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Feasibility, scope and requirements for a web based transition of care application for primary care providers

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OREGON HEALTH & SCIENCE UNIVERSITY

SCHOOL OF MEDICINE – GRADUATE STUDIES

Feasibility, Scope and Requirements for a Web Based Transition of Care Application for Primary Care Providers

Thomas McCarrick, MD

A Capstone Thesis

Presented to the Department of Medical Informatics and Clinical Epidemiology

and the Oregon Health & Science University

School of Medicine

in partial fulfillment of

the requirements for the degree of

Master of Biomedical Informatics

June 2015

OREGON HEALTH & SCIENCE UNIVERSITY

SCHOOL OF MEDICINE – GRADUATE STUDIES

School of Medicine

Oregon Health & Science University

CERTIFICATE OF APPROVAL

____

This is to certify that the Master's Capstone thesis of

Thomas P. McCarrick, MD

has been approved

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Mentor/Advisor

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Abstract

Research in transitions of care has shown that information flow from hospitals including notification of admission, discharge summaries and medication lists is often poor and undermines good transition handoffs. In spite of efforts to create interoperability and communicate important information about transitions of care, the flow of information is inconsistent, not supported by electronic health record (EHR) functionality, dependent on workarounds within the primary care provider (PCP) practice, and has little feedback to promote quality improvement efforts.

EHRs typically do not have tools to track patients who are outside the office, in the hospital, emergency room, subacute or skilled nursing facility. Practices trying to follow and manage these patients often create their own workarounds such as spreadsheet tracking lists. These lists are primarily used for tracking discharges, so that patients can be contacted to perform medication reconciliation and schedule a follow up office visit. These lists are created from a variety of sources including Notifications of Admission (NOA), hospital records such as admission history and physicals, discharge summaries, notification from hospitalists, census data retrieved from a hospital portal, or often just from scattered reports such as consults, that the practice receives.

A potential solution would be a web based application to assist primary care practices in tracking their patients across transitions of care, tracking the data associated with those patients such as notifications of admission (NOA), admission histories and physicals (H&Ps) and discharge summaries, and providing tools to follow those patients and

better manage those transitions. This tool and process should allow physicians to better identify their hospitalized patients, manage their transitions and reduce readmissions. Better identification of admissions and discharge may also allow better capture of reimbursement for transitions of care management. Hospitals would benefit if the application helped to reduce readmission rates and the cost of care related to avoidable post discharge events. The data collected can also be used to assess communication around transitions of care and provide feedback to hospitals and the local Health Information Exchange.

The question for this study is if a web based transitions of care application would be more effective, efficient, and desirable than current methods in identifying and managing transitions of care, and which features would be desirable. The proposed application would aggregate information from the Health Information Exchange and present to the primary care provider in a way that would align with their workflow. Primary care providers, hospitalists, hospital information officers and thought leaders in this area were surveyed and interviewed to build an understanding of the desired functionality of such an application. Identification of the primary care provider at the time of hospitalization was identified as a critical gap in improving the flow of transitions of care information.

Introduction

The United States healthcare system is characterized by fragmentation and silos of healthcare information contributing to errors that particularly affect vulnerable populations. (1) Transitions of care has been identified as an area of particular risk and avoidable cost. These transitions often involve chronically ill elderly patients who are exposed to lapses in care as well as errors.

Medicare readmissions within the first 30 days after discharge were 20% in 2009, and 34% of patients were readmitted within 90 days. (2) This back and forth between the hospital and other sites of care costs Medicare an estimated 15 billion dollars annually. (3)

Errors during transitions of care include medication errors, pending test results that are not communicated, and further testing recommended but not completed.(4) There are multiple barriers to effective transitions that span the clinicians, the delivery system and the patient. Lack of information systems to effectively make necessary information available has been explicitly identified as one of those barriers.(5)

Since 2010, in our own 15 provider primary care practice, we have been tracking the histories and physicals, discharge summaries and medication lists we receive from our primary hospital. In 2010 we received 30% of discharge summaries. Through an ongoing effort with hospital leadership, we have gradually increased that to about 75% today.

Transition of care quality improvement projects, have been found to reduce rehospitalization rates, improve health status and quality of life, and reduce cost of care.(6, 7) Project BOOST (Better Outcomes for Older Adults through Safe Transitions) was developed by the Society of Hospital Medicine and combined a structured readmission risk assessment (TARGET Tool) with specific risk mitigation strategies. The project also addressed the institutional requirements to create a self-sustaining transition of care quality improvement process. Implementation of Project BOOST was shown to reduce readmissions by almost 14% (relative risk reduction) over one year.(8) The Care Transitions Intervention (Coleman) used coaching to make sure that the needs of the patient and caregiver were met and also demonstrated a reduction in both readmissions and hospital cost.(9) The Transitional Care Model (Naylor) focused on the role of a trained transition care nurse (TCN) to coordinate care with the patient, family and health care system and also has demonstrated reduction in readmissions as well as improvement in patient experience.(10) In all these transitional care models, lack of effective information sharing between the hospital and post discharge care team has been identified as a significant barrier to safe transitions.

This study attempts to define the specific problems that contribute to poor information sharing from hospitals to the primary care physician and from that propose some potential solutions including a web based application for primary care providers.

Methods:

Framework and Design: The study is a qualitative analysis of hospital transitions of care using grounded theory with a tailored constant comparison approach to develop a list of desired functions for a web-based transitions of care application.

Comprehensive Primary Care Initiative (CPCI) and Horizon Patient Centered Medical Home (PCMH) practices were surveyed about their current management of transitions of care. From these results, additional questions were developed. Using these questions, semi-structured interviews were conducted with a sample of primary care physicians who had completed the survey. Using both the original survey and the results of the semi-structured interviews, a hospitalist survey was generated and sent to hospitalists used by those primary care practices. From those hospitalist surveys additional questions were generated and semi-structured interviews were conducted with a sample of hospitalists.

Using the primary care data and hospitalist data, a list of desirable features for a web based transitional care application was generated. This list of desirable features was used to create an additional survey to the primary care practices. All surveys were done by email using SurveyMonkey. Additional interviews were conducted with hospital information officers and primary care thought leaders to gain their perspective on the problem and the proposed solution.

Setting: This analysis was conducted in New Jersey. It included advanced primary care practices across 5 hospital systems as well as hospitalists and hospital information officers at most of those hospital systems.

Data Collection: Advanced primary care practices were selected as the starting point for this study. Although transitional care affects virtually all primary care providers, primary care practices involved in Patient Centered Medical Home (PCMH) transformation are particularly engaged in managing this process and aware of the issues.

In New Jersey, much of the stimulus to transform to Patient Centered Medical Homes came about through a PCMH program sponsored by the local Blue Cross Blue Shield Plan (Horizon Healthcare of New Jersey) starting in 2010. This program provides education and coaching support as well as financial incentives to facilitate transformation, and now includes over 900 primary care practices throughout the state. A similar transformation initiative in New Jersey is the Comprehensive Primary Care Initiative (CPCI) which started in 2012 and includes 68 primary care practices. Most of these 68 practices also participate in Horizon's PCMH program. Both programs place a strong emphasis on tracking and managing transitions of care.

167 of these "advanced" PCMH practices for which contact information was available were selected for the initial survey. A survey was created to understand the current state of transitional care management within these practices and consisted of the following ten questions:

1) Do you keep track of your patients who are hospitalized?
2) How do you track your hospitalized patients?
3) How do you find out that your patients have been hospitalized?

4) How many hospitals account for most of the hospitalizations of your patients
5) For all your hospitalized patients, how often are you informed of their admission?
6) For all your hospitalized patients, how often do you receive an admission history and physical?
7) For all your hospitalized patients, how often do you receive a discharge summary?
8) For all your hospitalized patients, how often do you receive a medication list at discharge?
9) When you do receive information from the hospital, how often is it received in a timely fashion to meet your clinical needs?
10) Have you had any discussion with administration at any of your primary hospitals about any issues with receiving information?

From the results of this survey the following group of open ended followup interview questions was developed. These interviews were taped and transcribed and reviewed manually.

1. What is your general sense about the information flow from the hospital for your hospitalized patients?
2. Why do you think you don't get more complete information on all your patients?
3. Who is responsible for getting information from the hospital to you – the hospitalists? the hospital?

4. What pieces of information are important to managing hospitalized patients?
5. Is there any kind of alerting that would be helpful? E.g. – admission or discharge
6. Is there any reporting about transitions of care work that would be helpful? Eg time from admission to notification; % of D/C summaries or medication lists received.

Using the information collected in the primary care survey and the followup interviews, a hospitalist survey was constructed and disseminated to the hospitalists through the directors of the hospitalist programs at 3 hospital systems.

1. In which of the following hospitals do you work as a hospitalist physician?
2. When you dictate an H&P, do you have to do anything specifically to send it to the Primary Care Physician (PCP), or does the hospital take care of that?
3. How often does the patient chart correctly identify the PCP?
4. How often do you have to ask the patient who their PCP is?
5. Which of the following documents are sent automatically by the hospital to the PCP?
    a. H&P
    b. Consults
    c. Discharge summary
    d. Discharge medication list
6. Does the hospital require any structured format on discharge summaries such as pending tests, tests to be done, followup appointments to be scheduled, medication list? or is it at your discretion?

7. From your workflow, how often do you expect the PCPs are getting discharge summaries?
8. From your workflow, how often do you expect the PCPs are getting medication lists?
9. What are the barriers to verbal communication with the PCPs at the time of discharge?
10. Do you have any suggestions how we can improve information flow?

From the results of the hospitalist survey a group of followup questions was created and semi-structured interviews were done with 3 hospitalists at different hospital systems. Those interviews were taped, transcribed and manually reviewed.

1. What are the most significant barriers to communication with the PCP
2. What is the problem with identifying the PCP?
3. Have you worked with the hospital to improve the flow of information? What was the outcome?
4. If there was an easier way to notify PCPs of a discharge, would that be helpful? And what might be preferred method? A text message? An audio text? Leaving a voicemail?

Based on feedback from the PCPs and hospitalists we resurveyed the 167 Advanced primary care practices using a new two part survey (Appendix C). The first part was a question to better understand what percent of a primary care provider's patients went

to a hospital outside the provider's information loop. The second part was a list of potential features for a web based transitions of care application. This list was developed based on feedback from the PCPs and hospitalists in the initial surveys and interviews.

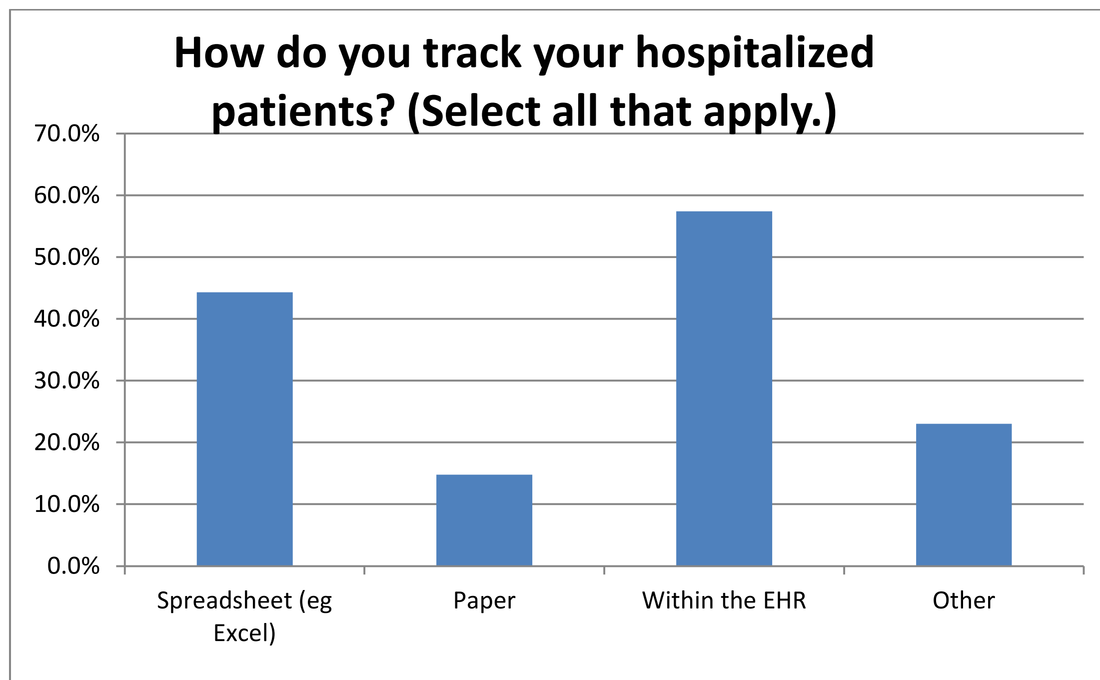
Semi-structured interviews were also conducted with hospital information officers at 3 hospital systems to assess their perspective on transitional care issues, problems that they had identified, solutions they had contemplated, and their level of motivation to find solutions.

1. What are the transitions of care pieces of information that PCPs need to receive – NOA, H&P, consults, discharge summary, medication list?
2. Is getting transitions of care information to PCPs a priority? A problem? What are the issues?
3. Do you get any feedback from PCPs about transitions of care information?
4. Is there any need to get transitions of care information to non-staff PCPs?
5. Do you have any sense about how the hospital is performing in getting transitions of care information to the PCPs?
6. What are you doing at present to get information to PCPs? Faxing? Mail? Electronic (C-CDA, HIE, Direct Messaging)?
7. What are the current transition of care efforts within the hospital

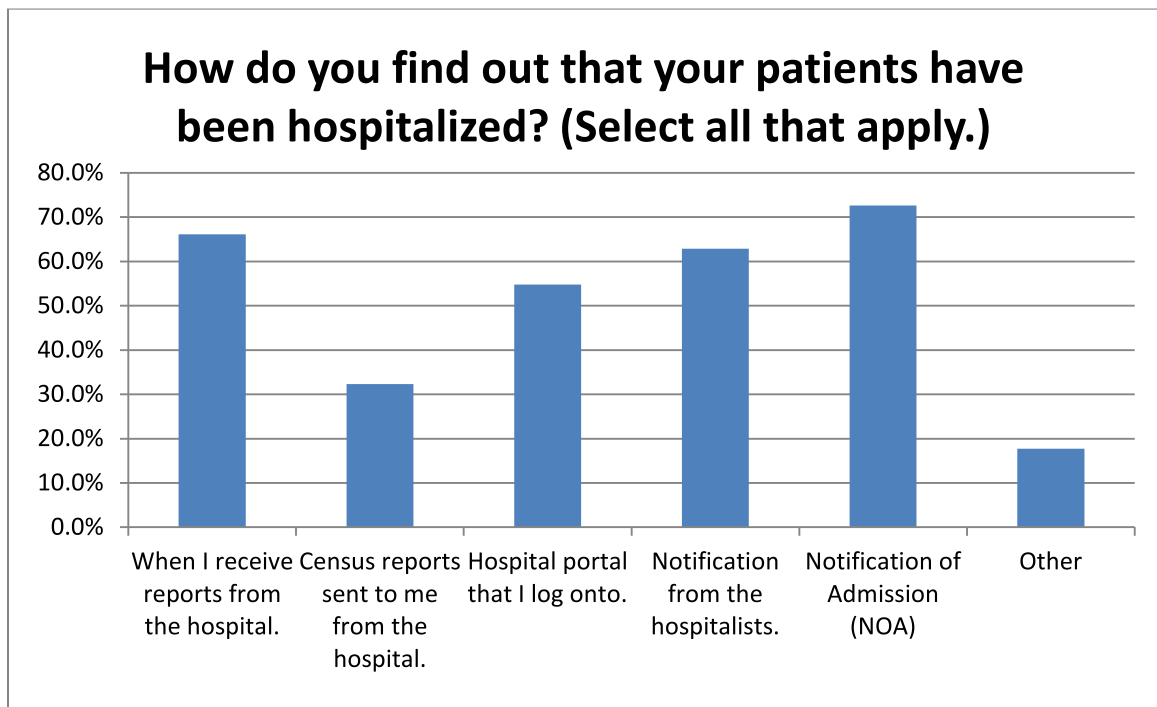
Because other areas of the country have been working through the issues with transitions of care for a number of years, in addition to the literature search, it was thought helpful to get the perspective of leaders in primary care transformation and technology. For that reason, additional interviews were conducted with Bruce Bagley, MD, CEO of TransforMED and Steven Waldren, MD, Director, Alliance for eHealth Innovation at the American Academy of Family Physicians.

Results

61 practices (of 167) responded to the initial survey (Appendix A). 98% track their hospitalized patients. Some practices use multiple methods concurrently to track patients. 57% use their EHR to track patients and 44% also use a spreadsheet. Only 15% use a paper method.



Practices are made aware of their hospitalized patients in a variety of ways. 73% receive Notifications of Admission (NOAs) from insurance carriers. 66% become aware from hospital reports such as H&Ps, and 63% are notified directly by their hospitalists. Only 32% receive a census report from the hospital.



The majority of primary care practices (61%) report that their hospitalized patients are distributed across two or more hospital systems. This in part relates to both population and hospital density in New Jersey.

Practices became aware that their patients were hospitalized by a variety of means. 76% of practices report they are notified of admissions from an insurance payer most of the time. 60% of the practices report they receive H&Ps and discharge summaries most of the time.

Medication reconciliation is considered to be a key feature of transitions of care, and yet only 57% of practices receive discharge medication lists most of the time (or always).

For all your hospitalized patients, how often do you receive a medication list at discharge?				
Never	Infrequently	Sometimes	Most of the time	Always
5%	13%	25%	43%	13%

Only 60% of practices felt they received information about their hospitalized patients in a timely fashion most of the time (or always). Interestingly, 73% of the practices had discussed their information needs with hospital administration.

30 primary care practices offered to be contacted for any followup questions. Four lead primary care providers from these practices were interviewed with the following observations.

Practices that managed their own patients in the hospital or subacute felt they had good information to manage transitions. However they experienced the same problems as other practices when their patients were admitted to other facilities and providers. History and Physicals reports were felt to be helpful, but discharge summaries with a medication list and discharge care plan were thought most helpful.

The hospitalist survey was completed by 8 hospitalists from 3 hospital systems (Appendix B). Only 50% of the hospitalists noted that the hospital record correctly identified the PCP most of the time (or almost always) and 75% indicated they had to

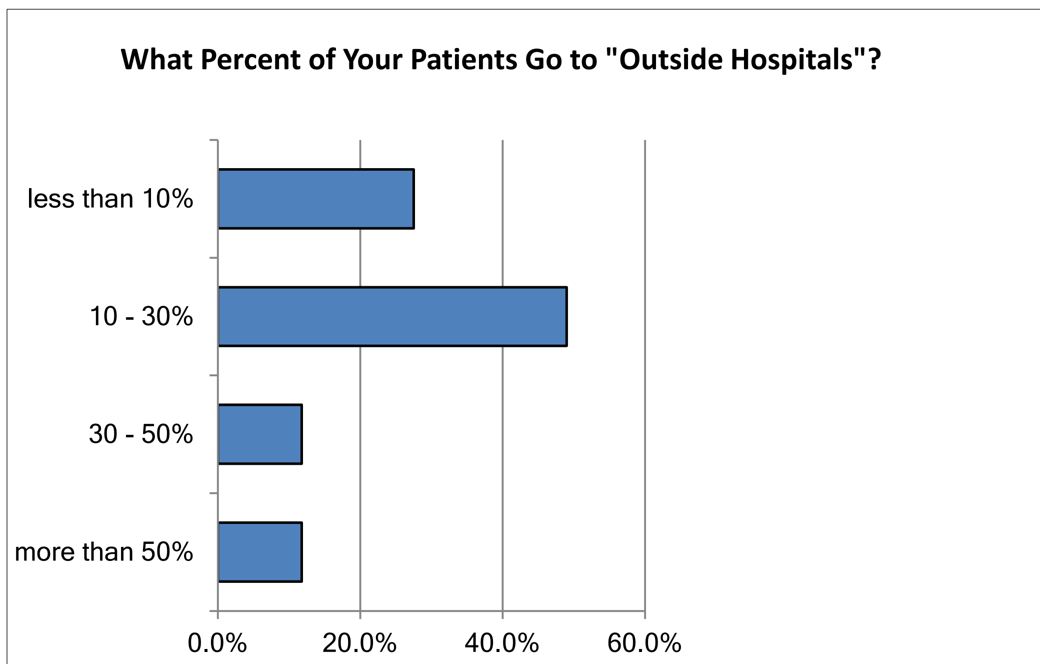
ask the patient almost always. 86% of the hospitalists indicated they thought they had to take some specific action to have an H&P or discharge summary sent to the PCP. Not more than 50% of the hospitalists felt that discharge summaries and other hospital records were automatically sent to the PCP and a significant number were unsure about how this was handled.

(Hospitalist:) Which of the following documents are sent automatically by the hospital to the PCP?			
	Yes	No	Not sure
History and Physicals	20%	30%	50%
Consults	10%	30%	50%
Discharge Summaries	50%	20%	30%
Discharge Medication Lists	40%	30%	30%

86% of hospitalists indicated that their hospital has no requirements for the format or content of discharge summaries.

Interviews with the hospitalists confirmed that the hospitals were inconsistent in capturing the PCP on admission. Sometimes the ER registration system was not sending the PCP information to the hospitals ADT system. Sometimes specialists were incorrectly listed as the PCP, or no PCP was identified at all. Hospitalists also noted that communication with PCPs was very variable and was often dependent on the volume of patients, and the relationship with that primary care provider. Because of their

involvement and responsibility in transition handoffs and Bundle Payment Initiatives, some hospitalists expressed frustration with lack of communication back from subacute facilities when problems occurred post discharge. Some hospitalist programs have developed their own tools to supplement the hospital systems such as an abbreviated structured discharge summary produced immediately at discharge and sent to the PCP.



From the second survey of practices, almost 50% of practices felt that between 10 and 30% of their patients went to “outside” hospitals, and 23% felt that more than 30% of their patients went to outside hospitals.

If there was a single portal for all your hospitalized patients (regardless of hospital), which of the following features would you find desirable or helpful?				
	Not desirable or helpful	**Somewhat desirable or helpful**	**Very desirable**	**Not sure**
An email or text alert that a patient had been admitted.	0%	6%	94%	0%
An email or text alert that a patient had been discharged.	0%	0%	98%	2%
An email or text alert that a patient had transferred to a subacute facility.	0%	9%	91%	0%
H&Ps are on this portal.	2%	13%	85%	0%
Consults are on this portal.	0%	7%	91%	2%
Discharge summaries are on this portal	0%	2%	94%	4%
Discharge medication list is on this portal.	0%	2%	94%	4%
Reminders to help track Medicare Transition of Care billing.	7%	24%	57%	13%
Reports I can use to show the hospital their performance on identifying the PCP, and sending reports such as H&Ps and discharge summaries and medication lists.	2%	11%	83%	4%

An email or text notification of a patient discharge was the most desirable feature to primary care providers. Discharge summaries and medication lists were also very desirable. Reminders to help track Medicare Transitions of Care billing was least desirable.

Interviews with Dr Bruce Bagley (TransforMED) and Dr Steven Waldren (AAFP) produced additional insights. "Improving transitions of care will require involvement of all stakeholders including the subacute facilities. Transitions information should be actionable. Aligning workflow in a transitions of care application to the business model is critical. Pivoting from a technology solution to one that combines people, skills and technology is also important. Any proposed application should address how it reaches the Triple Aim. It is important to define the minimal core requirements vs the ideal

solution. Standards are a morass, but the tools are there – DIRECT, C-CDA, ADT alerts, FHIR".

Discussion

This study focused on gaps in transitions of care from the primary care provider perspective and was also limited to hospital admissions and discharges. It does not address transitions to and from subacute facilities or other types of transitions. This study also does not address the technical interfaces and standards necessary to implement a web based transitions of care application, nor does it address the business model for such an application.

Primary care providers who made hospital rounds, or had employed hospitalists or were themselves employees of a hospital system felt they had more complete transitions of care information from their primary hospital. Managing the patient across the care continuum was felt to be an effective way to maintain control over transitions of care.

However, even these practices had more than 10% of their patients hospitalized at facilities other than their primary hospital, and in that situation experienced the same gaps in transition information as their peers. And in general, most primary care practices in this study had a significant number of their patients hospitalized at "outside" hospitals, and consequently experienced gaps in the management of their hospitalized patients.

A number of practices noted that they had great difficulty getting information from hospitals where they were not on staff. Some practices reported that they were told they could only gain electronic access if they joined the hospital's staff or ACO. Some practices also experienced difficulty dealing with hospital medical records departments and felt that those facilities were either misinformed about HIPAA requirements, or were using the cover of HIPAA to block information. This issue of information blocking was recently addressed by the Office of the National Coordinator in a Report to Congress (April 2015).(11)

Primary care providers and hospitalists both reported that ER and hospital admission processes often did not correctly capture the primary care provider. Hospitalists reported that the flow of information to the PCP was often not automated. A significant number of hospitalists also seemed uncertain about which records were sent automatically by the hospital to the PCP.

Hospital information officers also seemed uncertain about how to deal with the issue of communicating transitions of care information to non staff PCPs, and while understanding the importance of good transition handoffs, had no measurement of the effectiveness of their current processes. Hospital information officers are still trying to understand how to effectively use C-CDA for transitions of care.

Timely information is important. Given short lengths of stay, primary care providers need to be informed at the time of admission to be engaged and prepared for the transition hand off. Notifications of admission take 1-3 business days and are payer

specific. Timely notification of discharge has been identified by primary care providers as the most important single piece of information related to a hospitalization.

Summary and Conclusions:

This study confirms that in spite of efforts to improve hospital discharge transitions of care, significant gaps remain in New Jersey. Fundamental to those gaps is the frequent failure to correctly identify the primary care provider at the time of admission. The next most significant gap seems to be the lack of automated, structured processes to deliver important information to the primary care provider. Reconciled medication lists at discharge has been clearly identified in the medical literature as an issue, and yet primary care providers report this is still a major issue. Another very significant issue is how non staff primary care providers are identified and kept in the information loop similar to staff providers. For many PCP's, this represents 10-30% of their hospitalized patients. Health Information Exchange is agnostic to the staff issue and may provide a partial solution although the hospitals need to deal with this as well.

Information blocking has been identified by the Office of the National Coordinator as an issue that is being studied further. From this study it appears that part of the problem may actually result from the efforts of hospital systems to improve the flow of information within their systems. A possibly unintended consequence of this is an apparently increasing disparity in information access between staff and non staff providers. An interesting question would be whether there is a difference in readmissions for patients with non staff primary care providers.

A web based portal interfaced to the HIE may provide many of the functions desired by primary care providers such as immediate notification of admission and discharges, and aggregation of links to relevant documents. A single portal might be helpful to the majority of PCPs who have patients in multiple hospitals. Messaging for alerts could be customized within this portal to align with PCP workflow. The HIE and hospitals could use the portal to monitor the flow of transitions information and thereby use it as a quality management tool.

Engagement of other stakeholders such as subacute facilities could bring additional value to the application. Development of a business model involving the HIE would be a necessary next step.

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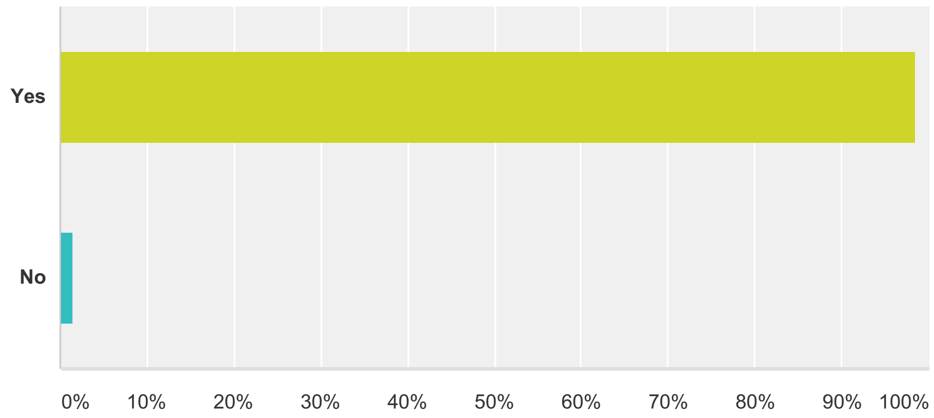
Appendix A

Q1 Do you keep track of your patients who are hospitalized?

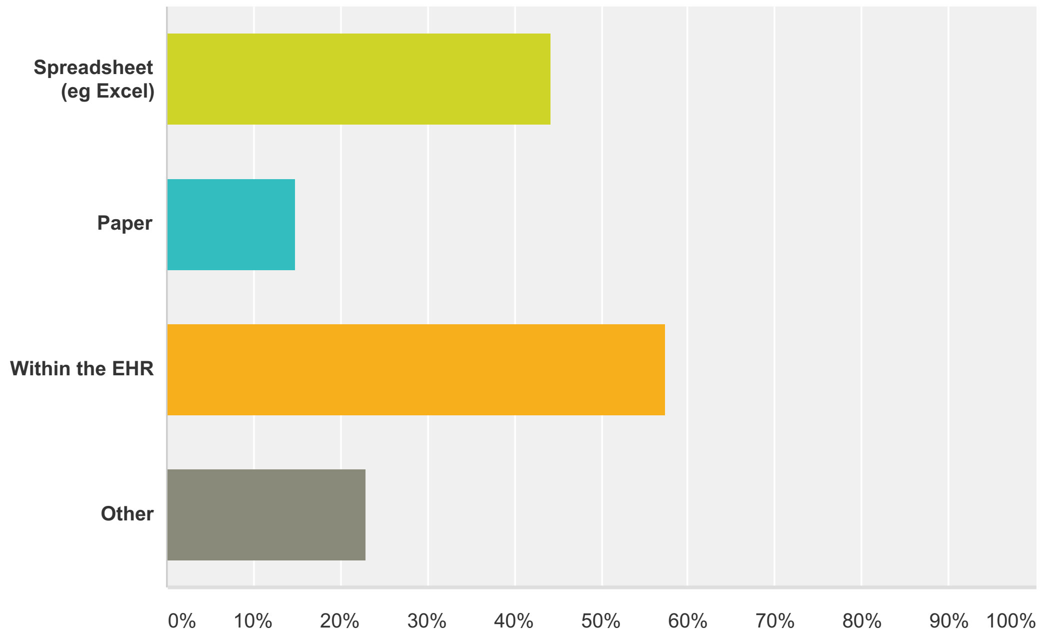
Answered: 64 Skipped: 0



Answer Choices	Responses	
Yes	**98.44%**	63
No	**1.56%**	1
Total		**64**

Q2 How do you track your hospitalized patients? (Select all that apply.)

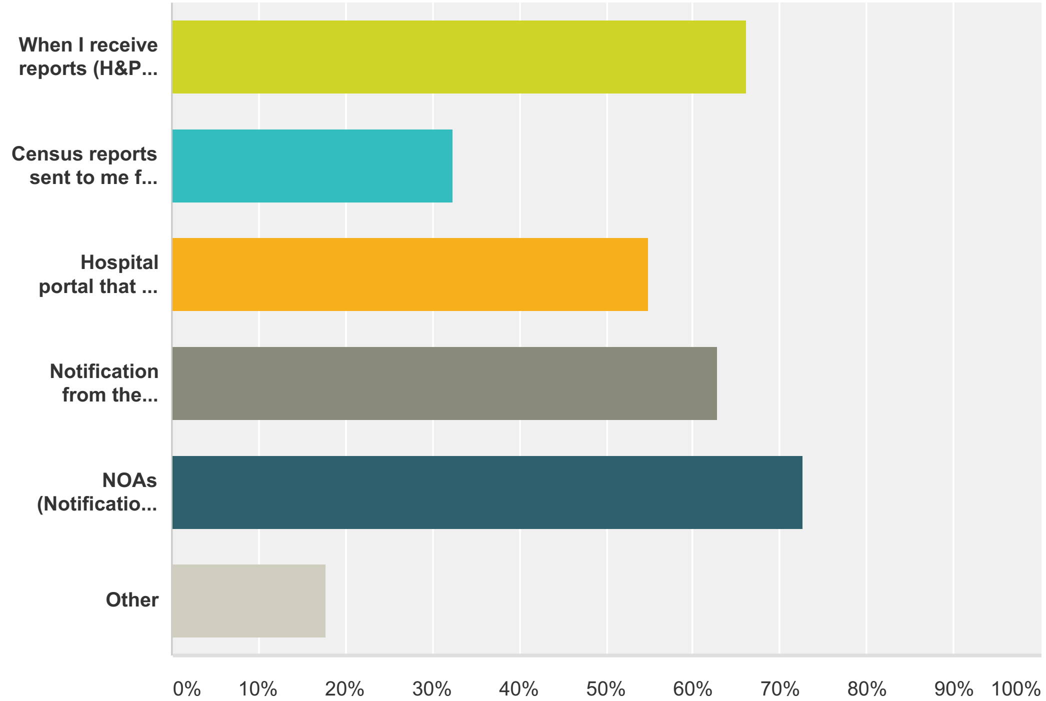
Answered: 61 Skipped: 3



Answer Choices	Responses	
Spreadsheet (eg Excel)	**44.26%**	27
Paper	**14.75%**	9
Within the EHR	**57.38%**	35
Other	**22.95%**	14
Total Respondents: 61		

Q3 How do you find out that your patients have been hospitalized? (Select all that apply.)

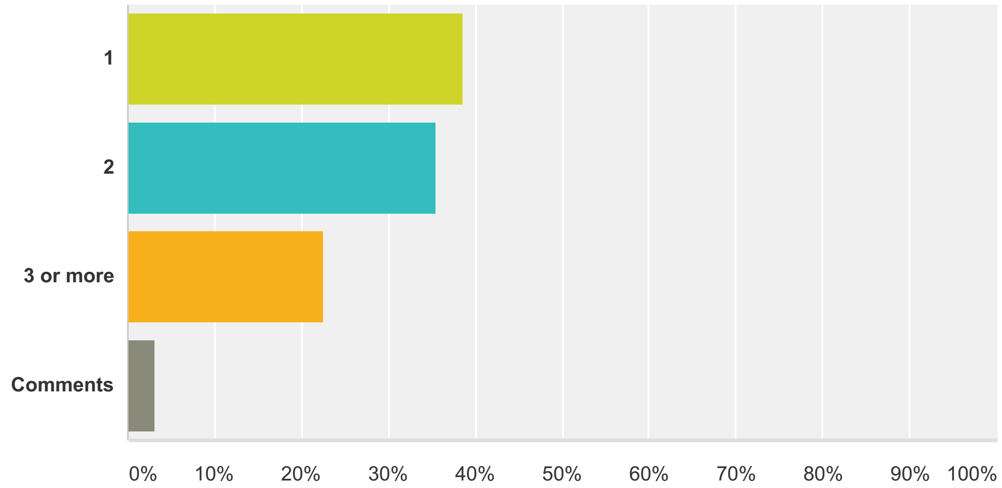
Answered: 62 Skipped: 2



Answer Choices	Responses	
When I receive reports (H&P, consults, discharge summaries) from the hospital.	**66.13%**	41
Census reports sent to me from the hospital.	**32.26%**	20
Hospital portal that I log onto.	**54.84%**	34
Notification from the hospitalists (phone, text, fax, etc).	**62.90%**	39
NOAs (Notification of Admission) from an insurance company.	**72.58%**	45
Other	**17.74%**	11
Total Respondents: 62		

Q4 How many hospitals account for most of the hospitalizations of your patients (ie your primary hospital)?

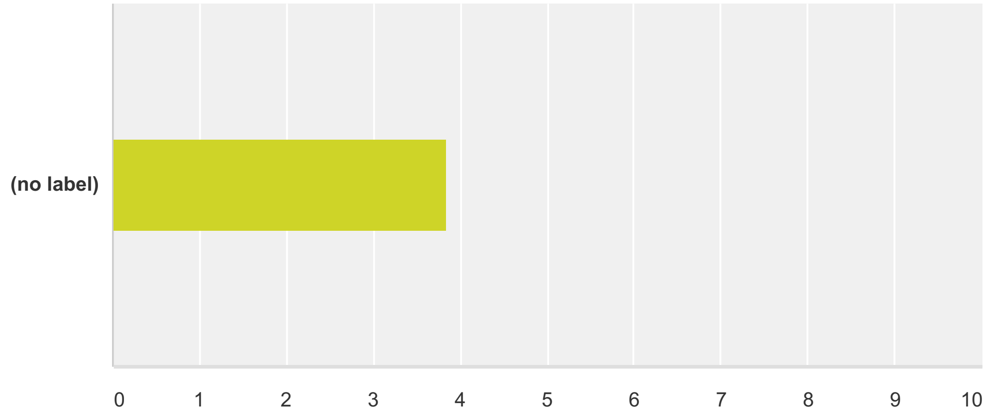
Answered: 62 Skipped: 2



Answer Choices	Responses	
1	**38.71%**	24
2	**35.48%**	22
3 or more	**22.58%**	14
Comments	**3.23%**	2
Total		**62**

Q5 For all your hospitalized patients, how often are you informed of their admission?

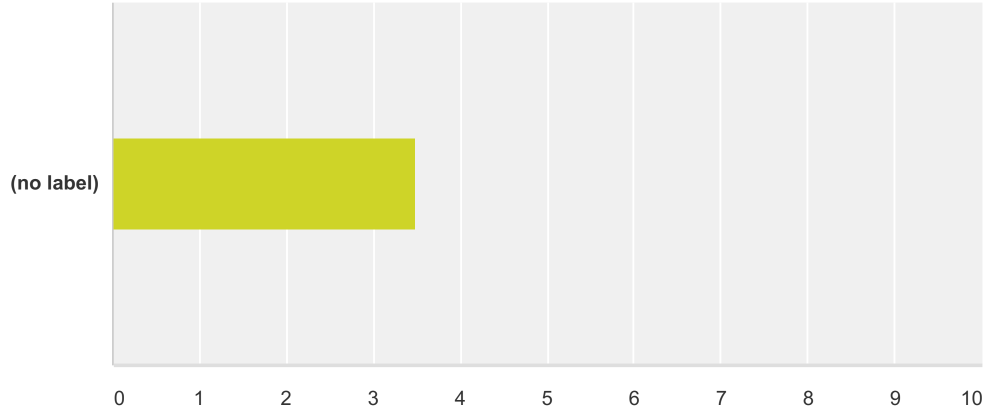
Answered: 62 Skipped: 2



	Never	Infrequently	Sometimes	Most of the time	Always	Total	Weighted Average
(no label)	**0.00%** 0	**1.61%** 1	**22.58%** 14	**66.13%** 41	**9.68%** 6	62	3.84

Q6 For all your hospitalized patients, how often do you receive an admission history and physical?

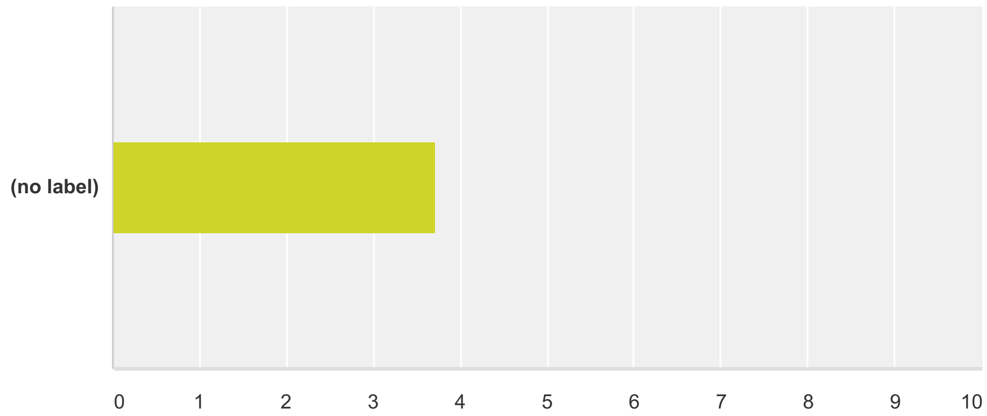
Answered: 61 Skipped: 3



	Never	Infrequently	Sometimes	Most of the time	Always	Total	Weighted Average
(no label)	**3.28%** 2	**9.84%** 6	**29.51%** 18	**49.18%** 30	**8.20%** 5	61	3.49

Q7 For all your hospitalized patients, how often do you receive a discharge summary?

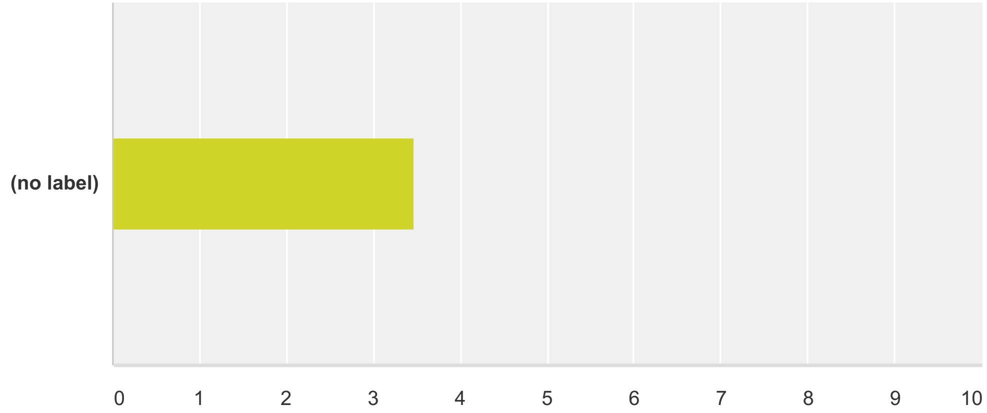
Answered: 61 Skipped: 3



	Never	Infrequently	Sometimes	Most of the time	Always	Total	Weighted Average
(no label)	**1.64%** 1	**3.28%** 2	**27.87%** 17	**55.74%** 34	**11.48%** 7	61	3.72

Q8 For all your hospitalized patients, how often do you receive a medication list at discharge?

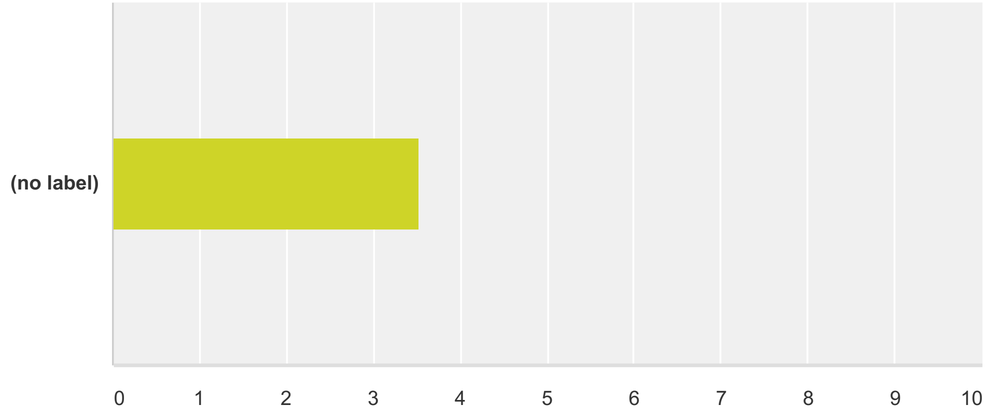
Answered: 60 Skipped: 4



	Never	Infrequently	Sometimes	Most of the time	Always	Total	Weighted Average
(no label)	**5.00%** 3	**13.33%** 8	**25.00%** 15	**43.33%** 26	**13.33%** 8	60	3.47

Q9 When you do receive information from the hospital, how often is it received in at timely fashion to meet your clinical needs?

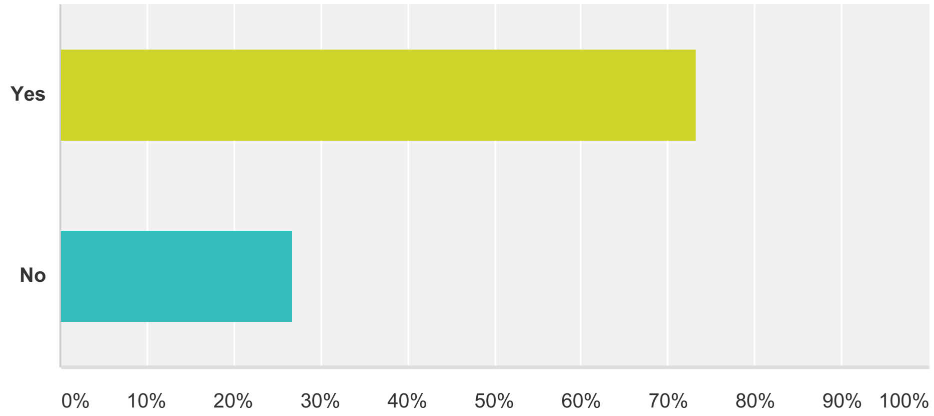
Answered: 58 Skipped: 6



	Never	Infrequently	Sometimes	Most of the time	Always	Total	Weighted Average
(no label)	**0.00%** 0	**12.07%** 7	**27.59%** 16	**56.90%** 33	**3.45%** 2	58	3.52

Q10 Have you had any discussion with administration at any of your primary hospitals about any issues with receiving information?

Answered: 60 Skipped: 4



Answer Choices	Responses	
Yes	**73.33%**	44
No	**26.67%**	16
Total		**60**

Q11 My Contact Info:

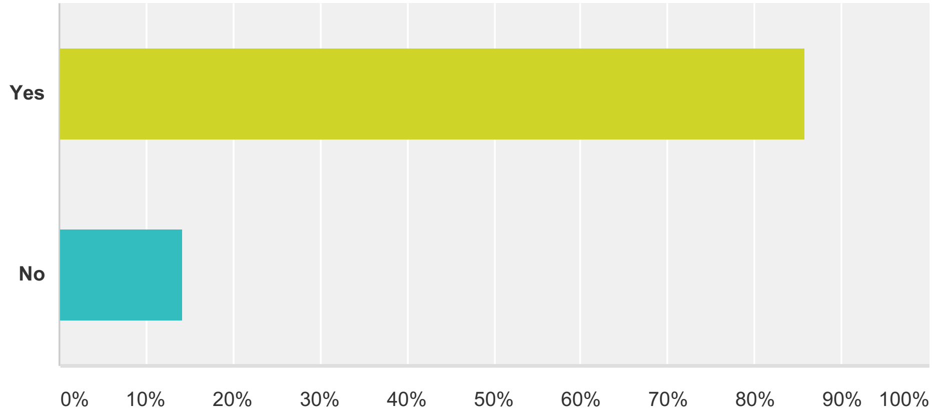
Answered: 30 Skipped: 34

Answer Choices	Responses	
Name	**100.00%**	30
Company	**93.33%**	28
Address	**0.00%**	0
Address 2	**0.00%**	0
City/Town	**0.00%**	0
State/Province	**0.00%**	0
ZIP/Postal Code	**0.00%**	0
Country	**0.00%**	0
Email Address	**96.67%**	29
Phone Number	**83.33%**	25

Appendix B

Q2 When you dictate an H&P, do you have to do anything specifically to send it to the Primary Care Physician (PCP)(eg "say copy to Dr PCP" when you dicate), or does the hospital take care of that?

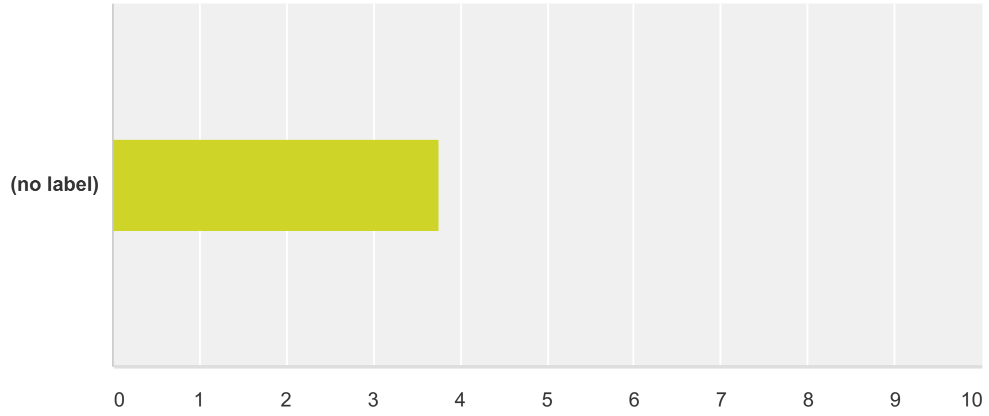
Answered: 7 Skipped: 1



Answer Choices	Responses	
Yes	**85.71%**	6
No	**14.29%**	1
Total		**7**

Q3 How often does the patient record correctly identify the PCP?

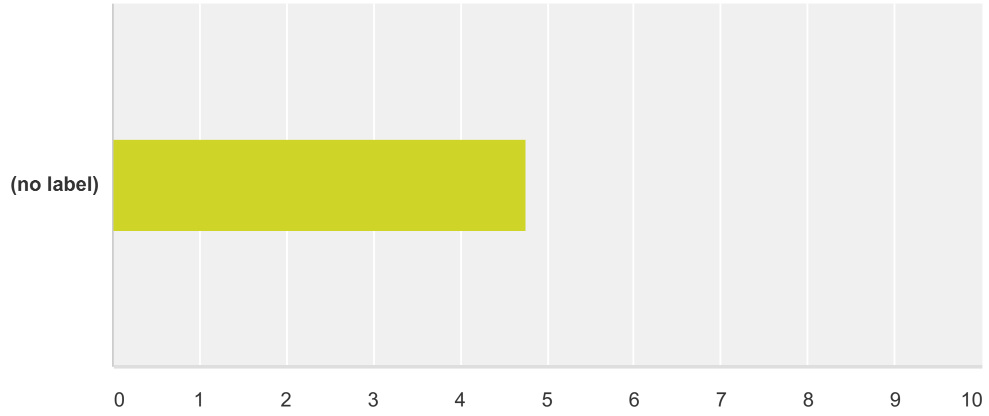
Answered: 8 Skipped: 0



	Rarely	Infrequently	Often	Most of the time	Almost always	N/A	Total	Weighted Average
(no label)	**0.00%** 0	**0.00%** 0	**50.00%** 4	**25.00%** 2	**25.00%** 2	**0.00%** 0	8	3.75

Q4 How often do you have to ask the patient who their PCP is?

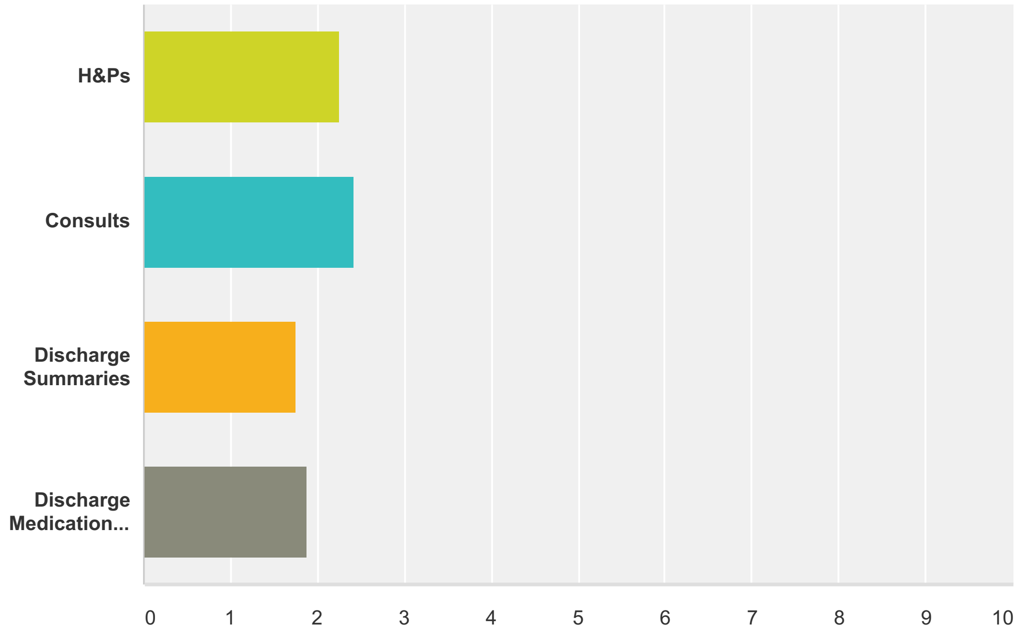
Answered: 8 Skipped: 0



	Rarely	Infrequently	Often	Most of the time	Almost always	N/A	Total	Weighted Average
(no label)	**0.00%** 0	**0.00%** 0	**0.00%** 0	**25.00%** 2	**75.00%** 6	**0.00%** 0	8	4.75

Q5 Which of the following documents are sent automatically by the hospital to the PCP?

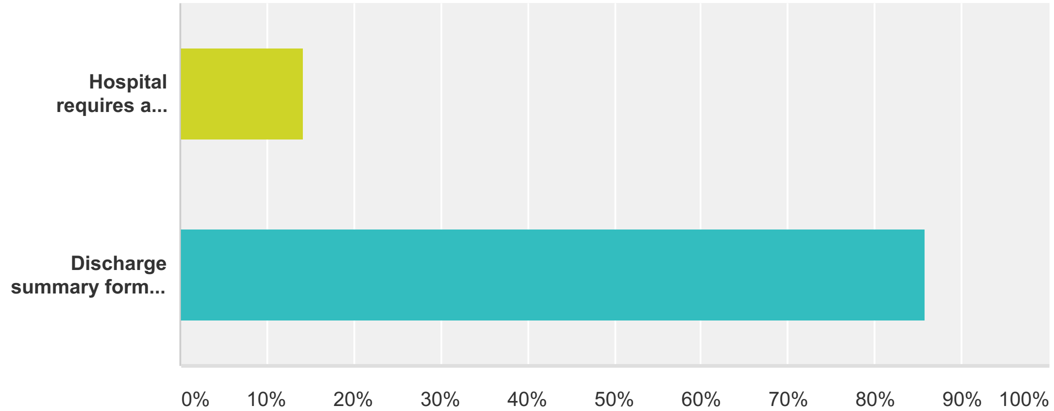
Answered: 8 Skipped: 0



	Yes	No	Not sure	Total	Weighted Average
H&Ps	**25.00%** 2	**25.00%** 2	**50.00%** 4	8	2.25
Consults	**14.29%** 1	**28.57%** 2	**57.14%** 4	7	2.43
Discharge Summaries	**50.00%** 4	**25.00%** 2	**25.00%** 2	8	1.75
Discharge Medication Lists	**37.50%** 3	**37.50%** 3	**25.00%** 2	8	1.88

Q6 Does the hospital require a structured format on discharge summaries (such as pending results, tests to be done, follow appts to be scheduled, medication list?), or is it at your discretion?

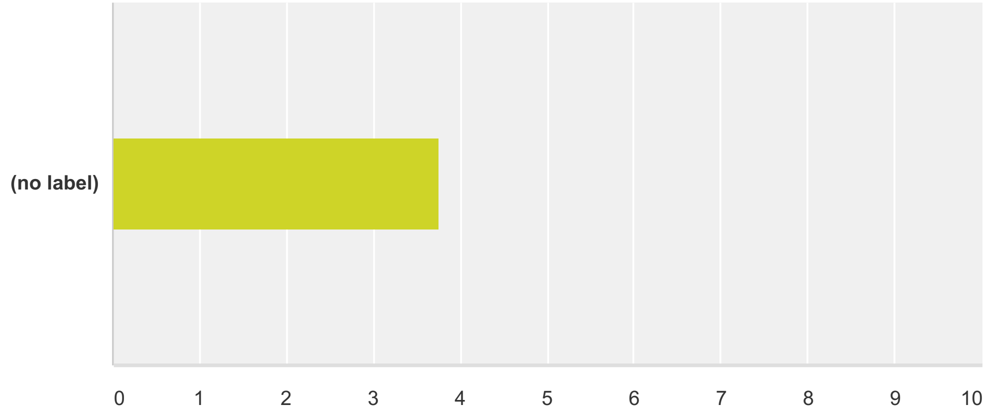
Answered: 7 Skipped: 1



Answer Choices	Responses	
Hospital requires a structured discharge summary format	**14.29%**	1
Discharge summary format is at my discretion	**85.71%**	6
Total		**7**

Q7 From your workflow, how often do you expect the PCPs are getting discharge summaries?

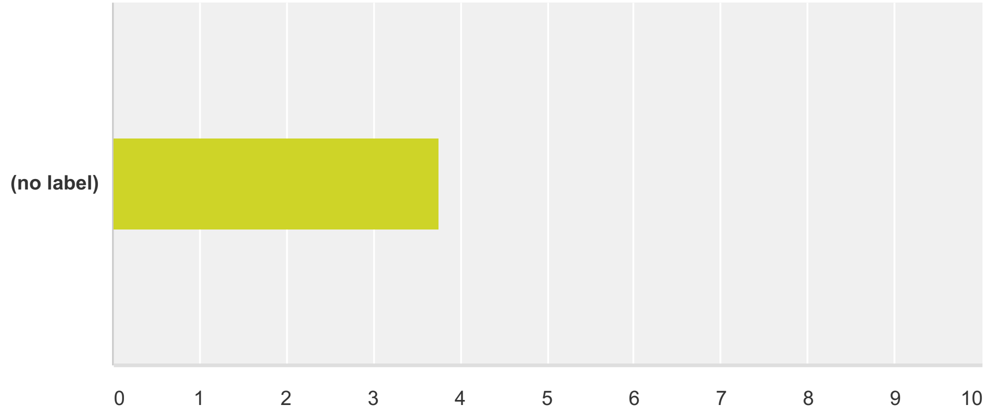
Answered: 8 Skipped: 0



	0 - 25% of the time	25 - 50% of the time	50 - 75% of the time	75 - 100% of the time	Total	Weighted Average
(no label)	**0.00%** 0	**0.00%** 0	**25.00%** 2	**75.00%** 6	8	3.75

Q8 From your workflow, how often do you expect the PCPs are getting medication lists?

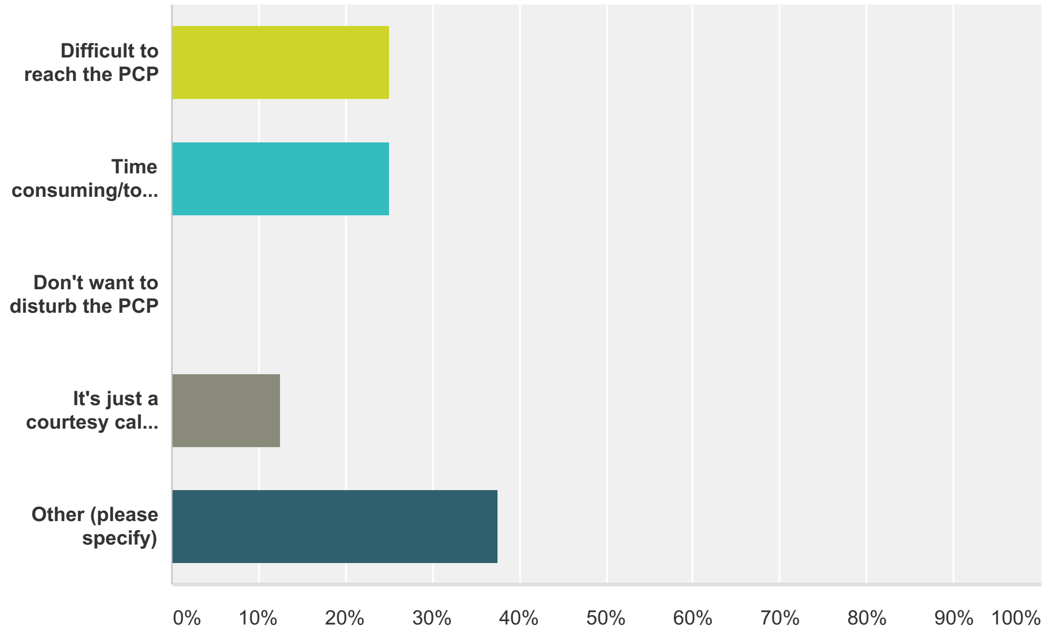
Answered: 8 Skipped: 0



	0 - 25% of the time	25 - 50% of the time	50 - 75% of the time	75 - 100% of the time	Total	Weighted Average
(no label)	**0.00%** 0	**0.00%** 0	**25.00%** 2	**75.00%** 6	8	3.75

Q9 What are the barriers to verbal communication with the PCP at the time of discharge?

Answered: 8 Skipped: 0



Answer Choices	Responses	
Difficult to reach the PCP	**25.00%**	2
Time consuming/too busy	**25.00%**	2
Don't want to disturb the PCP	**0.00%**	0
It's just a courtesy call and doesn't usually impact patient care.	**12.50%**	1
Other (please specify)	**37.50%**	3
Total		**8**

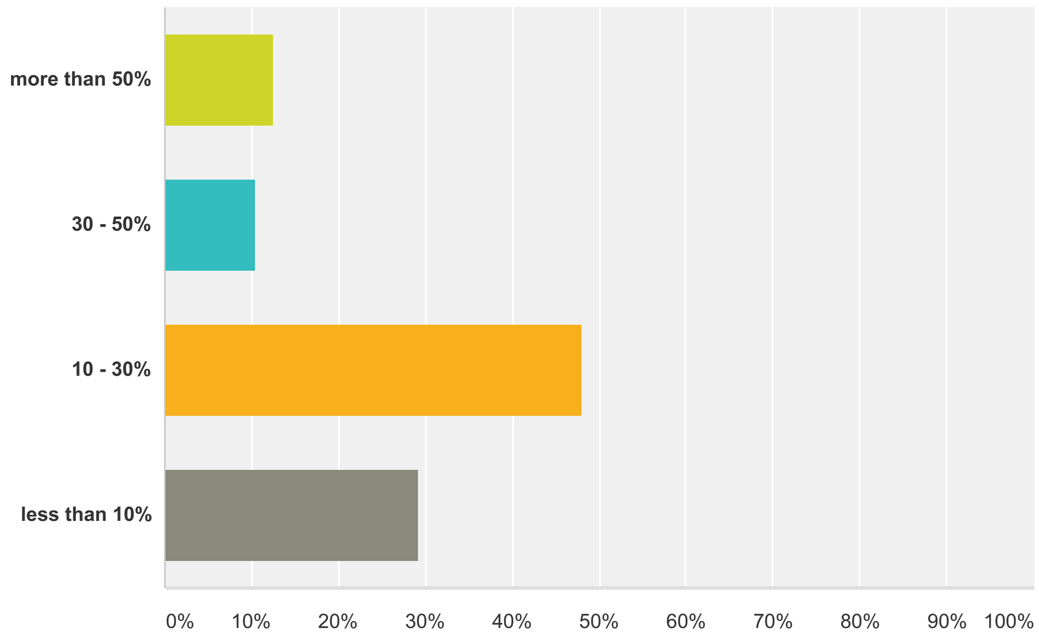
Q10 Do you have any suggestions as to how we can improve the flow of transitions of care information to the PCP?

Answered: 5   Skipped: 3

Appendix C

Q1 Even if you make hospital rounds yourself, or have dedicated hospitalists, or are employed in a hospital system with good information flow, some of your patients go to hospitals that are outside that information flow. What percent of your hospitalized patients do you think, end up at these "outside" hospitals?

Answered: 48 Skipped: 0



Answer Choices	Responses	
more than 50%	12.50%	6
30 - 50%	10.42%	5
10 - 30%	47.92%	23
less than 10%	29.17%	14
Total		48

Q2 If there was a single portal for all your hospitalized patients (regardless of hospital), which of the following features would you find desirable or hlepful?

Answered: 45 Skipped: 3

	Not desirable or helpful	Somewhat desirable or helpful	Very desirable	Not sure	Total	Weighted Average
An email or text alert that a patient had been admitted.	**0.00%** 0	**6.67%** 3	**93.33%** 42	**0.00%** 0	45	2.93
An email or text alert that a patient had been discharged.	**0.00%** 0	**0.00%** 0	**97.78%** 44	**2.22%** 1	45	3.02
An email or text alert that a patient had transferred to a subacute facility.	**0.00%** 0	**9.09%** 4	**90.91%** 40	**0.00%** 0	44	2.91
H&Ps are on this portal.	**2.27%** 1	**13.64%** 6	**84.09%** 37	**0.00%** 0	44	2.82
Consults are on this portal.	**0.00%** 0	**6.98%** 3	**93.02%** 40	**0.00%** 0	43	2.93
Discharge summaries are on this portal	**0.00%** 0	**2.27%** 1	**95.45%** 42	**2.27%** 1	44	3.00
Discharge medication list is on this portal.	**0.00%** 0	**2.27%** 1	**95.45%** 42	**2.27%** 1	44	3.00
Reminders to help track Medicare Transition of Care billing.	**6.82%** 3	**25.00%** 11	**59.09%** 26	**9.09%** 4	44	2.70
Reports I can use to show the hospital their performance on identifying the PCP, and sending reports such as H&Ps and discharge summaries and medication lists.	**2.27%** 1	**11.36%** 5	**81.82%** 36	**4.55%** 2	44	2.89