

## Supplemental Methods

### Patient Inclusion Criteria

- i) A final confirmed hospital diagnosis of acute stroke (ischemic or hemorrhagic).
- ii) Patient living at home pre-stroke.
- iii) Presence of stroke-related deficits at admission (defined as a National Institute of Health Stroke Severity score of  $\geq 1$ ).
- iv) Presence of functional limitations at discharge (defined as a modified Rankin score [mRS] score of  $\geq 1$  or therapy ordered).
- v) Discharged directly home (includes patient's residence or that of a family member), or discharged to a rehabilitation facility with the expectation of return to home within 4 weeks

### Patient Exclusion Criteria

- i) Patients who live more than 50 miles from the hospital (for reasons related to the home visits).
- ii) Patients discharged to hospice care, nursing home for long term care, or long term care hospital (LTCH).
- iii) Patients who have clinically documented cognitive deficits or stroke-related impairments including aphasia sufficient to impact the consent process and for whom a proxy respondent is not available.
- iv) Patients who fail the 6-item Cognitive Screen for cognitive function (score  $\leq 4$ ) and for whom a proxy respondent is not available.
- v) Patients enrolled in another acute stroke intervention trial that has a significant impact on the post-acute period (i.e., intensive data collection required of patient during follow-up).

### Statistical Approach for Missing Data (Multiple Imputation)

In addition to the available case analysis (difference-in-differences [D-in-D] analysis generated by SAS PROC MIXED), we conducted a sensitivity analysis by re-analyzing the data using the multiple imputation

method for missing data. The SAS procedure PROC MI (SAS Version 9.4) under the Markov chain Monte Carlo (MCMC) method for arbitrary missing data patterns was used to impute missing values. Specifically, missing values were imputed using a comprehensive model that imputed missing values for 6 variables which represented the combination of the two primary outcomes (PROMIS Global physical health [GPH] and mental health [GMH] sub-scales and patient activation measure [PAM]), across the two time points (7-day and 90-day).

The imputation model included the primary analysis variable (i.e., treatment group: Usual Care (UC), Social Worker Case Management (SWCM), SWCM+MISTT Website, and the following 24 auxiliary variables: age, sex, race, stroke type (ischemic vs. hemorrhagic), past medical history/comorbidities (including history of stroke, TIA, myocardial infarction, coronary artery disease, atrial fibrillation, hypertension, hyperlipidemia, diabetes mellitus, depression, and heavy alcohol consumption), living alone prior to stroke event, having a consented caregiver, caregiver living with patient, relationship of caregiver to patient, severity of stroke (NIH Stroke Scale [NIHSS]/ Glasgow Coma Scale [GCS]), modified Rankin Scale (mRS) at discharge, score on 6-item cognitive screening (SIS-6) test, study site, hospital discharge destination (home, acute rehabilitation, sub-acute rehabilitation), and the interval between admission and discharge to home (number of days). These auxiliary variables were selected on the basis that they had statistically significant associations with either the observed values of one or more of the 3 outcomes, or associated with missing data for the same outcomes. Importantly, a variable that indicated the primary reason for not completing a telephone interview (i.e., health-related reason, refused, or unable to contact) was also included in the imputation model. None of the auxiliary variables had missing values. Trace plots (across 2500 iterations) and autocorrelation plots were used to monitor the convergence behavior of the imputation algorithm. To allow for replication of the results, a random seed number was used for all the imputations. The final imputed data set contained 13250 observations which resulted from 25 imputations of the original 265 cases.

After generating the imputed data set, the substantive data model used in the available case analysis (SAS PROC MIXED) was applied to each imputed data set. SAS PROC MIANALYZE was used to summarize these results across the 25 imputed datasets, taking into account the uncertainty in imputation

due to missing data. PROC MIANALYZE generates valid statistical inferences under a missing at random (MAR) assumption by combining the estimated model coefficients and associated covariance matrices across the multiple imputed datasets. As with the available case analysis, the quantities of substantive interest were the D-in-D in the mean response between the two time points and among the three study arms. In the full factorial model (model with main effects of the treatment group and time, and their interactions), these quantities are simply the interaction terms between the treatment group and time. Evaluation of these interactions was performed using a numerator 2 degrees-of-freedom (df) test.

However, because the MIANALYZE procedure is unable to generate parameter estimates and standard errors for interaction terms, the mean models were parameterized using parameters that directly represented the cell means for each of the 6 combinations of treatment group and time (i.e. Trt\_group1= Usual Care at 7-day, Trt\_group2= Usual Care at 90-day, Trt\_group3= SWCM at 7-day, Trt\_group4= SWCM at 90-day, Trt\_group5= SWCM+MISTT Website at 7-day and Trt\_group6= SWCM+MISTT Website at 90-day). From this parameterization, the D-in-D in the mean responses were then expressed as contrasts of the 6 cell means and evaluated using the TEST statement of PROC MIANALYZE with MULT option (a joint numerator 2-df test). The mean differences across the two time points for any two of the three study arms were compared using a t-distribution with df that take into account the uncertainty due to imputations.

#### Sample size calculations

Sample size calculations were based on the 2 primary patient outcome measures: PROMIS-10 Global QOL and the Patient Activation Measure (PAM).<sup>1</sup> All sample size calculations were conducted using NQuery software (StatsSol Ltd, Cork, Ireland) based on an overall ANOVA F-test (equivalent to testing for at least one significant difference between the 3 treatment arms), with power of 80% and alpha = 0.05. A final sample size of 214 patients was determined to be sufficient for both outcomes. Because data related to the minimal important difference for PROMIS-10 Global QOL was lacking at the time that the study was designed, estimates were based on the Stroke-specific QOL (SS-QOL) measure.<sup>2</sup> We hypothesized a standardized effect size of 0.52 (derived from a between-group difference of 1.0 with a standard deviation of 1.9 observed in a previous study<sup>3</sup>) which resulted in a sample size of 214. For PAM, we estimated that

102 patients would be needed based on a standardized effect size of 0.77 (derived from a between-group difference of 10 with standard deviation of 13 observed in a previous study<sup>4</sup>). Thus, the sample size estimate of 214 calculated for PROMIS-10 Global QOL was more than adequate for the PAM outcome. In anticipation of loss to follow-up due to death, hospice or nursing home admission, or missing data, randomization targets were increased by 20% from 214 to 256. To account for the exclusion of patients whose rehabilitation stays extended beyond one month (and thus could not be randomized), enrollment targets were further inflated by 25% to 320. Further details are provided in the study protocol. <sup>1</sup>

## **Supplemental Results**

### Per-protocol Results

Supplemental Table e-1 shows the results of the per-protocol analyses compared to the results of the intention-to-treat (ITT) analysis based on available data (i.e. 240 subjects and 434 observations for PROMIS GPH and GMH outcomes and 233 subjects and 413 observations for PAM). We explored the effect of alternative definitions of non-compliance, dropping subjects if they did not receive the SWCM, or the MISTT website, or both. The net impact of these exclusions was minimal. The p-values for the D-in-D interaction for PROMIS GPH and GMH in the per-protocol analyses were very similar to the ITT available case analysis; GPH remained statistically significant and GMH remained non-significant (Table e-1). For PAM, the overall significance of the D-in-D interaction terms reduced to marginal significance in the per-protocol analysis ( $p < 0.09$ ) (Table e-1), but the pairwise comparison of SWCM+MISTT Website vs. SWCM, which was significant in the ITT available case analysis, remained so in all per-protocol analyses.

The minimal changes seen in the results of the per-protocol analyses were in part due to the small number of non-compliant subjects excluded. Although a maximum of 21 subjects were eligible to be dropped in the per-protocol analysis because of non-compliance, in fact only 10 were excluded because 11 had already been dropped from the ITT available case analysis due to missing outcomes data. Thus, only 4% (10/240) of the 240 subjects that contributed data to the ITT available case analysis were excluded, which resulted in no more than 13 observations or data points being dropped (i.e., 3% of 434 observations used in the ITT) (Table e-1).

### Treatment Interaction Results

Treatment interaction effects were analyzed for 4 covariates: age (in years), stroke severity (mild [ref], moderate, severe), discharge destination (home [ref], acute rehabilitation, sub-acute rehabilitation), and if a caregiver had consented to participate in the study (No [ref] vs Yes). Supplemental Table e-2 shows the results of the difference-in-differences 3-way interaction (i.e., treatment×time×covariate) analyses for all three primary patient outcomes (PROMIS GPH, PROMIS GMH, and PAM). Among the 4 covariates tested, only discharge destination had a statistically significant interaction effect (3-way interaction for PAM,  $p=0.042$ ). Compared to patients who went directly home and received UC (the reference group), PAM scores were significantly lower for both acute and sub-acute rehabilitation patients who received usual care (Table e-3). However, PAM scores among acute and sub-acute rehabilitation patients who received SWCM+MISTT website (i.e., group-3) were similar to those discharged home with usual care, indicating that the intervention had an ameliorating effect on the decline in patient activation in patients from these settings.

### Multiple Imputation Results

Among the 265 patients, PROMIS Global-10 (both physical and mental health) data were missing for 45 (17%) at 7-days and 51 (19%) at 90-days; 25 patients (9.4%) had missing data at both time points. Missing data rates were slightly higher for PAM (21%, 23%, and 12% for 7-day, 90-day, and both time points, respectively). The three main reasons for not completing an interview were refused (42%), health health-related reason (31%), or did not answer (unable to contact) (21%). There was no statistically significant association between the reason for missing and treatment group ( $P = 0.10$ ). Summary variance information from the MIANALYZE procedure for each of the 3 primary outcomes are shown in Table e-4. The relative efficiency was high in all cases (>98%), indicating an adequate number of imputations.

The least square mean (LSM) estimates generated by PROC MIANALYZE for each treatment-by-time group were very similar to the LSMs from the available case analysis (Table e-5). When compared to the results of the D-in-D tests of the treatment×time interaction from the available case analysis, the overall F test (2 df) results (generated by PROC MIANALYZE) show that the difference between the three intervention arms remained statistically significant for GPH ( $p=0.0003$ ), and remained not statistically

significant for GMH ( $p=0.40$ ). However, for PAM the overall F test shifted from a significant result in the available case analysis ( $p= 0.04$ ) to marginally significant result ( $p=0.08$ ) after imputation. After imputation the pairwise tests for PROMIS GPH and MPH remained concordant with the results of the available case analysis, and for PAM a statistically significant difference remained when the SWCM+MISTT Website group was compared to SWCM ( $p=0.03$ ).

#### Item-specific PROMIS Global 10 Results

Item-specific analyses of PROMIS Global-10 raw scores were concordant with the sub-scale results (Table e-6).

### **Supplemental References**

1. Reeves MJ, Hughes AK, Woodward AT, Freddolino PP, Coursaris CK, Swierenga SJ, Schwamm LH and Fritz MC. Improving transitions in acute stroke patients discharged to home: the Michigan Stroke Transitions Trial (MISTT) protocol. *BMC Neurol.* 2017;17:115.
2. Williams LS, Weinberger M, Harris LE, Clark DO and Biller J. Development of a stroke-specific quality of life scale. *Stroke; a journal of cerebral circulation.* 1999;30:1362-9.
3. Gargano JW and Reeves MJ. Sex differences in stroke recovery and stroke-specific quality of life - Results from a statewide stroke registry. *Stroke; a journal of cerebral circulation.* 2007;38:2541-2548.
4. Hibbard JH, Mahoney ER, Stockard J and Tusler M. Development and testing of a short form of the patient activation measure. *Health services research.* 2005;40:1918-30.

## Supplemental Tables and Figures

<b>Supplemental Table e-1. Per-Protocol difference-in-differences (D-in-D) analysis results for primary patient outcomes of PROMIS 10 Global Physical and Mental Health and Patient Activation Measure</b>					
<b>Analysis</b>	<b>N subjects eligible for analysis</b>	<b>N subjects excluded</b>	<b>N observations excluded (from n subjects)</b>	<b>N observations analyzed (among n subjects)</b>	<b>P-value for D-in-D treatment<math>\times</math> time interaction</b>
<b>PROMIS 10 Global Physical Health (GPH)</b>					
Intention-to-treat	265			434 (n=240)	p=0.003
Per-protocol: excluded those who did not receive SWCM*	247	18 (SWCM=9, SWCM+MISTT Website=9)	8 (n=7)	426 (n=233)	p=0.002 <sup>‡</sup>
Per-protocol: excluded those who did not receive MISTT Website <sup>†</sup>	255	10 (SWCM+MISTT Website)	9 (n=6)	425 (n=234)	p=0.002 <sup>§</sup>
Per-protocol: excluded those who did not receive SWCM or MISTT Website <sup>*†</sup>	244	21 (SWCM=9, SWCM+MISTT Website=12)	13 (n=10)	421 (n=230)	p=0.002 <sup>‡</sup>

<b>PROMIS 10 Global Mental Health (GMH)</b>					
Intention-to-treat	265			434 (n=240)	p=0.56
Per-protocol: excluded those who did not receive SWCM*	247	18 (SWCM=9, SWCM+MISTT Website=9)	8 (n=7)	426 (n=233)	p=0.49
Per-protocol: excluded those who did not receive MISTT Website†	255	10 (SWCM+MISTT Website)	9 (n=6)	425 (n=234)	p=0.58
Per-protocol: excluded those who did not receive SWCM or MISTT Website*†	244	21 (SWCM=9, SWCM+MISTT Website=12)	13 (n=10)	421 (n=230)	p=0.53
<b>Patient Activation Measure (PAM)</b>					
Intention-to-treat	265			413 (n=233)	p=0.043
Per-protocol: excluded those who did not receive SWCM*	247	18 (SWCM=9, SWCM+MISTT Web=9)	6 (n=5)	407 (n=228)	p=0.07#
Per-protocol: excluded those who	255	10 (SWCM+MISTT Web)	9 (n=6)	404 (n=227)	p=0.09**



did not receive MISTT Website <sup>†</sup>					
Per-protocol: excluded those who did not receive SWCM or MISTT Website* <sup>†</sup>	244	21 (SWCM=9, SWCM+MISTT Web=12)	11 (n=8)	402 (n=225)	p=0.09 <sup>††</sup>

SWCM = Social Work Case Management program (group 2); SWCM+Website = Social Work Case Management program plus access to the MISTT website (group 3)

\* Did not start SWCM intervention - i.e. did not complete a biopsychosocial assessment (BPSA)

<sup>†</sup> Did not receive MISTT website training or did not access the website as recorded by Google Analytics.

<sup>‡</sup> Both pairwise comparisons (SWCM+MISTT website vs UC, SWCM+MISTT website vs SWCM) remained significant (p=<0.001, and p=0.011, respectively).

<sup>§</sup> Both pairwise comparisons (SWCM+MISTT website vs UC, SWCM+MISTT website vs SWCM) remained significant (p=<0.001, and p=0.010, respectively).

<sup>||</sup> Both pairwise comparisons (SWCM+MISTT website vs UC, SWCM+MISTT website vs SWCM) remained significant (p=<0.001, and p=0.009, respectively).

<sup>#</sup> The pairwise SWCM+MISTT website vs SWCM comparison remained significant (p=0.026).

<sup>\*\*</sup> The pairwise SWCM+MISTT website vs SWCM comparison remained significant (p=0.032).

<sup>††</sup> The pairwise SWCM+MISTT website vs SWCM comparison remains significant (p=0.033).

<b>Supplemental Table e-2. Treatment×time×sub-group interactions for primary patient outcomes of PROMIS 10 Global Physical and Mental Health and Patient Activation Measure: P-values for Difference-in-differences tests of 3-way interaction</b>			
<b>3-way Interaction (treatment×time×sub-group)</b>			
<b>Sub-group Variable</b>	<b>PROMIS 10 Global Physical Health (GPH)</b>	<b>PROMIS 10 Global Mental Health (GMH)</b>	<b>Patient Activation Measure (PAM)</b>
Age (years)	p=0.93	p=0.91	p=0.10
Stroke Severity* (mild, moderate, severe)	p=0.75	p=0.39	p=0.19
Discharge Destination (home, acute rehabilitation, sub-acute rehabilitation)	p=0.57	p=0.82	p=0.04
Consented Caregiver† (No vs Yes)	p=0.72	p=0.45	p=0.74
* Stroke severity was categorized based on the National Institutes of Health Stroke Scale [NIHSS] or if not recorded the Glasgow Coma Scale [GCS]. Mild severity was defined as NIHSS 1-5 or GCS 13-15, moderate severity stroke was defined as NIHSS 6-13 or GCS 5-12, and severe stroke as NIHSS 14-42, or GCS 3-4.			
† n=169 patients also had a caregiver consented to MISTT			

**Supplemental Table e-3. Modifying effect of Discharge Destination and Treatment Group on the Patient Activation Measure (PAM): Results from a difference-in-differences model with a 3-way interaction involving Treatment-group\*discharge destination\*time (p=0.04). (n= 413 observations)**

	Pairwise Contrast in LS Means, 95% CI, p-value (referent group= home with UC)		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT Website</u>
<b>Home</b> (n=117)	0 (reference)	-5.97 95%CI -13.82, 1.90 P = 0.14	-1.75 95%CI= -9.73, 6.24 P = 0.67
<b>Acute rehabilitation</b> (n=124)	-9.83 95%CI = -18.60, -1.06 P = 0.03	-8.17 95%CI -15.60, -0.75 P = 0.03	+2.10 95%CI= -4.99, 9.19 P = 0.56
<b>Sub-acute rehabilitation</b> (n=24)	-17.28 95%CI = -31.15, -3.41 P = 0.01	+0.40 95%CI = -12.82, 13.61 P = 0.95	-2.03 95%CI= -17.88, 13.82 P = 0.80

UC = Usual Care (group 1); SWCM = Social Work Case Management program (group 2); SWCM+MISTT Website = Social Work Case Management program plus access to the MISTT website (group 3)

<b>Supplemental Table e-4. Variance information generated by PROC MIANALYZE</b>							
<b>following multiple imputation for three primary outcomes: PROMIS 10 Global Physical and Mental Health and Patient Activation Measure</b>							
<b>PROMIS 10 Global Physical Health (GPH) - Variance Information (25 Imputations)</b>							
<b>Parameter</b>	<b>Variance</b>			<b>DF</b>	<b>Relative Increase in Variance</b>	<b>Fraction Missing Information</b>	<b>Relative Efficiency</b>
	<b>Between</b>	<b>Within</b>	<b>Total</b>				
Usual Care-7day	0.185890	0.443440	0.636765	260.37	0.435968	0.308894	0.987795
Usual Care-90day	0.151668	0.443440	0.601175	348.62	0.355707	0.266573	0.989450
SWCM-7day	0.107999	0.438401	0.550720	576.99	0.256202	0.206694	0.991800
SWCM-90day	0.136362	0.438401	0.580217	401.74	0.323486	0.248153	0.990171
SWCM+MISTT Website-7day	0.112862	0.428659	0.546035	519.38	0.273824	0.217968	0.991357
SWCM+MISTT Website-90day	0.140150	0.428659	0.574415	372.74	0.340029	0.257720	0.989796
<b>PROMIS 10 Global Mental Health (GMH) - Variance Information (25 Imputations)</b>							
<b>Parameter</b>	<b>Variance</b>			<b>DF</b>	<b>Relative Increase in Variance</b>	<b>Fraction Missing Information</b>	<b>Relative Efficiency</b>
	<b>Between</b>	<b>Within</b>	<b>Total</b>				

Usual Care-7day	0.258175	0.880174	1.148676	439.25	0.305056	0.237214	0.990601
Usual Care-90day	0.334167	0.880174	1.227708	299.51	0.394847	0.287815	0.988618
SWCM-7day	0.128165	0.870172	1.003464	1360.2	0.153179	0.134104	0.994664
SWCM-90day	0.365709	0.870172	1.250510	259.45	0.437083	0.309449	0.987773
SWCM+MISTT Website-7day	0.167772	0.850835	1.025317	828.75	0.205072	0.172170	0.993160
SWCM+MISTT Website-90day	0.250985	0.850835	1.111859	435.46	0.306787	0.238255	0.990560
<b>Patient Activation Measure (PAM) - Variance Information (25 Imputations)</b>							
Parameter	Variance			DF	Relative Increase in Variance	Fraction Missing Information	Relative Efficiency
	Between	Within	Total				
Usual Care-7day	1.818439	3.661723	5.552899	206.91	0.516472	0.346857	0.986316
Usual Care-90day	1.749469	3.661723	5.481171	217.81	0.496883	0.337996	0.986661
SWCM-7day	1.017611	3.620113	4.678428	469.01	0.292343	0.229490	0.990904
SWCM-90day	1.732967	3.620113	5.422399	217.24	0.497854	0.338441	0.986643
SWCM+MISTT Website-7day	0.789176	3.539666	4.360409	677.41	0.231870	0.190612	0.992433
SWCM+MISTT Website-90day	1.556798	3.539666	5.158736	243.65	0.457408	0.319414	0.987385

UC = Usual Care (group 1); SWCM = Social Work Case Management program (group 2); SWCM+MISTT Website = Social Work Case Management program plus access to the MISTT website (group 3)

<b>Supplemental Table e-5. Comparison of available case analysis results with analysis of imputed data from PROC MIANALYZE: Least square means estimates (standard errors) within each treatment-by-time group, and statistical tests of intervention effects for the three primary outcomes</b>				
<b>Treatment-by-time group</b>	<b>Available case analysis</b>		<b>Imputed data*</b>	
<b>PROMIS 10 Global Physical Health (GPH)</b>	<b>N=434</b>	<b>P-value</b>	<b>N=13250</b>	<b>P-value</b>
Usual Care-7day	42.77 (0.71)	D-in-D test =0.003 <sup>†</sup> P <sub>1</sub> =0.34 P <sub>2</sub> <0.001 P <sub>3</sub> =0.016	42.72 (0.80)	F test =0.0003 <sup>‡</sup> P <sub>1</sub> =0.58 P <sub>2</sub> =0.0002 P <sub>3</sub> =0.002
Usual Care-90day	43.08 (0.70)		43.01 (0.78)	
SWCM-7day	41.95 (0.68)		41.84 (0.74)	
SWCM-90day	43.22 (0.69)		42.75 (0.76)	
SWCM+MISTT Website-7day	40.73 (0.68)		40.57 (0.74)	
SWCM+MISTT Website-90day	44.40 (0.69)		44.84 (0.76)	
<b>PROMIS 10 Global Mental Health (GMH)</b>	<b>N=434</b>		<b>N=13250</b>	
Usual Care-7day	45.96 (1.00)	D-in-D test =0.56 <sup>b</sup> P <sub>1</sub> =0.42 P <sub>2</sub> =0.84 P <sub>3</sub> =0.31	45.56 (1.07)	F test =0.40 <sup>c</sup> P <sub>1</sub> =0.49 P <sub>2</sub> =0.50 P <sub>3</sub> =0.19
Usual Care-90day	47.15 (0.99)		47.15 (1.11)	
SWCM-7day	45.23 (0.96)		44.77 (1.00)	
SWCM-90day	45.36 (0.97)		45.36 (1.12)	
SWCM+MISTT Website-7day	45.84 (0.95)		45.58 (1.01)	

SWCM+MISTT Website-90day	47.3 (0.98)		48.17 (1.05)	
<b>Patient Activation Measure (PAM)</b>	<b>N=413</b>		<b>N=13250</b>	
Usual Care-7day	65.71 (2.02)	D-in-D test =0.04 <sup>b</sup>  P <sub>1</sub> =0.56  P <sub>2</sub> =0.07  P <sub>3</sub> =0.016	64.36 (2.36)	F test =0.08 <sup>c</sup>  P <sub>1</sub> =0.64  P <sub>2</sub> =0.12  P <sub>3</sub> =0.032
Usual Care-90day	66.61 (2.02)		67.5 (2.34)	
SWCM-7day	61.35 (1.97)		60.19 (2.16)	
SWCM-90day	60.61 (1.98)		61.86 (2.33)	
SWCM+MISTT Website-7day	63.63 (1.93)		62.8 (2.09)	
SWCM+MISTT Website-90day	69.54 (1.99)		71.51 (2.27)	

UC = Usual Care (group 1); SWCM = Social Work Case Management program (group 2); SWCM+MISTT Website = Social Work Case Management program plus access to the MISTT website (group 3)

\* The number n= 13250 represents the product of the total number of outcome data points (530) multiplied by the 25 imputations. The number of 530 is based on 265 total case subjects with data from both time points.

<sup>†</sup> Overall D-in-D analysis test of group×time interaction, p-value.

<sup>‡</sup> F test= global 2df test of intervention effect (PROC MIANALYZE).

Pairwise test p-values; P<sub>1</sub>= SWCM vs. UC; P<sub>2</sub>= SWCM+MISTT Website vs. UC; P<sub>3</sub>= SWCM+MISTT Website vs. SWCM.



<b>Supplemental Table e-6. Single-item PROMIS 10 difference-in-differences analysis</b>						
<b>PROMIS 10 global01:</b> * general, overall health status						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: <b>p=0.04</b>		
				<b>Pairwise Difference [95% CI]</b>		
				<b>p-value</b>		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	3.00 [2.8, 3.2]	3.18 [3.0, 3.4]	2.95 [2.7, 3.2]			
<b>90-day</b>	3.19 [3.0, 3.4]	3.07 [2.9, 3.3]	3.29 [3.1, 3.5]			
<b>Change</b>	+0.20	-0.12	<b>+0.34</b>	-0.31	+0.14	<b>+0.45</b>
[95% CI]	[-0.06, 0.46],	[-0.37, 0.14]	<b>[0.09, 0.59]</b>	[-0.67, 0.05]	[-0.23, 0.50]	<b>[0.10, 0.81]</b>
p-value	p= 0.14	p= 0.37	<b>p= 0.008</b>	p=0.09	p=0.44	<b>p=0.013</b>
<b>PROMIS 10 global09:</b> * general ability to carry out usual social activities (at home, work, community, and as parent, child, spouse, employee, friend, etc.)						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: p=0.58		
				<b>Pairwise Difference [95% CI]</b>		
				<b>p-value</b>		

	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>WEBSITE</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>WEBSITE vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>WEBSITE vs</u> <u>SWCM</u>
<b>7-day</b>	2.94 [2.7, 3.2]	2.83 [2.6, 3.1]	2.81 [2.6, 3.1]			
<b>90-day</b>	3.17 [2.9, 3.4]	3.03 [2.8, 3.3]	3.20 [3.0, 3.4]			
<b>Change</b>	+0.23	+0.20	<b>+0.39</b>	-0.03	+0.16	+0.19
[95% CI]	[-0.05, 0.51]	[-0.08, 0.47]	<b>[0.12, 0.66]</b>	[-0.43,	[-0.23, 0.55]	[-0.20, 0.58]
p-value	p=0.11	p=0.16	<b>p=0.006</b>	0.36] p=0.87	p=0.42	p=0.33
<b>Physical Health Sub-scale Items (global03, global06, global07, global08)</b>						
<b>PROMIS 10 global03 (PH):*</b> general physical health						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: <b>p=0.030</b>		
				<b>Pairwise Difference [95% CI]</b>		
				<b>p-value</b>		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	3.02 [2.8, 3.2]	2.87 [2.7, 3.1]	2.70 [2.5, 2.9]			
<b>90-day</b>	2.98 [2.8, 3.2]	2.83 [2.6, 3.0]	3.06 [2.8, 3.3]			

<b>Change</b>	-0.04	-0.05	<b>+0.36</b>	-0.01	<b>+0.40</b>	<b>+0.41</b>
[95% CI]	[-0.29, 0.21]	[-0.29, 0.20]	<b>[0.12, 0.60]</b>	[-0.36,	<b>[0.05, 0.75]</b>	<b>[0.06, 0.75]</b>
p-value	p=0.77	p=0.72	<b>p=0.0034</b>	0.34]	<b>p=0.025</b>	<b>p=0.020</b>
				p=0.96		
<b>PROMIS 10 global06 (PH):*</b> ability to carry out every day physical activities such as walking, climbing stairs, carrying groceries, or moving a chair						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: p=0.23		
				<b>Pairwise Difference [95% CI]</b>		
				<b>p-value</b>		
	<b><u>UC</u></b>	<b><u>SWCM</u></b>	<b><u>SWCM+MISTT</u></b>	<b><u>SWCM vs</u></b>	<b><u>SWCM+MISTT</u></b>	<b><u>SWCM+MISTT</u></b>
			<b><u>Website</u></b>	<b><u>UC</u></b>	<b><u>Website vs UC</u></b>	<b><u>Website vs</u></b>
						<b><u>SWCM</u></b>
<b>7-day</b>	3.48	3.49	3.36			
	[3.2, 3.7]	[3.2, 3.7]	[3.1, 3.6]			
<b>90-day</b>	3.62	3.81	3.79			
	[3.4, 3.9]	[3.6, 4.1]	[3.5, 4.0]			
<b>Change</b>	+0.14	<b>+0.33</b>	<b>+0.43</b>	+0.19	+0.29	+0.10
[95% CI]	[-0.11, 0.38]	<b>[0.09, 0.57]</b>	<b>[0.19, 0.66]</b>	[-0.15,	[-0.05, 0.63]	[-0.24, 0.44]
p-value	p=0.28	<b>p=0.009</b>	<b>p=0.0004</b>	0.54]	p=0.09	p=0.56
				p=0.27		
<b>PROMIS 10 global07 (PH):†</b> average pain within last 7-days						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: p=1.0		
				<b>Pairwise Difference [95% CI]</b>		

				p-value		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	4.04 [3.8, 4.3]	3.97 [3.7, 4.2]	4.15 [3.9, 4.4]			
<b>90-day</b>	3.94 [3.7, 4.2]	3.85 [3.6, 4.1]	4.04 [3.8, 4.3]			
<b>Change</b>	-0.10	-0.12	-0.11	-0.01	-0.002	+0.01
[95% CI]	[-0.35, 0.14]	[-0.36, 0.12]	[-0.34, 0.13]	[-0.35, 0.33]	[-0.34, 0.34]	[-0.33, 0.35]
p-value	p=0.40	p=0.34	p=0.37	p=0.95	p=0.99	p=0.95
<b>PROMIS 10 global08 (PH):<sup>†</sup> average fatigue within last 7-days</b>						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: <b>p=0.014</b>		
				<b>Pairwise Difference [95% CI]</b>		
				<b>p-value</b>		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	3.41 [3.2, 3.6]	3.20 [3.0, 3.4]	3.13 [2.9, 3.3]			
<b>90-day</b>	3.33 [3.1, 3.5]	3.37 [3.2, 3.6]	3.59 [3.4, 3.8]			
<b>Change</b>	-0.08	+0.17	<b>+0.46</b>	+0.25	<b>+0.54</b>	+0.29
[95% CI]	[-0.34, 0.18]	[-0.09, 0.42]	<b>[0.21, 0.71]</b>			[-0.06, 0.65]

p-value	p=0.55	p=0.20	<b>p=0.0004</b>	[-0.12, 0.61] p=0.18	<b>[0.18, 0.90]</b> <b>p=0.004</b>	p=0.11
<b>Mental Health Sub-scale Items (global02, global04, global05, global10)</b>						
<b>PROMIS 10 global02 (MH):* overall quality-of-life</b>						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b> Test of group×time interaction: p=0.20		
				<b>Pairwise Difference [95% CI]</b> <b>p-value</b>		
	<u><b>UC</b></u>	<u><b>SWCM</b></u>	<u><b>SWCM+MISTT</b></u> <u><b>Website</b></u>	<u><b>SWCM vs</b></u> <u><b>UC</b></u>	<u><b>SWCM+MISTT</b></u> <u><b>Website vs UC</b></u>	<u><b>SWCM+MISTT</b></u> <u><b>Website vs</b></u> <u><b>SWCM</b></u>
<b>7-day</b>	3.24 [3.0, 3.5]	3.14 [2.9, 3.4]	3.00 [2.8, 3.2]			
<b>90-day</b>	3.37 [3.2, 3.6]	3.14 [2.9, 3.4]	3.32 [3.1, 3.5]			
<b>Change</b> [95% CI] p-value	+0.13 [-0.13, 0.39] p=0.33	+0.004 [-0.25, 0.26] p=0.97	<b>+0.32</b> <b>[0.08, 0.57]</b> <b>p=0.011</b>	-0.12 [-0.48, 0.24] p=0.50	+0.19 [-0.16, 0.55] p=0.29	+0.32 [-0.04, 0.67] p=0.08
<b>PROMIS 10 global04 (MH):* general mental health including mood and ability to think</b>						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b> Test of group×time interaction: p=0.94		

				Pairwise Difference [95% CI]		
				p-value		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	3.18 [2.9, 3.4]	3.06 [2.8, 3.3]	3.30 [3.1, 3.5]			
<b>90-day</b>	3.28 [3.0, 3.5]	3.15 [2.9, 3.4]	3.35 [3.1, 3.6]			
<b>Change</b>	+0.10	+0.10	+0.05	-0.01	-0.06	-0.05
[95% CI]	[-0.14, 0.34]	[-0.14, 0.33]	[-0.18, 0.27]	[-0.34, 0.33]	[-0.39, 0.28]	[-0.38, 0.28]
p-value	p=0.41	p=0.43	p=0.69	p=0.97	p=0.74	p=0.77
<b>PROMIS 10 global05 (MH):*</b> general satisfaction with social activities and relationships						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b>		
				Test of group×time interaction: p=0.45		
				Pairwise Difference [95% CI]		
				p-value		
	<u>UC</u>	<u>SWCM</u>	<u>SWCM+MISTT</u> <u>Website</u>	<u>SWCM vs</u> <u>UC</u>	<u>SWCM+MISTT</u> <u>Website vs UC</u>	<u>SWCM+MISTT</u> <u>Website vs</u> <u>SWCM</u>
<b>7-day</b>	3.18 [2.9, 3.4]	3.06 [2.8, 3.3]	3.03 [2.8, 3.3]			
<b>90-day</b>	3.27 [3.0, 3.5]	3.01 [2.8, 3.3]	3.21 [3.0, 3.4]			
<b>Change</b>	+0.09	-0.05	+0.18	-0.14	+0.09	+0.23
[95% CI]	[-0.17, 0.35]	[-0.30, 0.21]	[-0.07, 0.43]			[-0.13, 0.59]

p-value	p=0.49	p=0.71	p=0.16	[-0.50, 0.23] p=0.46	[-0.27, 0.45] p=0.62	p=0.21
<b>PROMIS 10 global10 (MH):</b> <sup>†</sup> bothered by emotional problems such as feeling anxious, depressed, or irritable in the last 7-days						
	<b>LS Means [95% CI]</b>			<b>D-in-D Analysis</b> Test of group×time interaction: p=0.51		
				<b>Pairwise Difference [95% CI]</b> p-value		
	<b><u>UC</u></b>	<b><u>SWCM</u></b>	<b><u>SWCM+MISTT Website</u></b>	<b><u>SWCM vs UC</u></b>	<b><u>SWCM+MISTT Website vs UC</u></b>	<b><u>SWCM+MISTT Website vs SWCM</u></b>
<b>7-day</b>	3.67 [3.4, 3.9]	3.65 [3.4, 3.9]	3.65 [3.4, 3.9]			
<b>90-day</b>	3.52 [3.3, 3.8]	3.58 [3.3, 3.8]	3.75 [3.5, 4.0]			
<b>Change</b> [95% CI] p-value	-0.15 [-0.47, 0.17] p=0.35	-0.07 [-0.38, 0.25] p=0.67	0.10 [-0.20, 0.41] p=0.50	+0.08 [-0.36, 0.53] p=0.71	+0.26 [-0.19, 0.70] p=0.26	+0.17 [-0.27, 0.61] p=0.44

UC = Usual Care (group 1); SWCM = Social Work Case Management program (group 2); SWCM+MISTT Website = Social Work Case Management program plus access to the MISTT website (group 3)

Physical Health (PH) subscale includes raw scores from items Global03, Global06, Global07, and Global08

Mental Health (MH) subscale includes raw scores from items Global02, Global04, Global05, and Global10

7-day data were available for n=220

90-day data were available for n=214

\* Higher raw scores indicate more of the construct

<sup>†</sup> Higher scores indicate less of the construct (i.e., less pain, fatigue, emotional problems)