

# **VA Academic PACT: A blueprint for primary care redesign in academic practice settings**

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Respectfully submitted on behalf of  
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Academic PACT Work Group

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## EXECUTIVE SUMMARY

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In 2010, the Veterans Health Administration (VHA) launched a program to transform its primary care system into a team-based care model in which all Veterans were assigned to Patient Aligned Care Teams (PACTs) in more than 900 primary care clinics nationwide. For those VA medical centers with health professions education programs, this transformation offers the additional challenge of integrating clinical trainees into the PACT environment.

As a principal primary care training site, the PACT model must provide a robust learning experience to achieve VA's statutory educational mission. In this report, an "Academic PACT" is defined as a primary care clinical practice that includes educating health professions trainees as an integral component of its mission. Meaningful roles in delivering care for trainees from medicine, mental health, undergraduate nursing, advanced practice nursing, pharmacy, and other health professions distinguish Academic PACTs from other PACTs.

Academic PACTs must deliver patient-centered, team-based, high quality care *and* provide education that prepares graduates for patient-centered care practice. In order to fulfill these dual missions, stakeholders at all levels inside and outside of the VHA must understand and address the unique challenges of Academic PACT implementation.

With this goal in mind and after careful study, the Academic PACT Work Group respectfully provides the following recommendations and underlying rationales for leadership consideration.

### **Recommendation #1: Develop Academic PACTs as ideal learning environments fully capable of addressing the inseparable missions of delivering quality patient care and educating the next generation of health care practitioners.**

Academic PACTs will only reach their full potential in clinical environments explicitly organized so that education is aligned with patient care. Under these circumstances, Academic PACTs will improve the quality of Veterans' care experiences by enhancing workplace learning for *all* team members – patient, clinicians, staff and trainees alike. As integral members of Academic PACT teams, trainees will also be far better prepared to enter the clinical workforce than their non-PACT counterparts.

Front line clinicians and educators are ideally situated to inform the optimal learning environment and the metrics that support continuous performance improvement. They must be seen as exemplary role models in high performing primary care teams striving to achieve desired patient-driven care outcomes in the most efficient way possible. Medical center leadership is well situated to promote the utility of Academic PACTs in aligning primary care with the goals of the VHA strategic plan. VHA and affiliate leadership must be jointly committed to the success of Academic PACTs by jointly ensuring the development, deployment and resourcing of the model.

In many locations, Academic PACT transformation is underway. To support those currently engaged in PACT redesign in academic settings, VA should develop a forum and mechanism for these leaders to share challenges, solutions, and best practices across different training models and accelerate learning that benefits primary care and education across the VA.

**Recommendation #2: Expand the definition and support of Academic PACT teaching faculty.**

To address the inseparable missions of quality patient care and education, *all* members of the Academic PACT team must be recognized as having the potential of influencing learning, and staff must be developed and supported as teaching faculty. All PACT team members must accept personal responsibility for their teaching roles and be willing to be guided by assessment measures that monitor both individual and team performance.

Fulfilling responsibilities for simultaneous patient care and teaching roles requires time and considerable skill development. All members of the Academic PACT team must have opportunities to improve their skills both as clinicians *and* as teachers. Skill development areas include supervision of trainees, mentoring, assessing trainees' performance and completing evaluations, providing feedback to trainees about performance, and teamwork performance. VA medical center and health profession school leaders must provide the time and opportunity for this training, making overall workload adjustments that optimize both missions.

In Academic PACTs clinical faculty from one profession interact with trainees from other professions. Academic affiliates and professional bodies with program oversight authority will have to revise faculty appointment and accreditation policies. Joint appointments for core faculty (e.g., nurse practitioners and physicians) in Academic PACTs may be an optimal solution. VA trainee supervision standards will have to be reconsidered as well.

**Recommendation #3: Prioritize continuity of patient care and learning in Academic PACTs**

Academic PACTs must include a robust platform to foster team development and cohesion. Longitudinal relationships between patients and the team and between trainees and supervisors and other team members are essential. Primary care and academic program leadership must work collaboratively to prioritize continuity in ways that support both missions.

*Continuity of care.* Continuity of care in a teaching practice requires fastidious attention to relationships between the patient and trainees, faculty supervisors, and other team members. Clinical systems must be designed for coverage and hand-offs that minimize the number of primary providers while ensuring the full availability of the team's expertise. Trainees must be held accountable for their patients' care including participation in huddles and team meetings to facilitate communication and care planning and for seamless transfer of responsibilities when they are not available. Performance evaluations should reflect these expectations. Faculty supervisors must be made readily available to ensure trainee supervision and patient access in the trainee's absence. To avoid fragmentation of supervision and promote continuity of patient care Academic PACTs should determine a minimum clinical effort per clinician-supervisor that best supports both missions.

*Continuity of learning.* Continuity of learning includes trainee-patient, trainee-faculty supervisor, and trainee-team relationships. Peer relationships amongst trainees are also important, including relationships within and across professions. Team stability supports the professional development of trainees and bolsters continuity for patients

when trainee providers are assigned to other activities. To the extent possible, Academic PACT team members should not be used as a staffing resource to backfill other primary care teams.

**Recommendation #4: Prioritize proactive, patient-centered, population-based team care delivery as the organizing principle for Academic PACTs**

Irrespective of their specific design features, all Academic PACTs must be organized around service and quality of care for their patients. The effective and efficient management of a defined patient panel is the center of team-based caring and learning in the same way that individual patients are the center of patient-centered care delivery. This organizing principle has several notable consequences.

*Performance Improvement.* All members of Academic PACTs, including health professions trainees, must develop proficiency in quality improvement methods applied to the continuous improvement of both care delivery and education. Improvement activities should be designed to leverage the oftentimes complementary expertise of each team member.

*Alternative Visits.* Many patients favor remote access to their electronic health record (e.g. MyHealthVet) and alternative appointment types. All members of Academic PACTs must become proficient with delivering care using both face-to-face and alternative visit modes. Curricula should include opportunities for trainees to deliver care using the telephone, secure messaging, group visits or shared medical appointments, and telehealth modalities.

*Data Management and Technical Support Systems.* Continuous performance improvement requires ready access to patient, program and system data. VA's electronic health record must have full population and panel management functionality and clinical trainees must be formally recognized as providers. Remote access for trainees, faculty, and other team members must be available to facilitate timely communication. Academic PACT supervisors and trainees must adhere to team and facility expectations to respond to alerts and participate in care decisions when working remote to the practice.

*Space.* Academic PACTs require space to optimize both missions. At least two exam rooms per provider (trainee or staff) allow rooming the patient only a single time while providing other team members co-visiting opportunities. Larger rooms more readily permit trainees to efficiently engage multiple team members quickly and easily in real time. Adjacent teaching rooms allow team meetings that promote team and trainee case discussions and interprofessional socialization. Clinical practice space should be designed with input from clinicians *and* educators, and space should be assigned with both missions in mind.

**Recommendation #5: Develop and implement metrics that support education as well as quality patient care and system performance**

To incentivize and monitor quality patient care *and* education, existing PACT metrics must be revised to take the needs of trainees and their education programs into account while still ensuring quality outcomes for patients. Continuity solely measured at individual patient or trainee levels inevitably discourages primary care sites from developing Academic PACTs. Metrics that demonstrate team performance and interprofessional education are also required and must recognize that all trainees and

some supervising faculty are not immersed in Academic PACT for the entirety of their effort. Metrics that reflect the priorities and desired outcomes of VHA and national educational and clinical workforce goals should be adopted as well.

**Recommendation #6: Educate trainees from different professions together.**

To meet its statutory education mission, Academic PACTs must incorporate trainees from as many of the health professions already engaged in PACT practice as possible. PACT transformational efforts have invested in preparing staff practitioners organized in teams for new ways of working together to deliver high quality, patient-driven care. The Academic PACT is the ideal platform for educating trainees from medicine, mental health, undergraduate nursing, advanced practice nursing, pharmacy, rehabilitation, and others *together* to best prepare them for future primary care practice.

**Recommendation #7: Develop collaborative leadership models for primary care delivery and educational programs.**

Developing Academic PACTs requires collaborative working relationships between clinical and educational leaders at all levels in VHA. At the practice level, traditional reporting structures for physician and nurse clinician-educators (and other members of the team) impedes the development of shared goals, shared investment in collaborative care model re-design, and shared engagement in care delivery and teaching. At the medical center and affiliate levels, educational activities must be designed collaboratively between academic leaders and primary care leaders to ensure optimization of both missions.

At the VHA and academic national leadership levels, better understanding of the inseparability of education and clinical practice should translate into consistent policy and procedures informed by both missions. Traditional educational cultures and accreditation requirements serve as barriers to interprofessional education. Ultimately, both within- and across-profession engagement in Academic PACT will require changes in national accreditation and other professional bodies. Education accreditation bodies will need to address supervision requirements that promote separate rather than cross-profession supervision (e.g., nurse practitioner supervision of physician trainees). VHA leadership should advocate for such changes at the national level and while fostering culture change at the local level.

## SECTION I: BACKGROUND AND RATIONALE

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In 1996, the U.S. Department of Veterans Affairs (VA), Veterans Health Administration (VHA) established VA Primary Care. In 2010, VHA launched a program to transform the primary care system into a team-based care model (Patient Aligned Care Team, or PACT) in more than 900 primary care clinics. The PACT system of care shares many features with patient-centered medical homes (PCMH). In addition to improving chronic disease management, the VA initiative aims to increase patients' accessibility to their primary care providers, improve continuity with the primary care team, intensify preventive health services, integrate mental and behavioral health into primary care, and enhance coordination of care as patients transition between primary and specialty care providers, hospital and ambulatory settings, and VA and private health care systems. The PACT model is intended to be proactive, personalized, and patient-driven, focusing not just on the management of disease but also more holistically on the Veteran's physical, psychological, social, and spiritual well-being. The model requires effective communication and coordination among team members for acute, preventive, chronic, and end-of-life care to achieve improved continuity and efficiency.

For those VA medical centers affiliated with health professions education and training programs, transformation to the PACT model of care offers the additional challenge of integrating clinical learners from these affiliated programs into the PACT environment. These *Academic PACTs* have two inseparable missions: deliver patient-centered, team-based high quality care *and* provide education that prepares practice-ready graduates for participation in patient-centered care settings. With guidance from others implementing PCMH (1-7) and early lessons from the Office of Academic Affiliations Centers of Excellence in Primary Care Education (8), the purpose of this paper is to outline the special considerations for implementing VHA's *academic* PACT models of care and learning.

### **VHA Commitment to Education**

VA has a long tradition of significant investment in health professions education (9). This commitment aligns with VA's strategic plan to 1) Build internal capacity to serve Veterans, their families, employees, and other stakeholders efficiently and effectively, and 2) Recruit, hire, train, develop, deploy, and retain a diverse VA workforce to meet current and future needs and challenges. VA educates physicians, nurses, nurse practitioners, pharmacists, psychologists, and many other associated health professionals; family medicine and internal medicine physician trainees account for the largest proportion. In FY 2012, VHA invested 1.7 billion dollars in support of health professions education. Clearly an annual investment of over half a billion dollars to train learners who may enter the primary care workforce as primary care practitioners represents an enormous commitment.

Training in VA settings positively influences future employment choice. Approximately 60% of current VA-employed physicians and 70% of current VA-employed optometrists and psychologists had part or all of their clinical training in VA. Currently, VA funds about 15% of all U.S. internal medicine resident positions, through which approximately 52% of all U.S. allopathic internal medicine residents rotate for part

of their training, assuring significant opportunity to introduce the PACT model of primary care delivery to these learners.

### **Academic PACT defined**

As the principal ambulatory training site for learners in primary care, the PACT must aspire to provide a positive learning experience to achieve VA's statutory mission for education to benefit VA and the nation. We define the *Academic PACT* as a team-based, patient-centered primary care clinical practice that includes educating learners as one of its primary missions. Learners involved in meaningful roles of delivering clinical care distinguish Academic PACTs from other PACTs. Thus, *Academic PACTs* have two inseparable missions: deliver patient-centered, team-based high quality care *and* provide education that prepares practice-ready graduates for participation in patient-centered care settings.

### **PACT Learning Framework**

By definition, education in the Academic PACT should ideally be centered on learning to deliver clinical care in the PACT model. Two theories of learning inform the design of instruction in clinical settings: Workplace learning (10, 11) and experiential learning (12-14). From these perspectives, learning is something that takes place as part of everyday thinking and acting in authentic clinical care delivery settings. Learning is made possible when learners from represented professions are embedded with authentic roles in the clinical practice where teams are engaged in delivering quality care.

From a developmental perspective, workplace activities must be designed to assist learners in their transitions from participation in low complexity activities under high supervision to performance that requires less supervision for more complex problem-solving activities. Supervisors support learners' transitions to more complex, independent practice through deliberately structured guidance. Supervisors, including more experienced co-workers and team members, select work tasks appropriate to the learners' readiness, provide explanations, make explicit what otherwise might remain hidden from the learners' view, and monitor each learner's performance. Longitudinal educational relationships on PACT teams allow supervisors to sequence for learners increasingly more complex tasks that require higher levels of competence and accountability.

Interactions with other PACT clinical team members in the workplace also contribute to learning. Learners observe and listen to team members from their own and other health professions as they conduct work tasks and discuss problems. Thus, supervisors serve as role models and coaches, but every member of the PACT team in the workplace will influence learners' education in this model. Instructional design for learning in PACT settings should include a balance of formal instruction that prepares learners for workplace activities, useful and developmentally appropriate workplace activities, and purposeful reflective practice.

From these theories of learning, we identify eight principles to be used to inform optimal design of Academic PACT learning experiences. These guiding principles are shown in Appendix A.

Thus, the Academic PACT workplace must advance missions of clinical practice *and* education, which impacts both clinical operations and instructional design. Although this integration of missions is not new and has occurred for many years at every clinical

teaching site, the implications of these simultaneous missions have historically been insufficiently addressed, especially in outpatient clinics. For example, VHA's implementation of PACT did not account for the differences that academic activities might have on panel sizes, staffing, and continuity metrics. In the Academic PACT, the sheer increase in number of part time primary care providers (faculty and learners) on a single clinical team requires considerable coordination, significantly stressing the clinical staff whose roles and responsibilities include assuring the delivery of high quality patient-centered care. At the same time, educational programs in these primary care settings have seldom been designed around the specific goals these clinical settings have established for practitioner (faculty or learner)-patient continuity, schedules, or even desired competencies.

### **Application of PACT Principles to the Academic PACT**

Because Academic PACT occurs within VA's PACT system of care, PACT principles must inform development of the Academic PACT (15). At the core is *patient-driven, team-based* care that optimizes *continuity*. These elements inform the design considerations for addressing both care and learning in the Academic PACT and will be addressed in **Section II: Design Considerations**. Once the structural and functional design decisions are made, they serve as a scaffold for curricula that address and reinforce learners from multiple professions working together and effectively *communicating* with patients and families, and with each other to deliver *comprehensive, efficient, coordinated* care. Curricula will be addressed in **Section III: Curricular Considerations**.

## **SECTION II: DESIGN CONSIDERATIONS**

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Academic PACTs will only reach their full potential in clinical environments explicitly organized so that education is aligned with patient care. Under these circumstances, Academic PACTs will improve the quality of Veterans' care experiences by enhancing workplace learning for *all* team members – patient, clinicians, staff and students alike. As integral members of Academic PACT teams, learners will also be far better prepared to enter the clinical workforce than their non-PACT counterparts. Patient-driven, team-based care that optimizes continuity must inform design decisions for the Academic PACT.

### PATIENT-DRIVEN CARE

#### **QUESTION 1: What Academic PACT structural and functional design decisions support learning and caring from the patient's perspective?**

In PACT, the primary care team is focused on caring for the whole person and patients' preferences guide care planning and execution. Systems support patient self-efficacy throughout the continuum of care needs from health promotion to acute care and chronic care to end-of-life care. The Academic PACT design must include a healthy platform to develop and preserve longitudinal relationships between patients and learners, learners and faculty supervisors, and learners and health care (PACT) team members. Learners' roles and responsibilities for team-based patient-centered care must be defined and reinforced.

Because design choices are often made among competing values, patient-centered quality care must not suffer under any choice. Irrespective of their specific design features, all Academic PACTs must be organized around service and quality of care for their patients. To frame this discussion, we consider questions that patients might pose to us:

*Am I getting the same high quality care if I have a learner as my Primary Care Provider (PCP) as I would if I had a non-learner as my PCP? Do I get the same access, care management, care coordination, and population management? Will the staff practitioners be appropriately engaged with me and my care? What systems are in place to ensure that this occurs, despite the learning status of the learner and the fact that my PCP's availability may be limited? What are my roles and responsibilities on the PACT in academic training settings? What is the role of each of the members of my PACT? How should I participate differently with my team?*

These questions are addressed through structural and functional design decisions related to care that is both *team-based* and *continuous*.

### TEAM-BASED CARE

In PACT, a primary care provider (physician, nurse practitioner, or physician's assistant) leads an interprofessional teamlet in care delivery. The VA "teamlet" includes a registered nurse as care manager, a health technician or licensed practical nurse (LPN), and a medical clerk. Together, the teamlet shares responsibility for partnering with patients to manage their care (16). Teams that include pharmacists, social workers, nutritionists, psychologists, and disease management coaches (among others) all support larger panels of patients in collaboration with the patient's teamlet. For simplicity, we use "team" throughout this report to refer to either the PACT teamlet or team.

The PACT model provides an ideal setting for interprofessional education. "Interprofessional collaboration in education occurs when students from two or more professions learn about, from and with each other" (17) to maximize the strengths and skills of each worker, establish trust, enable effective collaboration, and improve health outcomes (18, 19). While traditional education provides opportunities for health professions learners to learn to communicate with colleagues in a team-based environment, deliberate interprofessional training allows advancement of those skills beyond coordination and cooperation to a collaborative practice-ready model where they can effectively interact, negotiate, and jointly work with others from any background. This collaborative approach also represents a shift from the traditional model characterized by competitiveness and individual achievement to an environment that supports interprofessional relationships for the shared purpose of providing high quality patient-centered care (20).

To address the team-based care principle in the Academic PACT, medical center leaders must consider both team-based care *and* team-based education. In these settings, teams may include learners from any (or all) of the involved professions. Therefore, leadership will need to decide "who" to educate in PACT and "how" to structure the teams to achieve the dual (and sometimes seemingly competing) goals of caring and learning. Which learners are present determines team structure, supervision structure, and the professional development needs of clinical supervisors.

**QUESTION 2: Which learners should the Academic PACT educate and what are the Academic PACT responsibilities to learners from different professions?**

To frame this discussion, we consider questions that learners might pose:

*What is my role in and responsibility for consistently providing outstanding patient care? Am I learning to practice to the top of my professional ability? Are my clinical and PACT training needs being met? Are there systems in place to ensure that my patients get outstanding care even when I am not available? What are the expectations of me to provide clinical care even when I am not physically present in my PACT setting? Are they realistic? Are my general and specific primary care educational needs being met? How can I interact respectfully with learners and staff from other professions and fully appreciate the potential for collaborative contributions to the clinical team?*

Most existing primary care clinical education sites in VA medical centers engage learners from the professions of medicine, mental health, nursing, and pharmacy, among others separately, in historically determined program designs. To meet its statutory education mission, Academic PACTs must incorporate trainees from as many of the health professions already engaged in PACT practice as possible. PACT transformational efforts have invested in preparing staff practitioners organized in teams for new ways of working together to deliver high quality, patient-driven care. The Academic PACT is the ideal platform for educating trainees from medicine, mental health, undergraduate nursing, advanced practice nursing, pharmacy, rehabilitation, and other health professions *together* to best prepare them for future primary care practice.

Resources for interprofessional education will vary by site, depending on the existence and interest of academic affiliates for placing learners in VA PACT learning environments. Leaders must ask: *Who are our academic affiliates? What are the program requirements for clinical learners we want to engage in the Academic PACT?* Table 1 lists examples of potential post-graduate learners in the Academic PACT and how educational program elements vary, highlighting the challenge of coordinating effective interprofessional learning in PACT. (For PACTs considering clinical training for early clinical learners, Appendix B compares program elements for pre-degree students for Academic PACTs.) Educators must learn about each other’s programs, tease out program assumptions, and seek opportunities to design collaborative learning that mimics future practice in interprofessional teams.

Table 1. Comparison of some of the post-graduate, post-licensure PACT trainees’ educational program elements.

Learner	Educational program level^	Duration of education*	Clinical requirements in ambulatory setting++	Frequency in PACT=	PCMM Associate provider@	Supervision requirements#
Physician residents	Post MD or DO	3 years (IM/FM)	33% for IM > 33% for FM	1-2 half-days / wk	Yes	MD or DO
NP residents or fellows	Post NP masters	1 year	100%	5-10 half days/wk	Yes	MD/DO or NP/DNP
Pharmacy residents	Post doctorate	1 year	40%	4-5 half-days/wk	No	Pharmacist
Psychology fellows	Post doctorate	1 year	Variable	4-5 half-days/wk	No	Psychologist

^Educational program level refers to learner’s stage in the health professions degree program  
 \*Duration of education delineates the length of educational program  
 ++Clinical requirements indicates specified percent of time in “duration of education” that must be in clinical practice settings (33% specific to internal medicine; family medicine residents increase ambulatory commitment over time to >50% in final year of training)  
 =Frequency in PACT indicates the amount of time a typical learner might spend in the PACT setting involved in direct patient care or educational activities supporting learning in PACT  
 @Primary Care Management Module (PCMM) is a data entry field in the veteran’s electronic health record that drives distribution of information; the associate provider field within PCMM allows naming of learners primarily responsible for the patient and is used to assign panels of patients to providers; currently limited to “licensed” providers  
 #Supervision requirements indicate academic program requirements for supervising the learner in clinical settings

**QUESTION 3: How will team members be assigned to and support caring and learning in the Academic PACT?**

Learning in the workplace requires active engagement of learners in developmentally appropriate care delivery. To learn to be effective team members, learners must be fully integrated into team activities that support patient-centered care.

Table 2 compares typical PACT team composition with team composition for two examples in the Academic PACT, where low integration is defined as the PACT serving as an education site for learners from at least one academic affiliated program and high integration indicates the PACT is fully engaged in addressing the missions of team care and interprofessional learning. In this example, the non-academic PACT PCP is a physician, but could also be a nurse practitioner or physician assistant. A notable difference is the total number of individual PCP providers on either Academic PACT team (7-12) compared to a typical team (1), which will require considerable coordination.

For example in Table 2, the non-academic PACT has 1.0 FTE provider, but in the low integration Academic PACT illustration, the physician FTE is 0.2 and only present in clinic while staffing and the NP team partner has 0.6 FTE in the practice with time divided between direct patient care and clinical supervision of learners. In the high integration example, the physician FTE and NP FTE are both 0.75 with a mix of direct patient care and clinical supervision of learners.

In comparison to the 3:1 PACT staffing ratio for PACT teamlets and the low integration example for Academic PACT, the high integration Academic PACT adds one additional RN care manager for the teamlet panel size of 1250 patients, to support care delivered during 10 sessions per week, approximately half as faculty practice sessions and half as learner-delivered care sessions with supervision.

Table 2. Comparison of non-academic PACT and Academic PACT team composition for examples of low and high integration of trainees into Academic PACT

	PACT	Academic PACT			
		Low Integration Example		High Integration Example	
PCP Faculty					
<b>PHYSICIAN</b>					
FTE	1	0.2	Physician present only while staffing	0.75	Practice and supervision
Patient care clinic sessions (half-days)	10	0		3	Panel size = 360
Supervision clinic sessions (half-days)	0	2		3	

<b>NURSE PRACTITIONER</b>					
FTE	0	0.6		0.75	Practice and supervision
Patient care clinic sessions (half-days)	0	2	Panel Size = 480	4	Panel Size = 320
Supervision clinic sessions (half-days)	0	4	Has NP learner in personal practice	3	NP has protected time for precepting learners
PCP Learners					
<b>PHYSICIAN TRAINEE</b>					
Associate providers (MD/DO residents)	0	8	Mix of PGY-1, PGY-2, PGY-3	2	Mix of PGY-1, PGY-2, PGY-3
1/2 day clinics (average per week)	0	1		2-4	
Learners staffed per faculty per session	0	4	Staffing ratio suboptimal	2	Excellent staffing ratio for teaching/supervision
<b>NURSE PRACTITIONER TRAINEE</b>					
Associate provider (NP, DNP students)	0	4	Mix of NP, DNP students, years 1-2	3	Mix of NP, DNP students, years 1-2
1/2 day clinics (average per week)	0	2		2	Trainees supervised by faculty with protected time for precepting
NP learners staffed per faculty session	0	1	NP learner in NP supervisor's practice	2	Excellent staffing ratio for teaching/supervision
<b>TOTAL FTE and PANEL SIZE</b>					
Total faculty (individuals)	1	2	1:6 mentoring	2	1:3 mentoring
Faculty FTE	1.0	0.8		1.5	
Faculty panel size (combined)	1200	480		680	
Total learners (individuals)	0	12		5	
Total learner FTE	0	1.6		1.2	
Associate provider panel size / session (mean)(range)	0	Mean 70	Range 50-120 (physicians residents)	Mean 70	Range 50-120
Total associate provider panels	0	560		570	210 per MD/DO 50 patients per NP
Total FTE	1	2.4		2.7	
Total team panel size	1200	1040		1250	625 total patients per 0.75 FTE faculty (mean) (trainee panels subsumed)
<b>TEAM COMPOSITION ADJUSTMENT</b>					
PACT staffing ratio	3:1	3:1		4:1	
Team Support Staff adjustment for Academic PACT	N/A	None			Add RN Care Manager to Academic PACT teamlet for first 1000 patients on team. Add one full teamlet (ratio 3:1) for each additional 1000 patients

Once decisions are made about which learners are on the team, the highest priority should be continuity (21). This PACT principle of continuity should not only

inform how these learners will be scheduled but also how they will be supervised. Several dimensions of continuity are addressed in the next section.

## CONTINUOUS CARE

### **QUESTION 4: What Academic PACT structures optimize patients' access to their own primary care provider and team, *and* optimize continuity of care and continuity for learning?**

In the PACT care model, every patient has an established and continuous relationship with a primary care provider (PCP). When care is delivered in teams, learners from all PACT professions have opportunities to develop longitudinal relationships with patients. Academic PACTs must include a robust platform to foster team development and cohesion. Longitudinal relationships between patients and the team and between learners and supervisors and other team members are essential. Primary care and academic program leadership must work collaboratively to prioritize continuity in ways that support both missions.

Academic settings find that supporting the continuous relationships principle challenging on at least two dimensions. First, learners have competing responsibilities during training. To fulfill program requirements, most must learn to provide care in settings other than primary care. Thus, by definition, these learners are “part time” primary care providers. Further, learners' assignments to their Academic PACTs are subject to the academic affiliates' scheduling complexities, requiring advanced planning, intense schedule oversight, and frequent communication with affiliates in order to anticipate schedule changes. In addition, many NPs are part time students, employed as nurses to be able to support themselves and pay for their education. These learners are both part time in their educational program and, when “in school,” part time in primary care.

Second, continuity between learners and their patients is interrupted at the end of the training period. The conclusion of a learner's training program can be a time of stress for patients as important relationships are disrupted. Medical center leaders should address the process for patient assignment to a new provider, with emphasis on communication with the patient about how to obtain care at all steps during the transition. Learners' supervisors will play a crucial role in maintaining continuity of care and safe care transitions.

### **Team assignments for continuity**

Continuity often leads to increased efficiency as team members build working relationships, develop trust, interact and communicate regularly, and distribute work efficiently to the most appropriate person at the right time (22). Continuity among team members in the Academic PACT is one of the most important considerations for making team assignments for three reasons. First, the provision of continuous care for patients in Academic PACT teams is often dependent upon the team and faculty supervisors, not the learner. Patients should know their team and feel as though their team *knows* them. Second, the Academic PACT should be committed to teaching learners about teamwork, with a focus on team participation in the workplace. Through such participation, learners will have the opportunity to learn and understand the roles and responsibilities of team members from other professions, earn the trust of the team and learn to trust others, and

learn core components of high performing teams (22). Third, continuity between faculty supervisors and learners may facilitate learners' transitions from highly supervised roles and responsibilities of the novice to developmentally appropriate autonomy (23). How faculty and other team members make decisions to entrust learners with more independence is in part dependent on multiple performance assessments made over time when supervisors and learners have longitudinal continuity (24).

Thus, stability of Academic PACT teamlets is necessary to support learners' development as professionals and bolster continuity for patients when their learner primary care providers are assigned to other patient care activities. All too often, Academic PACT teamlet members are used as a staffing resource to fill in for absent members on non-teaching teamlets. Primary care and academic program leadership must work collaboratively to prioritize Academic PACT continuity in ways that support both missions.

### **Team responsibilities for continuity**

If learners are to learn how to practice in teams in the workplace setting, staff members of the Academic PACT must carry out the same responsibilities for learners as for faculty, and learners must participate as responsible team members accountable to the team. Team support activities include pre-visit planning huddles for scheduled visits, pre-visit phone calls, post-discharge phone calls, health coaching, high-risk patient panel management, secure message triage, walk-in care triage, and managing care transitions. Through role modeling, these team members influence learning in the workplace. With continuity among team members, including learners and supervisors, all members will learn to negotiate roles and responsibilities to provide efficient and timely patient-centered care.

Staff members of Academic PACT teams should have support for developing skills in working with learners, including understanding the educational program requirements, developmental expectations, instruction and assessment. All members of the team, not just supervisors, should take responsibility for supporting learning and providing feedback to and evaluation of learners' performance. These special roles and responsibilities for Academic PACT team members may require selection of the right people for these roles to avoid excessive staff turnover often seen in the teaching setting.

### **Learner-supervisor-team relationships**

Medical center leaders may choose several approaches to assigning faculty to their supervisory and team member roles in the Academic PACT. Three dimensions should be addressed. First, what are the qualifications for selecting faculty supervisors in Academic PACT? Second, how will the faculty supervision be structured to support patient continuity with the team, learner continuity with supervisors, and supervision requirements? Third, how will the faculty workload be adjusted to account for teaching and supervision responsibilities?

#### *Selecting faculty supervisors*

Faculty supervisors in Academic PACT will serve as role model clinicians and teachers for learners from all professions training in PACT. Medical center leaders may want to consider qualities of desirable role models (25-27), primary care clinical expertise,

teaching excellence, commitment to continual professional development as teachers in this setting, and commitment to interprofessional teamwork for both caring and learning. Demonstrated scholarship in evidence-based clinical practice, teamwork and communication, population management, quality improvement, health systems, and education should also be considered as a collective attribute of the Academic PACT. Faculty supervisors in the PACT teaching setting will need support for professional development to learn new content and teaching skills for their roles (28-29).

### *Structuring faculty supervision*

Largely dictated by accreditation requirements, physician training programs have a long tradition at the graduate education level of assigning faculty supervisors to half-days of supervision in the residents' continuity clinic. Many professions do not have similar traditions of providing dedicated faculty teaching time. In order to develop models of interprofessional co-supervision in primary care, leaders will need to align supervision approaches for all professions involved.

Leaders will need to address the minimum clinical commitment of faculty supervisors to the Academic PACT to optimize function of both the practice and the educational mission. Part-time clinical supervisors with multiple competing priorities pose a different organizational challenge to the Academic PACT than supervisors who are full-time clinician-educators. The common practice of utilizing supervisors with 10-20% clinical roles must be re-examined. Academic PACTs should arrange explicit partnerships among faculty members to assure 100% availability in the practice of at least one clinical supervisor per team. Availability to the team must be a priority for longitudinal team relationships to reap the benefits described above.

### *Adjusting faculty supervisor expectations*

Academic PACT teams should have smaller total panel sizes for two reasons (see Table 2). First, team communication strategies among multiple team members that ensure comprehensive, coordinated, personalized care *and* support learners' development as PACT team members add layers of complexity to team function. Learners need more time to assimilate and effectively integrate learning, including time for reflection with team members prior to and after actions are taken. Second, learners by definition are developing clinical and teamwork skills, which requires time for performance under supervision. Initially, Academic PACT teams will be less efficient. Once the models of supervision and cooperative practice are established, it is more efficient to have multiple learners seeing patients under joint MD-NP supervision and productivity will likely reach or exceed a breakeven point.

Table 3 describes three points on a continuum for integrating learners into the Academic PACT. The table is intended to illustrate an integration spectrum for the elements discussed above. Many variations between these examples are possible. The "low integration" model describes the "current" state of learner integration into Academic PACT in many locations. The "moderate" integration model describes elements in early implementation in some locations. The "high" integration model describes elements of sites fully engaged in addressing the dual missions of team-based care and interprofessional learning. The goal is to move Academic PACTs from low integration models toward high integration models, determining what works in different

contexts. All possible models should be evaluated on an ongoing basis to advance collective understanding of what design elements achieve the desired goals for caring and learning in different local contexts.

Table 3. Examples of continuity and team models for trainee integration into Academic PACT

	No/Low integration	Moderate integration	High integration
System requirements	Associate provider field not populated in the system.	PCMM associate provider field entered appropriately for licensed, credentialed learners; PCMM data not available at the level of the team.	Full team membership established in PCMM. Patient Alerts/Notifications forwarded to appropriate team members, including all involved learners. Learners have access to CPRS from non-VA training sites
Inter-professional engagement	Learners from different professions work in parallel	Learners from different professions attend teaching sessions together but remain separate for patient care	Learners from different professions are assigned to teams and care for patients together, learn and reflect together
Patient-Learner continuity model	No defined patient panel for any learners	Physician resident learners have their own longitudinal panels of patients. NPs, PAs, Pharmacists may have panels, requires local “work around” systems	All learners have their own longitudinal panel of patients. Faculty subsume all learner panels longitudinally
Patient-Learner care coverage model	Learners sign out to any available faculty or team member. Coverage processes not consistent or fully delineated.	Learners sign out to responsible faculty or available team member when absent; between clinic availability not expected; team members utilize available faculty for management decisions when learners not available.	Practice partnership model where learners have assigned partners who cover for each other so that one partner is always available to patients and team; partners handle non-face to face communication.
Supervision model	Learners and faculty are assigned to half-days independently; continuity occurs randomly; learners rarely make between-visit care decisions.	Learners and their faculty are assigned to half-days together deliberately; continuity is expected; learners get help from available supervisors for between-visit care decisions.	Faculty preceptors in relevant professions collaboratively supervise learners in practice with longitudinal continuity among faculty, learners, and patients as core design element
Teacher-learner continuity model	Physician residents are assigned a primary faculty mentor who subsumes the learners’ patient panels; precepting assignments are made independent of mentoring. Other learners are assigned to the preceptors’ practice for clinical experiences.	Learners are assigned a primary faculty mentor who precepts the learner most of the time, subsumes the primary care learners’ patient panels; the model uses traditional independent assignment of supervisors.	Learners are assigned to a faculty member longitudinally for the duration of their PACT experience who subsumes the learners’ patient panels, supervises patient care, and provides support for between visit care and longitudinal mentoring for assigned learners

Team-Learner continuity	Learners not assigned to a team; they are supported in practice based on scheduling and availability.	Learners are assigned to a team but caring for patients together is limited because of scheduling; available teams and faculty provide continuity for patients for non-face-to-face care	All members of the team know they are assigned to each other; providing continuity to a panel of patients together as much as possible is a priority
End of training transitions of care model	Patients are randomly assigned to new learners	Patients stay with faculty supervisors who have subsumed the patient panels; patients are distributed to new learners who are assigned to the faculty mentor	Patients remain with supervising faculty and team, are reassigned to new learners on same team; faculty and team provide continuity of supervision and care

### **SECTION III: CURRICULAR CONSIDERATIONS**

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Academic PACT’s structural and design elements, grounded in *patient-driven, team-based, continuous* care principles, serve as a scaffold for curricula that address and reinforce learners from multiple professions working together and effectively *communicating* with each other to deliver *comprehensive, efficient, coordinated* care. In the sections below each of these PACT principles are discussed in relationship to curricular development.

Instructional strategies for teaching and learning in PACT settings should include a balance of developmentally appropriate workplace activities, formal instruction (didactics, discussions, simulations) that supports workplace learning, and purposeful reflective practice. Too frequently, the planned formal instruction is the primary strategy for implementing curricula. While necessary to support learning from clinical experience, the primary instructional strategy should be appropriate immersion in workplace activities followed with reflection on practice. It is important to note that workplace learning frequently assumes the step of reflective observation, relying on learners’ abilities to appreciate what has happened, interpret those observations correctly, and apply what has been learned to new situations. Therefore, reflective practice should be a deliberate part of the instructional design for workplace learning (10-11).

#### COMMUNICATION

**QUESTION 5: What Academic PACT processes facilitate communication between patients and their team members, and among team members so that care is efficient, comprehensive, and coordinated?**

The PACT model requires that communication between the patient and other team members is honest, respectful, reliable, and culturally sensitive. Effective communication between health care professionals and patients is essential to coordinating health care services across the continuum of health care settings, integrating comprehensive health care services, and protecting patient safety. Team members may use electronic technologies to enhance communication as long as patient privacy, confidentiality, and information security are protected and other relevant VA policy is followed. Respectful communication with patients and among PACT team members

allows each person a voice in supporting patients' decisions regarding their care, making decisions that affect the patient's care, and how the team functions.

Communication, the act of exchanging information, takes several forms and serves multiple purposes. Some exchanges of information can occur outside of real time (asynchronously), such as sharing normal test results with patients via secure messaging. Other exchanges must occur in real time (synchronously) when shared understanding is the goal or immediacy is required (30). For some complicated tasks, asynchronous communication between team members can be used successfully when team members know their responsibilities in the sequence of care and document the outcome of the actions as previously determined by protocol. Assisting a patient with diabetes to improve glycemic control is a complicated problem amenable to asynchronous communication following a structured protocol. For complex problems characterized by ambiguity or uncertainty, communication with patients and between team members should be synchronous via either telephone or face-to-face discussion. A team member transitioning responsibility for a patient's care amidst an evaluation for an unclear health problem is an example where communication with another team member is best carried out face-to-face and includes the patient. Communication techniques that improve shared understanding have been well described (31-32). In all cases, the preferences of the patient must be considered in choosing a communication approach.

Discussing in detail the types of communication and when best to use them is beyond the scope of this document. However, in the Academic PACT, the part-time status of learners and faculty supervisors, and the developmental status of learners create significant challenges for designing and implementing optimal communication expectations and strategies in this setting. Patient expectations and improved patient safety require high quality communication with patients and between team members (33-34).

Medical center leaders will need to address system access and technical capabilities that are needed to optimize communication among team members (Table 4). All providers in primary care must have remote access to the electronic health record and medical center leaders must assure such capability is provided in a timely fashion. Curricular considerations include 1) teaching technical skills and assuring capabilities for multiple modes of communication (face-to-face, telephone, secure messaging), 2) developing interpersonal skills for effective communication that is respectful and effective, 3) team building and learning strategies for building trust among team members that assures appropriate responsiveness and supports delegation as required, 4) learners developing judgment about the communication approach to use in different circumstances, and 5) negotiating and clarifying expectations for timely responses to communication requests. Academic PACT teams must determine communication expectations that optimize team functioning and care delivery from the patient's perspective. Learners should know how and how often they are expected to check view alerts, return pages from clinic team members, and accept phone calls from patients between clinic sessions. In turn, team members should know how these expectations impact the learners' responsibilities to other aspects of their education.

Table 4. System and Educational Program Requirements for optimal communication

	System Requirements	Educational Design Requirements
Patient	Has access to phone or computer when needed Secure messaging, my HealtheVet Has technical proficiency Participates in providing feedback about communication effectiveness	Patient understands educational mission Patient considers self a member of the team Patient knows who is on the team Patient knows how to access team Learner builds trust with patient and encourages trust-building with team members; Patient retains autonomy to direct decision-making and influence team behavior.
Learner	Has continuous access to phone and CPRS from all locations (Citrix/VPN) throughout the training program period Access to shared drives/SharePoint Can be reached (e.g., pager status is current, telephone operators know status and coverage plan)	Participates in communication curricula Has time to respond to communication requests Participates as active team member, works on communication, open to feedback, develops trust Requests and receives feedback about communication
Team	Knows team design for coverage; has access to phone and CPRS from all locations Team facilitates trusting relationships between patient and all team members	Understands requirements of learners' programs when learner not present in PACT Participates in teaching communication Provides feedback about communication
Supervisor	Has access to phone and CPRS from all locations (Citrix/VPN) Can be reached (e.g., pager status is current, telephone operators know status and coverage plan)	Understands role and responsibility for support and timely backup communication for patient care Facilitates trust between learner and patient, between team and patient Takes responsibility for supporting learner to meet/exceed expectations that are developmentally appropriate

Learning and practicing effective interprofessional communication should take place in the workplace where learners from multiple professions observe, participate, and receive feedback about their judgment and effectiveness as communicators. At the team level, learners should participate in huddles with team members for each patient care session. Learners should also participate in periodic team meetings and care planning sessions for their own patients.

COMPREHENSIVE

Once PACT is fully implemented, the primary care practice should be the point of first contact for a range of medical, behavioral, functional, and psychosocial needs, and will be fully integrated with other VA health services and community resources. In delivering this care, veteran preferences for care are routinely elicited. Services include education that promotes patient self-efficacy, preventive care, lifestyle coaching, early detection screenings, appropriate consultation, and chronic care management. Learners must develop profession-specific proficiency for comprehensive care, know proficiencies of other team members, and learn to trust and work with other team members to provide

quality care. Curricula must be designed to teach population health strategies, including panel management.

### EFFICIENT

In the PACT model of care, patients receive the care they need at the time they need it from an interprofessional team functioning at the highest level of their collective competency. Technology is utilized to support optimal patient care, performance measurement, systems redesign, patient education, and enhanced communication.

Through PACT implementation, the VA primary care system is moving away from face-to-face visits as the only type of appointment offered to patients to meet their care needs and expectations. Timely access to care is also offered in group encounters (shared medical appointments) (35), telephone clinics, home telehealth, and secure messaging encounters as appropriate to the patient's care needs and desires. In this model, providing patients with access to care means providing access to patient-centered support for care decisions that assist patients in determining the best way to engage with the health care system to achieve their goals.

Academic PACT curricula should include instruction in and experience with multiple 'visit' modalities. The face-to-face visit between a patient and a learner under supervision is the most common educational visit model. However, not all visit requests require direct patient-primary care provider interaction. Learners in PACT from all professions must learn to deliver 1) face-to-face visits, 2) group visits or shared medical appointments, 3) telephone visits, 4) secure messaging visits, and 5) Telehealth visits. This will require instruction and practice in listening to patients' requests for care, determining the best visit method for meeting those requests, delivering that care in ways that leverage the expertise of PACT team members, and monitoring the quality of care and team performance to the benefit of patients. It will also require new ways of scheduling learners for patient care sessions in PACT, not just face-to-face visits.

### COORDINATED

The PACT coordinates care for the patient across and between health care venues. Coordination is achieved through active interprofessional collaboration as patients move from primary care to specialty care providers, between clinic, hospital, and long term care settings, and between VA and private health care systems. The Academic PACT should ensure that care coordination is provided to learners' patients under appropriate supervision, assuring no lapse in care for the patient. The curriculum should support learners' engagement in appropriate profession-specific roles in care coordination and learning from others about their care coordination roles.

Population management is defined as a data-driven process for proactively defining a cohort of patients who might benefit from a health care plan or intervention and reaching out to individual patients in the cohort to offer the right intervention at the right time, rather than waiting for the patient to self-identify and seek out health care. Population management activities identify gaps in clinical care and use strategies for improving health care outcomes for the defined patient cohort.

Population management processes must be sufficient to ensure that PACT team members use data sources (e.g., Primary care almanac, PACT compass, clinical reminders, disease specific registries, dashboards, Decision Support Systems (DSS) data,

VSSC) for population management, including preventive health care, disease-specific interventions, complex health care planning, or to identify and provide support to patients at high-risk for clinical complications. To be effective in Academic PACTs these resources need to deliver data at the associate provider (learner) level. Learners, team members, and faculty supervisors should be actively involved in population management of learner panels with regular follow-up and discussion of overall panel and individual patients, as appropriate.

## **SECTION IV: NEW MODELS FOR CARE AND LEARNING**

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Once medical center leaders make choices about which learners to educate in the Academic PACT, design options outlined in this section will determine the characteristics of the Academic PACT learning environment. In a series of tables below (5A to 5D), we address 1) contextual factors influencing redesign (health care system, institution, and point of care), 2) structure of educational engagement, 3) space requirements for learning while providing care, and 4) professional development and support. In each case, examples are shown for illustration along a continuum of integration of education and clinical care, using the same definitions as for Table 3.

### **QUESTION 6: What are the educational design options for supporting patient-driven, team-based care *and learning* that optimizes continuity, communication, and quality of care?**

For training to simulate team-based care delivery, new educational models should incorporate learners from several relevant professions to train collaboratively in Academic PACT settings. As noted above, the majority of learners engaged in training in VA's primary care settings have been physician residents. At the same time, the majority of physician residency structures have not been developed to advance primary care, much less PACT or other recent innovations in patient-centered primary care. This realization leads to the obvious problem of how to balance program structure and curricula within professions, as well as across professions in the context of Academic PACT. Ultimately, both within- and across-profession barriers to learner engagement in Academic PACT likely require changes and harmonization by and among national accreditation and other professional bodies. For example, accreditation bodies will need to address supervision requirements that maintain separation of professions rather than permitting appropriate cross-profession supervision (e.g., NPs supervising physician learners) based on skills, expertise, and learning goals.

In the meantime, VA facilities need a place to start to develop program structures that can be useful among and between the professions currently (and yet to be) engaged in Academic PACT. As a pragmatic matter, we recognize that many VA sites will likely build their initial Academic PACT structures onto the backbone of their existing training programs. However, it will be problematic if the physician-dominant culture does not adapt to seek engagement with and support the unique characteristics and cultures of the other health professions programs—nurse practitioners, physician assistants, pharmacists, psychologists, others—that must be included for collaborative care and learning. Deliberate attention to integration of all learners in ways that preserve their unique professional characteristics and contributions is required.

One significant problem in the current Academic PACT model is the limitation of the electronic health record in identifying all team members involved in caring for the same panel of patients in ways that facilitate communication between team members. A system in which all learners can be identified as members of the team and follow their own panels is needed. In addition, the system should identify the team’s populations of patients and develop disease registries for monitoring quality and designing improvement efforts.

Disease registries should be broadly implemented in Academic PACTs to support learning about population management and performance improvement. Registries must support more than alerts directed to the primary care provider if innovative practice redesign supporting “top of competency” performance among team members is to occur. Registries must be capable of reporting population data at the level of the Academic PACT to monitor continuous quality improvement activities and individual patient data to intervene appropriately to improve care. Similarly, care management applications that facilitate asynchronous communication among team members must be broadly implemented.

Table 5A provides examples of evidence one might see as Academic PACT transformation to interprofessional education and collaborative practice takes hold. At the institutional level, relationships between VA academic medical centers and their academic affiliates will need to engage in higher levels of collaboration.

Table 5A. Contextual Factors for Redesign of Academic PACT

	No/Low integration	Moderate integration	High integration
Healthcare system	Training continues in silos; learners unaware of gaps in preparation for practice; retraining in practice required	Practice environment beginning shift to teamwork and coordination of care	Training matches workplace competencies; learners prepared to enter workforce
Institutional	Educational programs operate independently from other clinical and research missions; resources for education unknown	Awareness of involved educational programs and potential for missions competing for resources; Minimal resource investment, low return on investment	Clear mission for interprofessional education and collaborative practice in primary care settings; education optimized for all involved professions; Significant resource investment to achieve goals, high return on investment
Relationships with Academic Affiliates	Little collaboration; affiliates send learners to Academic PACT as scheduling allows; affiliate not invested in Academic PACT goals	Moderate collaboration for planning some educational elements about Academic PACT goals	High collaboration for significant educational redesign; focus is on primary care aspects of educational program
Point of Care	Learners participate in silo activities as PACT can accommodate; collaborative planning absent	Learners participate in silo activities as PACT can accommodate; may have some shared formal instruction activities	Learners engaged in collaborative care/learning activities, delivering care in teams and using registries for optimizing quality of care for populations; focus is primary care competency as interprofessional team

Table 5B compares three structural design models for integrating learners into Academic PACT. In collaboration with the appropriate academic affiliates, leaders will need to address the question: *How long is the exposure of the learner in PACT and what is the optimal design for that exposure to achieve the educational outcomes desired?* Three dimensions are important. First, “intensity” of exposure will vary based on the amount of dedicated time the learner spends in the Academic PACT. Longitudinal assignments describe briefer episodic exposure (e.g., 2 half-days per week) usually over a longer period of time (e.g., 1 year). Block immersion assignments describe high intensity of exposure (e.g., 10 half-days per week) usually over a shorter period of time (e.g. 4-8 weeks). Second, the length of the educational program informs the “duration” of exposure. Third, breaks between PACT learning activities and non-PACT learning assignments represent “interruptions”. The length and pattern of these interruptions impact instructional design, teamwork, and continuity, and therefore must be thoughtfully considered. When taken together, many intensity-duration-interruption design options are possible and determine the overall workplace experiences for learners. Overall exposure should be sufficient for learners to demonstrate desired competencies. The many potential benefits of longitudinal exposure are addressed under ‘continuous care’ above.

Table 5B. Structure of Educational Engagement

	No/Low integration	Moderate integration	High integration
Physician residents (Post-Doctoral)	Traditional longitudinal continuity clinic (1-2 half-days per week for IM, 3-5 half-days per week for FM)	Traditional longitudinal continuity clinic plus 1-2 ambulatory blocks that include PACT learning activities 50% of time	Interprofessional block Immersion: 8-12 week blocks constituting 30-50% of total training; clinic sessions 4-6 half-days per week during block
NP Students (pre-Master or pre-Doctoral)	Longitudinal; 2-4 half days per week at many different sites for duration of required clinical hours; 1 quarter exposure to PACT	Longitudinal; 2-4 half days per week for >6 months; some interprofessional education seminars	Longitudinal; 2-4 half-days per week at same site for duration of educational program; fully integrated into interprofessional clinical teams and teaching sessions
NP Fellows (post-Master, post license)	N/A	N/A	100% interprofessional immersion block; mix of direct clinical care and educational seminars; provide leadership on interprofessional teams
Pharmacy residents (post-Doctoral)	Block: 10 half days per week for 6 weeks	Block: 5 half-days per week for 6 months, some interprofessional education seminars	Longitudinal: Four half days per week for 12 months; fully integrated into interprofessional clinical teams and teaching sessions
Psychology fellows (post-Doctoral)	Block: Five half days per week for 3 months	Block: 5 half-days per week for 6 months, some interprofessional education seminars	Longitudinal: Four half days per week for 12 months; fully integrated into interprofessional clinical teams and teaching sessions

Longitudinal refers to low intensity exposure distributed over a longer period of time

Immersion block describes high intensity experiences in Academic PACT where learners are protected from other non-PACT related responsibilities during the block experiences

Teaching activities require space (Table 5C). For interprofessional learning in the workplace to occur, Academic PACT teams will require sufficient patient care space for face-to-face visits and shared medical appointments. In addition, team workspace during clinical care activities must be of sufficient size to accommodate the PACT team, associated learners, and computer workstations. To protect patient privacy, multi-purpose conference room space near the clinical learning space will be necessary to support team meetings, teaching sessions, and spontaneous clinical care discussions among learners from different professions. Table 5C compares space considerations for integration of learners into the Academic PACT.

Table 5C. Educational Space considerations

	No/Low integration	Moderate integration	High integration
Exam rooms	Learners needs for exam rooms accommodated when faculty not using them	Learners exam rooms integrated into operations plans; team alignment not considered	Learners exam rooms sufficient in number for interprofessional teamwork, longer appointments for teaching, and higher volume of visits for more experienced learners
Team work space	Learners and preceptors work separately from clinical PACT team	Learners and preceptors work separately from clinical PACT team; conference rooms available on an as needed basis	Team work room large enough for team members and their learners to work together in delivering care
Team meeting and Educational space	Not available	Conference rooms available on an as needed basis; Teams, including learners, meet once monthly to discuss patient care issues	Conference room for 30 with white boards, LCD projector and computers available for team meetings, teaching and reflection; clinical team members included in all sessions

To fulfill the dual mission of excellence in caring and learning, all members of the Academic PACT will require support for developing proficiency as teachers in the Academic PACT setting. To frame this discussion, we consider questions that teachers might pose to us:

*Are the patients getting the quality of care they deserve? Are the learners' patient care experiences positive and satisfactory? Are the didactic, workplace, and reflective learning experiences optimal and coordinated? Are the learners given enough time for reflective learning? Do I know how to lead team-based didactics, interprofessional care, and guided reflection? Am I prepared to participate and educate in interprofessional, team care settings? ? Am I modeling the behavior I want the learners to demonstrate?*

To address these questions, clinical supervisors must understand how to access, interpret, and monitor quality of care data for the learners' patient panels they subsume. Information technology and applications should be designed to reinforce *team performance* (not only individual learner performance) and include all learners.

Teaching activities require time and professional development. To assure that clinical supervisors are prepared for their roles and responsibilities, professional development programs must be offered. Areas that should be addressed include: educational program competencies and accreditation requirements for all involved professions; skills for effective interprofessional teaching (small group didactics, clinical supervision, reflective discussions); role modeling as a teaching technique; communication skills; and teamwork skills; in addition to profession or role specific clinical competence. Ideally, these professional development programs will be interprofessional in nature to promote shared understanding and responsibility for learning in the Academic PACT. Table 5D compares professional development and support considerations for integrating learners into the Academic PACT.

Table 5D. Professional Development and Support considerations for Academic PACT

	No/Low integration	Moderate integration	High integration
Professional development	Occurs for interested faculty members on their own initiative	Offered systematically to physician and NP supervisors; other supervisors and clinical team members not included	All team members are viewed as clinical teachers, receive interprofessional training for professional development as teachers
Performance adjustments (time)	No change	Clinical supervisors for all involved professions are recognized as teachers but negotiate individually for protected time	NP, PharmD, and Mental Health supervisors given time for collaborative co-precepting commensurate with physician precepting model
Technical support	Only post-graduate physicians have assigned patient panels; registries are not in use; quality monitoring occurs randomly; performance assessment occurs for individuals	Teams develop work around to assign panel of patients to most learners Local registry development in some sites Some learners have VPN access Some team performance metrics in place	All learners have PCMM designation as associate providers All team members have Citrix/VPN access PCMM <i>team</i> is level of performance measurement Disease registries in use Care management software in use

**QUESTION 7: What assessments and metrics will support care and learning in the Academic PACT?**

PACT metrics were developed to monitor patient access, quality of care (including satisfaction), and continuity of care. The Academic PACT must be held to the same quality standards as patients must be assured that the care they receive as members of Academic PACT teams is not inferior to care they might otherwise receive. The dual missions of caring and learning in the Academic PACT require some adjustment of certain metrics and introduction of other new metrics. Two measurement principles emerge. First, what one chooses to measure and report to clinical providers is what those providers will attend to. Choices should therefore reflect the values of the practice. Second, shifting attention to what is measured will potentially shift attention away from something else. When metrics focus on achieving patient care outcomes without regard to the Academic PACT complexities outlined above, the teaching mission is undermined.

A balanced set of metrics to monitor caring and learning that supports (not undermines) both missions is required.

With these principles in mind, Academic PACT metrics should be distinguished from those metrics used to monitor the non-academic PACT in the following ways: 1) a core set of metrics that monitor patient care quality should be identical across PACT; 2) some PACT expectations should be adjusted for the Academic PACT (see Table 2); 3) some Academic PACT metrics should be measured only at the team level, reflecting the expanded team that includes multiple clinical supervisors and learners; and 4) new metrics must be developed to monitor the important learning activities of teamwork, communication, space for learning, and professional development (see Table 6).

Once both non-academic and Academic PACTs are fully implemented and functional as intended, performance should be studied to inform our understanding of differences between these two PACT models and permit more data-driven decisions about models of caring and learning that promote the principles of PACT. For example, the workload for the supervising clinicians will likely be higher than expected. Is adjustment of the total panel size sufficient to maintain or improve quality outcomes? Further, if the Academic PACT wishes to teach learners how to diversify and individualize patient visits, then teams must receive performance data about shared medical appointments, secure messaging, and telephone encounters.

#### *Core quality metrics*

Metrics for both Academic and non-academic PACTs should address patient engagement and satisfaction, and monitor selected evidence-based disease or condition guideline implementation.

#### *Team level metrics*

Given the small patient panel sizes for learners and many supervising faculty, we recommend the following Academic PACT metrics be measured at the level of the team, not the individual learner PCP. In all cases, patients will need to be formally introduced to their team and the purpose of the Academic PACT, and patient satisfaction and engagement must be assessed. For access, team level metrics include patients receiving desired date appointments with their PCPs or the PCP's practice partner(s). For continuity, the percent of patient visits with his/her PCP should be measured along with percent of visits with practice partners and other team members. Care coordination should be measured by tracking hospital admissions, post-hospital telephone follow-up, referral and consultant tracking, and care coordination/home telehealth services (CCHT) for the team's panel of patients. For clinical improvement, low acuity emergency department visits, hospital admissions, re-admissions, and admissions for ambulatory care sensitive conditions should be monitored at the team level. In addition, team performance itself should be measured (36).

#### *New Academic PACT metrics for patient care and learning*

Recommendations for developing and piloting new metrics in the Academic PACT are shown in Table 6. Rationale for the concepts is provided in the sections above. The Table is divided into sections based on the target audience for suggested measures with a separate section for Learner Perception Survey (LPS) items (37). The proposed approach

engages clinical practice leaders in monitoring the development and effectiveness of systems support and practice engagement in the dual missions of caring and learning. In some cases, existing instruments, such as the Learners' Perceptions Survey for primary care (LPS-PC), could be used to monitor some of these concepts although some modifications may be needed. In other cases a new survey will need to be developed. We recommend local sites monitor the effectiveness of new curricula and share success and failures to accelerate learning across the VA system. Importantly, we recommend assessing patients' abilities to identify their team members.

Table 6. Recommended Academic PACT metrics

<b>CONCEPT</b>	<b>SUGGESTED MEASUREMENT</b>
<b><i>Target audience for measure: Patients</i></b>	
Patients know their team, team members	% Patients accurately identifying team members
<b><i>Target audience for measure: Clinical practice leaders</i></b>	
All learners have panels	Adapted PCMM associate provider field
Learners have access to phone, EHR, and other necessary technology	% of learners with Citrix / VPN
Supervisor continuity	% Supervisors with 40% or more FTE in Academic PACT
Team continuity	% Time teamlet / team work together with same learners
Professional development	% all team members engaged in ongoing professional development
System uses co-precepting model	% Clinical teaching sessions where more than one profession represented
Learner availability per coverage plan	% Time learner available as expected per coverage plan
Protected time for supervising / mentoring learners	Ratio of protected precepting sessions over total sessions with learners providing clinical care
<b><i>Target audience for measure: PACT Teamlet (staff, faculty, learners), practice leaders</i></b>	
All team members are considered teachers	New team survey
Teachers invest in continuous improvement of skills as educators	Completion of individual performance plans
All team members carry out required supervisor roles and responsibilities	Multisource feedback
Team staff members view themselves as accountable for care <i>and learning</i>	New team survey
Team staff members are viewed by others as accountable for care <i>and learning</i>	New team survey
Team members reliably carrying out roles and responsibilities	Team Development Measure or TeamSTEPPS team perception questionnaire
Quality and effectiveness of interprofessional communication	SBAR Teach-back / Check back Closed loop
<b>LEARNER PERCEPTION SURVEY FOR PRIMARY CARE ITEMS</b>	
<b><i>Target audience for measure: Learners from all professions</i></b>	
Patient registries in use (panel management)	LPS-PC question 15*
Continuity for patients	LPS-PC Q12 LPS-PC Q15
Learner accountability for patient centered care	LPS-PC Q14
Electronic care management system in use (care coordination)	LPS-PC Q15

Exam rooms	LPS-PC Q11
Team work space	LPS-PC Q11
Team meeting and educational space	LPS-PC Q11
Learners participate in teamwork	LPS-PC Q 17
Quality of teamwork	LPS-PC Q12
Learner uses all communication systems	LPS-PC Q15

\*See Appendix C for question details

## **CONCLUDING COMMENTS AND NEXT STEPS**

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The professional workforce in primary care is facing increasing pressure from an impending shortage of high quality health care professionals, as well as the increasing demands expected from the Affordable Care Act. Therefore, integrating the two inseparable missions: caring and learning, must become an extremely high priority for the VHA to best support the health and well-being of a strong primary care platform and prepare learners to join the primary care workforce.

Recommended next steps:

- 1) Critically evaluate the success of the existing Centers of Excellence in Primary Care education in relationship to the recommendations in this report. Evidence-based best practices must be discovered and disseminated. Barriers and obstacles should be identified and targeted for redesign to encourage improvement. The critical determinants responsible for successful learning and caring in the PACT Academic model must be identified and nurtured.
- 2) Develop a forum and mechanism for primary care and education leaders currently engaged in PACT redesign in academic settings to share challenges, solutions, and best practices across different training models and accelerate learning that benefits primary care across the VA.
- 3) Begin a formal dialogue among academic affiliate leadership, VA facility training program directors, and PACT clinical supervisors to develop an organizational alignment that best supports and integrates learner education and optimal patient care.
- 4) Develop an oversight structure to ensure the completion of these steps, comprised of VHA clinical and academic leaders.

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## Appendix A. Guiding principles for designing academic PACT

### BUILDING LONGITUDINAL RELATIONSHIPS

1. Longitudinal relationships between patients and learners, supervisors, and team members will facilitate patient engagement in setting and achieving care goals and coordination of comprehensive care.

2. Longitudinal relationships between faculty supervisors and learners will facilitate competency-based professional growth. As novice learners demonstrate proficiency, supervisors entrust them to carry out increasingly independent activities.

3. Longitudinal relationships between PACT team members (with each other and with learners) will facilitate learning how to work in teams and earning the trust of the clinical team. This includes learner-to-learner relationships within and across professions.

### LEARNING IN THE WORKPLACE

4. Learning in the primary care workplace requires new organizational relationships between Primary Care (as a care delivery model) and health professions education. The academic PACT is simultaneously a clinical practice environment and a learning environment. Redesign of the learning environment in ways that fulfill two missions—caring and learning—impacts both clinical operations and instructional design.

5. To optimize learning, academic PACT clinical space should be thoughtfully designed to facilitate teamwork, teaching, and reflection. Clinical space must accommodate larger groups of learners, team members, and supervisors working side-by-side while protecting patient privacy. Clinical space that operates separately from learning space will not facilitate powerful and necessary learning interactions between learners and PACT team members.

6. Formal instruction (didactic sessions) should be designed to support, interpret, and apply to learning in the PACT clinical practice setting (workplace). Instructional design should prioritize workplace learning over didactic sessions and must include reflective practice activities.

### PREPARING FACULTY AND STAFF

7. Faculty supervisors must have faculty development opportunities to obtain the necessary skills to facilitate interprofessional learning in the workplace beyond traditional clinical supervision within one's own profession.

8. As core members of the instructional team, PACT members must have an array of ongoing individual and team development strategies to develop, reinforce, and improve clinical practice, workplace learning, and to adopt the *additional* roles and responsibilities necessary for facilitating that learning.

**Appendix B. Comparison of potential pre-degree, pre-licensure PACT trainees' educational program elements.**

Learner	Educational program level <sup>^</sup>	Duration of education*	Clinical requirement <sup>+</sup>	Frequency in PACT= <sup>=</sup>	PCMM Associate provider <sup>@</sup>	Supervision requirements <sup>#</sup>
<b>MEDICINE</b>						
Medical student	Pre-doctoral	4 years	Variable	Variable	No	MD/DO
<b>NURSING</b>						
LPN student	Pre-licensure	1 year	Variable		No	LPN faculty
BSN student	Pre-baccalaureate	4 years	Variable	2 half days/wk	No	BSN or MSN prepared RN
NP masters student	Pre-masters	2-3 years	500-650 hours	2-4 half days/wk	variable	Masters or higher prepared NP or MD
NP –DNP student	Pre-doctorate	3 years	1000 hours	2-4 half days/wk	variable	Prefer DNP or PhD prepared NP; Master prepared NP or MD acceptable
CNL student	Pre-masters 2 <sup>nd</sup> year	2-3 years	450 hours	2-4 half days/wk	No	Master's prepared RN
CNS student	Pre-masters 2 <sup>nd</sup> year	2-3 years	450 hours	2-4 half days/wk	No	Master's prepared RN
<b>ASSOCIATED HEALTH</b>						
Pharmacy student	Pre-doctorate	4 years	Variable	Variable	No	Pharmacist
Psychology student	Pre-doctorate	Variable	Variable	Variable	No	Psychologist
Psychology intern	Pre-doctorate	Variable	One year	Variable	No	Psychologist
Physician Assistant student	Pre-masters	2-3 years	2000 hours	Variable	No	PA-C, MD, or DO
Social work student	Pre-baccalaureate or masters	2 years	500-600 hours	2-3 days/week	No	Masters prepared Social Worker
Nutrition student/fellow Dietetic intern/fellow	Pre-baccalaureate, Pre-masters, Pre-doctorate	Variable	Variable	Variable	No	Registered Dietician
Medical Assistant student	Pre-certificate, diploma, Associate degree	Variable	Variable	Variable	No	LPN, RN, MD
Nursing Assistant student	Pre-certificate	3 months	Average of 50 hours	Variable	No	RN or MD

<sup>^</sup>Educational program level refers to student's stage in the health professions degree program

\*Duration of education delineates the length of educational program for this stage of learning

<sup>+</sup>Clinical requirements indicates specified percent of time in "duration of education" that must be in clinical practice settings

<sup>=</sup>Frequency in PACT indicates the amount of time a typical student might spend in the PACT setting involved in direct patient care or educational activities supporting learning in PACT

<sup>@</sup>Primary Care Management Module (PCMM) is a data entry field in the veteran's electronic health record that drives distribution of information; the associate provider field within PCMM allows naming of learners primarily responsible for the patient and is used to assign panels of patients to providers; currently limited to "licensed" providers

<sup>#</sup>Supervision requirements indicate academic program requirements for supervising the learner in clinical settings

## **APPENDIX C. Relevant Learner Perception Survey Questions**

Q11: Please rate your satisfaction with the WORKING ENVIRONMENT for your VA PRIMARY CARE CLINIC in the following areas (computer access, internet access, room availability, clinic room design, space for case discussion with faculty)

Q12: Please rate your satisfaction with the CLINICAL ENVIRONMENT for your VA PRIMARY CARE CLINIC in the following areas (how well PC practitioners—physicians, NPs, PAs—work together, How well PC practitioners and nursing staff work together, how well PCP and other health professionals work together, how well PCP and administrative staff work together, nursing support for patient care issues between sessions, How well primary care practitioners support patient care for each other's assigned patients, Management of patient phone calls)

Q14: Please rate your satisfaction with YOUR PERSONAL EXPERIENCE for your VA PRIMARY CARE CLINIC in the following areas (appreciation of your work by faculty, appreciation of your work by patients, appreciation of your work by other members of the interprofessional healthcare team, enjoyment of your work, level of job stress, level of fatigue, continuity relationship with patients, ownership / personal responsibility for your patients' care)

Q15: In my VA PRIMARY CARE CLINIC (Patients and families are engaged with clinicians in collaborative goal setting; Patients and families are listened to, respected, and treated as partners in care; Clinicians use e-mail to communicate with patients and families; Clinicians use telemedicine or telehealth technology to evaluate or interact with patients or other practitioners who are off-site; Other than e-mail or telemedicine/telehealth, clinicians use additional electronic means of communicating with patients; Environment encourages family presence; Families are treated as members of the treatment team; I follow a defined panel of patients longitudinally; Patients or cohorts of patients with chronic disease(s) are identified who might benefit from additional intervention or coordination of care between clinic visits; For patients with chronic disease such as diabetes, I review lists of patients in my primary care clinic or panel in order to identify and better manage patients not meeting treatment goals)

Q17: In my VA PRIMARY CARE CLINIC  
I participate regularly in team meetings (formal or informal) with members of different professions to discuss and coordinate the care of patients  
I participate regularly in team meetings (formal or informal) with members of different professions to discuss performance improvement  
I participate regularly in team meetings (formal or informal) with members of different professions to discuss clinic operational issues  
Practitioners from different settings (inpatient, outpatient, and extended care) communicate with me about my patients and their transitions from one level of care to another, such as hospital discharge  
Primary care practitioners (e.g., physicians, nurse practitioners, physician assistants) work well together

Primary care practitioners and nursing staff work well together  
Primary care practitioners and other health professionals work well together  
(e.g., optometry, pharmacy, podiatry, psychology, rehabilitation, social work)  
Primary care practitioners and administrative support staff work well together