Quality collaboratives and campaigns to reduce readmissions: What strategies are hospitals using?

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Abstract

Background—Reducing hospital readmissions is a national priority, and many hospitals are participating in quality collaboratives or campaigns.

Objective—To describe and compare the current use of hospital strategies to reduce readmissions in two prominent quality initiatives – STAAR (the State Action on Avoidable Rehospitalization) and H2H (Hospital-to-Home Campaign).

Design—Cross-sectional.

Methods—Web-based survey of hospitals that had enrolled in H2H or STAAR from May 2009 through June 2010, conducted from November 1, 2010 through June 30, 2011 and (n= 599, response rate of 91%). We used standard frequency analysis and multivariable logistic regression to describe differences between STAAR and H2H hospitals.

Results—Many hospitals were not implementing several of the recommended strategies. Although STAAR hospitals tended to be more likely to implement several strategies, differences were attenuated when we adjusted for region and ownership type. In multivariable models, STAAR hospitals compared with H2H hospitals were more likely to ensure outpatient physicians were alerted within 48 hours of patient discharge (63% versus 38%, P-value < 0.001), and more likely to provide skilled nursing facilities the direct contact number of the inpatient treating physician for patients transferred (53% versus 34%, P-value = 0.001). H2H hospitals were more likely to assign responsibility for medication reconciliation to nurses usually or always (80% versus 54%, P-value = 0.001) and more likely to give most or all discharged patients referrals to cardiac rehabilitation services (59% versus 41%, P-value = 0.001).

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Conclusions—Substantial opportunity for improvement exists for hospitals engaged in STAAR or H2H quality initiatives.

Keywords

Quality; readmissions; hospitalists

With U.S. hospital readmission rates within 30 days of discharge approaching 20%,[1] reducing readmissions has become a national priority. Hospitalists are frequently involved in quality improvement efforts to improve transitions from hospital to home,[2,3] and they play critical roles in implementing recommended strategies to support effective discharge transitions.[4,5] Initiatives such as Better Outcomes for Older Adults through Safe Transitions (BOOST) [6] and the adaptable Transitions Tool[7] from the Society of Hospital Medicine provide important approaches and checklists for helping hospitals improve strategies.[8]

In addition to these initiatives, multiple quality collaboratives and campaigns are underway to help hospitals reduce their readmission rates. Two of the more prominent efforts are STAAR (STate Action on Avoidable Rehospitalization) initiative,[9] a learning collaborative launched in the fall of 2009 and led by the Institute for Healthcare Improvement (IHI) and funded in part by The Commonwealth Fund, and H2H (Hospital-to-Home), a national quality campaign led by the American College of Cardiology and IHI with support of several professional associations and partners. Together, these serve more than 1,000 hospitals nationally. The STAAR initiative is a state-based collaborative that partnered with more than 500 community groups across four states selected for their diverse readmissions performance and support for improvement efforts: Massachusetts, Michigan, Washington. After July 2011, efforts expanded to include and Ohio. STAAR was designed to work with leadership at the state level including representatives from hospital associations, government payers, private payers, state governments, provider organizations, employers, and business groups. H2H, in contrast, employs a national quality campaign model and focuses on the care of patients with heart failure or acute myocardial infarction. H2H hospitals are encouraged to participate in a set of H2H Challenges, which provide hospitals with recommended strategies and tools for reducing unnecessary readmission and improve transitions of care. Each Challenge project is 6-8 months and consists of success metrics, three webinars, and one tool kit.

Although previous research has examined strategies used by hospitals enrolled in H2H,[11] we know little about strategies used by STAAR hospitals within one year of enrollment. Such data across these two prominent initiatives at baseline can provide a snapshot of strategies used prior to the major efforts to reduce readmission rates nationally and identify gaps in practice to target for improvement. Furthermore, given the distinct designs of STAAR (a state-based learning collaborative in selected regions) and H2H (an open, national campaign), future evaluations will likely compare the effectiveness of these alternative approaches for reducing readmissions.

Accordingly, we sought to describe and compare the reported use of recommended strategies to reduce readmission strategies among STAAR and H2H hospitals. Our findings provide a contemporary view of a large set of hospitals working to reduce readmissions.

Findings from this study can provide insight into the strategies used by hospitals that enrolled in a state-based learning collaborative versus a national campaign as well as document a baseline against which future improvements can be measured and evaluated.

Methods

Study Design and Sample

We conducted a national Web-based survey of all hospitals that had enrolled in H2H and/or STAAR from May 2009 through June 2010 (n=658 hospitals); the survey was conducted from November 1, 2010 through June 30, 2011 and completed by 599 hospitals (response rate of 91%). See the survey tool in the **Appendix**. To initiate contact with each hospital, we emailed the primary liaison person for the initiative at the hospital (n=594 hospitals enrolled in the H2H campaign and n=64 hospitals from Massachusetts, Michigan, and Washington enrolled in STAAR). Respondents were instructed to coordinate with other relevant staff to complete a single survey reflecting the hospital response. Of the total 658 hospitals, 599 completed the survey, for a response rate of 91%. A total of 532 of these 599 hospitals were enrolled in H2H, 55 hospitals were enrolled in STAAR, and 12 hospitals were enrolled in both STAAR and H2H. We excluded the 12 hospitals that were enrolled in both campaigns from our analysis. All research procedures were approved by the Institutional Review Board at the Yale School of Medicine.

Measures

We examined hospital strategies in 3 areas: quality improvement resources and performance monitoring, medication management, and discharge and follow up procedures. In addition, consistent with our earlier work,[10] we summarized strategies using an index of 10 specific strategies across the 3 domains. The first domain (quality improvement resources and performance monitoring) includes having a quality improvement team for reducing readmissions for heart failure or for AMI or both; monitoring the percent of patients with follow up appointments within 7 days of discharge; and monitoring 30-day readmission rates. The second domain (medication management) includes providing patient education about the purpose of each medication and any alterations to the medication list, having a pharmacist primarily responsible for conducting medication reconciliation at discharge, and having a pharmacy technician primarily responsible for obtaining medication history as part of medication reconciliation process. The third domain (discharge and follow up procedures) includes discharge processes in which patients or their caregivers receive an emergency plan, patients usually or always leave the hospital with an outpatient follow-up appointment already arranged, a process is in place to ensure the outpatient physicians are alerted to the patient's discharge status within 48 hours of discharge, and patients are called after discharge to follow up on post-discharge needs or to provide additional patient education. The summary score ranged from 0 to 10 and its items are supported by a number of studies[3,11-28] although definitive evidence on their effectiveness is lacking.

We also examined hospital characteristics including the number of staffed hospital beds, teaching status (hospital that is a member of Council of Teaching Hospitals (COTH), non-COTH teaching hospital with residency approved by the Accreditation Council for Graduate

Medical Education, and non-teaching hospital), multihospital affiliation (yes/no), and ownership (for-profit, nonprofit, or government) using data from the Annual Survey of the American Hospital Association (AHA) from 2009. We determined census regions from the U.S. Census Bureau and urban/suburban/rural location from the 2003 Urban Influence Codes. Hospital 30-day risk-standardized readmission rates (RSRRs) were derived from the most recent year of data (July 2010 to June 2011) collected by the Centers for Medicare and Medicaid Services (CMS). RSRRs were calculated using the statistical model as specified by the CMS for public reporting of 30-day RSRRs.[29,30]

Data analysis

We used standard frequency analysis to describe the sample of hospitals, the prevalence of each hospital strategy, and the distribution of summary variables, for both H2H and the STAAR hospitals. We examined the statistical significance of differences between the reported use of strategies to reduce readmissions in H2H versus STARR hospitals using logistic and linear regression, adjusted for hospital characteristics that differed significantly between the two groups in the bivariate analyses (ownership type and census region). We adjusted for hospital characteristics to isolate the independent association between the initiative (H2H or STAAR) and hospital strategies being employed. This was important given the significant differences in types of hospitals (by ownership and geographical region) in the H2H versus STAAR initiatives and reported variation of strategies used by hospital characteristics. Because hospitals completed the questionnaire at different times during the survey period, we adjusted for month of survey completion, but this variable was non-significant and hence eliminated from the final model. We employed P-value < 0.01 as our significance level to adjust for multiple comparisons conducted. This research was funded by the Commonwealth Fund, which had no influence on the methodology, findings, or interpretation. All analyses were conducted in SAS, version 9.2 (Carey, NC).

Results

Characteristics of hospital sample

Of the 587 hospitals in our sample, 55 hospitals (9%) were enrolled in STAAR and 532 hospitals (91%) were enrolled in H2H. The roles reported by respondents varied and many respondents reported having more than one role; nearly 60% were from quality management departments, 24% were from cardiology departments, 24% had other clinical roles, 17% were from case management or care coordination, and 7% reported working in non-clinical roles. Hospital characteristics are reported in Table 1.

Hospital strategies to reduce readmission rates

Many hospitals were not implementing recommended strategies at the time of enrollment. Only 52.7% of STAAR hospitals and 53.4% of H2H hospitals had a quality improvement team devoted to reducing readmissions (Table 2). Half or fewer hospitals in either initiative reported that they monitored the proportion of discharge summaries sent to the primary care physician or the percent of patients with follow-up appointments within 7 days. Less than 20% of hospitals in either initiative were monitoring readmissions to another hospital (Table 2). Most hospitals in STAAR and in H2H did not have the pharmacists responsible for

medication reconciliation, with most assigning nurses this task, and few employed a third-party database regularly for checking historical fill and current refill information (Table 3). In both initiatives, a small minority of hospitals reported that patients were always discharged with a follow up appointment already made, and less than half of hospitals had assigned someone to follow up on test results that return after the patient was discharged (Table 4).

Differences in the use of strategies by STAAR versus H2H hospitals were significant (P-values < 0.01) in unadjusted analysis for several strategies that were attenuated and non-significant after adjustment for census region and ownership type (Tables 2-4). STAAR compared with H2H hospitals were more likely to have: 1) used a multidisciplinary team to care for patients at high risk of readmission, 2) partnered with community home care agencies and/or skilled nursing facilities, 3) partnered with community physicians or physician groups, 4) partnered with other local hospitals to reduce preventable readmissions, 5) estimated risk of readmission in a formal way and use it in clinical care, 6) used teach-back techniques, and 7) used telemonitoring. In contrast, H2H hospitals were more likely than STAAR hospitals to have monitored 7-day readmission rates, and have conducted nurse-to-nurse report usually or always prior to discharge to nursing home facilities.

In multivariable analysis, STAAR and H2H hospitals differed significantly (P-values < 0.01) for 4 additional strategies. STAAR hospitals were more likely to have 1) ensured outpatient physicians were alerted within 48 hours of patient discharge, and 2) provided skilled nursing facilities the direct contact number of the inpatient treating physician for patients transferred, and H2H hospitals were more likely to have 3) assigned responsibility for medication reconciliation to nurses, and 4) referred discharged patients to cardiac rehabilitation services.

Discussion

We found that many hospitals enrolled in the STAAR or the H2H initiative were not implementing strategies commonly recommended to reduce readmission in 2010-2011, indicating substantial opportunities for improvement. The gaps were apparent among both the STAAR and the H2H hospitals. Previous literature has shown that discharged patients often do not have timely post-hospitalization follow-up visits, and that discharge summaries are infrequently complete prior to the follow-up visit.[4,19,31] Studies have also demonstrated weaknesses in the medication reconciliation process[32] and overall communication between hospital-based and primary care physicians.[33,34] Our survey adds to this existing literature by employing a more comprehensive survey of hospital strategies and reporting results for a larger, national sample of hospitals.

Encouraging the use of strategies recommended by quality initiatives is difficult for several reasons. First, the evidence base for their effectiveness is not yet solid, making it difficult for institutions to prioritize and select interventions and to foster enthusiasm for change. Second, the organizational challenges of these interventions are often substantial, requiring coordination across disciplines, departments, and settings (hospital, home, nursing facility). Third, some literature suggests[3] that multi-pronged strategies may be most effective, increasing the complexity of readmission reduction activities. Last, important financial

barriers must be overcome, including the cost of interventions as well as lost revenue from reduced readmissions. Input from hospitalists who are often critical links among inpatient and outpatient care and between patients and their families is strongly needed to ensure hospitals focus on what strategies are most effective for successful transitions from hospital to home.

The prevalence of several strategies differed between STAAR and H2H hospitals; however, these differences were largely attenuated by geographic region. The finding that significant differences among hospitals in strategies was explained in large part by geographical region is consistent with previous research that has documented substantial regional differences in many kinds of practice patterns[35-37] as well as geographic differences in readmission rates.[38-40] The results suggest regionally focused initiatives may be most effective in tailoring interventions to practice needs and norms within specific areas.

Among the strategies that differed significantly between the hospitals in STAAR compared with in H2H, the variation may be attributable in part to the focus of the initiatives themselves. For instance, one strategy that was significantly more prevalent among H2H compared with STAAR hospitals is central to the quality of care for patients with heart failure and acute myocardial infarction, the focus of H2H: referral patterns to cardiac rehabilitation services after discharge. H2H hospitals may have been particularly attuned to this practice as H2H focused on cardiovascular-related readmissions whereas STAAR focused on all readmissions.

The study has several limitations. First, data were self-reported, and we did not have the resources to verify these reports with onsite evaluations. Nevertheless, the methods for obtaining the data were the same for H2H and STAAR hospitals, and therefore, measurement errors are unlikely to have varied systematically between the two types of hospitals. Second, a single respondent at each hospital completed the survey; however, we did instruct respondents to attain information from a broad range of relevant staff to reflect a more comprehensive perspective in the survey. Third, the sample size of STAAR hospitals was modest and hence we may have lacked statistical power to detect important differences; however, we did include all hospitals that had enrolled in STAAR by the study date. Fourth, hospitals that enrolled in STAAR and H2H initiatives represent a selected group, and results may differ among non-enrolled hospitals. Last, we have data on strategies used during the 2010-2011 time frame and hence cannot evaluate the impact of the quality initiatives from these baseline data. Studies that examine the associations between changes in the use of strategies and subsequent changes in readmission rates would be valuable. Nevertheless, this study establishes a baseline against which future progress can be evaluated.

In sum, we found that many STAAR and H2H hospitals were not implementing many of the recommended strategies for reducing readmissions as of 2010 - 2011, suggesting continued opportunities for improvement. Hospitalists will have opportunities to play leadership roles as hospitals look for meaningful ways to reduce readmissions. At the same time, although hospitalists have a key role in implementing hospital- based programs, much of the care transitions work must also engage with teams across the continuum of care. Furthermore,

priority should be given to augmenting the evidence base about which strategies are most effective in reducing readmissions, as this evidence is currently underdeveloped.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Table 1
Descriptive characteristics of surveyed hospitals

	N (%)		
Characteristic	H2H (N=532)	STAAR (N=55)	Chi-sq P-value
Teaching status			0.185
COTH teaching	70 (13.2%)	12 (22.2%)	
Non-COTH teaching	105 (19.7%)	9 (16.7%)	
Non-teaching	357 (67.1%)	33 (61.1%)	
Number of staffed beds			0.598
< 200 beds	180 (34.2%)	22 (42.3%)	
200-399 beds	199 (37.8%)	19 (36.5%)	
400-599 beds	90 (17.1%)	6 (11.5%)	
600+ beds	58 (11.0%)	5 (9.6%)	
Mean (SD)	315 (218)	254 (206)	0.056[2]
Census region			<0.001
New England	21 (4.0%)	14 (26.4%)	
Middle Atlantic	58 (10.9%)	0	
East North Central	95 (17.9%)	27 (50.9%)	
West North Central	45 (8.5%)	0	
South Atlantic	122 (23.0%)	0	
East South Central	52 (9.8%)	0	
West South Central	54 (10.2%)	0	
Mountain	33 (6.2%)	0	
Pacific	50 (9.4%)	12 (22.6%)	
Puerto Rico	1 (0.2%)	0	
Geographic location			0.184
Urban	451 (85.1%)	40 (75.5%)	
Suburban	53 (10.0%)	9 (17.0%)	
Rural	26 (4.9%)	4 (7.6%)	
Ownership type			<0.001
For-profit	129 (24.3%)	1 (1.9%)	
Nonprofit	355 (66.9%)	44 (83.0%)	
Government	47 (8.9%)	8 (15.1%)	
Multihospital affiliation			0.032
Yes	385 (72.5%)	31 (58.5%)	
No	146 (27.5%)	22 (41.5%)	
Risk-standardized readmission rate (RSRR; per 100 patients)[1]			
For patients with HF [Mean (SD)]	24.7 (0.06)	25.1 (0.06)	0.088[2]
For patients with AMI [Mean (SD)]	19.5 (0.06)	19.6 (0.07)	0.722[2]

Percentages computed excluding missing values, ranging 0-9 missing values by item.

[1] Risk-standardized readmission rates are weighted by hospital volume; 14 RSRRs are missing for heart failure (HF) and 25 are missing for acute myocardial infarction (AMI);

[2] P-values derived from t-tests.

Table 2

Quality improvement resources and performance monitoring

	H2H (N=532)	STAAR (N=55)
Hospital has reducing preventable readmissions as a written objective		
Strongly agree/agree	478 (89.9%)	53 (96.4%)
Not sure/disagree/strongly disagree	54 (10.2%)	2 (3.6%)
Hospital has a reliable process in place to identify patients with heart failure (HF) at the time they are admitted.	438 (82.6%)	50 (90.9%)
Hospital has quality improvement teams devoted to reducing preventable readmissions for patients with HF	462 (86.8%)	49 (89.1%)
Hospital has quality improvement teams devoted to reducing preventable readmissions for patients AMI	284 (53.4%)	29 (52.7%)
Hospital has a multidisciplinary team to manage the care of patients who are at high risk of readmission	299 (56.4%)	42 (76.4%)[a]
Hospital has partnered with the following to reduce readmission rates[2]		
Community home care agencies and/or skilled nursing facilities	358 (67.6%)	48 (87.3%)[a]
Community physicians or physician groups	262 (49.6%)	42 (76.4%)[a]
Other local hospitals	123 (23.3%)	23 (41.8%)[a]
Hospital tracks the following for quality improvement efforts		
Timeliness of discharge summary	373 (70.6%)	40 (72.7%)
Proportion of discharge summaries sent to primary physician	121 (23.0%)	17 (31.5%)
Percent of patients discharged with follow-up appt 7 days	168 (31.9%)	27 (50.0%)
Accuracy of medication reconciliation	385 (72.9%)	36 (66.7%)
30-day readmission rate	499 (94.5%)	54 (98.2%)
Early (<7 day) readmission rate	293 (55.5%)	26 (48.2%)[a]
Proportion of patients readmitted to another hospital	61 (11.6%)	9 (16.7%)
Has a designated person or group to review unplanned readmissions that occur within 30 days of the original discharge	338 (63.9%)	43 (78.2%)
Estimates risk of readmission in a formal way and uses it in clinical care during patient hospitalization	118 (22.3%)	22 (40.0%)[a]

Numbers of missing (overall) ranged by item from 0 to 6.

[a] P-value < 0.01 in unadjusted analysis; none of these was significant in analysis adjusted for geographic region and hospital ownership type.

[1] Among hospitals reporting corresponding quality improvement teams.

[2] Select all that apply.

Table 3

Medication management strategies

	H2H (N=532)	STAAR (N=55)
Who is responsible for medication reconciliation at discharge?		
Nurse		
Never	53 (10.0%)	12 (22.2%)[b]
Sometimes	51 (9.6%)	13 (24.1%)
Usually	49 (9.3%)	5 (9.3%)
Always	376 (71.1%)	24 (44.4%)
Pharmacist		
Never	309 (58.5%)	30 (55.6%)
Sometimes	163 (30.9%)	21 (38.9%)
Usually	21 (4.0%)	1 (1.9%)
Always	35 (6.6%)	2 (3.7%)
Responsibility is not formally assigned		
Never	453 (86.1%)	41 (77.4%)
Sometimes	23 (4.4%)	6 (11.3%)
Usually	21 (4.0%)	4 (7.6%)
Always	29 (5.5%)	2 (3.8%)
Tools in place to facilitate medication reconciliation[1]		
Paper-based standardization form	290 (54.5%)	31 (56.4%)
Electronic medical record/web-based form	392 (73.7%)	38 (69.1%)
How often does each of the following occur as part of the medication reconciliation process at your hospital?		
Emergency medicine staff obtains medication history.		
Never	3 (0.6%)	0
Sometimes	39 (7.4%)	5 (9.1%)
Usually	152 (28.7%)	20 (36.4%)
Always	336 (63.4%)	30 (54.6%)
Admitting medical team obtains medication history.		
Never	8 (1.5%)	1 (1.8%)
Sometimes	33 (6.2%)	6 (10.9%)
Usually	97 (18.3%)	15 (27.3%)
Always	392 (74.0%)	33 (60.0%)
Pharmacist or pharmacy technician obtains medication history.		
Never	244 (46.1%)	19 (34.6%)
Sometimes	160 (30.3%)	16 (29.1%)
Usually	47 (8.9%)	10 (18.2%)
Always	78 (14.7%)	10 (18.2%)
Contact is made with outside pharmacies.		
Never	76 (14.4%)	3 (5.5%)
Sometimes	366 (69.3%)	42 (76.4%)

	H2H (N=532)	STAAR (N=55)
Usually	69 (13.1%)	6 (10.9%)
Always	17 (3.2%)	4 (7.3%)
Contact is made with primary physician.		
Never	27 (5.1%)	2 (3.6%)
Sometimes	280 (52.9%)	30 (54.6%)
Usually	148 (28.0%)	18 (32.7%)
Always	74 (14.0%)	5 (9.1%)
Outpatient and inpatient prescription records are linked electronically.		
Never	324 (61.4%)	28 (50.9%)
Sometimes	91 (17.2%)	14 (25.5%)
Usually	61 (11.6%)	8 (14.6%)
Always	52 (9.9%)	5 (9.1%)
Third party prescription database that provides historical fill and refill information (e.g., Health Care Systems).		
Never	441 (83.5%)	37 (67.3%)
Sometimes	54 (10.2%)	10 (18.2%)
Usually	14 (2.7%)	4 (7.3%)
Always	19 (3.6%)	4 (7.3%)
All patients (or their caregivers) receive at the time of discharge information about the purpose of each medication, which medications are new, which medications have changed in dose or frequency, and/or which medications are to be stopped	407 (76.9%)	35 (63.6%)
Hospital promotes use of teach-back techniques (having the patient "teach" new information back to educator)	371 (69.9%)	48 (87.3%)[a]

Numbers of missing ranged by item from 0 to 5; one item is missing 8.

[a] P-value < 0.01 in unadjusted analysis.

[b] P-value < 0.01 in analysis adjusted for geographic region and hospital ownership type.

[1] Select all that apply.

Table 4
Discharge and follow-up procedures

	H2H (N=532)	STAAR (N=55)
For all patients		
All patients (or their caregivers) receive the following in written form at the time of discharge:		
Discharge instructions	485 (91.3%)	45 (81.8%)
Names, doses, and frequency of all discharge medications	463 (87.4%)	42 (76.4%)
Educational information about heart failure, when relevant	385 (72.5%)	37 (67.3%)
Symptoms that prompt an immediate call to a physician or return to hospital	352 (66.4%)	33 (60.0%)
Educational information about AMI	348 (65.5%)	36 (66.7%)
Any type of emergency plan[1]	312 (58.8%)	26 (47.3%)
Action plan for heart failure patients for managing changes in condition	282 (53.1%)	28 (50.9%)
Personal health record	139 (26.3%)	23 (41.8%)
Discharge summary	104 (19.6%)	12 (21.8%)
Patients are discharged from the hospital with an outpatient follow-up appointment already arranged		
Never	20 (3.8%)	1 (1.8%)
Sometimes	222 (41.9%)	26 (47.3%)
Usually	233 (44.0%)	26 (47.3%)
Always	55 (10.4%)	2 (3.6%)
Patients with home health services are provided direct contact information for a specific inpatient physician in case of questions	249 (47.1%)	35 (63.6%)
Process is in place to ensure outpatient physicians are alerted to the patient's discharge within 48 hours of discharge	199 (37.6%)	37 (67.3%)[b]
Proportion of patients for whom a paper or electronic discharge summary is sent directly to the patient's primary MD		
None	43 (8.1%)	3 (5.5%)
Some	153 (28.9%)	14 (25.5%)
Most	200 (37.8%)	18 (32.7%)
All	133 (25.1%)	20 (36.4%)
Patient's discharge summary typically completed and available for viewing		
Upon discharge	42 (8.0%)	5 (9.1%)
Within 48 hours of discharge	222 (42.1%)	33 (60.0%)
Within 7 days	94 (17.8%)	10 (18.2%)
Within 30 days	157 (29.7%)	7 (12.7%)
There are no explicit goals or policies defining a time-frame for completing the discharge summary	13 (2.5%)	0
Someone in the hospital is assigned to follow up on test results that return after the patient is discharged	191 (36.2%)	27 (49.1%)
Patients are regularly called after discharge to either follow up on post-discharge needs or to provide additional education	334 (63.0%)	38 (69.1%)
Home visits are arranged for all or most patients after discharge	114 (21.5%)	9 (16.4%)
After discharge, patients:		
Receive telemonitoring		
None	241 (45.5%)	12 (21.8%)[a]

	H2H (N=532)	STAAR (N=55)
For all patients		
Some	265 (50.0%)	41 (74.6%)
Most	23 (4.3%)	1 (1.8%)
All	1 (0.2%)	1 (1.8%)
Receive referrals to cardiac rehabilitation		
None	27 (5.1%)	4 (7.4%)[b]
Some	190 (36.0%)	28 (51.9%)
Most	203 (38.5%)	17 (31.5%)
All	108 (20.5%)	5 (9.3%)
Are enrolled in chronic disease management programs		
None	161 (30.4%)	13 (23.6%)
Some	321 (60.7%)	34 (61.8%)
Most	41 (7.8%)	7 (12.7%)
All	6 (1.1%)	1 (1.8%)
For patients transferred to skilled nursing facilities		
Nurse-to-nurse report is always conducted prior to transfer Information always provided to the facility upon discharge	326 (61.5%)	22 (40.0%)[a]
Completed discharge summary	252 (47.6%)	27 (49.1%)
Reconciled medication list	436 (82.3%)	46 (83.6%)
Medication administration record	352 (66.4%)	38 (69.1%)
Direct contact number of inpatient treating physician	180 (34.0%)	29 (52.7%)[b]

Numbers of missing ranged by item from 1 to 4.

[a] P-value < 0.01 in unadjusted analysis.

[b] P-value < 0.01 in analysis adjusted for census region and ownership type.

[1] Indicates hospitals that provide direct contact information for a specific physician in case of emergency and/or any other type of emergency plan.