ONLINE SUPPLEMENTARY APPENDIX:

1) Hospitals participating in the Hospital Medicine Reengineering Network (HOMERuN)

Hospitals participating in the Hospital Medicine Reengineering Network (HOMERuN):

Brigham and Women's Hospital, Boston MA

Beth Israel Deaconness Medical Center, Boston MA

Baystate Medical Center, Springfield MA

Hospital of the University of Pennsylvania, Philadelphia PA

Christiana Care Health System, Wilmington DE

Vanderbilt University Medical Center, Nashville TN

University of Michigan Health System, Ann Arbor MI

University of Chicago Hospitals, Chicago IL

Northwestern University Hospital, Chicago IL

Harborview Hospital, Seattle WA

California-Pacific Medical Center San Francisco CA

San Francisco General Hospital, San Francisco CA

Moffitt-Long Hospital, San Francisco CA

Appendix Table 1. PCP, Discharging Physician, and Readmitting Physician Perceptions Regarding Potential Strategies to Prevent Readmission Using a Higher Threshold to Define Endorsement of a Strategy

	PCP n = 305		Disch n = 642		Admit n = 694		Concordance		
							PCP-Disch n = 190	PCP-Admit n = 212	Admit-Disch n = 440
	n	%*	n	%*	n	%*	κ	κ	κ
Improved self-management plan at discharge	66	(22)	98	(15)	109	(16)	0.03	0.21	0.09
Greater engagement of home and community supports	72	(24)	93	(14)	110	(16)	0.03	0.12	0.11
Provision of resources to manage care and symptoms after discharge	58	(19)	89	(14)	114	(16)	-0.05	0.15	0.05
Improved discharge planning	51	(17)	38	(6)	66	(10)	0.03	0.11	0.16
Improved coordination of care between inpatient and outpatient providers	49	(16)	53	(8)	74	(11)	0.02	0.03	0.03
More complete communication of information	25	(8)	21	(3)	27	(4)	-0.06	0.02	0.10
Improved attention to medication safety	29	(10)	21	(3)	39	(6)	0.06	0.22	0.12
Improved clarity, timeliness, or availability of information provided at discharge	30	(10)	9	(1)	22	(3)	0.16	-0.07	-0.01
Average κ	N/A		N/A		N/A		0.03	0.10	0.08

Abbreviations: Disch = discharging physician, Admit = readmitting physician.

*n represents the number reporting "slightly more than 50-50," "strongly probable," or "nearly certain."

Appendix Table 2. PCP, Discharging Physician, and Readmitting Physician Perceptions Regarding Factors Contributing to Readmission in Subgroup of Patients with Complete Survey Data (n=155)[*]

	PCP		Disch		Admit		Concordance		
							PCP-Disch	PCP-Admit	Admit-Disch
	n	%	n	%	n	%	κ	κ	κ
Patient Understanding and Ability to Self-Manage	**92**	**(59)**	**81**	**(52)**	**83**	**(54)**	**0.39**	**0.39**	**0.38**
Patient or caregiver inability to manage his/her symptoms	66	(43)	60	(39)	60	(39)			
Patient or caregiver inability to otherwise care/provide care	38	(25)	30	(19)	32	(21)			
Patient or caregiver inability to manage his/her medications	22	(14)	27	(17)	23	(15)			
Patient or caregiver lack of understanding of the post-discharge plan	12	(8)	10	(6)	15	(10)			
Insufficient or ineffective patient or caregiver education	10	(6)	4	(3)	10	(6)			
Continuity of Care and Provider Communication	**62**	**(40)**	**32**	**(21)**	**37**	**(24)**	**0.09**	**0.06**	**0.05**
Inability of the patient to keep the follow-up appointment or follow-up studies	28	(18)	12	(8)	13	(8)			
Insufficient communication with post-acute care providers re:post-discharge plan	22	(14)	3	(2)	5	(3)			
Insufficient monitoring of the patient's condition(s) after discharge	18	(12)	11	(7)	21	(14)			
Failure to obtain an appropriately timely follow-up appointment or follow-up studies	7	(5)	12	(8)	8	(5)			
Discharge summary unavailable in timely manner	6	(4)	1	(1)	0	(0)			
Discharge summary poorly written or with missing or erroneous information	4	(3)	1	(1)	0	(0)			
Problems with Index (Initial) Admission	**36**	**(23)**	**20**	**(13)**	**32**	**(21)**	**0.23**	**0.02**	**0.13**
Discharged from the hospital too soon	17	(11)	9	(6)	10	(6)			
Inappropriate/inadequate treatment of the patient	16	(10)	4	(3)	13	(8)			
No or inadequate end of life or goals of care planning	6	(4)	5	(3)	7	(5)			
Misdiagnosis	4	(3)	4	(3)	8	(5)			
Absent, erroneous, or incomplete medication reconciliation	2	(1)	0	(0)	0	(0)			
Social Supports	**35**	**(23)**	**24**	**(15)**	**31**	**(20)**	**0.23**	**0.15**	**0.32**
Inadequate support for non-clinical issues	18	(12)	15	(10)	13	(8)			
Inadequate home services or equipment after discharge	12	(8)	8	(5)	14	(9)			
Inappropriate choice of discharge destination	10	(6)	8	(5)	8	(5)			
Problems with Triage after Index (Initial) Discharge	**8**	**(5)**	**11**	**(7)**	**10**	**(6)**	**0.16**	**0.41**	**0.34**
Patient inappropriately went/sent to ED or inappropriately readmitted from ED	8	(5)	11	(7)	10	(6)			
Average κ	N/A		N/A		N/A		**0.22**	**0.21**	**0.24**

Abbreviations: Disch = discharging physician, Admit = readmitting physician.

[*]Section headings represent major categories, reflecting selection of at least one individual sub-item.

Appendix Table 3. PCP, Discharging Physician, and Readmitting Physician Perceptions Regarding Potential Strategies to Prevent Readmission in Subgroup of Patients with Complete Survey Data (n=138)[*]

	PCP		Disch		Admit		Concordance		
							PCP-Disch	PCP-Admit	Admit-Disch
	n	%*	n	%*	n	%*	κ	κ	κ
Improved self-management plan at discharge	82	(59)	61	(44)	75	(54)	0.22	0.19	0.23
Greater engagement of home and community supports	78	(57)	57	(41)	61	(44)	0.08	0.21	0.20
Provision of resources to manage care and symptoms after discharge	79	(57)	59	(43)	69	(50)	0.26	0.30	0.13
Improved discharge planning	58	(42)	39	(28)	45	(33)	0.08	0.03	0.08
Improved coordination of care between inpatient and outpatient providers	48	(35)	36	(26)	47	(34)	0.12	0.05	0.06
More complete communication of information	50	(36)	35	(25)	38	(28)	0.04	-0.12	0.05
Improved attention to medication safety	43	(31)	20	(14)	30	(22)	0.07	0.17	0.13
Improved clarity, timeliness, or availability of information provided at discharge	44	(32)	28	(20)	25	(18)	0.15	0.04	0.04
Average κ	N/A		N/A		N/A		0.13	0.11	0.11

Abbreviations: Disch = discharging physician, Admit = readmitting physician.

[*]n represents the number reporting anything other than "no probability" of preventing readmission (i.e. slightly probable, slightly less than 50-50, slightly more than 50-50, strongly probable, nearly certain).

PCP Survey

HOMERUN Primary Care Provider Survey

Dear Reviewer,

Thank you for taking this survey and being a part of the HOMERUN study. Please refer to the email containing the link to this survey to remind you of the patient to whom it refers. If you have any questions about the survey, please do not hesitate to email us.

The HOMERUN Transitions of Care Research Team

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1) Were you aware that your patient was readmitted to the hospital on the date indicated? ☐ Yes ☐ No

2) Did you have any contact with the patient, family/caregivers, between the previous admission and this readmission?

☐ Office visit ☐ Phone call ☐ Email ☐ No contact with patient between admissions

In your opinion, which of the following factors may have contributed to the readmission? (CHECK ALL THAT APPLY)

3) PATIENT UNDERSTANDING AND ABILITY TO SELF-MANAGE

- ☐ Patient or caregiver lack of understanding of the post-discharge plan
- ☐ Patient or caregiver inability to manage his/her medications
- ☐ Patient or caregiver inability to manage his/her symptoms
- ☐ Patient inability to otherwise care for him/herself or caregiver's inability to otherwise provide care
- ☐ Insufficient or ineffective patient or caregiver education

4) CONTINUITY OF CARE AND PROVIDER COMMUNICATION

- ☐ Failure to involve you sufficiently in the development of the post-discharge plan
- ☐ Discharge summary unavailable in a timely manner
- ☐ Discharge summary poorly written or with missing or erroneous information
- ☐ Lack of verbal communication with you re: follow-up plans
- ☐ Failure to obtain an appropriately timed follow-up appointment or follow-up studies
- ☐ Inability of the patient to keep the follow-up appointment or follow-up studies
- ☐ Insufficient monitoring of the patient's condition(s) after discharge

5) SOCIAL SUPPORTS

- ☐ Inappropriate choice of discharge destination
- ☐ Inadequate support for non-clinical issues (such as food, heat, transportation, or ability to afford medications)
- ☐ Inadequate home services or equipment after discharge

6) PROBLEMS WITH INDEX (INITIAL) ADMISSION

- ☐ Misdiagnosis made during the index admission
- ☐ Inappropriate/inadequate treatment of the patient during the index admission
- ☐ Discharged from the hospital too soon after index admission
- ☐ Absent, erroneous, or incomplete medication reconciliation
- ☐ No or inadequate end of life or goals of care planning

7) PROBLEMS WITH TRIAGE AFTER INDEX (INITIAL) DISCHARGE

- ☐ Patient inappropriately went/sent to ED or inappropriately readmitted from ED

How probable do you think each of these potential types of interventions might have been in preventing this readmission?

8) More complete communication of information (e.g. tests or appointments to be completed after discharge)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

9) Improved clarity, timeliness or availability of information provided at discharge

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

10) Improved self-management plan at discharge (e.g. patient-centered discharge instructions, transition coaches)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

11) Provision of resources to manage care and symptoms after discharge (e.g. telephone monitoring of body weight)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

12) Greater engagement of home and community supports (e.g. enlisting help of community agencies)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

13) Improved discharge planning (e.g. appointments scheduled in advance)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

14) Improved coordination of care between inpatient and outpatient providers (e.g. shared medical records)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

15) Improved attention to medication safety (e.g. medication reconciliation)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

16) In addition to the previous categories, is there anything else you think contributed to this readmission?

17) Would you be surprised if the patient died within the next 6-12 months?

- ☐ Yes
- ☐ No

Discharging Physician Survey

HOMERUN Discharging Physician Survey

Dear Reviewer,

Thank you for taking this survey and being a part of the HOMERUN study. Please refer to the email containing the link to this survey to remind you of the patient to whom it refers. Feel free to talk about the case with your own residents or the discharging case coordinator or social worker. If you have any questions about the survey, please do not hesitate to email us.

The HOMERUN Transitions of Care Research Team

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1) Were you aware that your patient was readmitted to the hospital on the date indicated? ☐ Yes ☐ No

In your opinion, which of the following factors might have contributed to the readmission? (CHECK ALL THAT APPLY)

2) PATIENT UNDERSTANDING AND ABILITY TO SELF-MANAGE

☐ Patient or caregiver lack of understanding of the post-discharge plan
☐ Patient or caregiver inability to manage his/her medications
☐ Patient or caregiver inability to manage his/her symptoms
☐ Patient inability to otherwise care for him/herself or caregiver's inability to otherwise provide care
☐ Insufficient or ineffective patient or caregiver education

3) CONTINUITY OF CARE AND PROVIDER COMMUNICATION

☐ Insufficient communication with post-acute care providers re: post-discharge plan
☐ Discharge summary unavailable in timely manner
☐ Discharge summary poorly written or with missing or erroneous information
☐ Failure to obtain an appropriately timely follow-up appointment or follow-up studies
☐ Inability of patient to keep the follow-up appointment or follow-up studies
☐ Insufficient monitoring of the patient's condition(s) after discharge

4) SOCIAL SUPPORTS

☐ Inappropriate choice of discharge destination
☐ Inadequate support for non-clinical issues (such as food, heat, transportation, or ability to afford medications)
☐ Inadequate home services or equipment after discharge

5) PROBLEMS WITH INDEX (INITIAL) ADMISSION

☐ Misdiagnosis made during the index admission
☐ Inappropriate/inadequate treatment of the patient during the index admission
☐ Discharged from the hospital too soon after index admission
☐ Absent, erroneous, or incomplete medication reconciliation
☐ No or inadequate end of life or goals of care planning

6) PROBLEMS WITH TRIAGE AFTER INDEX (INITIAL) DISCHARGE

☐ Patient inappropriately went/sent to ED or inappropriately readmitted from ED

How probable do you think each of these potential types of interventions might have been in preventing this readmission?

7) More complete communication of information (e.g. tests or appointments to be completed after discharge)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

8) Improved clarity, timeliness or availability of information provided at discharge

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

9) Improved self-management plan at discharge (e.g. patient-centered discharge instructions, transition coaches)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

10) Provision of resources to manage care and symptoms after discharge (e.g. telephone monitoring of body weight)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

11) Greater engagement of home and community supports (e.g. enlisting help of community agencies)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

12) Improved discharge planning (e.g. appointments scheduled in advance)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

13) Improved coordination of care between inpatient and outpatient providers (e.g. shared medical records)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

14) Improved attention to medication safety (e.g. medication reconciliation)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

15) In addition to the previous categories, is there anything else you think contributed to this readmission?

16) Would you be surprised if the patient died within the next 6-12 months?

- ☐ Yes
- ☐ No

17) Please list all the people who helped fill out this form (e.g. Attending, Resident, Intern, Case Manager, etc):

Admitting Physician Survey

HOMERUN Admitting Physician Survey

Dear Reviewer,

Thank you for taking this survey and being a part of the HOMERUN study. Please refer to the email containing the link to this survey to remind you of the patient to whom it refers. Feel free to talk about the case with your own residents or the discharging case coordinator or social worker. If you have any questions about the survey, please do not hesitate to email us.

The HOMERUN Transitions of Care Research Team

In your opinion, which of the following factors might have contributed to this readmission? (CHECK ALL THAT APPLY)

1) PATIENT UNDERSTANDING AND ABILITY TO SELF-MANAGE

- ☐ Patient or caregiver lack of understanding of the post-discharge plan
- ☐ Patient or caregiver inability to manage his/her medications
- ☐ Patient or caregiver inability to manage his/her symptoms
- ☐ Patient inability to otherwise care for him/herself or caregiver's inability to otherwise provide care
- ☐ Insufficient or ineffective patient or caregiver education

2) CONTINUITY OF CARE AND PROVIDER COMMUNICATION

- ☐ Insufficient communication with post-acute care provider(s) re: post-discharge plan
- ☐ Discharge summary unavailable in a timely manner
- ☐ Discharge summary poorly written or with missing or erroneous information
- ☐ Failure to obtain an appropriately timely follow-up appointment or follow-up studies
- ☐ Inability of the patient to keep the follow-up appointment or follow-up studies
- ☐ Insufficient monitoring of the patient's condition(s) after discharge

3) SOCIAL SUPPORTS

- ☐ Inappropriate choice of discharge destination
- ☐ Inadequate support for non-clinical issues (such as food, heat, transportation, or inability to afford medications)
- ☐ Inadequate home services or equipment after discharge

4) PROBLEMS DURING INDEX (INITIAL) ADMISSION

- ☐ Misdiagnosis made during the index admission
- ☐ Inappropriate/inadequate treatment of the patient during the index admission
- ☐ Discharged from the hospital too soon after index admission
- ☐ Absent, erroneous, or incomplete medication reconciliation
- ☐ No or inadequate end of life or goals of care planning

5) PROBLEMS WITH TRIAGE AFTER INDEX (INITIAL) DISCHARGE

- ☐ Patient inappropriately went/sent to ED or inappropriately readmitted from ED

How probable do you think each of these potential types of interventions might have been in preventing this readmission?

6) More complete communication of information (e.g. tests or appointments to be completed after discharge)

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

7) Improved clarity, timeliness or availability of information provided at discharge

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

8) Improved self-management plan at discharge (e.g. patient-centered discharge instructions, transition coaches)

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

9) Provision of resources to manage care and symptoms after discharge (e.g. telephone monitoring of body weight)

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

10) Greater engagement of home and community supports (e.g. enlisting help of community agencies)

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

11) Improved discharge planning (e.g. appointments scheduled in advance)

☐ No probability
☐ Slightly probable
☐ Slightly less than 50-50
☐ Slightly more than 50-50
☐ Strongly probable
☐ Nearly certain

12) Improved coordination of care between inpatient and outpatient providers (e.g. shared medical records)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

13) Improved attention to medication safety (e.g. medication reconciliation)

- ☐ No probability
- ☐ Slightly probable
- ☐ Slightly less than 50-50
- ☐ Slightly more than 50-50
- ☐ Strongly probable
- ☐ Nearly certain

14) In addition to the previous categories, is there anything else you think contributed to this readmission?

15) Would you be surprised if the patient died within the next 6-12 months?

- ☐ Yes
- ☐ No

16) Please list all the people who helped fill out this form (e.g. Attending, Resident, Intern, Case Manager, etc.)