IMPLEMENTATION OF NEW PHYSICAL THERAPY PROGRAMS FOR KNEE OSTEOARTHRITIS IN THE VA

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Knee Osteoarthritis Impacts 1 in 4 Veterans

Lavin et al., Osteoarthritis across joint sites in the Million Veteran Program: Insights from electronic health records and military service history. J Rheum, Online ahead of print

Knee Osteoarthritis

Pain & Functional Decline

cardiovascular events

falls

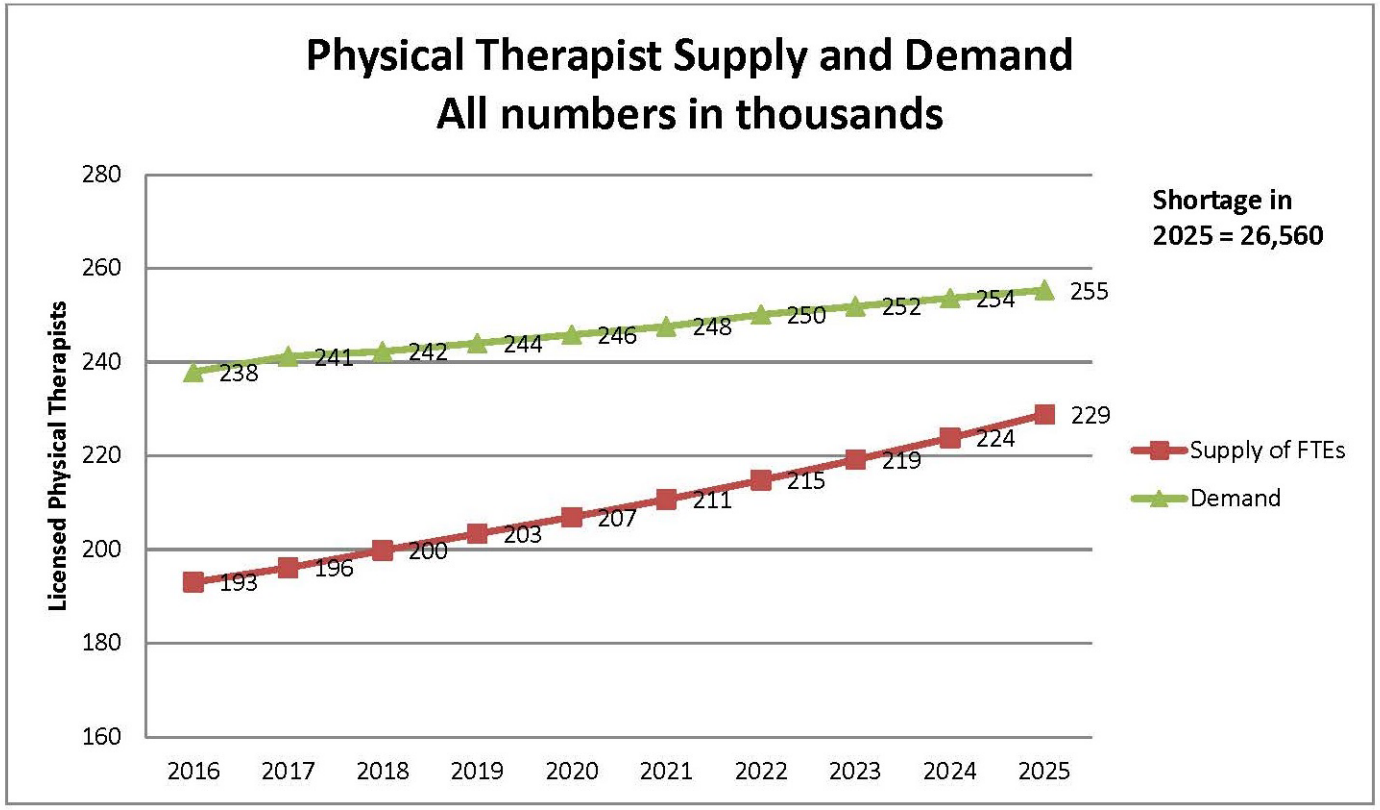
disability

work limitations

mortality

DEMAND FOR PHYSICAL THERAPY SERVICES

Figure 1: 2016 projection using an attrition rate of 3.5%.



FY23: VA spent $260 million on Community Care for PT

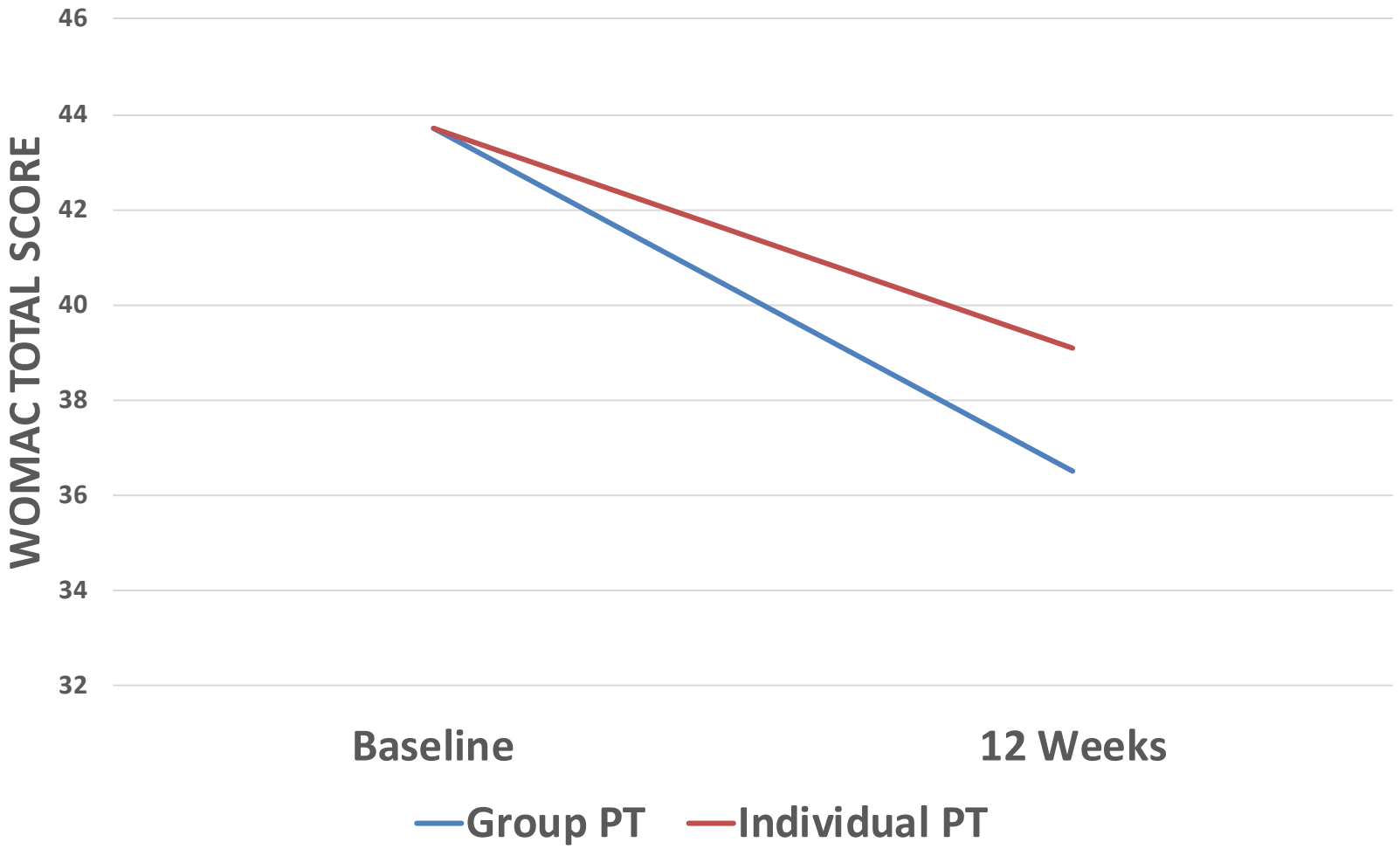
Source: American Physical Therapy Association: A Model to Project the Supply and Demand of Physical Therapist: 2021-2025

Group Physical Therapy for Knee OA Trial

- **Randomized 320 Veterans with knee OA to receive group vs. individual PT**
- **Individual PT:**
  - Two 1-hour visits with physical therapist, ~2-3 weeks apart (could receive additional visits)
- **Group PT:**
  - Six 1-hour visits over 12 weeks, 8 patients per group
  - Co-led by physical therapist and PT assistant
  - Group education and exercise + individual evaluations / consultations with therapist
- **Pragmatic Aspects:**
  - Limited exclusion criteria
  - Embedded within Durham VA PT Service
  - Intervention efficiency

Allen et al., Physical Therapy Journal, 2016

Group Physical Therapy for Knee OA



Allen et al., Physical Therapy Journal, 2016

Group Physical Therapy for Knee OA: Efficiency

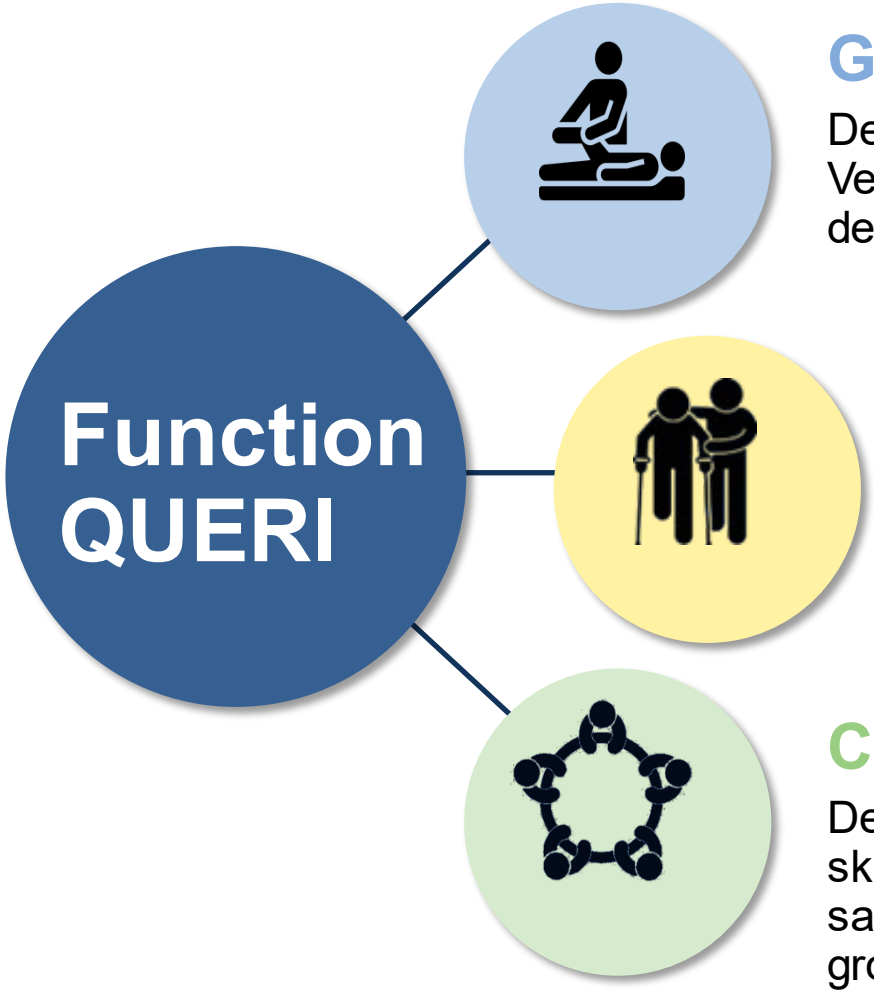
Scenario: Treating 8 Patients

Individual PT
6 visits each = **48** **clinician** hours

Group PT
6 visits each = **6** **clinician** hours

42 hours
of clinical time saved

Optimizing Function and Independence
VA Quality Enhancement Research Initiative



Group PT

Designed to improve access to PT for Veterans with knee osteoarthritis by delivering PT in a group setting

STRIDE

Designed to reduce preventable harm of hospital-associated disability for Veterans through a supervised, inpatient walking program

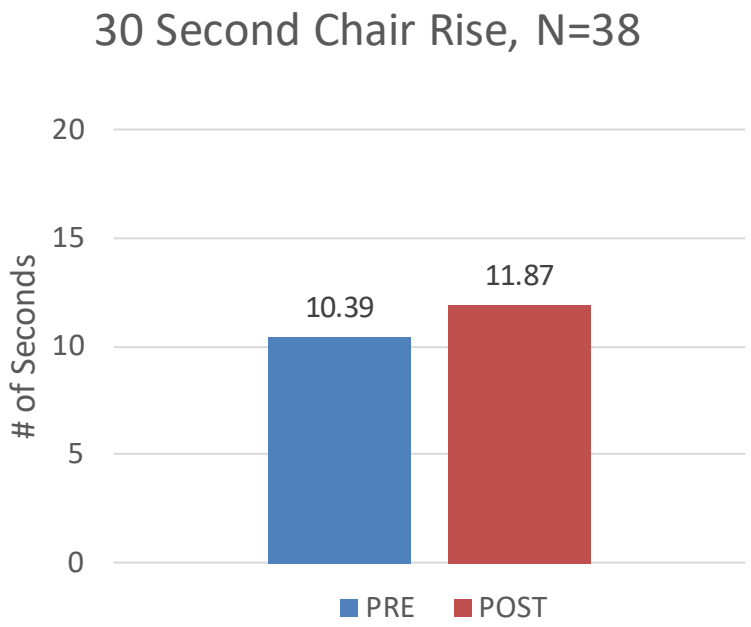
Caregivers FIRST (iHI-FIVES)

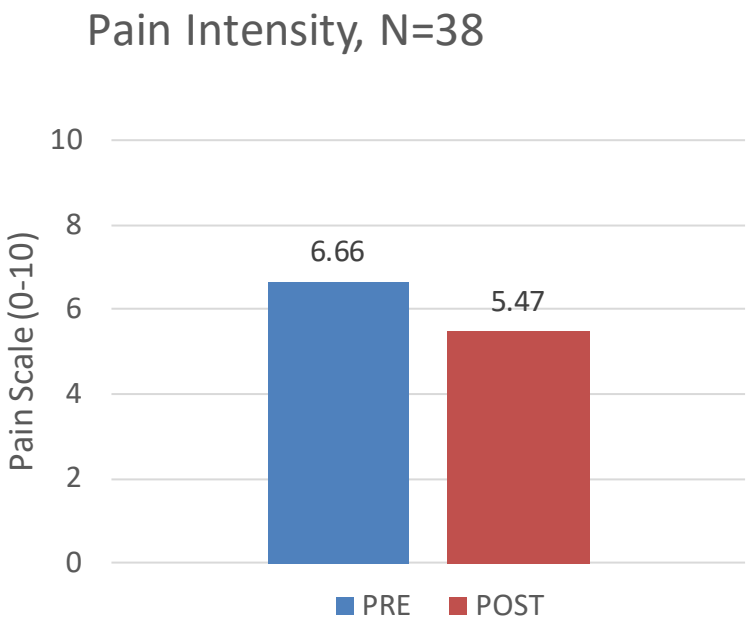
Designed to improve family caregiver skill building and support and improve satisfaction with care through dynamic group training

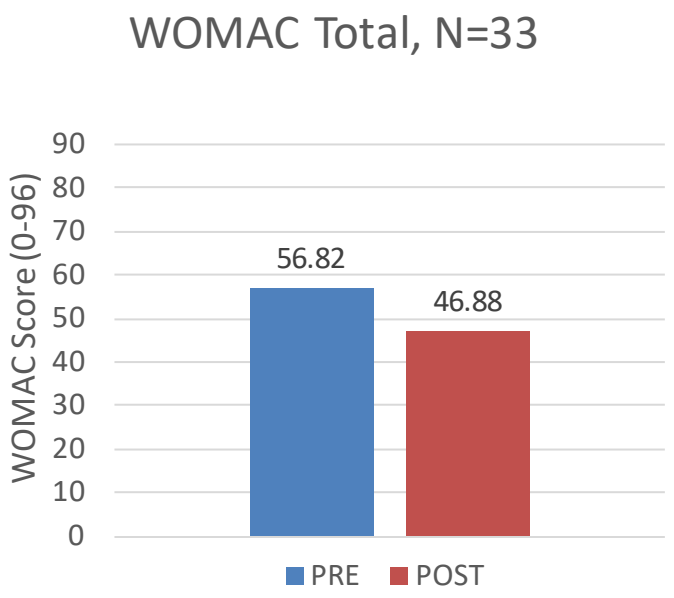
Group PT

Getting veterans moving with increased access to care

Phase 1: Evaluation of Ongoing Program at Durham VA Healthcare System





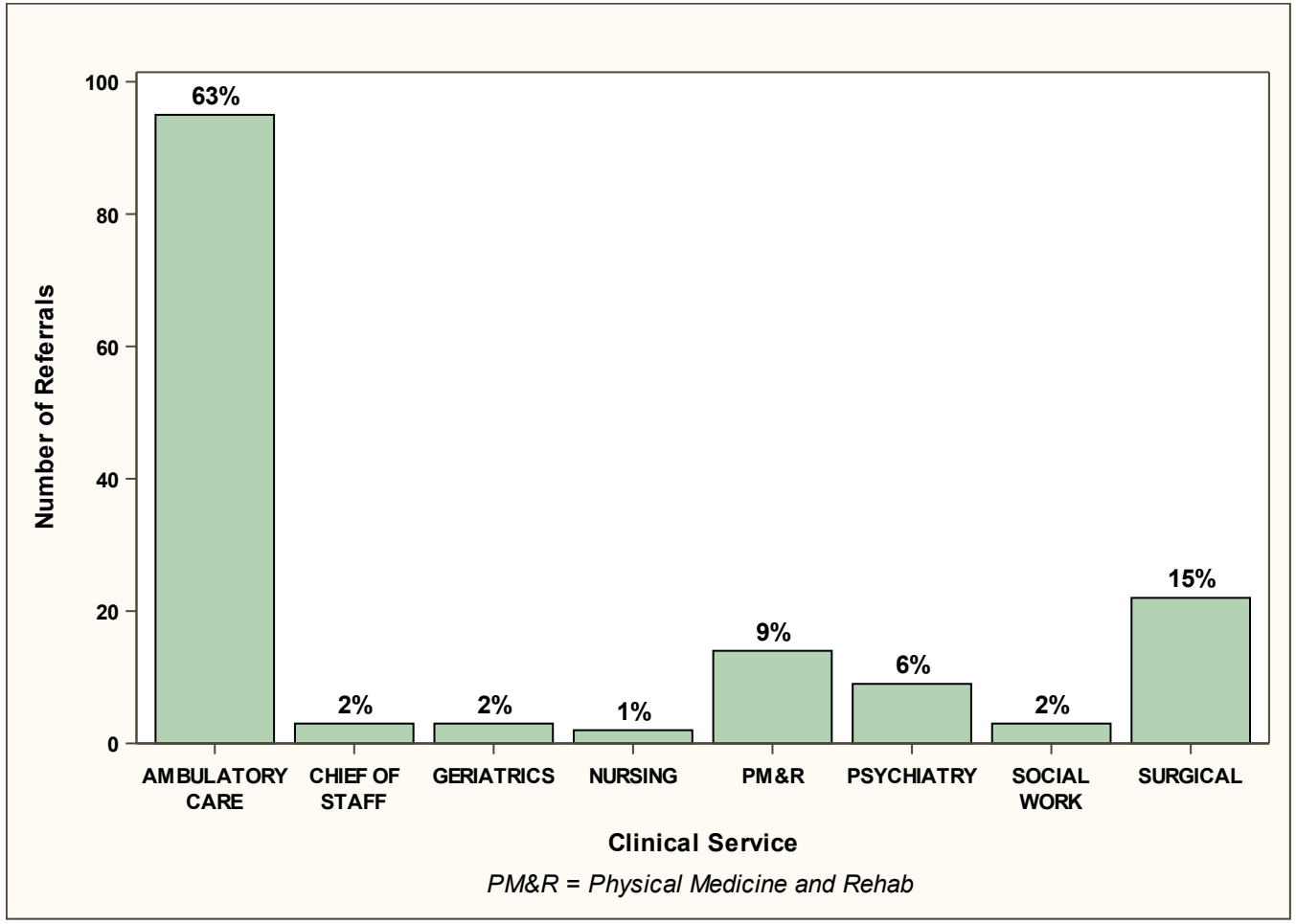


Allen et al., BMC Musculoskeletal Disorders, 2020

Group PT

Getting veterans moving with increased access to care

Phase 1: Evaluation of Ongoing Program at Durham VA Healthcare System

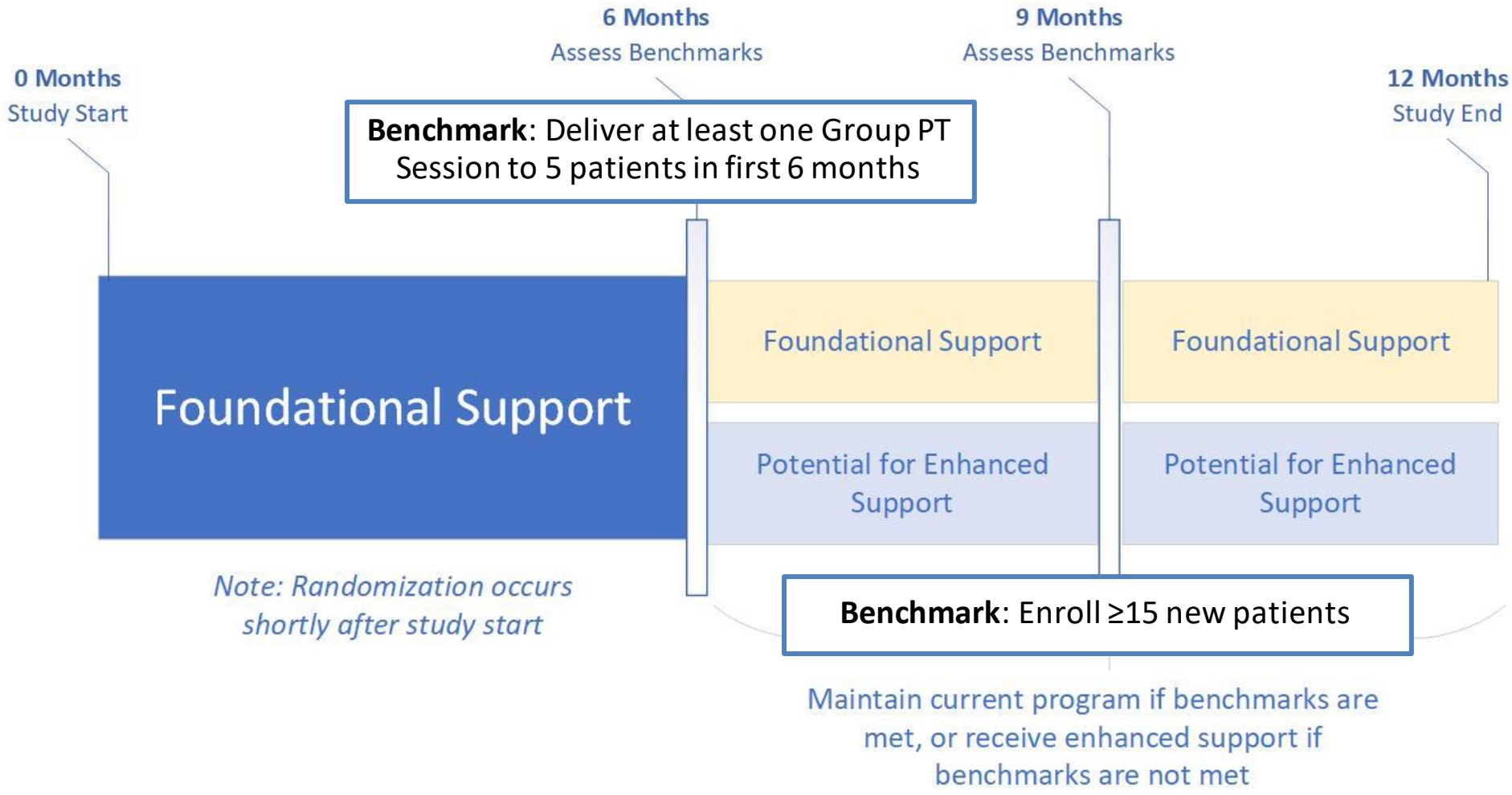


Challenges:

- Referral volume
- Inappropriate referrals
- Drive time to VA
- No shows

Allen et al., BMC Musculoskeletal Disorders, 2020

Phase 2: 16(+) Site Implementation Trial (Hybrid III)



Group PT Components & Process

VA Facility

- Outpatient physical therapy service
- Physical therapy gym
- Two staff members for program delivery (1 primary and 1 backup, PT/KT/PTA/KTA)

Patients

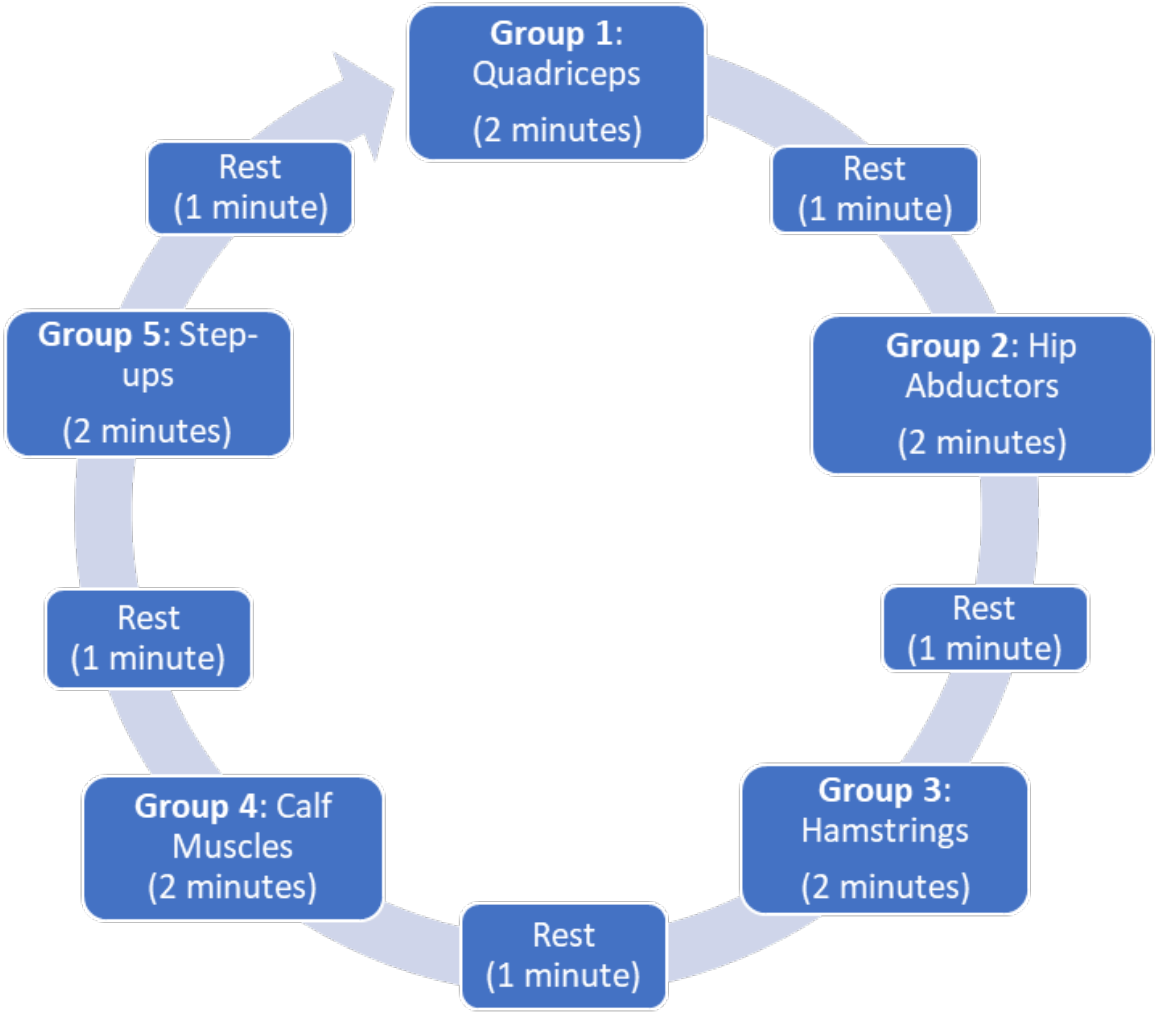
- Previous diagnosis of Knee OA (imaging not required)
- No documentation of a recent fall and considered at low-risk for falling
- No co-occurring health conditions that would make participation in an exercise program unsafe

Group PT

Group PT Components & Process

Group PT

Group PT Components & Process



Group PT

Group PT Components & Process

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Group 1 (QUADRICEPS)	Knee Extension	Mini-Squat	Sit to Stand	Weighted Squat	Lunge
Group 2 (HIPS)	Seated Hip Abduction	Standing Hip Abduction	Standing Hip Abduction *(with weight or exercise band)*	Crab Walk	Crab Walk *(with weight or exercise band)*
Group 3 (HAMSTRINGS)	Hamstring Curl	Standing Hip Extension	Deadlift	Dumbbell Swing	Single Leg Deadlift
Group 4 (STEP-UPS)	2" Step Up	4" Step Up	6" Step Up	8" Step Up	10" Step Up
Group 5 (CALVES)	Bilateral Calf Raise	Bilateral Step Calf Raise	Single Leg Calf Raise	Single Leg Calf Raise	Single Leg Step Calf Raise
Warm-Up (no levels)	• Marching in Place • Side-to-Side lunges			• Arm circles • Torso rotation	
Cool-down (no levels)	• Hamstring (seated, standing) • Quad (standing) • Calf (standing) • Hip Flexor (standing, kneeling)			• Lower back (seated) • Thoracic extension (seated) • Thoracic rotation (seated)	

Group PT

Group PT Components & Process

Group PT

Group PT Components & Process

IF your RPE is less than 5/10 (hard)

AND your pain is less than 4/10

THEN progress to the next exercise in that group (Table 1)

Group PT

Group PT Components & Process

Patient Education Modules

- What happens in a Group PT session?
- Exercise & knee osteoarthritis
- Tips for success with exercise
- Protecting & supporting your joints
- Managing osteoarthritis pain

Group PT Components & Process

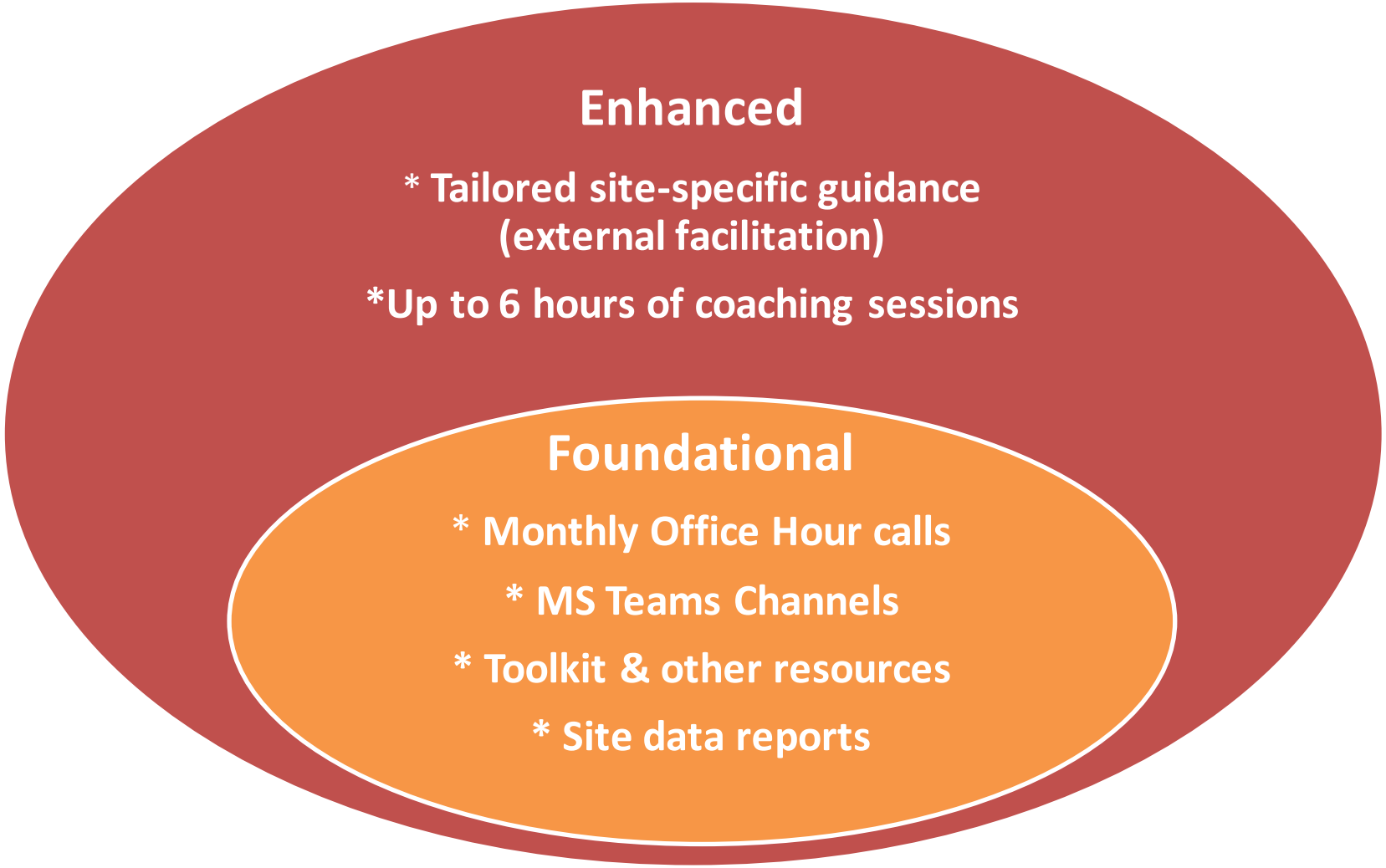
Site-Level Adaptations

- Delivery Mode: In-Person, Virtual, Hybrid
- Frequency of classes & class size
- Enrollment (rolling vs. cohort)
- Method to conduct initial evaluations
- Method to collect PROs

Resources Provided to All Sites: Replicating Effective Programs (REP) / Foundational Support

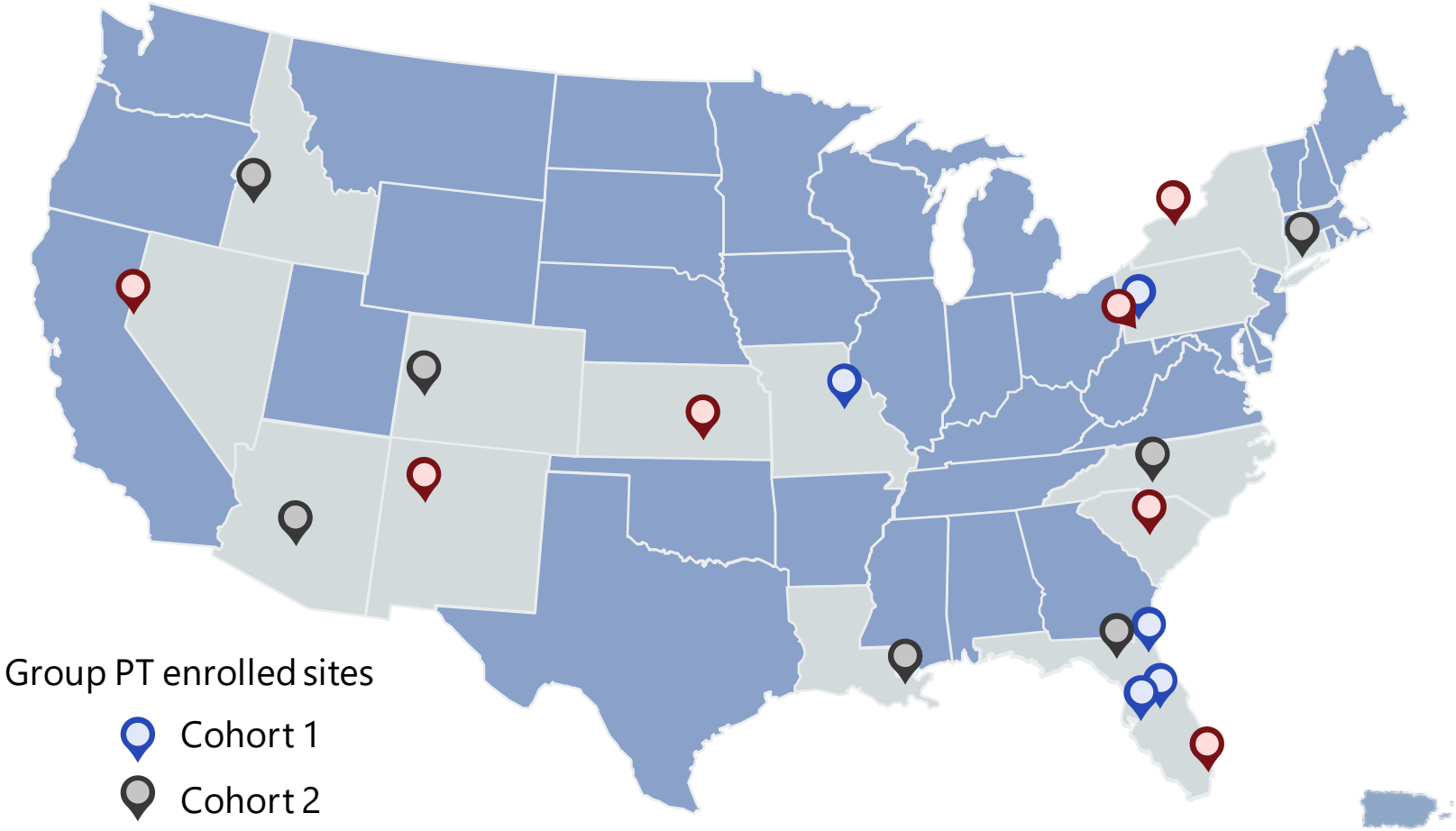
- Implementation toolkit
- Patient resources
- EHR note templates
- Group PT data reports
- Group PT implementation webinars
- Access to SharePoint site & MS Teams Channels
- Group PT Office Hour calls (in cohorts)

Implementation Strategies: Foundational & Enhanced Support



Group PT

Enrolled Sites (19)



Implementation Trial Results: Site Characteristics

	Total	Foundational Support	Enhanced Support
	(N = 19)	(*n* = 9)	(*n* = 10)
Facility complexity level, n (%)			
High complexity	11 (58)	5 (56)	6 (60)
Medium/low complexity	8 (42)	4 (44)	4 (40)
Geographic region, n (%)			
West	5 (26)	2 (22)	3 (30)
Midwest	2 (11)	0 (0)	2 (20)
Northeast	4 (21)	2 (22)	2 (20)
South	8 (42)	5 (56)	3 (30)
Rural facility, n (%)			
1 – High	4 (21)	1 (11)	3 (30)
2 – Low	15 (79)	8 (89)	7 (70)

Implementation Trial Results: Veteran Characteristics

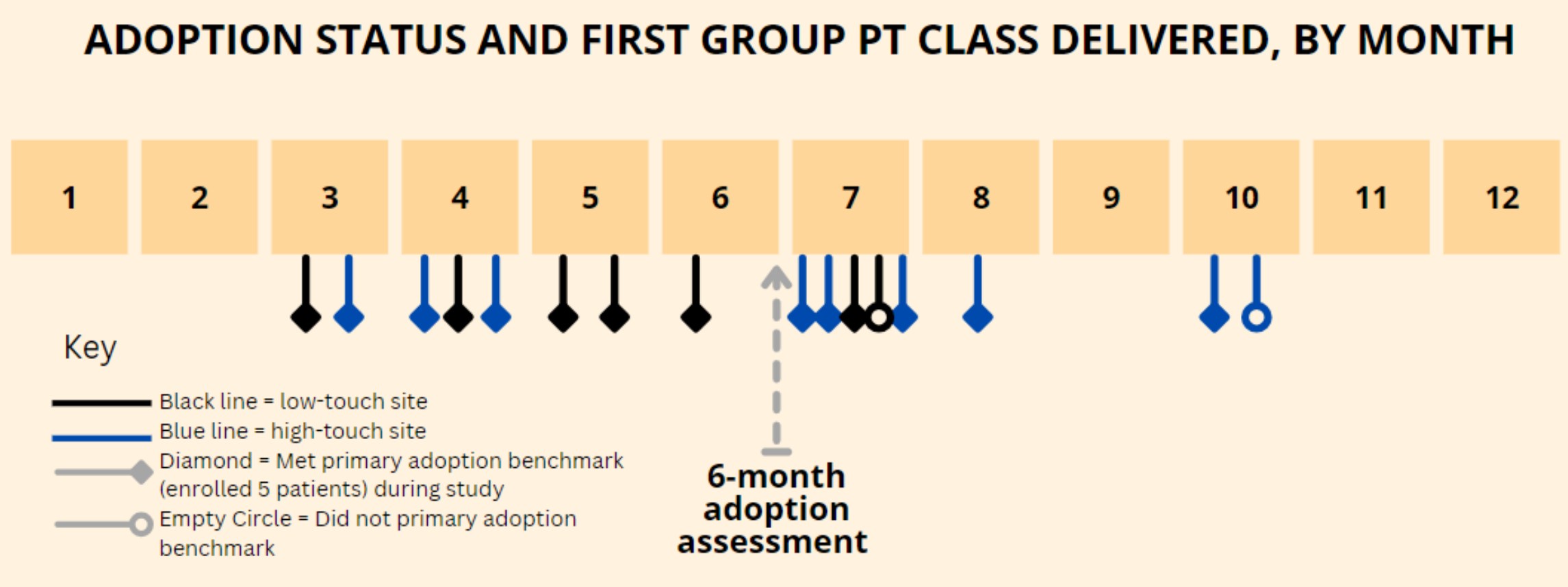
	Total (N=189)	Foundational Support (N=99)	Enhanced Support (N=90)
Gender Identity - n(%)			
Man	168 (89)	85 (86)	83 (92)
Woman	21 (11)	14 (14)	7 (8)
Race- n(%)			
White	127 (67)	68 (69)	59 (66)
Black	30 (16)	15 (15)	15 (17)
Asian	2 (1)	0 (0)	2 (2)
Native Hawaiian / Pacific Islander	4 (2)	1 (1)	3 (3)
American Indian or Alaska Native	2 (1)	1 (1)	1 (1)
Unknown	24 (13)	14 (14)	10 (11)
Hispanic, Latino, or Spanish origin - n(%)			
Yes	26 (14)	14 (14)	12 (13)
No	151 (80)	78 (79)	73 (81)
Prefer not to answer	12 (6)	7 (7)	5 (6)
Age (mean, SD)	67.0 (9.0)	67.3 (9.6)	67.5 (8.3)

Implementation Trial Results

- 63% in-person, 38% telehealth
- 63% cohort admission, 38% rolling admission
- Mean (SD) office hours calls attended: 6.6 (3.2, range 1-11)
- All Enhanced Support sites received additional support at either 6-months or 9-months
- Mean (SD) enhanced support calls:
  - 5.5 (1.2, range 4-7) of sites starting at 6 months (n=6)
  - 3.3 (0.6, range 3-4) of sites starting at 9 months (n=3)

Group PT

Implementation Trial Results



Implementation Outcomes by Study Arm (Months 7-12)

Outcome	Definition	Foundational Support (n=9) Mean, 95% CI	Enhanced Support (n=10) Mean, 95% CI
Penetration	Average number of patients enrolled in Group PT monthly	1.16 (0.21, 2.11)	0.95 (0.11-1.80)
	Total number of patients enrolled in Group PT	6.46 (2.93. 14.26)	5.66 (2.80, 11.44)
Fidelity	Average number of sessions attended by enrolled patients		
	6 Classes Maximum	4.05 (3.22, 4.89)	4.99 (4.29, 5.69)
	All Classes	4.27 (2.24, 6.30)	6.22 (4.52, 7.93)

Implementation Outcomes by Study Arm (Months 0-12)

Outcome	Definition	Foundational Support (n=9) Mean, 95% CI	Enhanced Support (n=10) Mean, 95% CI
Penetration	Average number of patients enrolled in Group PT monthly	0.77 (0.10, 1.20)	0.65 (0.10-1.20),
	Total number of patients enrolled in Group PT	11.0 (5.87, 20.62)	9.00 (4.93. 16.44)
Fidelity	Average number of sessions attended by enrolled patients		
	6 Classes Maximum	4.27 (3.49, 5.06)	4.70 (4.04, 5.36)
	All Classes	4.58 (2.57, 6.59)	5.73 (4.04, 7.42)

Patient Outcomes by Study Arm (Months 7-12)

	Foundational Support (N=75) Mean (SD)			Enhanced Support (N=67) Mean (SD)		
	First Class	Last Class	**Change**	First Class	Last Class	**Change**
PROMIS Pain Interference Score	61.1 (5.5)	57.3 (6.8)	-2.7 (6.0)	60.6 (7.0)	56.9 (7.0)	-2.4 (5.4)
PROMIS Physical Function Score	38.7 (6.3)	40.5 (6.2)	1.2 (4.3)	38.3 (5.6)	40.6 (7.0)	1.4 (4.3)
Chair Rise Repetitions Completed in 30s	10.0 (4.4)	12.3 (4.6)	2.4 (3.6)	10.3 (4.2)	12.4 (4.6)	2.1 (3.6)

Additional Patient Outcomes by Study Arm (Months 7-12)

	Foundational Support	Enhanced Support
Patient Satisfaction (0-10) – Mean (SD)	9.2 (1.5)	9.3 (1.3)
Ability to deal with daily knee problems compared to before starting Group PT - % Better	60%	61%

Staff Survey

- What additional tools or resources would have helped your facility successfully implement Group PT?
  - Provider buy-in (31%)
  - Support from leadership (28%)
  - Patient awareness (24%)

Group PT

Patient & Clinician Comments

"It was nice to have a group setting…hour long sessions felt more effective than a quick 30-minute PT session."
-Veteran

"It has helped me get better, and I have been keeping up with the home exercises. It has made a difference in my ability to get up from a seated position compared to when I started…"
- Veteran

Group PT

Patient & Clinician Comments

"It was nice to be able to participate in class during my lunch break, without needing to take time off work and drive to a clinic."
-Veteran

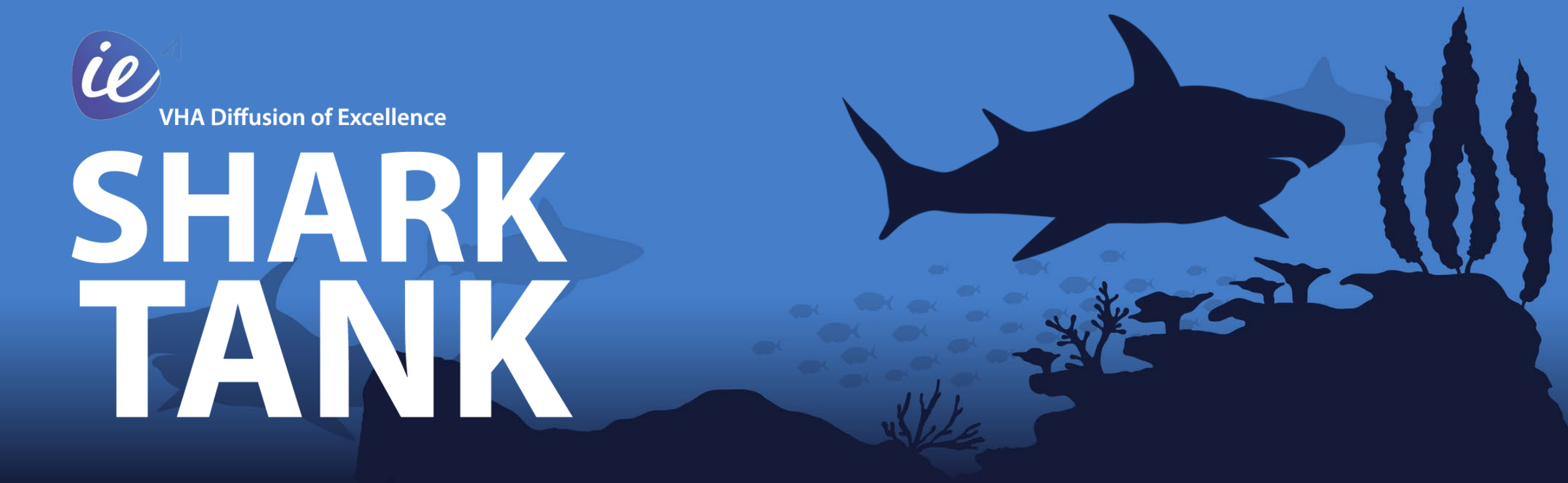
"Our first group of veterans rated the class a perfect 10 – completely satisfied. Decrease in pain and improved 30 second chair rise scores…were also noted. This motivates us that we are headed in the right direction and serving our Veteran population!" - Staff

Challenges & Next Steps

- EHR documentation of outcomes was cumbersome for some sites
- Staffing changes can place program delivery at risk
- Penetration / reach was modest – how can we support sites to enhance?
- Best strategies to support sustainment?

VHA Diffusion of Excellence

SHARK TANK



Group Physical Therapy for Knee Osteoarthritis

Center of Innovation to Accelerate Discovery and Practice Transformation Durham VA Healthcare System

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