

Improving the Quality and Value of Care for People with Multiple Sclerosis (MS)

Year 1 baseline results of the first multi-center systems level quality improvement research collaborative for Multiple Sclerosis in the United States— The Multiple Sclerosis Continuous Quality Improvement Collaborative (MS-CQI).

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DESCRIPTION

MS-CQI is a three year study to improve system-level performance and population health outcomes in MS care. Four MS Centers are participating, representing approximately 5,000 people with MS.

AIMS

- (1) Synthesize Patient Reported Outcome (PRO) and Electronic Health Record (EHR) data to benchmark and study variation across sites
- (2) Provide real time data to sites to inform improvement
- (3) Evaluate the effect of improvement interventions using a step-wedge randomized design.

METHODS

We collect real-time PRO surveys, administrative data, and quarterly EHR data. We have completed the first year of the study which established baseline for benchmarking analyses. Beginning in Year 2, one center each year will be randomized to a QI coach supported QI intervention. The intervention will prepare participating clinics for evaluation for Specialty Medical Home recognition from NCQA. Remaining centers will serve as “usual practice” controls. All centers will receive monthly learning sessions and quarterly performance reports.

SUMMARY OF RESULTS

In Year 1, we collected 6,300 baseline PRO responses from 336 participants and 5,661 clinical encounters from EHR data. Demographic characteristics are representative of existing epidemiologic studies of MS populations. Benchmarking analyses of EHR data using SPC methods reveal underutilization of magnetic resonance imaging (MRI) and disease modifying therapy (DMT). MRI and DMT utilization between centers and DMT utilization for the collaborative longitudinally demonstrates special cause variation.

CONCLUSIONS

MS-CQI has demonstrated feasibility and established baseline. Analyses have identified performance variation patterns in MRI and DMT utilization which will inform improvement efforts to be employed in Year 2.

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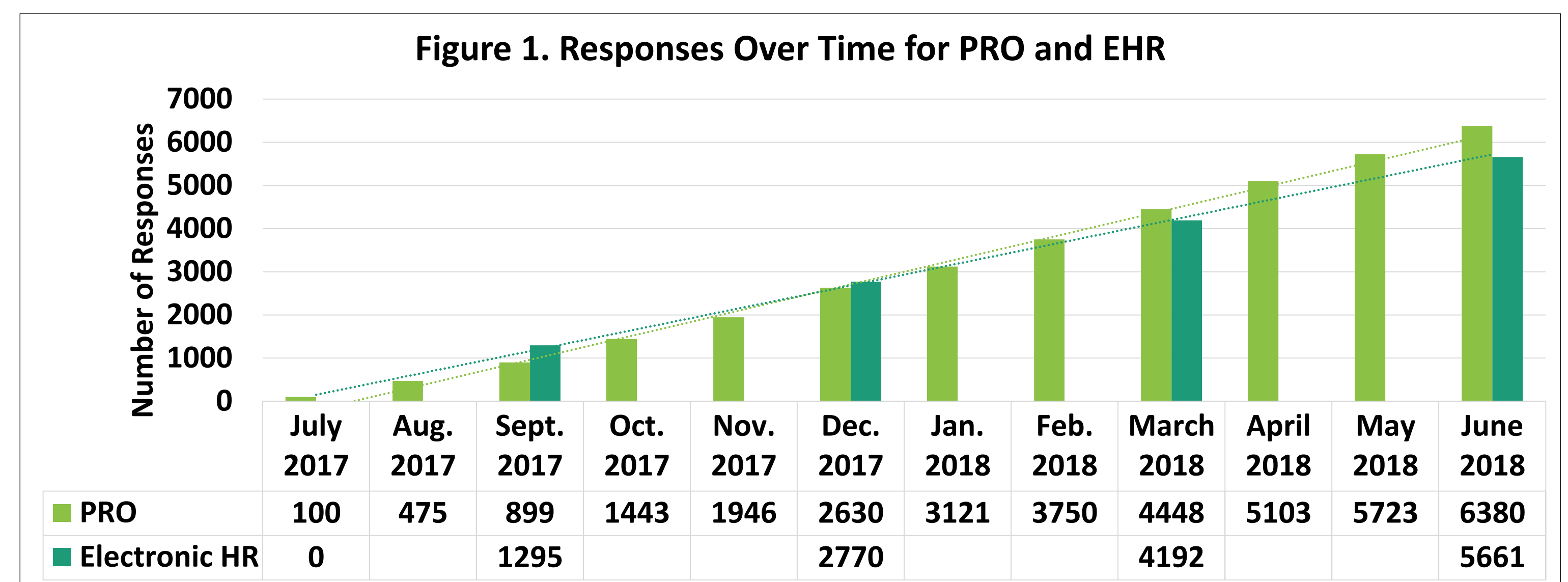
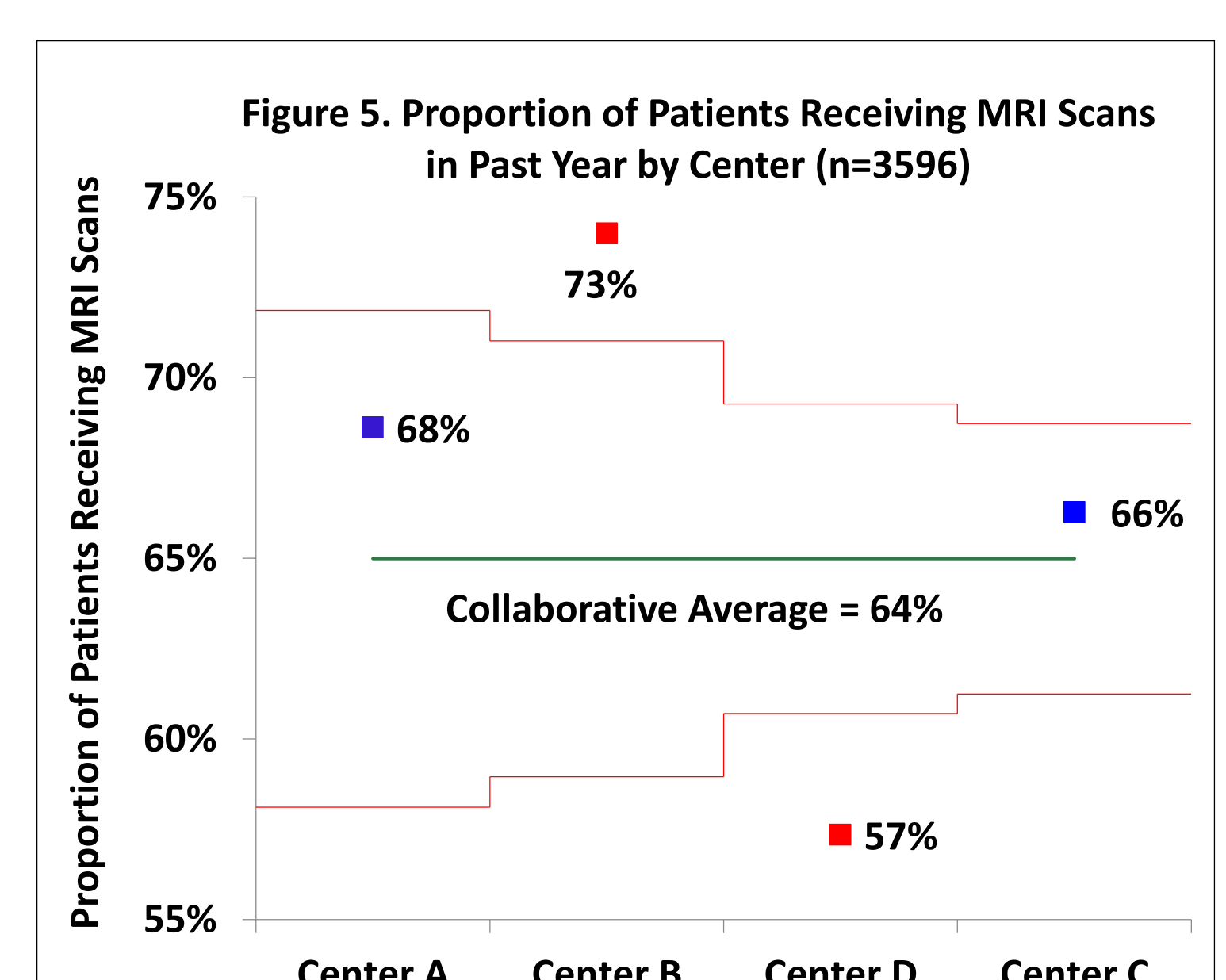
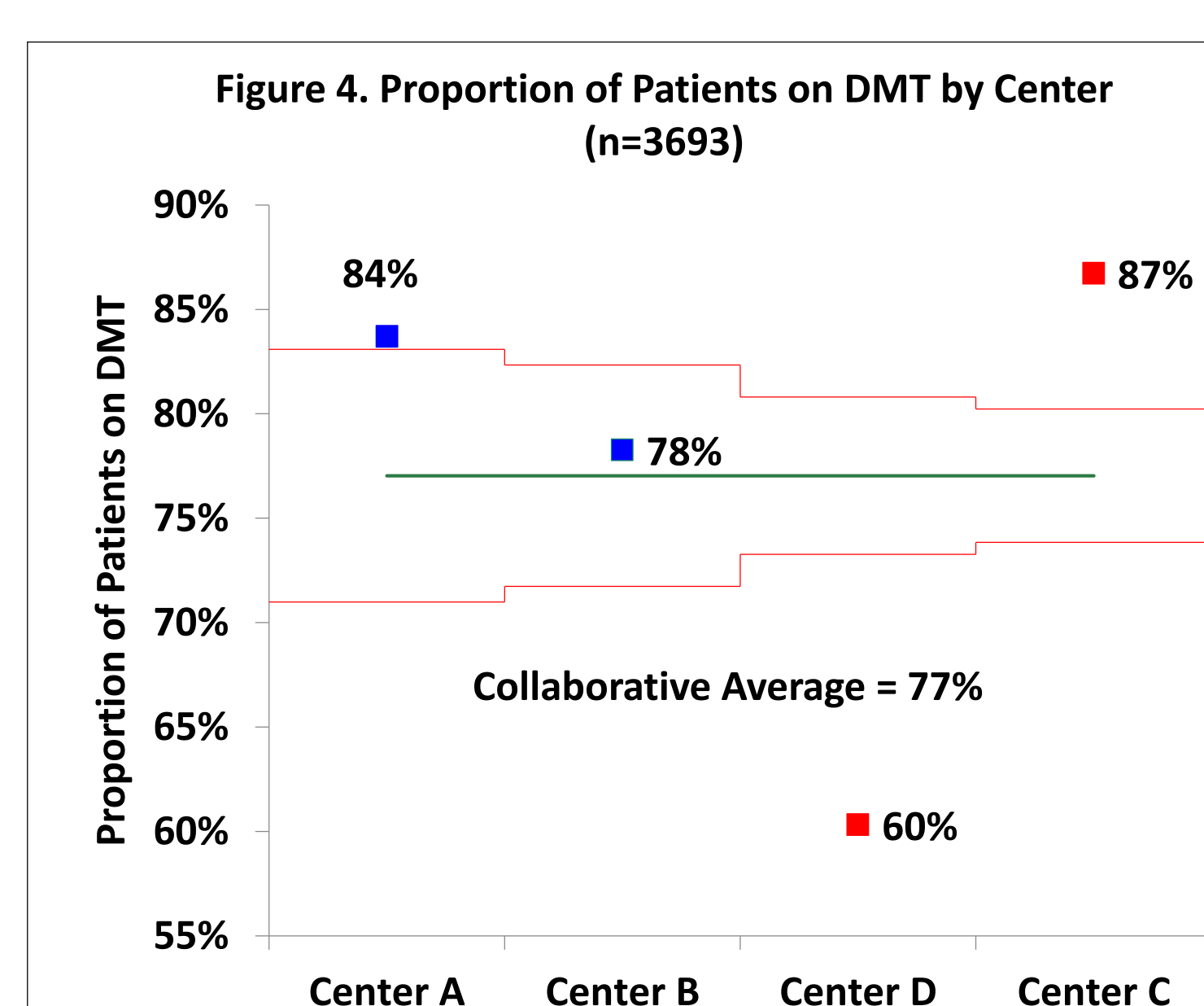
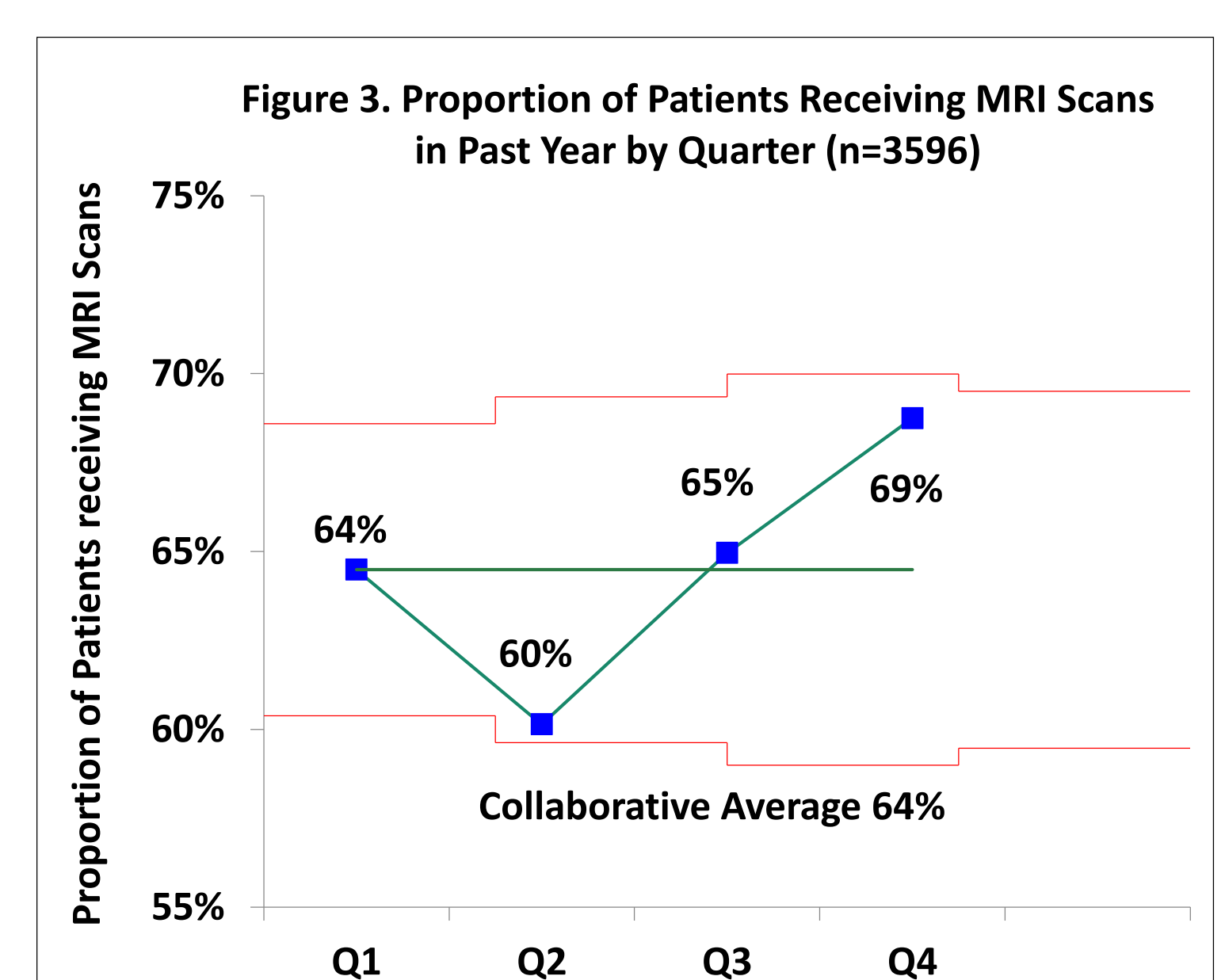
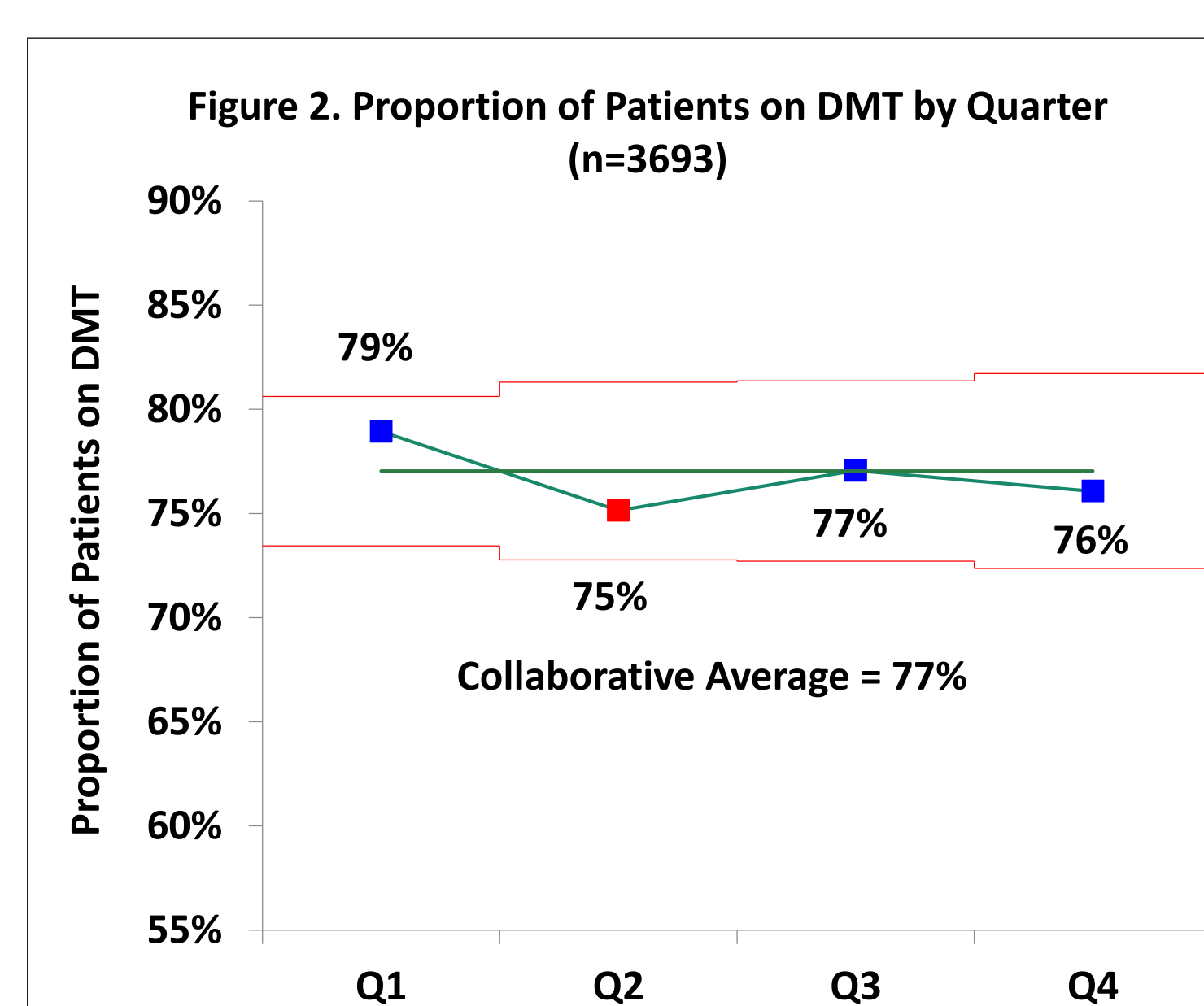


Table 1. MS-CQI Site Characteristics	Sex (% Female)	MS Type (% RRMS)	Insurance Type (% Publicly Insured)	Capacity and Access Wait Time [†] (Days)
Concord Hospital MS Specialty Care Program (Concord, NH) Ann Cabot, DO and Jennifer Taylor, MSN, APRN	80	65	60	30
Multiple Sclerosis Center of Greater Orlando (Orlando, FL) Tricia Pagnotta, MSN, APRN and Kelly Holley, RN	79	70	14	3
Massachusetts General Hospital (Boston, MA) Eric Klawiter, MD and Natalya Machado, BS	73	83	54	14
University of Vermont MS Center (Burlington, VT) Andrew Solomon, MD and Roman Pettigrew, BS	74	75	40	14

Table 2. Patient Reported Outcomes (PROs)	Reports (n)	Mean	Std. Dev.
PDDS	302	2	2
PHQ-9	515	6	5
Neuro-QoL: Stigma	258	12	5
Neuro-QoL: Anxiety	499	17	7
PROMIS Fatigue MS	484	22	8
WWPAI: Activity Impairment	97	25	23
Neuro-QoL: Satisfaction with Social Roles and Activities	255	29	8
Neuro-QoL: Cognitive Function	497	31	7
Neuro-QoL: Ability to Participate in Social Roles and Activities	257	32	7
Neuro-QoL: Sleep Disturbance	235	33	7
Neuro-QoL: Lower Extremity Function	302	34	7
Neuro-QoL: Communication	234	34	7
Impairment While Working(WWPAI)	97	35	6
Neuro-QoL: Upper Extremity Function	304	38	4
Treatment Satisfaction	173	75	21

Table 3. PRO Demographic Characteristics of Study Participants (n=293)		
Age		48
Gender	Male	19%
	Female	81%
Race	White	94%
	Black or African American	6%
	Other	4%
Employment	Employed	7%
	Disabled	20%
	Retired	14%
	Unemployed	4%
Insurance Type	Employer Health Plan	71%
	Medicare	16%
	Individual Health Plan	7%
	Veteran's Affairs	1%
	Other	2%
	Medicaid	2%
	Uninsured	1%



Figures 2-5. Statistical Process Control (SPC) proportions analyses (p Charts) describing the variation in DMT and MRI utilization compared to the overall average performance of the MSCQI Collaborative. Points show averages for each center, the green line represents the overall MS-CQI Collaborative average, and red lines denote 3 Sigma upper and lower control limits. Points outside control limits (shown in red) indicate non-random variation, suggesting real differences between the site average and the MS-CQI Collaborative average. DMT= Disease Modifying Therapy. MRI= Magnetic Resonance Imaging.