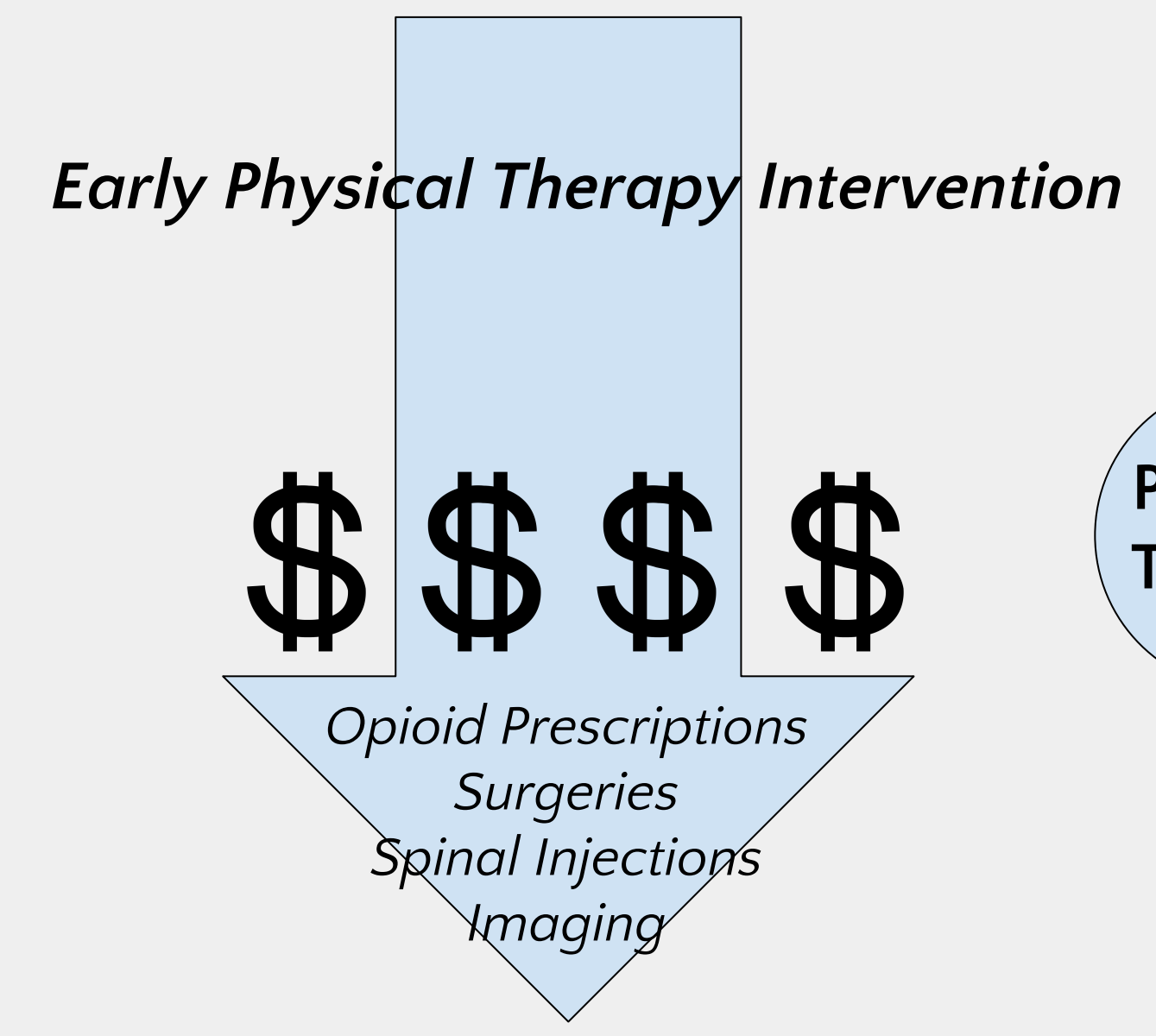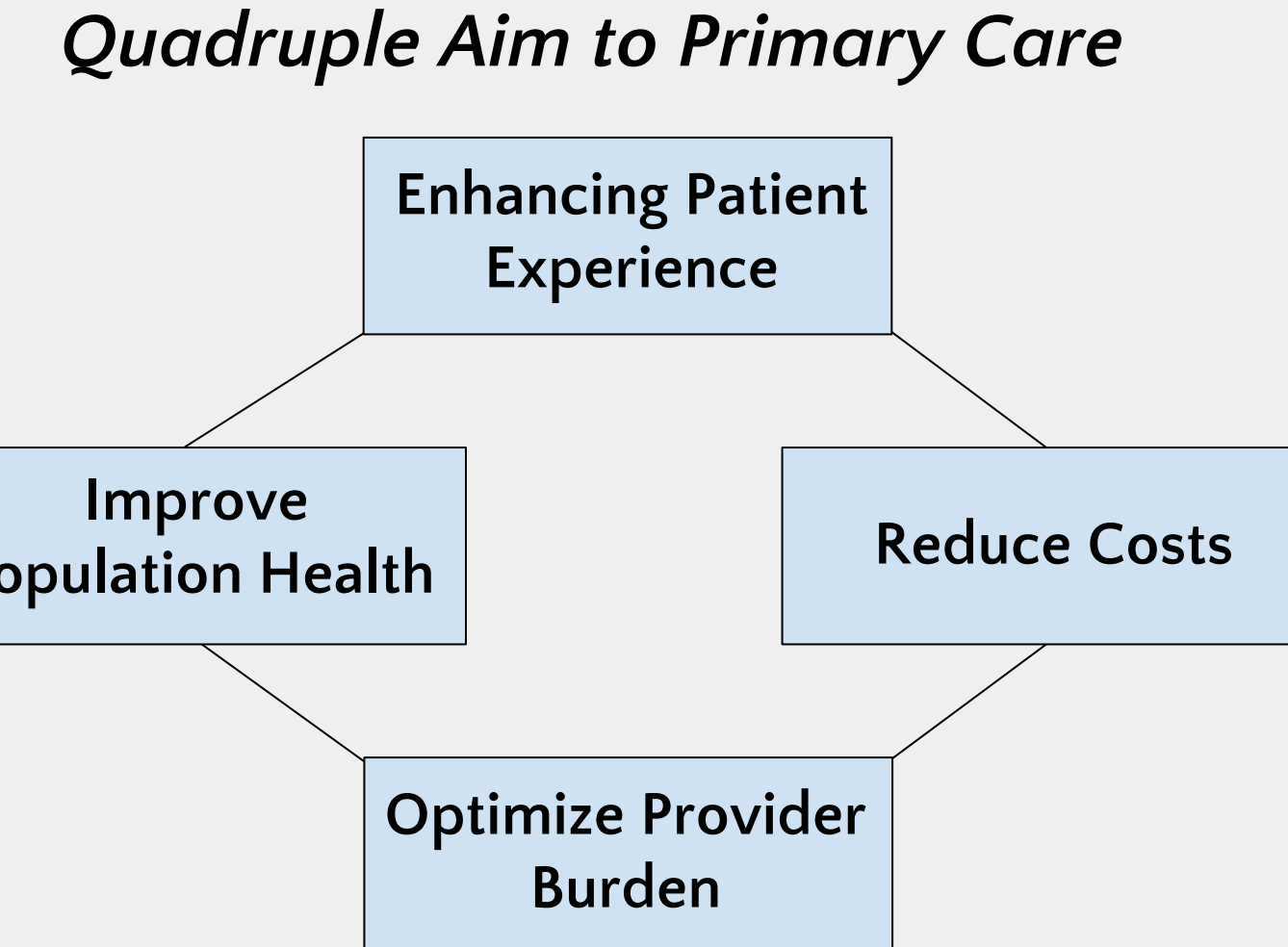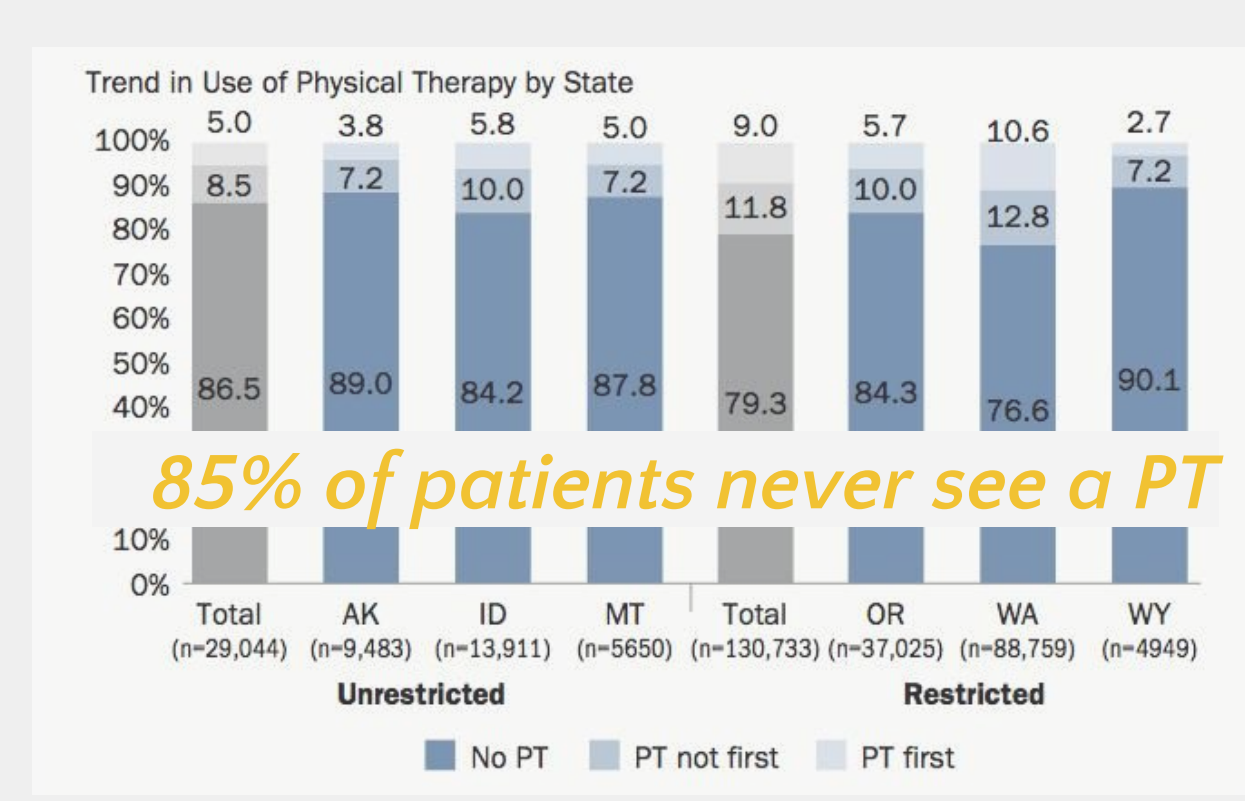# Predicting Patients Acceptable Symptom State at Short Term Follow Up of a Collaborative Primary Care PT/MD Service

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Background

Trend in Use of Physical Therapy by State

85% of patients never see a PT

Quadruple Aim to Primary Care

- Enhancing Patient Experience
- Improve Population Health
- Reduce Costs
- Optimize Provider Burden

Early Physical Therapy Intervention

$ $ $ $

Opioid Prescriptions
Surgeries
Spinal Injections
Imaging

Physical Therapy — Primary Care Provider
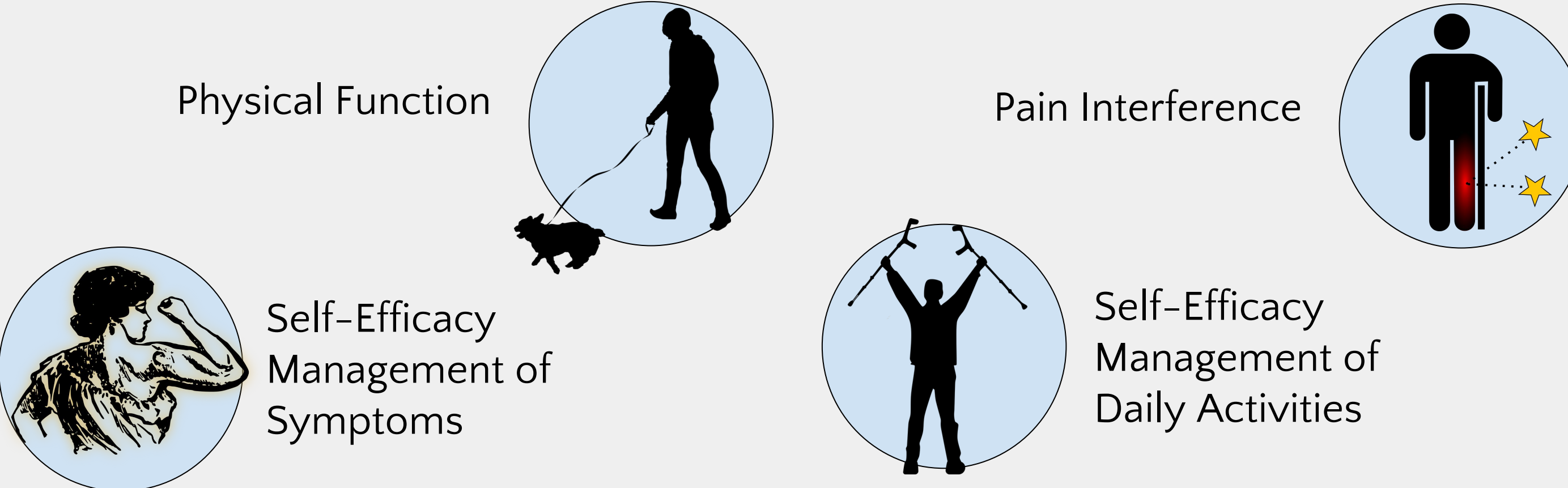
A New Entry Point!

Methods

163 patients were called 0-7 days and 45-60 days following a collaborative Physical Therapy & Primary Care Provider encounter

Outcome measures were administered over the phone using an iPad App and an electronic survey

Patient Reported Outcome Measurement Information System (PROMIS)

Physical Function

Pain Interference

Self-Efficacy Management of Symptoms

Self-Efficacy Management of Daily Activities

Patient Acceptable Symptom State (PASS)

"Taking into account all the activities you do during your daily life, your level of pain, and also your functional impairment, do you consider your current state is satisfactory?"

Global Rating of Normal Function (GRNF)

"How would you rate the function of your _____(fill in joint problem) on a scale of 0 to 10 with 10 being normal, excellent function, and 0 being the inability to perform any of your usual daily activities which may include sports?"

Results

ROC CURVE
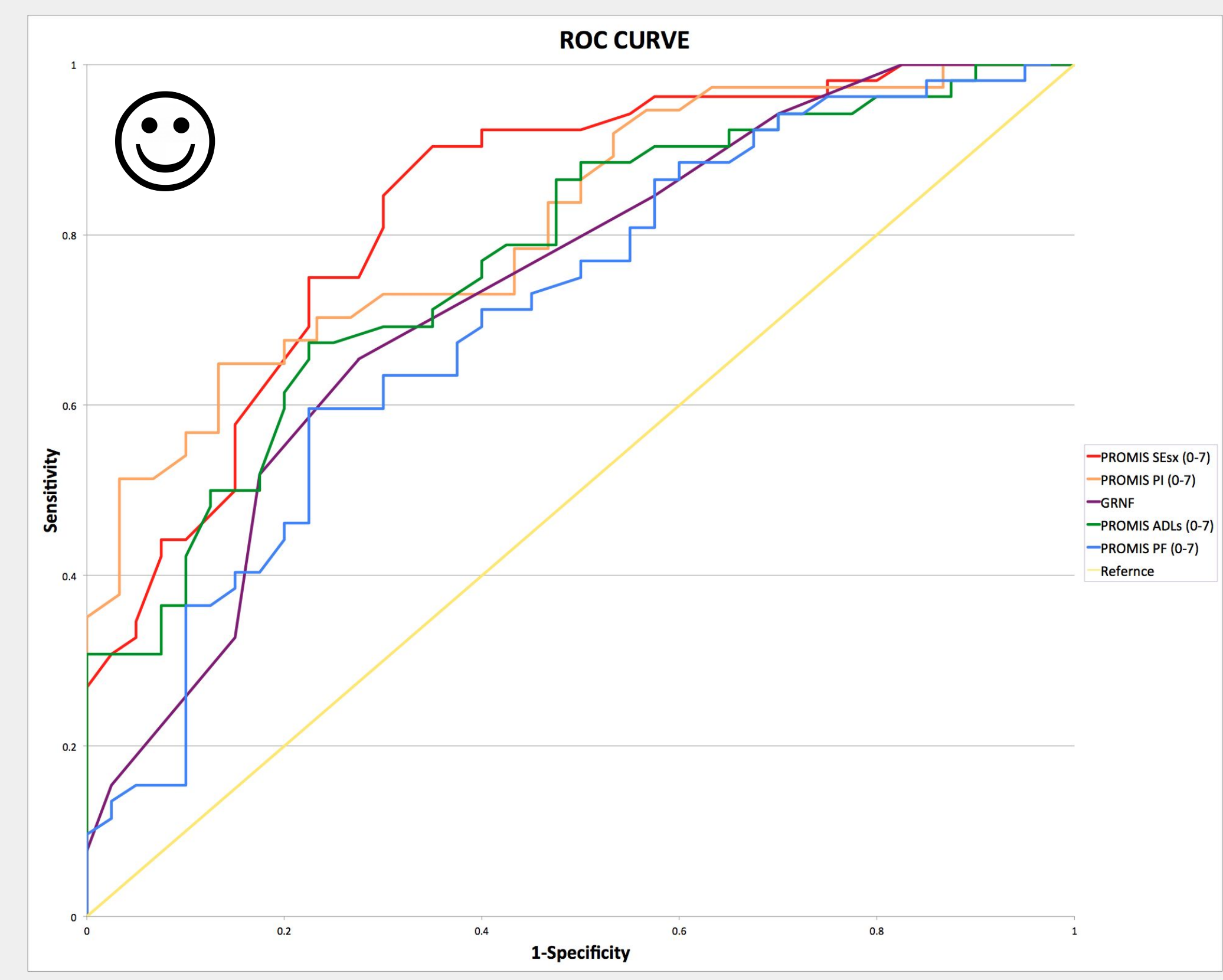
Graph 1: Receiver Operator Curve (ROC)
ROC analysis was used to determine the prognostic ability of the PROMIS and GRNF PRO's to predict PASS Yes or No at 45-60 days

	Area Under the Curve	Asymptotic 95% Confidence Interval	
		Lower Bound	Upper Bound
PROMIS PF	.708	.601	.815
PROMIS SE sxs	.833	.749	.916
PROMIS SE ADLs	.773	.678	.867
PROMIS PI	.814	.715	.914
GRNF	.735	.632	.838

AUC > .800 is considered clinically significant!

Table 1: Results of Receiver Operator Curve analysis of 0-7 day data.
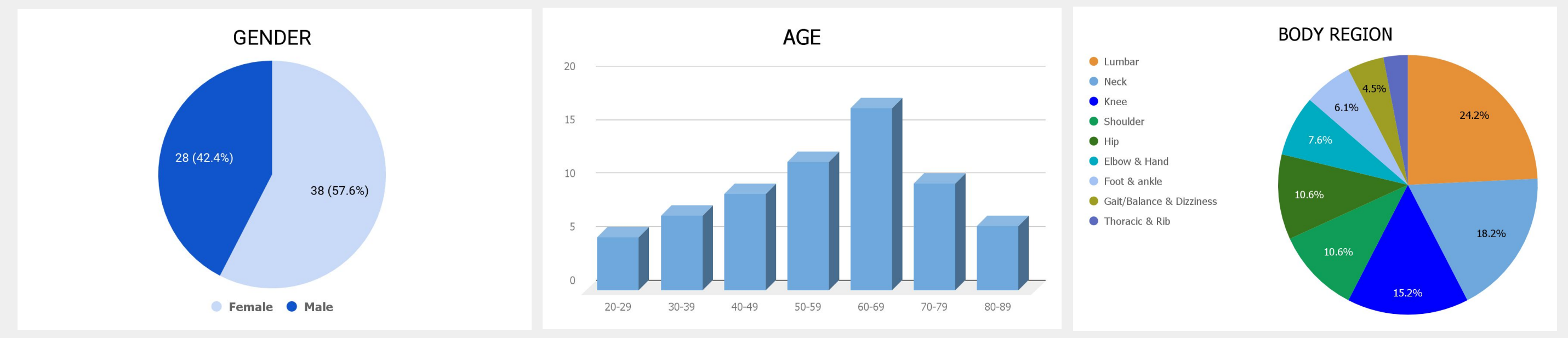
Prognosis Prediction Equation

$$\text{PASS} (0,1) = SE*0.298 - PI*0.131 - GRNF*0.445 - 3.058$$

		Actual Response		
		PASS No	PASS Yes	Overall (%)
Predicted Response	PASS No	22	5	
	PASS Yes	7	32	
	Percent Correct (%)	75.9	86.5	81.8

Table 2: Contingency table for Prognostic Prediction Equation and PASS values collected at 45-60 days out.

Using the prognosis prediction equation, PASS No was correctly identified 75.9% of the time while PASS Yes was correctly identified 86.5% of the time

Considering the overall sample size, this equation was able to accurately predict their PASS status 81.8% of the time

GENDER — 28 (42.4%), 38 (57.6%) — Female, Male

AGE

BODY REGION — Lumbar, Neck, Shoulder, Knee, Hip, Elbow & Hand, Foot & ankle, Gait/Balance & Dizziness, Thoracic & Rib

Hypothesis

Patient Reported Outcome Tools will predict a patient's acceptable symptom state (PASS)

Discussion

This data has the potential to be used as a clinical prediction rule!
Univariate analysis identified PROMIS PI and SEsx as the highest predictive patient reported outcomes.
Adding GRNF increased the power of our predictive tool with PROMIS SEsx and PI.

HEALTH

PASS prediction was achieved by ONLY using patient reported outcomes. Are there other biopsychosocial factors that can improve the predictive tool?

Validate this prediction equation works with other populations
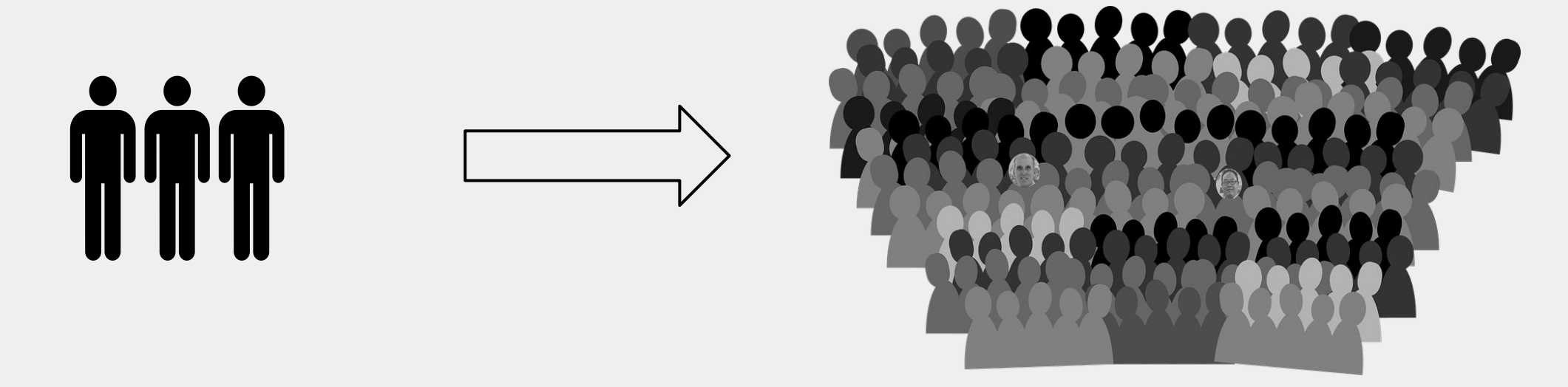
Conclusion

The use of PROMIS SEsx, PI and GRNF accurately predicted **~ 80 % of patients** as PASS Yes/No at short term follow up, which can easily be implemented by medical providers to optimize clinical decision making at an initial visit while decreasing medical cost and provider burden.