CPOE-ENABLED COORDINATION: APPROPRIATION FOR DEEP STRUCTURE USE AND IMPACTS ON PATIENT OUTCOMES

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Appendix A

Formulating Patient Care Teams and Managing the Survey Process

We followed a systematic and rigorous procedure as described below to meaningfully map the care team for each patient and to administer the surveys to the clinicians.

Step 1: Obtaining Patient Satisfaction Survey for a Visit to the Hospital
We obtained a total of 2,475 patient satisfaction surveys, with each survey having a unique visit ID. These data were provided to us by the third-party administrator of patient satisfaction surveys for the hospitals.

Step 2: Extracting CPOE Order Data to Match the Patient Satisfaction Surveys
Using the unique patient visit ID contained in the patient satisfaction survey, the Chief Medical Information Officer (CMIO) retrieved from the clinical archival data all CPOE orders placed on behalf of the patient during their stay, resulting in a total of 370,000 unique orders. Data elements included date timed stamped description of the order, the clinician name and occupation code (MD, RN, PA), and the responsible physician.

Step 3: Extracting Documentation and Diagnosis Codes
For each patient visit ID, the CMIO extracted all nursing and physician documentation entries, resulting in a total of 300,000 unique records. These data included vital signs, medication orders, progress notes, and discharge orders, as well as admitting, secondary, and discharge diagnosis codes (problem lists).

Step 4: Associating and Validating a Patient Record with a Medical Condition
Order set and documentation entries were organized by patient visit IDs which were then counted according to order sets for conditions. Final confirmation of the patient condition was determined by the admitting and discharge diagnosis codes.

Step 5: Selecting Patient Conditions
Our sampling included both high and low patient mortality risk conditions. We focused on patient conditions in which there would be maximal variance in the composition of the teams caring for such patients. This was done in order to avoid having to ask clinicians to complete multiple surveys. We ultimately selected the following patient conditions: high mortality risk (organ transplant, cardiovascular surgery, and pneumonia); low mortality risk (knee/hip replacement and vaginal birth).

Step 6: Determining Clinicians with Direct Contact with a Patient and Consequently Members of the Patient Care Team
Our objective was to include those clinicians on a patient care team who had direct contact with the patient during their hospitalization. The likelihood of direct contact was assessed using appropriate role-based criteria that were determined in consultation with hospital representatives. This assessment procedure, as described below, was identically implemented across each patient condition.

All orders and documentation entries were summarized by patient, and then by clinician associated with the patient.

From the CPOE order set detail, the identified responsible physician was included as a team member.

Other clinicians associated with a patient care team were determined based on documentation entries made by a clinician. We considered documentation entries made by a clinician as more indicative of direct contact of the clinician with a patient in the patient's care process, compared to a clinician simply entering an order into the CPOE system on behalf of the responsible physician. We use this heuristic as documentation entries by the clinician were more apt to require a bedside visit, thus additional physicians, as well as mid-level clinicians (PA, NP, CNM) who made documentation entries were included as clinicians in the patient care team. Nurses (RN, LPN), who are more apt to make routine entries on behalf of other team members than an MD or PA, were included on a team with a documentation entry, and any combination of entries to the documentation and CPOE order system exceeding two entries.

Other clinicians, such as pharmacists, anesthesiologists, and dieticians, who provided services across a broad range of patient conditions were also identified through the order and documentation entries. However, these clinicians were only identified in a few instances and were not included in a patient care team.

Therefore, the care team that was identified for a patient was comprised of the responsible physician, and other physicians, mid-levels, and nurses that would have most likely presented themselves at the patient bedside throughout the patient stay.

Step 7: Assigning a Clinician to a Survey for One of the Patient Conditions
This step focused on ensuring that a clinician was assigned to complete a survey for one patient condition. Although most clinicians mapped to one patient condition, there were clinicians who cared for multiple patient conditions. This was especially true for float pool, pre-admission testing, and pre-op/post-anesthetic care unit (PACU) nurses. Nurses that had cared for patients in multiple conditions were assigned to complete a survey for one condition based on a careful consideration of the volume of patients and the patient condition.

Step 8: Validation Process
Throughout the team formation process, input was sought from the CMIO, Chief Medical Officers, Chief Nursing Officers, and Nursing Management. A final review of the team creation process was completed with the CMIO, and cross-validation using separate archival data was performed on a sample of teams. Through the cross-validation, the CMIO was satisfied with the representation of the patient care teams and the rigor associated with the process. While nurses such as RN's and LPN's were included as team members, the inclusion of clinical partners whose role on the units were more administrative than fully trained nurses, required additional discussion with nurse management. Through the discussion, the nurse managers felt strongly that the role of clinical partners should be excluded from the study, as they were not sufficiently trained to understand the features embedded in the system, or make alterations to the clinical care processes.

Step 9: Managing the Survey Process
Once each clinician was assigned to one patient condition, additional information for each clinician and patient team (e.g., clinician hospital unit assignment, patient team size, number of patient care teams for each clinician, date of first survey request, survey completion date, date that the clinician was excluded from the study for reasons such as the clinician not being employed at the hospital anymore) was integrated to facilitate the progression of survey data collection process. This additional information was useful in tracking overall response rates and progress towards obtaining at or above an 80% response rate for each team. The survey collection process began in the third week of October 2012 after the pre-tests and the team formation process.

Appendix B

Control Variables

Construct	Definition And Informing Sources	Measurement Approach
Team Average Age	Average age of individuals in a patient care team (Morris and Venkatesh 2000; Venkatesh et al. 2003)	• Clinician survey (single-item measure) • Mean of age of team members
Perceived Usefulness	The degree to which a patient care team believes that system use would enhance team performance (Davis 1989; Salisbury et al. 2002; Venkatesh et al. 2003)	• Clinician survey (three-item reflective measure) • Aggregation through direct consensus
Perceived Ease of Use	The degree to which a patient care team believes that use of a system will be free of effort (Davis 1989; Salisbury et al. 2002; Venkatesh et al. 2003)	• Clinician survey (six-item reflective measure) • Aggregation through direct consensus
Hospital PATSAT	Mean of PATSAT across patient care teams at hospital	• Third-party administered patient survey (three-item reflective measure)
Length of Stay	Length of stay for a patient associated with a care team; *length of stay = actual inpatient length of stay in relation to the standard protocols for the patient condition*	• Archival data from hospital (patient length of stay)
Team Size	Number of clinicians, including physicians and nursing staff that are part of the patient care team	• Computed using archival data from hospital
Team Physician Proportion	Ratio of physicians to other clinicians (e.g., nurse, mid-level) on a team	• Computed using archival data from hospital
Cross-Nesting Index	For each individual clinician in our sample, we calculated the number of teams (patients) that they represented. Then, for each team we calculated the average number of teams that its team members were part of.	• Computed using archival data from hospital

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Appendix C

Loadings and Cross-Loadings of Multi-Item Measures ▮▮▮▮▮▮

Construct	Item	High Mortality Risk Patients					Low Mortality Risk Patients				
		COA	EOU	FOA	PATSAT	USFL	COA	EOU	FOA	PATSAT	USFL
COA	COA3	**0.944**	0.520	0.749	0.056	0.669	**0.936**	0.325	0.604	-0.177	0.234
	COA4	**0.970**	0.469	0.738	0.003	0.633	**0.964**	0.327	0.626	-0.126	0.272
	COA5	**0.938**	0.409	0.794	0.030	0.589	**0.933**	0.303	0.608	-0.195	0.261
EOU	EOU2	0.432	**0.949**	0.362	-0.144	0.615	0.287	**0.915**	0.314	-0.079	0.607
	EOU3	0.523	**0.971**	0.451	-0.126	0.579	0.309	**0.931**	0.353	-0.114	0.676
	EOU4	0.449	**0.956**	0.374	-0.107	0.528	0.334	**0.937**	0.407	-0.085	0.646
FOA	FOA2	0.700	0.301	**0.904**	0.011	0.518	0.595	0.282	**0.920**	-0.079	0.349
	FOA3	0.727	0.410	**0.916**	0.041	0.630	0.427	0.402	**0.808**	-0.131	0.427
	FOA4	0.727	0.385	**0.953**	-0.018	0.537	0.596	0.396	**0.935**	-0.131	0.408
	FOA5	0.814	0.438	**0.941**	0.044	0.616	0.646	0.267	**0.796**	-0.058	0.289
PATSAT	OA2	0.053	-0.17	-0.03	**0.827**	-0.08	-0.09	-0.086	-0.05	**0.897**	-0.16
	OA3	0.020	-0.11	0.005	**0.955**	-0.07	-0.18	-0.09	-0.01	**0.914**	-0.14
	OA4	0.027	-0.10	0.066	**0.953**	0.010	-0.22	-0.096	-0.18	**0.913**	-0.16
USFL	USFL1	0.595	0.526	0.586	-0.084	**0.950**	0.255	0.630	0.453	-0.144	**0.935**
	USFL2	0.627	0.482	0.568	0.031	**0.964**	0.259	0.698	0.364	-0.135	**0.932**
	USFL3	0.676	0.582	0.647	-0.020	**0.971**	0.262	0.640	0.409	-0.196	**0.932**
	USFL4	0.637	0.703	0.577	-0.115	**0.939**	0.231	0.623	0.360	-0.164	**0.925**

Notes:
1. COA = Consensus on Appropriation; EOU = Team Perceived Ease of Use; FOA = Faithfulness of Appropriation; PATSAT = Patient Satisfaction with Care Team; USFL= Team Perceived Usefulness.
2. Communicative Coordination, Team Deep Structure Use, and Informating the Patient are formative constructs that were measured as composite indexes of their respective measurement items. Accordingly, the measurement items of these constructs are not included in this analysis.

Appendix D

Measurement Invariance and Common Method Bias Analysis ▉▉▉▉

Measurement Invariance: In order to compare low and high mortality risk patient condition groups, it was necessary to drop certain items to establish measurement invariance. For the perceived usefulness and perceived ease of use constructs, we deleted the problematic items which included productivity and mental effort in their stem. Similarly, some of the appropriation measures, including "The developers would agree with how our team used the system" and "There was no conflict on our team with respect to the CPOE system," accentuated measurement variance, and were subsequently deleted. The trimmed measures resulted in improved construct validity, higher AVE scores, and improved measurement invariance, without substantially changing content validity of the affected constructs. The loadings of these measures across groups are shown in the table below.

Measure	Low Mortality Risk	High Mortality Risk
FOA2	.920	.904
FOA3	.808	.916
FOA4	.935	.953
FOA5	.796	.941
COA3	.936	.944
COA4	.964	.969
COA5	.933	.938
EOU2	.915	.949
EOU3	.931	.971
EOU4	.937	.956
USFL1	.935	.950
USFL2	.932	.964
USFL3	.932	.970
USFL4	.925	.939
PATSAT1	.897	.827
PATSAT2	.914	.955
PATSAT3	.913	.952

Common Method Bias Analysis: Common method bias is considered a significant threat to construct validity, resulting from the simultaneous measurement of the dependent and independent variables with the same instrument (Podsakoff et al. 2003). We rely on clinician surveys for the independent variables and a third-party patient satisfaction survey for the dependent variable. Therefore, the independent and dependent variables are collected separately from two instruments, as well as from a completely different set of respondents, thereby eliminating the principal source of common method bias. Additionally, as per recommended procedures, we evaluated the correlations among the study constructs by conducting a marker variable analysis (Malhotra et al. 2006). We identified the lowest and second lowest correlation variables that were collected during the survey process.   Adjusting for and , the correlations among the study variables did not change at the second decimal level, nor was there a change in significance level. The average correlation change for was -.00110, and for .00116, indicating that common method bias is not a concern with our data.

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Appendix E

Correlation Matrix by Patient Mortality Risk Group

	AGE	COA	EOU	EXP	FOA	HOSP	LOS	IP	PATSAT	RC5	RC6	RC7	CC	TPP	DSU	SIZE	USFL
AGE	**1\1**	0.11	0.10	0.38	0.19	NA	0.03	-.06	0.00	-0.13	0.10	0.04	0.10	0.19	0.04	0.11	0.28
COA	0.2	**0.95\ 0.89**	0.34	0.08	0.65	NA	-0.02	-.17	-0.18	0.27	0.29	0.26	0.37	0.05	0.49	0.00	0.27
EOU	0.07	0.49	**0.96\ 0.86**	0.21	0.39	NA	0.12	-.05	-0.10	-0.01	0.05	-0.07	0.06	0.36	0.43	0.23	0.69
EXP	0.33	0.11	-0.20	**1\1**	-0.04	NA	0.14	-.10	-0.02	-0.09	0.08	0.05	-0.11	0.25	-0.08	0.24	0.33
FOA	0.18	0.80	0.42	0.09	**0.93\ 0.75**	NA	0.08	-.06	-0.12	0.47	0.36	0.29	0.51	0.20	0.70	0.15	0.43
HOSP	0.15	-0.16	-0.43	0.63	-0.18	**1\NA**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LOS	-0.07	-0.28	-0.21	0.06	-0.21	0.28	**1.00**	-.29	-0.20	-0.08	-0.07	-0.10	-0.05	0.36	0.05	0.74	0.16
IP	-.00	.09	-.12	.05	.04	.06	-.03	**1\1**	.74	-.05	.06	.04	.02	-.31	-.09	-.30	-.09
PATSAT	0.03	0.04	-0.14	0.04	0.02	0.12	-0.12	**.73**	**0.91\ 0.83**	-0.10	0.00	-0.03	-0.02	-0.21	-0.11	-0.18	-0.17
RC5	0.00	0.41	0.18	-0.02	0.43	-0.22	-0.17	.07	0.09	**1\1**	0.58	0.53	0.46	-0.04	0.42	0.00	0.11
RC6	0.10	0.46	0.22	0.16	0.51	0.03	-0.23	.13	0.14	0.61	**1\1**	0.67	0.60	-0.08	0.21	-0.04	0.22
RC7	0.15	0.48	0.04	0.31	0.48	0.21	-0.24	.21	0.16	0.41	0.73	**1\1**	0.61	-0.11	0.21	-0.08	0.12
CC	0.07	0.38	0.31	0.19	0.36	0.09	-0.27	.18	0.28	0.30	0.61	0.56	**1\1**	0.01	0.45	-0.04	0.17
TPP	-0.08	-0.44	-0.21	0.16	-0.43	0.36	0.44	.01	0.04	-0.39	-0.50	-0.46	-0.39	**1\1**	0.36	0.64	0.30
DSU	0.28	0.60	0.32	0.30	0.64	0.09	-0.23	.11	0.17	0.33	0.58	0.63	0.62	-0.39	**1\1**	0.14	0.52
SIZE	-0.08	-0.30	-0.10	0.10	-0.26	0.27	0.89	-.00	-0.08	-0.25	-0.33	-0.34	-0.25	0.60	-0.27	**1\1**	0.22
USFL	0.31	0.66	0.60	0.06	0.62	-0.15	-0.21	-.04	-0.05	0.23	0.42	0.31	0.41	-0.40	0.60	-0.21	**0.96\ 0.87**

Notes

1. Above diagonal represents Low Mortality Risk group (n = 126); below diagonal represents High Mortality Risk group (n = 98).
2. Square root of AVE on diagonal for high\low mortality group; AVE (high group)\AVE(low risk group).
3. Age = Team members' average age (in years); COA = Consensus on Appropriation; EOU = Team Perceived Ease of Use; EXP = Team Average Experience with CPOE; FOA = Faithfulness of Appropriation; HOSP = Hospital Control; LOS = Patient Length of Stay; IP = Informating the Patient; PATSAT = Patient Satisfaction with Care Team; RC5 = Clinician Shared Knowledge; RC6 = Clinician Mutual Respect ; RC7 = Clinician Shared Goals; CC = Team Communicative Coordination; TPP = Team Physician Proportion; DSU = Team Deep Structure Use of CPOE; Size =Patient Care Team Size; USFL = Team Perceived Usefulness

Appendix F

Measurement Items for Constructs

Construct/ Type of Scale Used	Measurement Items	Informing Sources
Faithfulness of Appropriation 7-point Likert scale: 1 = Extremely unlikely 7 = Extremely Likely	(1) The developers of the CPOE system would agree with how our patient care team used the system.* (2) Our patient care team used the CPOE system properly. (3) The original developers of the CPOE system would view our patient care team's use of the system as appropriate. (4) Our patient care team used the CPOE system as it should have been used. (5) Our patient care team used the CPOE system in the most appropriate fashion.	Chin et al. 1997 DeSanctis and Poole 1994 Salisbury et al. 2002
Consensus on Appropriation 7-point Likert scale: 1 = Strongly disagree 7 = Strongly Agree	(1) Our patient care team was able to reach consensus on how to apply CPOE to coordinate patient care.* (2) There was no conflict in our patient care team regarding how we should incorporate the CPOE system to coordinate care.* (3) Our patient care team reached mutual understanding on how we should use CPOE to coordinate care. (4) Our patient care team was able to reach consensus on how we should use CPOE to coordinate care. (5) Overall, our patient care team agreed on how we should use CPOE to coordinate patient care.	DeSanctis and Poole 1994 Salisbury et al. 2002
Deep Structure Use 7-Point Likert scale: 1 = Strongly Disagree 7 = Strongly Agree	(1) <u>Including the responsible physician</u>, our patient care team directly entered CPOE medication orders for ___percent of unique patients. (2) Our patient care team ensures that ____ percent of all patients had at least one diagnosis entry. (3) <u>Including the responsible physician</u>, our patient care team consistently utilized the <u>drug-drug</u> interaction alerts provided by the CPOE system as a prompt to find safer alternatives. (4) Including the responsible physician, our patient care team consistently utilized <u>drug-allergy</u> interaction alerts provided by the CPOE system as a prompt to find safer alternatives. (5) Including the responsible physician, our patient care team consistently used CPOE to update and monitor real time patient status such as vital signs, medication orders, and lab results. (6) Including the responsible physician, our patient care team consistently used CPOE for clinical decision support—such as advice on medical conditions like sepsis, or for drug prescribing. (7) Including the responsible physician, our patient care team consistently used progress notes to update other team members on the care of our patients. (8) Our patient care team consistently used the standard CPOE order sets in the care of our patients, unless patient conditions prompted changes to standard protocols.	Burton-Jones and Straub 2006 DeSanctis and Poole 1994
Communicative Coordination 5 point Likert scale: 1 = Never 5 = Always	(1) How <u>frequently</u> do the following types of care providers on your team communicate with you about patients? Physicians, Nurses (2) Do the following types of care providers on your team communicate with you in a <u>timely</u> way about patients? Physicians, Nurses (3) Do the following types of care providers on your team communicate with you <u>accurately</u> about patients? Physicians, Nurses (4) When problems arise regarding the care of patients, do the following types of care providers on your team work with you *to solve the problem*? Physicians, Nurses	Gittell 2002 Gittell et al. 2010
Informating the Patient 5 Point Likert scale: 1 = Very Poor 5 = Very Good	(1) How well did the nurses keep you informed? (2) How well did the physician keep you informed?	Third-party provider patient survey
Patient Satisfaction 5 Point Likert scale: 1 = Very Poor 5 = Very Good	(1) Overall rating of your care at the hospital. (2) How well did the staff *work together* to care for you? (3) Likelihood of you recommending the hospital to others.	Third-party provider patient survey

*Denotes items that were dropped.

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Appendix G

Measurement Items for Controls

Construct/ Type of Scale Used	Measurement Items	Informing Sources
Perceived Usefulness 7 point Likert where: 1 = Extremely likely 7 = Extremely unlikely	(1) Using CPOE enables me to improve patient care and management. (2) Using CPOE improves my performance with respect to patient care. (3) Using CPOE enhances my effectiveness with respect to patient care. (4) Using CPOE makes it easier to carry out patient care. (5) I find CPOE useful for coordinating patient care* (6) Using CPOE increases my productivity with respect to patient care*	Davis 1989 Salisbury et al. 2002 Venkatesh et al. 2003
Perceived Ease of Use 7 point Likert where: 1 = Extremely likely 7 = Extremely unlikely	(1) Interacting with the CPOE system does not require a lot of my mental effort.* (2) I *find* it easy to get the CPOE system to do what I *want* it to do. (3) I *find* interaction with the CPOE system clear and understandable. (4) I *find the CPOE system* easy to use.	Davis 1989 Salisbury et al. 2002 Venkatesh et al. 2003
Age	In what year were you born? (enter 4-digit birth year; for example, 1976)	Morris and Venkatesh 2000 Venkatesh et al. 2003
Gender	Are you male or female?	Venkatesh et al. 2003 Venkatesh et al. 2000
Experience	The go-live date for CPOE at Hospital A was 11/01/2003 and at Hospital B was 02/01/2007. I have been using CPOE since _____	Davis et al. 1989 Venkatesh et al. 2003
Team Physician Proportion	Which best describes your role at the hospital? Nurse, Nurse Practitioner, Physician Assistant, Physician Computed based on the survey item above as the ratio of physicians to other clinicians (e.g., nurse, mid-level) on a team	
Shared Knowledge 5 point Likert where: 1 = Nothing 5 = Everything	How much do the following types of care providers on your team <u>know about your role</u> in caring for patients? Physicians: Nurses:	Gittell 2002 Gittell et al. 2010
Mutual Respect 5 point Likert where: 1 = Not at all 5 = Completely	How much do the following types of care providers on your team <u>respect the role you play</u> in caring for patients? Physicians: Nurses:	Gittell 2002 Gittell et al. 2010
Shared Goals 5 point Likert where: 1 = Not at all 5 = Completely	How much do the following types of care providers on your team <u>share your goals</u> for the care of patients? Physicians: Nurse:	Gittell 2002 Gittell et al. 2010

*Denotes items that were dropped

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Appendix H

Robustness Analysis with Inclusion of Cross-Nesting Index ▮▮▮▮▮

Main Effects			Low Mortality Risk Without CNI	Low Mortality Risk with CNI	High Mortality Risk Without CNI	High Mortality Risk with CNI
β1: FOA	→	DSU	.442 (.088) ***	.409 (.085) ***	.349 (.112) ***	.389 (.10) ***
β2: COA	→	DSU	.151 (.090) *	.161 (.086) *	.027 (.122) NS	-.022 (.116) NS
β3: COA	→	FOA	.649 (.052)***	.651 (.050)***	.801(.031) ***	.797 (.032) ***
β4: DSU	→	PATSAT	-.025 (.072) NS	-.024 (.072) NS	.061 (.102) NS	.049 (.102) NS
β5: DSU	→	CC	.453 (.071) ***	.438 (.069) ***	.622 (.064) ***	.629 (.067) ***
β6: CC	→	IP	.018 (.071) NS	.085 (.080) NS	.213 (.128) **	.210(.13) *
β7: IP	→	PATSAT	.754(.066) ***	.755(.067) ***	.720 (.070)***	.719(.07)***
β8: CC	→	PATSAT	.017(.083) NS	.015 (.083) NS	.178(.105)**	.189 (.108) **
FOA R²			.421	.422	.641	.644
DUS R²			.632	.666	.557	.603
CC R²			.205	.286	.387	.388
IP R²			.112	.143	.039	.039
PATSAT R²			.562	.562	.583	.585
Controls						
AGE	→	DSU	-.125 (.078) NS	-.097 (.077) NS	.022 (.060) NS	.006 (.06) NS
EXP	→	DSU	-.186 (.069) ***	-.091 (.069) NS	.272 (.078) ***	.141 (.085) NS
TPP	→	DSU	.249 (.072) ***	.331(.074) ***	-.155 (.091) *	-.208 (.078) **
EOU	→	DSU	-.095 (.065) NS	.004 (.080) NS	.024 (.094) NS	.151 (.099) NS
USFL	→	DSU	.373 (.084) ***	.324 (.091) ***	.267 (.109) ***	.220 (.097) **
SIZE	→	PATSAT	.092 (.127) NS	.099 (.103) NS	-.060 (.163) NS	.-.049 (.161) NS
LOS	→	PATSAT	-.054 (.104) NS	-.086 (.093) NS	-.07 (.164) NS	-.067 (.157) NS
RC5	→	PATSAT	-.038 (.071) NS	-.041 (.075) NS	.079 (.095) NS	.077 (.092) NS
RC6	→	PATSAT	-.011 (.096) NS	-.011 (.102) NS	-.026 (.119) NS	-.024 (.117) NS
RC7	→	PATSAT	-.036 (.105) NS	-.038 (.110) NS	-.213 (.163) NS	-.214 (.155) NS
HOSP	→	PATSAT	NA	NA	.155(.092) *	.082 (.183) NS
CNI	→	FOA	NA	-.024(.062) NS	NA	-.058(.058) NS
CNI	→	DSU	NA	-.258(.085) ***	NA	.299(.09)***
CNI	→	CC	NA	-.285(.071) ***	NA	-.034(.08) NS
CNI	→	IP	NA	.212(.115) *	NA	.017 (.094) NS
CNI	→	PATSAT	NA	-.015(.057) NS	NA	.079 (.158) NS

Notes:
(a) All hypotheses were supported with the inclusion of CNI was a control.
(b) Standardized coefficients are reported. ***p < .01, **p < .05, *p < .10, NS: Not significant.
(c) We evaluated the robustness to the inclusion of the interaction effect of CNI with each of the theorized predictors. We found all hypotheses to be supported and only nominal changes to the path coefficients and standard errors. All but one interaction was nonsignificant (CC × CNI → IP for low mortality group, p < .1).
(d) P values for main effects are theorized and use one-tailed tests, two-tailed tests used for controls.
(e) AGE = Team members' average age (in years); CC = Communicative Coordination; COA = Consensus on Appropriation; EOU = Team Perceived Ease of Use; EXP = Team Average Experience with CPOE; FOA = Faithfulness of Appropriation; HOSP PATSAT grand mean for patient care teams at a hospital; LOS = Patient Length of Stay; IP = Informating the Patient; CNI = Cross-Nesting Index; PATSAT = Patient Satisfaction with Care Team; RC5= Clinician Shared Knowledge; RC6 = Clinician Mutual Respect ; RC7 = Clinician Shared Goals; TPP = Team Physician Proportion; DSU = Team Deep Structure Use of CPOE; Size = Patient Care Team Size; USFL= Team Perceived Usefulness.