Understanding interprofessional communication: a content analysis of email communications between doctors and nurses

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Summary

Background: Clinical communication is recognized as a major source of errors in hospitals. The lack of documentation of communication, especially among verbal interactions, often creates hindrances and impedes improvement efforts. By providing smartphones to residents and encouraging nurses to communicate with residents by email shifted much of the communication to emails which permitted analysis of content.

Objective: Description on the interprofessional email communication between doctors and nurses occurring on the general internal medicine wards at two academic hospitals.

Design: A prospective analysis of email communications between doctors and nurses.

Setting: 34 out of the 67 residents who were on the general medicine clinical teaching units consented to allow analysis of their emails over a 6 month period.

Main measures: Statistical tabulations were performed on the volume and frequency of communications as well the response time of messages. Two physicians coded the content of randomly selected emails for urgency, emotion, language, type of interaction, and subject content.

Key results: A total of 13,717 emails were available for analysis. Among the emails from nurses, 39.1% were requests for a call back, 18.9% were requests for a response by email and the remaining 42.0% indicated no response was required from physicians. For the messages requesting a response by email, only 50% received an email response. Email responses had a median response time of 2.3 minutes. Content analysis revealed that messages were predominantly non-urgent. The two most frequent purposes for communications were to convey information (91%) and to request action by the physician (36%).

Conclusions: A smartphone-based email system facilitated the description and content analysis of a large amount of email communication between physicians and nurses. Our findings provide a picture of the communication between physicians, nurses and other healthcare professionals. This work may help inform the further development of information and communications technology that can improve clinical communication.

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Introduction

The Institute of Medicine has characterized the current practice of medicine as "more to know, more to manage, more to watch, more to do, and more people involved in doing it than at any time" [1]. With the increasing complexity in the provision of healthcare, communication and collaboration between healthcare providers is critical to deliver safe, high quality care. Advances have been made in health information systems, and most major institutions have adopted electronic medical records. However, these systems are primarily designed for information access, clinical documentation and computerized provider order entry rather than the *communication* of important information [2]. In contrast, communication technologies regularly used in healthcare organizations have lagged: many hospitals continue to rely on traditional numeric pagers for standard communication despite well documented limitations, resulting in a significant potential impact on healthcare quality [3, 4]. Multiple studies have shown direct links between poor clinical communication and increased risks of morbidity and mortality, as well as substantially increased costs [5–7].

Using information technology to improve clinical communication has been advocated as a method to improve care [1]. Recommendations include the use of other methods of communication such as email to reduce the burden of synchronous communication and unnecessary interruptions [8–10]. However, development of effective interventions to improve communication systems is limited by lack of information regarding the content of communication between health care providers. To date, a large amount of communication among clinicians has been verbal in nature, typically initiated by paging the clinician with little description in the literature of what is actually communicated [11]. In contrast, there are numerous studies including a systematic review that describe the content of communication between patients and providers [12, 13]. This information has aided in understanding the requirements for development of successful communication systems in this setting. A better understanding of the content of communication between clinicians could aid in improving both current communication and in designing improved communication systems.

In 2008, we implemented a communication system on the general medicine wards that provided smartphones to residents and allowed nurses and other clinicians to communicate with them by email as well as telephone. Evaluations of this system have previously been described [14, 15]. In summary, there was high uptake of the system among physicians and nurses, and both groups perceived improved efficiency. The system has shifted much of the communication between nurses and physicians to email and provided an opportunity to study the content of clinical communication [15]. The purpose of this study was to analyze email communications between doctors, nurses and other health care providers in order to describe the content of email messages to gain insight into this important clinical interprofessional link.

Objective

Describe the interprofessional communication between clinicians that occurred on the general internal medicine wards at two academic hospitals.

Methods

Design

A prospective analysis of email communications between clinicians.

Setting

General internal medicine wards at the Toronto General Hospital and Toronto Western Hospital in Toronto, Ontario, Canada. At each site, there were four medical teams, each consisting of a senior resident and two to three junior residents.

Intervention

All residents on the medicine service were given a BlackBerry smartphone. As well, there was a team smartphone that was the primary point of contact for nurses and allied health professionals to communicate with each team, 24 hours a day, 7 days a week. The team smartphone was handed over during sign over from resident to resident. Nursing and allied health colleagues could send emails to the team smartphone by using an intranet page that delivered messages with specific structure and content – the patient's name, the sender's name, the issue, and their desired method of response (call back, email, or no response for informational items that did not require a response). For urgent issues, the smartphones could be called directly. Physicians could respond to or forward these emails, as well as send emails to each other using their smartphones. Nursing and allied health professionals could retrieve email replies from a ward-based email account. Residents received one hour of training on the use of smartphones that included appropriate use. This included instructions to only use institutional email on the smartphones to communicate patient information due to privacy and confidentiality concerns.

Data collection

Between January 2009 and June 2009, all email communication that occurred on the smartphones of consenting residents was collected, including the sender, the receiver, the time of message, and the message text. To address privacy concerns of patient information or personal information contained within the emails, a research associate removed identifying information from emails by performing the following:

- information identifying patients was removed such as names and medical record numbers
- information identifying residents was replaced with a unique identifier known only to the research associate
- personal emails were deleted

Analysis

To describe email communications, emails were categorized as either structured emails or unstructured emails based on whether or not the email originated from the structured intranet page. Descriptive statistics were calculated for each group. A categorization scheme based on previous communication literature was used to provide description of email content (▶Table 1) [16, 17]. Definitions for terms such as courteous vs. non-courteous, concise vs. verbose were determined from a content analysis study in patient-provider communication [17]. A sample set of emails was then analyzed to refine the categories. A random sample of emails were then chosen as the study set and were coded independently by two physicians (CS, RW). The physicians coded the study set for interaction type, language usage, emotional tone, and the perceived clinical urgency of each communication. Based on all of these factors, the coding physicians also made an overall judgement with regards to the appropriateness of the type of response requested in structured emails (call back required, email response required, or no response required). A sample size of approximately 200 emails in each category was selected to provide confidence intervals of 5% around point estimates. To determine inter-rater agreement, kappa coefficients were calculated between the two physicians on the coding set.

The study was approved by the institutional review board of the University Health Network.

Results

Email Usage

Between January 2009 and June 2009, 34 of the 67 residents who were on the general medicine clinical teaching units consented to allow analysis of their emails. This resulted in 13,717 total emails for analysis. Of these, 7,784 emails originated as structured messages from the intranet page (structured emails) while 5,933 emails did not (unstructured emails) (▶Table 2). With respect to typical daily

communication, a senior resident who was on call would be typically carrying a senior smartphone and the team smartphone. This would equate to on average receiving 22.3 emails from nurses, 4.0 from other residents, 1.4 emails from the attending physician, while sending 4.3 emails to nurses and 4.8 emails to other residents, and 0.8 emails to the attending physician over a 24 hour period.

Of the 7,784 structured emails, there were 5,393 from the structured intranet page that initiated a new email thread, with the rest constituting replies (n = 942) and forwards to other clinicians (n = 1,449). The majority of structured emails originated from nurses (94.7%).

Structured emails contained requests for the desired method of response. Of these requests, 39.1% were requests for a call back, 18.9% were requests for an email response, and 42.0% were sent as information-only, with no response requested. Among the structured emails requesting an email response, 50.0% of them received an email response. The median response time was 2.3 minutes. Despite not requesting email responses, 9.7% of call back requests and 9.9% of information-only emails received an email response (▶Table 3). For structured emails requesting an email response, the rate of response did not vary if it was sent during regular weekday hours, evenings, early morning or weekend hours. Email response time appeared to be better during regular hours (mean 6.8 minutes, median 1.8 minutes) compared to early morning hours (mean 12.0 minutes, median 3.0 minutes) (▶Table 3).

The bulk of the unstructured email traffic through smartphones was between medical residents (▶Table 2). Residents also used emails to communicate with attending physicians, the chief medical resident, patient flow coordinators, pharmacists and social workers. Emails were received from and sent to external email addresses 7.9% and 10.4% of the time respectively.

Content Analysis

To determine the content of emails, a random sample of 392 emails – 196 structured emails (i.e. from the intranet page with defined fields) and 196 unstructured emails – were selected from a total of 13,717 emails. Between the two coders, agreement was very good for interaction types and emotion ($\kappa = 0.8$), substantial for subject, appropriateness of response request and conciseness of language ($\kappa = 0.7$), and moderate for the level of urgency ($\kappa = 0.54$).

The tone of structured emails was equally courteous (49.6%) and neutral (50.2%), while unstructured emails were predominantly neutral (62.9%).(▶Table 4). Language usage in both structured and unstructured emails was predominantly concise, with only 17% using descriptive language in either group. No unstructured emails were deemed urgent, while 5.7% of structured emails were deemed urgent. The most common interaction of structured emails was the receipt of information from nurses by residents (90.5%), but 36.2% of messages also contained a request for some sort of action by the resident. Unstructured emails mostly involved the sending or receiving of information (combined 81.3%). Communication was primarily related to medication/treatments (43.4%), patient symptoms or signs (35.3%), and results of investigations (29.3%), while unstructured emails between smartphones were predominantly for organizing the team (53.5%), patient flow (21.0%), and medical education (9.4%) purposes.

Of the structured emails, 55 (28.1%) were perceived by the coding physicians to request a type of response (call back, email, no response) that was inappropriate for the message content. Predominately, a less interruptive message was felt to be more appropriate (n = 50). In only a few cases it was felt that not enough information was provided (n = 2), a higher level of interruptive response was indicated (n = 2), or a question was being asked without requesting a response (n = 1) (▶Table 5).

Discussion

To date, there is little detailed description of the important interprofessional communication between clinicians, which impedes efforts towards quality improvement in this area. We believe that this is the first study to analyze the content of email communication between clinicians providing care to hospitalized patients, and that the prospective design and large volume of emails analysed provide an accurate picture of *who communicates with whom, how, and about what*. With this email system, it was predominantly nurses using structured emails to communicate patient's symptom/

signs, investigations, and treatment to resident physicians, with other clinician interactions being much less frequent. In comparison, the majority of unstructured communication between smartphones involved residents co-ordinating within their medical teams.

The existing data on content of clinical communication has focused mainly on patient-provider interactions and on other provider settings. Content of patient-provider emails has been recently reviewed, with the majority of emails from patients found to be for non-acute issues and requests of information or updates on condition [13]. Communication between primary care providers and staff of diabetic clinics has been described, with the content of messages coded by computer software as being mostly about communication with patient and family, medications and treatment, and arranging appointments with patients [18]. We found some similar content areas, but our study is complementary to these studies in providing information on communication between a broad range of clinicians in a complex inpatient hospital setting. Additionally, since we had two clinicians coding the content of the selected sample, we were also able to provide a more informed picture with descriptions of emotion, language, and urgency, as well as a subjective analysis of the types of responses requested.

A limitation to this study was that we analyzed only emails, which are just one part of clinical communication. Verbal communication between clinicians still continued. Without having data on verbal communications available for analysis, it is difficult to interpret findings such as the lack of email response to the nurses who requested emails (50%). It is unknown how many of these requests were resolved in telephone calls or face-to-face conversations. However, the large volume of email communication suggests that a significant amount of clinical communication had relied on this mode. A second limitation is that we studied communications from an intervention using smartphones and a structured intranet page, and our results may not be generalizable to other settings. However, we used standard components of smartphones and an intranet page, and other institutions that use similar components may see similar communication. Thirdly, this study was conducted at two academic hospitals, and the communication culture in other institutions, especially community hospitals, may be different. Fourthly, slightly over 50% of residents over the six-month period consented to be part of this study, and it is unknown if the communication content would be much different had all residents participated. One can postulate that residents who opted-out may have a different communication style or a different level of comfort with technology, but given the similarity of the clinical work that needs to be accomplished daily by all residents, the actual content would likely be similar. Other reasons for opting out may have been related to privacy or confidentiality concerns, but unfortunately we did not obtain reasons for declining study participation. For those participants that did consent, they may have modified their behaviour in communicating with emails which may have affected results. Finally, interpreting and analyzing email communications out of context may lead to misinterpretations. While the two coders used standard definitions to categorize email content, the coding was done without the clinical and interprofessional context and may have led to systematic misclassification for categories such as courtesy.

The main implication of this study is that it helps to characterize the communication between care providers. With better understanding of clinical communication, we can help move from the disruptive communication that can occur to a collaboration space between the multiple clinicians involved in the care of a patient [19]. We see the following possibilities with improved documentation of clinical communications.

First, we see potential for improving communication by reducing unnecessary communication and liberating more time for patient care. This includes the 29% of emails that contained laboratory information from nurses to residents or the 8% of emails from nurses informing residents about consultants' orders. Nurses appeared to be relaying abnormal laboratory values to physicians to ensure they were aware. Improvements in patient care information systems could allow for direct notification of critical values to residents but also let nurses know when physicians have already reviewed a result and their plan of action. Similarly, direct communication from consultants to physicians while informing nurses of any changes in care plans would reduce the need for nurses to play a role as an intermediary. By reducing this 'noise' in communication which can result in interruptions, we hope that this will improve the 'signal' – the delivery of the right message to the right provider through the proper communication channel.

Second, 28% of the types of requested response in structured emails were found by physicians to

be inappropriate for the content. In 91% of these cases, it was felt that a less interruptive method could have been substituted, typically an email response instead of a more labour intensive and disruptive return telephone call. The gap between perceived urgency between nurses and physicians has been previously identified, and may have played a role in this result [11]. In order to design better functioning communication tools, further agreement is necessary to determine the appropriate response type for different clinical scenarios that optimally balances the needs of the patient, the needs of the nurse, and the workload of the physicians.

Thirdly, considering the 63.4% of messages that requested either an email response or no response at all, the communication system appeared to be used for conveying information that required no immediate action from the resident. As these physicians took a median of 2.3 minutes to respond to messages, it appears that they were able to prioritize response time. Presumably, this was based on both the content of the email request and on the other clinical tasks that they were engaged in at the time of the request. This demonstrates that an email-based communication system can decrease the synchronicity of the communication, which would be expected to lead to decreases in distraction and cognitive overload, and hopefully as a result to less adverse outcomes [9, 11].

Finally, language use in clinical communication has not been well studied [16]. Email communications can potentially be fraught with more misunderstandings than voice communications due to the lack of nonverbal cues [20–23]. In this study, the structured emails from nurses and other allied health clinicians were more likely to have polite modifiers in the message while physician emails were more likely to contain only neutral language. This may be due to the fact that the nurse is initiating a communication that may interrupt the physician. It is not clear how such neutral language from physicians would be interpreted by the receiving nursing and allied health staff, especially given the tensions that often already exist between physicians and other members of the interprofessional team [24]. Further work should be done in studying the potential impact of email language on interprofessional relationships, as well as on the role for educating physicians about clear usage of courteous written language to avoid misunderstandings.

Conclusion

A smartphone-based email system facilitated the description and content analysis of a large amount of email communication between physicians and nurses. Our findings provide a picture of the communication between physicians, nurses and other healthcare professionals. This work may help inform the further development of information and communications technology that can improve clinical communication.

Conflicts/Disclosure
The authors declared that no conflict of interest exists

Protection of Human and Animal Subjects
The study was performed in compliance with the World Medical Association Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects, and was reviewed by University Health Network institutional review board.

Acknowledgements

Table 1 Definitions of fields coded in content analysis of emails

1	EMOTION	Each email coded for the <u>overall</u> message tone, by the following categories	
		COURTEOUS	Specifically polite language/grammar usage
		NEUTRAL	Neither courteous nor non-courteous
		NON-COURTEOUS	Specifically impolite language/grammar usage
2	LANGUAGE	Each email coded for the <u>overall</u> message style, by the following categories	
		CONCISE	Comprehensive information conveyed, but with no or only limited/economical usage of adjectives, descriptive terms
		DESCRIPTIVE	Information conveyed, but wider use of adjectives and descriptive terms
3	URGENCY	Based on the clinical information available in the email, a subjective opinion on the immediacy of the response request.	
		NON-URGENT	A delay greater than 30 minutes in response is unlikely to negatively impact patient outcome
		URGENT	A response within 30 minutes is required to avoid any potential negative impact on patient outcome
		UNABLE TO DETERMINE	Due to lack of clinical information or other patient context, it is not clear whether a response within 30 minutes is required to avoid any potential negative impact on patient outcome
4	INTER-ACTION	Each email was coded from the point-of-view of the resident using the smartphone as it relates to the purpose of the interaction, under the following categories	
		● For received emails	
		RECEIVE INFORMATION	Receipt by resident of an email containing information
		RECEIVE INFORMATION REQUEST	Receipt by resident of an email containing a request for information
		RECEIVE INSTRUCT REQUEST	Receipt by resident of an email containing a request for action
		● For sent emails	
		GIVE INFORMATION	Email containing information sent by the resident to others
		INFORMATION REQUEST	Email sent by resident containing a request for information
		INSTRUCT REQUEST	Email sent by resident containing a request for action
		● For sent or received emails	
		ACKNOWLEDGE MESSAGE RECEPTION	Email that has the sole purpose of confirming the receipt of a prior message

Table 1 Continued

5	SUBJECT	Each string of text coded <u>non-exclusively</u> as it relates to the subject matter of the interaction, under the following categories	
		MEDICATION / TREATMENT(S)	Medications or other therapeutic treatments/interventions currently underway or planned
		TEAM COORDINATION	Organization of daily work-flow within the GIM medical team
		PATIENT SYMPTOM / SIGN	Physical symptoms or clinical signs of patient
		LAB VALUE / INVESTIGATION(S)	Results of investigations
		ADMISSION, DISCHARGE, TRANSFER, PATIENT FLOW	Issues of patient movement in to-within-and out of the hospital
		NURSING PROCEDURE	Procedures typically performed by nurses (phlebotomy, IV sites, IV pumps, patient feeding etc.)
		PATIENT OR FAMILY COMMUNICATION	Communications to/from patient and family
		REFERRALS OR CONSULTANT SUGGESTIONS	Involvement of consultants and action related to their suggestions
		MEDICAL EDUCATION	Pertaining to issues primarily focused on medical education of trainees
		SOCIAL	Inter/intra disciplinary exchanges with no relation to patient care or hospital environment
		ADVERSE EVENT OR NEAR MISS	Any patient safety concern where an unintended hospital event has occurred, either with subsequent morbidity/mortality or where morbidity/mortality were avoided
6	INAPPROPRIATE (structured emails only)	Marked if the coder feels the type of response requested (call back/ email/no response) is inappropriate for the data contained in the email	

Table 2 Emails received by and sent from residents' smartphones by types of email

| | Structured | | | | Unstructured | | | | All | |
| | Received | | Sent | | Received | | Sent | | | |
	n	%	n	%	n	%	n	%	n	%
Nurses	5,889	94.5	930	60.0	----		----		6,822	48.4
Residents	----		612	39.4	1,868	53.5	2,038	72.3	4,516	32.0
Pharmacist	243	3.9	6 ()	0.4	125	3.6	36	1.3	410	2.9
Patient Flow	29	0.5	----		172	4.9	131	4.6	332	2.4
Attending	6	0.1	1	0.1	568	16.3	279	9.9	854	6.1
Social worker	4	0.1	1	0.1	175	5.0	42	1.5	222	1.6
External email	----		----		274	7.9	293	10.4	567	4.0
Chief medical resident	----		----		307	8.8	----		307	2.2
Other[1]	63		----		----		----		63	
Total	6,234		1,550		3,489		2,819		14,093[2]	

[1] There was less than or equal to 0.1% use of email by emergency physicians, palliative care, respiratory therapists, occupational therapists, physiotherapists, community access care coordinators, interventional radiology, dieticians, speech language pathologists.
[2] The total is greater than the total emails for analysis (13,717) because unstructured emails sent by smartphones sometimes had multiple recipients.

Table 3 Email response to structured emails

| | Structured Emails | | Email response received | | Response Times in minutes | | |
	n	%	n	%	Mean	SD	Median
Call-back requested	2,109	39.1	202	9.6	7.8	27	2.0
Email response requested							
Regular weekday (8am-6pm)	491	48.3	241	49	6.8	16.8	1.8
Evening (6pm-12am)	224	22.0	110	49	11.9	29.1	2.5
Early am (12am-8am)	137	13.4	74	54	12.0	24.7	3.0
Weekend (8am-6pm)	165	16.2	84	51	5.1	9.9	2.8
Total	1017	18.9	509	50.0	8.4	23	2.3
Information only (no response)	2,267	42.0	219	9.7	11	59	1.7
Total	5,393		930				

Table 4 Content analysis of emails between clinicians

	Structured email	Unstructured email	Example
Emotion	**196**	**196**	
Courteous	49.6%	36.5%	Pt booked for chest ct with contrast today consent needed please
Neutral	50.2%	62.9%	VSS BP 125/84, HR-118, RR-20, SaO2 98% RA
Non-courteous	0.6%	0.6%	You are needed here NOW. RT is here to assess the patient and need you to consult. Please respond now.
Language			
Concise	82.5%	83.0%	Pt VSS this morning, breathing better O2 sat 98% on 2L. Please assess q 1hr inhalers
Descriptive	17.6%	16.9%	Pt is still drowsy, but better than last night. Please reassess morphine dose. Does am morphine need to be hold? Also seen chest CT being ordered in EPR, if pt going for CT, can suction be connected??? Thanks.
Urgency			
Urgent	5.7%	0.0%	BP Rt arm 207/104 Lt 230/104
Non-urgent	89.7%	99.0%	STAT INR is 4.37 No coumadin given. Please call to confirm.
Unable to determine	4.6%	1.0%	Chest tube continues to leak ++, patient reports a lot of pain with touch and movement. Anything else you want us to do? Also, Hb 76 (89) Creatinine 145 (129) Thanks!
Interaction type			
Receive information	90.5%	46.5%	Pt refused bloodwork this am. Wants to speak to MD regarding no further blood work or IV lines to be put in as pt does not want to be „poked" anymore.
Receive information request	24.7%	14.2%	There is one-time dose IV 60 mg Lasix and PO 40 mg Lasix to be given this morning. Should we hold the PO lasix?
Receive instruction request	36.2%	13.5%	PLS ENTER MILK OF MAG. 30CC AS PER GI SUGGESTIONS IN COMPUTER FOR TONIGHT;
Send information	0.0%	34.8%	Ok will change in epr ----- Original Message ----- pt family requesting morphine to be on hold and put tylenol 1–2 tab 500mg
Send information request	0.0%	10.0%	Who wants the junior code pager tonight?
Send instruction	0.0%	2.6%	I'm back and I'm going to the er Txt me when your mtg is done
Acknowledgment	0.0%	17.1%	Great thank you ----- Original Message ----- blood work was done and result is back. K+-5.6
Other	0.3%	0.0%	

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Table 4 Continued

	Structured email	Unstructured email	Example
Subject			
Medication or Treatment	43.7%	10.3%	Pt does not want her 2200 colace or prevacid. Please let me know if this is a problem. Cheers!
Team coordination	0.3%	53.5%	Can I handover team X?
	Structured email	Unstructured email	Example
Patient symptom/ sign	35.3%	8.1%	pt c/o feeling dizzy when she got up this am, states she vomitted x 1 . BP is 90/60 (pt's usual BP is around 110/ 70), HR 77, T- 36.8, O2 – 97% on RA, RR 18. Any orders please place in EPR. Thank You.
Laboratory result	29.3%	12.3%	Pt's bicarb is 37. Previous 34.
Admission, discharge, transfer or other	10.3%	21.0%	Pt waiting for D/C order, family coming soon to pick up.
Nursing procedure	15.2%	0.6%	Please address: Mrs. X removed her catheter twice today she walks away from the bed pulling the catheter out bulb inflated and all.
Patient or family communication	9.8%	3.9%	patient would like dr. X to come speak to her when he/she comes in. please pass on the message.
Referrals or consultant related	7.8%	4.2%	pls. OK rheumatology suggestions
Medical education	0.0%	9.4%	Hi guys [chief medical resident]is going try to have code blue teaching later this afternoon. She will email us.
Social	0.0%	3.9%	I'm going back to the [ward], but I'll stop by the cafeteria to get something to eat; to you want something?
Adverse event or near miss	1.7%	0%	Received a new order for Novolin 30/70 tid (times 2am, 10am and 18:00). Pt is also on Novolin NPH bid at 10am and 22:00. Please clarify if pt needs both insulins and at these times.
Inappropriate	28.1%	N/A	Please see Table 5

Table 5 Structured emails whose desired response type were perceived as inappropriate

Reason why inappropriate	Frequency (n = 55)	Example
Less interruptive response type could be used (email or information only)	50	Page type: Call back requested There is one-time dose IV 60 mg Lasix and PO 40 mg Lasix to be given this morning. Should we hold the PO lasix?
More interruptive response type should be used (direct call or request a call back)	2	Page type: Info only/No Response necessary Pt's vitals this morning- BP- 130/90 HR- 145–150 RR- 40 Temp- 39.1 (last tyl given at 0030, will give again this morning)
Not enough information provided	2	Page type: Call back requested pls call me
Asking a question without requesting a response	1	Page type: Info only/No Response necessary Pt is still drowsy, but better than last night. Please reassess morphine dose. Does am morphine need to be hold?

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