Supplementary Online Content

This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods. Information About Trial Procedures

Provisioning of Tablets with Inpatient Portal Application
Provisioning of tablets to patients was performed under a clinical protocol developed by the OSUWMC and was considered usual care during the course of the study. The provisioning workflow for each patient required that the inpatient portal application on the tablet be registered and linked to the patient's medical record.

Trial Design and Hypotheses
The trial was designed to evaluate two hypotheses related to the primary outcomes of portal usage (H1) and satisfaction and involvement with the care experience (H2).

      H1:   *Patients assigned to the High intervention levels for Tech and Touch will demonstrate higher use of the MyChart Bedside inpatient portal.*

      H2:   *Patients assigned to the High intervention levels for Tech and Touch will demonstrate higher levels of satisfaction with (H2a) and involvement in (H2b) their care experience.*

Touch Intervention Protocol
The study training protocol for the Touch intervention groups was developed with input from an Implementation Working Group composed of patients, providers, research team members, and education specialists. As part of this training protocol, a video was developed and produced by the OSUWMC Department of Patient Education with input from the research team to outline the functions of the full-tech and lite-tech versions inpatient portal application. The full-tech training video lasted 11:17 minutes and the lite-tech training video lasted 4:29 minutes. Training in both Touch groups was designed to be delivered in person, one-on-one, by a study-provided research assistant trained to be a Technology Navigator (TN). In both Touch groups, study participants had access to in-application contextual help as well as to health system-provided tip sheets about use of MyChart Bedside. There were no time limits for training of Low- and High-Touch, and in both groups, the TN ended the training when the patient had no further questions. In the High-Touch group, the TN training session lasted an average of 13 minutes (range 2-24 minutes), and depended on the patient's level of confidence to navigate the application with out in-person support. In the Low-Touch group, the TN training session lasted an average of 6.7 minutes (range 2-24 minutes); when patients asked questions in the Low-Touch session, they were respectfully directed to the video and in-application conceptual help and tip sheets.

Trial Survey Deployment
Once a patient provided informed consent, the study Admission survey was activated and could be completed on the OSUWMC-provided tablet; it was also available on paper if the patient preferred that modality. The Admission survey was accessible for the patient to complete throughout their inpatient stay. Patients were reminded up to three times, in-person, by TNs to complete the Admission survey. Following discharge, all patients were contacted and asked to complete two follow-up surveys: a 15-day Post-discharge survey and a 6-month Post-discharge survey. Patients could indicate their preference to be contacted by email or phone and could complete the surveys either electronically, through a web link to their preferred email, or over the phone with a TN. Patients were contacted no less than three times to request completion of the follow-up survey; however, this number was increased if the patient changed their communication preference (e.g., from email to phone), at which point the contact protocol was restarted.

eTable 1. MyChart Bedside Inpatient Portal Functions

MyChart Bedside Function	Description
Dining On Demand*	Order a meal from a predefined menu
Bedside Tutorial*	Access tutorials on the use of MyChart Bedside
To Learn*	Access training materials through a link to an external health information content provider
My Health	Review vitals and laboratory test results
Happening Soon	Review scheduled upcoming interactions with the care team
Notes	Record and review personal notes (audio and written)
Messages	Send and review secure messages
I Would Like	Request one of a number of ancillary services
OSU MyChart	Create an outpatient MyChart account or change the password on an existing MyChart account
Taking Care of Me	Review active members of the care team

* Function available in Lite-Tech version of MyChart Bedside

eTable 2. Demographic and Clinical Characteristics for Patient Enrollment Admission by Survey Type and Study Group Assignment

	Total			Full-Tech						Lite-Tech					
				Low-Touch (N=1,523)			High-Touch (N=624)			Low-Touch (N=468)			High-Touch (N=277)		
	Admission survey (n=2,836)	15-day Post-discharge survey (n=459)	6-month Post-discharge survey (n=673)	Admission survey (n=1,481)	15-day Post-discharge survey (n=187)	6-month Post-discharge survey (n=346)	Admission survey (n=623)	15-day Post-discharge survey (n=154)	6-month Post-discharge survey (n=150)	Admission survey (n=456)	15-day Post-discharge survey (n=60)	6-month Post-discharge survey (n=95)	Admission survey (n=276)	15-day Post-discharge survey (n=58)	6-month Post-discharge survey (n=82)
Female – n (%)	1,606 (56.6)	264 (57.5)	410 (60.9)	846 (57.1)	105 (56.2)	217 (62.7)	357 (57.3)	90 (58.4)	92 (61.3)	252 (55.3)	35 (58.3)	57 (60.0)	151 (54.7)	34 (58.6)	44 (53.7)
Race – n (%)															
White	2,184 (77.0)	378 (82.4)	556 (82.6)	1,117 (75.4)	145 (77.5)	277 (80.1)	504 (80.9)	126 (81.8)	132 (88.0)	344 (75.4)	55 (91.7)	79 (83.2)	219 (79.4)	52 (89.7)	68 (82.9)
Black	534 (18.8)	62 (13.5)	101 (15.0)	303 (20.5)	32 (17.1)	60 (17.3)	96 (15.4)	21 (13.6)	16 (10.7)	89 (19.5)	4 (6.7)	12 (12.6)	46 (16.7)	5 (8.6)	13 (15.9)
Other	118 (4.2)	19 (4.1)	16 (2.4)	61 (4.1)	10 (5.4)	9 (2.6)	23 (3.7)	7 (4.6)	2 (1.3)	23 (5.0)	1 (1.7)	4 (4.2)	11 (4.0)	1 (1.7)	1 (1.2)
Age in years – median (95% CI)	47 (46.0, 48.0)	51 (49.0, 53.0)	52 (50.0, 54.0)	46 (45.0, 48.0)	52 (49.0, 54.0)	52 (49.0, 55.0)	47 (45.0, 49.0)	48 (42.3, 51.0)	48 (45.0, 51.0)	48 (45.0, 50.0)	53 (45.0, 59.1)	57 (53.3, 60.0)	49 (46.0, 51.0)	53 (46.1, 58.0)	54 (49.0, 59.4)
Charlson Comorbidity Index – median (95% CI)	1 (1.0, 2.0)	1 (1.0, 2.0)	1 (1.0, 2.0)	1 (1.0, 2.0)	2 (1.0, 2.0)	1 (1.0, 2.0)	1 (1.0, 1.0)	1 (1.0, 1.7)	1 (1.0, 2.0)	1 (1.0, 2.0)	1 (0.0, 2.0)	1 (1.0, 2.0)	2 (1.0, 2.0)	2 (1.0, 2.0)	2 (1.0, 2.0)
Length of stay in days – median (95% CI)	6 (6.0, 7.0)	7 (6.0, 7.0)	6 (5.0, 6.0)	6 (6.0, 6.0)	6 (5.0, 7.0)	5 (5.0, 6.0)	7 (7.0, 8.0)	7 (6.0, 8.0)	7 (6.0, 8.0)	6 (5.0, 6.0)	6 (5.0, 7.0)	6 (5.0, 7.0)	7 (6.0, 8.0)	7 (6.0, 7.0)	6 (5.0, 7.0)

Abbreviation: CI, confidence interval.

eTable 3. Inpatient Portal Use Outcomes, Interaction, and Noninteraction Models

	N	Median (95% CI)	Full-Tech IRR (95% CI)	High-Touch IRR (95% CI)	Tech X Touch IRR (95% CI)
Sessions in enrollment admission	2,892	18.0 (17.0, 19.0)	1.44 (1.25 to 1.66)	1.29 (1.14 to 1.46)	1.06 (0.98 to 1.15)
			1.47 (1.25 to 1.72)	1.34 (1.25 to 1.44)	
	N	No. positive (%)	Full-Tech OR (95% CI)	High-Touch OR (95% CI)	Tech X Touch OR (95% CI)
Comprehensiveness* (comprehensive functions user)	2,892	1,346 (46.5)	0.74 (0.69 to 0.81)	16.82 (13.05 to 21.69)	1.34 (0.94 to 1.90)
			0.79 (0.72 to 0.87)	20.75 (16.49 to 26.10)	

Abbreviations: IRR, incidence rate ratio; OR, odds ratio; CI, confidence interval.

The top row for each outcome reports main effects and interaction effects; the bottom row for each outcome reports main effects only.

*A comprehensive portal user was one who used all three Lite-Tech functions or used eight or more Full-Tech functions.

†A comprehensive portal user was one who used all three Lite-Tech functions.

eTable 4. Patient Satisfaction Outcomes by Study Group Assignment

Outcome	N	Study groups					Intervention effects			
		Lite-Tech + Low-Touch	Lite-Tech + High-Touch	Full-Tech + Low-Touch	Full-Tech + High-Touch		Any High-Touch	Any Low-Touch	Any Full-Tech	Any Lite-Tech
15 day discharge: In your most recent hospital experience, how satisfied were you with how well your healthcare professionals responded to your concerns?										
Most positive response — n / total (%)	396	36/53 (67.9)	36/53 (67.9)	107/157 (68.2)	94/133 (70.7)		130/186 (69.9)	143/210 (68.1)	201/290 (69.3)	72/106 (67.9)
Odds ratio (95% CI)		—	—	—	—		1.11 (0.58 to 2.14)		1.11 (0.65 to 1.88)	
6 month discharge: In the past 6 months, how satisfied were you with how well your healthcare professionals responded to your concerns?										
Most positive response — n / total (%)	558	36/78 (46.2)	47/73 (64.4)	172/273 (63.0)	84/134 (62.7)		131/207 (63.3)	208/351 (59.3)	256/407 (62.9)	83/151 (55.0)
Odds ratio (95% CI)		—	—	—	—		2.01 (1.16 to 3.50)		2.06 (1.42 to 2.99)	
Interaction effect (95% CI)							0.50 (0.29 to 0.85)			
15 day discharge: In your most recent hospital experience, how satisfied were you with the interactions you had with your healthcare professionals?										
Most positive response — n / total (%)	397	35/52 (67.3)	37/53 (69.8)	104/159 (65.4)	105/133 (78.9)		142/186 (76.3)	139/211 (65.9)	209/292 (71.6)	72/105 (68.6)
Odds ratio (95% CI)							1.78 (1.09 to 2.90)		1.21 (0.68 to 2.18)	
6 month discharge: In the past 6 months, how satisfied were you with the interactions you had with your healthcare professionals?										
Most positive response — n / total (%)	569	46/79 (58.2)	50/74 (67.6)	185/280 (66.1)	95/136 (69.9)		145/210 (69.0)	231/359 (64.3)	280/416 (67.3)	96/153 (62.7)
Odds ratio (95% CI)							1.28 (1.08 to 1.53)		1.23 (0.69 to 2.18)	

All models include the comparable survey item from the admission survey as a control variable.

eTable 5. Patient Involvement Outcomes by Study Group Assignment

Outcome	N	Study groups					Intervention effects			
		Lite-Tech + Low-Touch	Lite-Tech + High-Touch	Full-Tech + Low-Touch	Full-Tech + High-Touch		Any High-Touch	Any Low-Touch	Any Full-Tech	Any Lite-Tech
All of my questions about managing my health, including my medications, were addressed before I left the hospital.										
Most positive response — n / total (%)	396	37/58 (63.8)	37/58 (63.8)	118/184 (64.1)	112/153 (73.2)		149/211 (70.6)	155/242 (64.0)	230/337 (68.2)	74/116 (63.8)
Odds ratio (95% CI)		—	—	—	—		1.36 (1.10 to 1.67)		1.24 (0.82 to 1.88)	
If you had a question about your care while you were in the hospital, what steps did you take to find an answer? (mark all that apply)										
I asked my doctor										
Most positive response — n / total (%)	457	46/60 (76.7)	46/58 (79.3)	142/186 (76.3)	107/153 (69.9)		153/211 (72.5)	188/246 (76.4)	249/339 (73.5)	92/118 (78.0)
Odds ratio (95% CI)		—	—	—	—		0.81 (0.38 to 1.72)		0.77 (0.59 to 1.02)	
I asked a nurse										
Most positive response — n / total (%)	457	54/60 (90.0)	51/58 (87.9)	169/186 (90.9)	142/153 (92.8)		193/211 (91.5)	223/246 (90.7)	311/339 (91.7)	105/118 (89.0)
Odds ratio (95% CI)		—	—	—	—		1.12 (0.78 to 1.59)		1.38 (0.91 to 2.11)	
I asked another hospital staff member										
Most positive response — n / total (%)	457	17/60 (28.3)	19/58 (32.8)	52/186 (28.0)	36/153 (23.5)		55/211 (26.1)	69/246 (28.0)	88/339 (26.0)	36/118 (30.5)
Odds ratio (95% CI)		—	—	—	—		1.23 (0.92 to 1.65)		0.98 (0.67 to 1.43)	
Interaction effect (95% CI)							0.64 (0.45 to 0.92)			
I searched online										
Most positive response — n / total (%)	457	14/60 (23.3)	16/58 (27.6)	59/186 (31.7)	50/153 (32.7)		66/211 (31.3)	73/246 (29.7)	109/339 (32.2)	30/118 (25.4)
Odds ratio (95% CI)		—	—	—	—		1.09 (0.79 to 1.51)		1.40 (0.99 to 1.97)	
Other										
Most positive response — n / total (%)	457	4/60 (6.7)	2/58 (3.4)	11/186 (5.9)	12/153 (7.8)		14/211 (6.6)	15/246 (6.1)	23/339 (6.8)	6/118 (5.1)
Odds ratio (95% CI)		—	—	—	—		1.10 (0.62 to 1.97)		1.36 (0.46 to 4.02)	
I did not have questions										
Most positive response — n / total (%)	457	1/60 (1.7)	1/58 (1.7)	6/186 (3.2)	5/153 (3.3)		6/211 (2.8)	7/246 (2.8)	11/339 (3.2)	2/118 (1.7)
Odds ratio (95% CI)		—	—	—	—		1.02 (0.35 to 2.92)		1.95 (0.64 to 5.93)	
What kinds of activities did you use the tablet for? (mark all that apply)										
Email										
Most positive response — n / total (%)	454	7/59 (11.9)	7/58 (12.1)	29/183 (15.8)	18/154 (11.7)		25/212 (11.8)	36/242 (14.9)	47/337 (13.9)	14/117 (12.0)
Odds ratio (95% CI)		—	—	—	—		0.77 (0.43, 1.37)		1.18 (0.69, 2.01)	
Research health issues										
Most positive response — n / total (%)	454	26/59 (44.1)	23/58 (39.7)	82/183 (44.8)	84/154 (54.5)		107/212 (50.5)	108/242 (44.6)	166/337 (49.3)	49/117 (41.9)
Odds ratio (95% CI)		—	—	—	—		0.83 (0.52, 1.35)		1.03 (0.77, 1.38)	
Interaction effect (95% CI)							1.77 (1.05, 2.98)			
Social media										
Most positive response — n / total (%)	454	11/59 (18.6)	7/58 (12.1)	36/183 (19.7)	27/154 (17.5)		34/212 (16.0)	47/242 (19.4)	63/337 (18.7)	18/117 (15.4)
Odds ratio (95% CI)		—	—	—	—		0.80 (0.43 to 1.49)		1.25 (0.78 to 2.03)	
Watch movies/TV										
Most positive response — n / total (%)	454	4/59 (6.8)	5/58 (8.6)	17/183 (9.3)	10/154 (6.5)		15/212 (7.1)	21/242 (8.7)	27/337 (8.0)	9/117 (7.7)
Odds ratio (95% CI)		—	—	—	—		0.80 (0.55, 1.16)		1.04 (0.50, 2.16)	
Communicate with my family										
Most positive response — n / total (%)	454	5/59 (8.5)	3/58 (5.2)	19/183 (10.4)	10/154 (6.5)		13/212 (6.1)	24/242 (9.9)	29/337 (8.6)	8/117 (6.8)
Odds ratio (95% CI)		—	—	—	—		0.60 (0.19, 1.83)		1.26 (0.63, 2.50)	
Play games										
Most positive response — n / total (%)	454	20/59 (33.9)	21/58 (36.2)	49/183 (26.8)	47/154 (30.5)		68/212 (32.1)	69/242 (28.5)	96/337 (28.5)	41/117 (35.0)
Odds ratio (95% CI)		—	—	—	—		1.17 (0.75 to 1.85)		0.74 (0.69 to 0.80)	
MyChart Bedside										
Most positive response — n / total (%)	454	50/59 (84.7)	49/58 (84.5)	167/183 (91.3)	143/154 (92.9)		192/212 (90.6)	217/242 (89.7)	310/337 (92.0)	99/117 (84.6)
Odds ratio (95% CI)		—	—	—	—		1.14 (0.67 to 1.93)		2.10 (1.10 to 4.01)	
None of the above										
Most positive response — n / total (%)	454	5/59 (8.5)	4/58 (6.9)	7/183 (3.8)	6/154 (3.9)		10/212 (4.7)	12/242 (5.0)	13/337 (3.9)	9/117 (7.7)

							0.93 (0.49 to 1.75)	0.48 (0.14 to 1.63)
Odds ratio (95% CI)		—	—	—	—			

Patient involvement items were only asked in the 15-day Post-discharge survey.

Responses from multiple response questions were coded as 1 if selected by the respondent, and 0 if the respondent selected any other response options from the question but not the given response.

eTable 6. Inpatient Portal Use Outcomes in Full-Tech Subsample

Outcome	N	Low-Touch	High-Touch
Inpatient portal frequency of use			
Sessions in enrollment admission — patient no. (mean sessions)	2147	1523 (26.5)	624 (36.1)
Incidence rate ratio (95% CI)		1.36 (1.29 to 1.44)	
Inpatient portal comprehensiveness of use			
Comprehensive portal user* — n / total (%)	2147	396/1523 (26.0)	554/624 (88.8)
Odds ratio (95% CI)		22.52 (16.88 to 30.06)	
Inpatient portal functions			
Dining on Demand, mean proportion (sd)	2146	0.22 (0.19)	0.18 (0.14)
Odds ratio (95% CI)		0.75 (0.68 to 0.82)	
Tutorial, mean proportion (sd)	2146	0.19 (0.22)	0.12 (0.10)
Odds ratio (95% CI)		0.56 (0.53 to 0.59)	
To Learn, mean proportion (sd)	2146	0.01 (0.04)	0.03 (0.03)
Odds ratio (95% CI)		1.84 (1.73 to 1.96)	
My Health, mean proportion (sd)	2146	0.09 (0.17)	0.13 (0.15)
Odds ratio (95% CI)		1.45 (1.27 to 1.66)	
Happening Soon, mean proportion (sd)	2146	0.37 (0.25)	0.42 (0.19)
Odds ratio (95% CI)		1.24 (1.20 to 1.28)	
Notes, mean proportion (sd)	2146	0.00 (0.00)	0.00 (0.00)
Odds ratio (95% CI)		1.32 (0.56 to 3.11)	
Messages, mean proportion (sd)	2146	0.03 (0.05)	0.04 (0.03
Odds ratio (95% CI)		1.13 (0.99 to 1.30)	
I Would Like, mean proportion (sd)	2146	0.00 (0.01)	0.01 (0.01)
Odds ratio (95% CI)		2.55 (2.26 to 2.88)	
OSU MyChart, mean proportion (sd)	2146	0.03 (0.04)	0.03 (0.03)
Odds ratio (95% CI)		1.25 (0.97 to 1.60)	
Taking Care of Me, mean proportion (sd)	2146	0.04 (0.05)	0.05 (0.03)
Odds ratio (95% CI)		1.16 (1.04 to 1.29)	

* A comprehensive portal user was one who used eight or more Full-Tech functions.

† Adjusted for frequency of use prior to study enrollment.