Video Conferencing at patient discharge: a strategic communication model to connect patients and care providers.

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About the Author:

Sarah Elizabeth Shindelar’s background is in the psychosocial field with an interest in psychology, child development and leisure education. Sarah currently works at the University of Minnesota Amplatz Children’s Hospital, Fairview. Her primary job function includes providing direct-patient care to chronically ill children and their families during their hospitalization. Other functions include quality improvement projects, coordination and planning of events, partnerships with donors and supervising volunteers. Sarah has worked on an inpatient unit for seven years serving an array of patients and families with a focus on the cardiology, nephrology and pulmonary services.

As Sarah’s interests changed, along with an anticipated career switch, Sarah explored additional schooling. Strategic Communications became a bridge to further enhance her knowledge as well as supplement her existing expertise in healthcare services. Sarah continues to search for future opportunities in health care communications with goals of supporting healthcare companies in the areas of branding, strategy, planning and account management.

Sarah is a master’s graduate of University of Minnesota and this paper is the capstone project for her Professional M.A. in Strategic Communication through the School of Journalism and Mass Communication. The paper explores healthcare communications in a pediatric inpatient setting looking at the use of video conferencing as a strategic communication tool to connect patients and care providers at discharge.
Introduction:

With the rapid changes of technology, the ability to connect and communicate with one another through various devices has skyrocketed. Personally and professionally consumers are able to get immediate access at the tip of their fingers to connect with others via smartphones, tablets and computers. The healthcare system is also moving towards an integrated approach of using technology to communicate with and support patients and families during their healthcare journey.

Buzzwords such as e-health, telehealth, telecommunications and video conferencing are commonly used in the healthcare field to describe a variety of ways medical providers are communicating and interacting with their patients through the use of technology. According to White (2012) “our health care system has moved from a model where the patient physically goes to the point of care, either at a doctor's office, clinic or hospital, to a model where the care travels to the patient through an Internet connection” (p. 1). Therefore, with the changes in medical practices, health care systems are figuring out how to best serve the patient at the point of care through the use of technology and are adopting practices best fit for their facility and strategic goals.

To avoid confusion with the variety of buzzwords used to describe technology devices used to communicate in a health care setting this paper will use the term video conferencing. Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, Google chat, etc…). Research in the area of using video conferencing for health care communications is still new. However, with changes to health care services and common goals across the health care field to reduce readmissions, improve patient-
satisfaction scores, improve patient safety and improve communication amongst care providers there is a growing need to understand the communication processes and ways to integrate technology to support these initiatives.

The University of Minnesota Amplatz Children’s Hospital has a contract with Video Guidance, a strategic visual communications vendor that manages different brands (Cisco, LifeSize, Polycom) of video conferencing equipment to facilitate an electronic connection and interaction to occur in real-time from a distance. This technology creates an audio and visual presence and experience for patients, families and care providers in a multitude of ways including patient family connectedness, school integration, e-field trips, community outreach and physician referrals.

The partnership Fairview Information Technology has taken with Video Guidance has ensured a safe, encrypted and legal transfer of health information, complying with HIPAA, to protect patient confidentiality when using the video conferencing equipment.

The logistics of video conferencing, in the case of a patient’s discharge, includes coordination of selecting a date and time that works for the patient-family, internal care providers and external care providers schedule. The video conferencing session would last for approximately one hour to discuss the patient’s discharge. Ideally all of the participants would stay for the entire video conferencing session to offer the best experience so everyone involved can hear the same messages and be on the same page with the discharge plan of care.

When implementing the use of video conferencing for a patient’s discharge at the University of Minnesota Amplatz Children’s Hospital a conference room in the hospital would be reserved and set-up with the video conferencing equipment. The patient-family
and internal care providers (i.e., primary physician, care coordinator, nurse, pharmacist and as able other relevant care providers) would meet in the conference room to make the video and audio connection with the external care providers. The external care providers would either be together as a group, with a similar set-up in a private conference room at their facility, or have the technology capability to connect on an individual basis wherever their location.

This case study will focus on the use of video conferencing during the discharge process of a patient from the hospital and explore the communication pathways between care providers (physician, pharmacist, care coordinator, primary care physician and/or other external care providers) and the patient-family. This case study will also explore how using video conferencing as a strategic communication platform may improve patient-satisfaction scores.

**Literature Review:**

Technology has transformed health care and is changing the way patients are interacting and communicating, both on a personal and professional level. The ongoing dialogue between patients and their care providers during the discharge process creates a complex web of communication (See Appendix 1). A crucial element in the communication process at discharge is that often patient’s live far away from the hospital/clinic where he/she was receiving care. At the University of Amplatz Children’s Hospital about 23.41% of patient’s admitted during 2012 live outside of the Twin cities metro area. About forty four percent of patient’s admitted during 2012 live outside of the Minneapolis-St Paul metro area.
Upon discharge to home the patient may end up back at his/her local clinic/hospital where the primary care physician is out of the loop of the patient’s medical situation. According to Hofflander, Nilsson, Eriksen, & Borg (2013) “there is a need to support both nursing staff in primary healthcare and nursing staff at the hospital to help them understand the importance of collaboration around the patient and the patient’s needs in the discharge planning process, and how new solutions, such as video conferencing, might be used in this context” (p. 96).

At the University of Minnesota Amplatz Children’s Hospital patient satisfaction is measured through a nationally recognized survey, Picker. (See Appendix 2). Patient satisfaction is a measure of how satisfied a person is with a product or service. Picker surveys are sent to patients after they are discharged to home, generally the patient receives the survey about one to two weeks later. The Picker survey identifies key areas for medical facilities to understand how they are performing in patient-centered care services within eight primary dimensions: patients’ preferences, emotional support, physical comfort, information and education, continuity and transition, coordination of care, access to care and family and friends (www.nrcpicker.com). Data related to this case study falls under the patient-centered care dimension of continuity and transition, Picker survey questions number 37, 38 and 39 under the category “going home” (See Appendix 1).

The Picker survey uses a three-tiered color system to differentiate at which level the hospital is performing in a particular dimension. Red indicates the score is significantly less than the National Research Corporation (NRC) 50th percentile, demonstrating a negative trend. Yellow indicates the score is less than the NRC 50th
percentile (but may not be significantly), demonstrating a neutral trend. Green indicates the score is equal to or greater than the NRC 50th percentile, demonstrating a positive trend.

The most current Picker results at the University of Minnesota Amplatz Children’s Hospital include a data collection, on a quarterly basis, from April 1st 2012 to March 31st 2013. During this time frame 797 patients were sampled. Out of the 797 surveys sent, 14 surveys were non-deliverable and 158 were returned resulting in a 20.2% response rate (See Appendix 3). The survey consists of multiple choice, ratings, free text comments and demographics. Out of 78 comments collected from the survey, six comments were related to continuity and transition (i.e., discharge) with all of the remarks being negative. Remarks can be found in Appendix 4.

According to the University of Minnesota Amplatz Children’s Hospital Unit Comparison Spotlight Report (See Appendix 5) within the patient-centered dimension area of continuity/transition, the report indicates the hospital has room for performance improvement in the patient-care dimension of continuity/transition (i.e., discharge) as the ratings fall in the yellow and red zone and current scores do not consistently exceed the NRC average.

**Expectation Disconfirmation Theory:**

Providing patient-centered care has been a strong initiative amongst the health care industry and has been a predictor in patient-satisfaction scores. “Patient-centered care treats patients as individuals and defines quality of care from the patient’s perspective” (Martin, Diehr, Conrad, Davis, Leickley & Perrin, 1998, p.125). Customer satisfaction in service-oriented functions is defined in two ways by Davis & Heineke
1.) satisfaction as a function of disconfirmation

2.) satisfaction as a function of perception

An example of satisfaction as a function of disconfirmation is if a patient expects that the care provider enters the room within 15 minutes of the admission time and if the care provider doesn’t arrive to the patient’s room until 45 minutes later then the patient’s satisfaction is not confirmed. An example of satisfaction as a function of perception is if a patient perceives that the care provider should be smiley and greet him/her by his/her first name and the care provider is able to do this then the patient’s perception is met and his/her satisfaction is confirmed.

Reliability, responsiveness, assurance, empathy and tangibles are all attributes that affect patient perceptions and experiences to rate the quality of service/s (Newsom & Wright, 1999). With these variables research has been performed to study, identify and develop tools to evaluate the effectiveness in the ability to measure consumer satisfaction. Suki et al. (2009) evaluated two measurement tools (SERVQUAL and QFD-led). The SERVQUAL five dimension model looks at the dimensions of reliability, assurance, tangibles, empathy and responsiveness within service quality versus the Quality Function Deployment (QFD) model consists of seven parts that look at service planning, operational planning and new concepts deployment (Suki, et al, 2009).

The study found mixed results in the use of the assessment tools in measuring patient expectations and perceptions. Even with extensive research in the area of consumer satisfaction there are varied opinions on appropriate theories that frame satisfaction and dissatisfaction. However, a popular theory is the expectation
disconfirmation theory. This theory states that it can predict and explain satisfaction of consumers in regards to a product or service. Disconfirmation results from a patient’s expectations of the service compared to the actual performance of service/s he/she receives. Therefore a patient’s expectations are confirmed when the service performance meets his/her expectations. On the flipside, a patient’s expectations are disconfirmed when the service performance doesn’t meet his/her expectations. (Hills & Kitchen, 2006). Each patient holds a unique perception of what he/she expects the hospital to provide for him/her in terms of the quality of service/s. The perception and actual service is then either confirmed or disconfirmed.

Research agrees that disconfirmation provides valuable insights explaining the cognitive concept of evaluating patient satisfaction but it lacks supporting the emotional responses of measuring patient satisfaction. Variables such as the relationship a patient has with his/her medical provider/s, impacting personal emotions, could play an integral role in the patient’s experience and have an impact on his/her satisfaction with his/her experience. “Expectations also have a direct effect on emotions: the higher the expected satisfaction the more likely it is that an individual will experience positive emotions when he/she is satisfied. If the level of satisfaction is lower than anticipated he/she is more likely to experience strong negative emotions. Individuals experience pleasant or unpleasant emotional states depending on their expected levels of satisfaction”(Suki et al. 2009, p. 46). In summary, when it comes to expectations, “consumers can and do hold different types which are characterized by a range of levels” (Newsome & Wright, 1999, p. 162).

Today patients are more aware of health care options and services available to
them. This awareness increases patient expectations (Suki et al. 2009). Research is helping physicians realize that “ensuring customer satisfaction is a key element in a marketing strategy and a crucial determinant of long-term viability and success” (Suki et al. 2009, p 43). This is important because the measurement of quality of services supports not only the patient and clinicians but managers and executives of the hospital as well. First, it helps patients make decisions about selecting particular clinicians and provider services. Second, clinicians use quality metrics to analyze where improvements are needed within the system (Suki et al. 2009).

Thus, if patient-centered care initiatives are in place at healthcare facilities this may affect disconfirmation. A patient may have a particular expectation in place that doesn’t get met resulting in disconfirmation, yet the patient-centered care he/she receives exceeds his/her other expectations resulting in a satisfied patient resulting in positive patient-satisfaction scores. A patient-centered care model reflects greater involvement and support from the care provider to the patient. Patient-centered care focuses on personalization of care to meet and respect patient preferences, needs and his/her values. Patient-centered care also considers direct and active involvement of the patient in the decision-making process and providing personalized education related to the patient’s health care needs. In a study by Martin et al. (1998) patients in the ‘patient-centered care model’ unit reported more satisfaction with the hospital stay compared to alternative units within the facility that didn’t focus on the patient-centered care model.

Although disconfirmation theory is widely recognized, it still does not fully explain how consumers rate satisfaction and more research will need to look at the effects of attribution and equity in this area (Newsome & Wright, 1999). Davis and Heineke
(1999) found that an “alternative approach in looking at satisfaction depends primarily on
the customer’s perception of service performance rather than on the disconfirmation
between perception and expectation” (p. 66).

**Media Richness Theory:**

Clearly technology isn’t going away and its growing prevalence in the way people
interact and communicate with one another is evident. Media richness theory helps
explain the value of each technology medium during a communication exchange.

Cheney, Christensen, Zorn, & Ganesh (2011) define media richness theory as the
“potential information-carrying capacity of a medium” (p. 371). Cheney et al. (2011)
goes on to explain “the information-carrying capacity is defined by four criteria: (1) the
possibility for instant feedback, (2) the ability to convey multiple communication cues,
(3) the capacity for nonverbal communication (e.g., facial expressions), and (4) the
potential to tailor messages to personal circumstances” (p. 371). How many
characteristics the communication medium carries determines whether the medium is rich
or lean. Therefore, video conferencing can be classified as a rich medium form because

- it provides real time feedback between two or more people such as
  between a referring physician and primary care physician
- communication cues such as hand gestures, eye contact and audio can
  occur between the users of video conferencing
- non-verbal communication including head nods is present and visible
  during the face-to-face screen time interaction
- the communicator can tailor his or her messages to the appropriate
  context during the communication exchange such as a patient referral
Siriwardena et al. (2012) supports video conferencing being a rich media form in that the study finds that using telemedicine (ie., video conferencing) for managing an illness can achieve equal or better efficacy. If able to achieve equal or better efficacy this may improve patient-satisfaction outcomes. The study also found that participants felt more secure and their satisfaction was higher. Also, “healthcare workflows are increasingly relying on such media-rich applications as medical imaging, patient education, video conferencing, and real-time collaboration between health practitioners and services” (Blatt, Brown & Gough, 2012, p. 3). In another study, Kau et al. (2008) found that “all physicians and nurses reported video conferencing for rounding was easy to use, enhanced patient care, would be a comfortable alternative if direct physician contact was not possible, and that it should be a regular part of institutional care” (p. 1179).

Research finds that the use of video conferencing allows a strong virtual interaction between caregivers and care providers. This connection allows caregivers to communicate with the entire team to participate in a rich and meaningful conversation in real-time (Wittenberg-Lyles et al., 2013). Having a collaborative interdisciplinary communication approach supports the patient-family in a well-rounded health care experience.

**Communication Process at Discharge:**

Discharging a patient includes advance planning in attempts to reduce the length of stay during an admission, reduce unplanned readmissions, and improve coordination with care providers after discharge, all with the ultimate goals to contain costs and
improve patient outcomes (Kripalani et al., 2007). When a patient is discharged he/she is given a plethora of information on how to manage his/her care effectively once home.

Overall the discharge process involves an intertwined web of communications between interdisciplinary staff working together to support the patient in the transition of transferring from the hospital to his/her home environment (See Appendix 6 for discharge process map). This transfer shifts the responsibility of care from the inpatient provider to the primary care physician (Kripalani, Jackson, Schnipper & Coleman, 2007) and also increases the responsibilities of self-care to the patient, which presents new challenges. Because of the changes a patient goes through, “ineffective planning and coordination of care at discharge can undermine patient-satisfaction, facilitate adverse events, and contribute to more frequent hospital readmissions” (Kripalani et al., 2007, p.838).

To prevent failures in planning and coordination of care at discharge, clear, effective, integrated and consistent communication between all stakeholders is key. During the communication process at discharge between the patient and care providers dialogue should be an on-going daily two-way symmetrical exchange. The current discharge model primarily includes a one-way transfer of communication such as the medical doctor indicating when the patient is ready to go home, the pharmacist instructing the patient on medications and dosing, the care coordinator explaining home care services and/or the nurse providing additional instructions to the patient regarding how to care for his/her wound. Due to the one-way transfer of communication a patient may not feel involved in the discharge process. If a patient doesn’t feel involved in his/her care due to lack of involvement and/or being overwhelmed with the amount of information given to him/her this may reflect the patient’s memory recall in self-care at
home, which then impacts at-home outcomes. Kripalani et al. (2007) quoted Lee and Gavin that medical facilities should stress the importance “to move beyond traditional practices of information transfer (based on a 1-way monologue) and toward a more useful and appropriate notion of information exchange (based on 2-way dialogue)” (p. 839). Moving towards a more integrated process of communication exchange (i.e., 2-way symmetrical communication) between all relevant care providers and the patient can assist in participatory engagement. Having all relevant care providers and the patient fully engaged and participating with one another in the health care decision-making process ensures care providers and the patient-family understand each other and are all on the same page, ultimately having a shared-mental model amongst all participants involved.

Not only does the type of dialogue affect communication but there is also a shift in practicing medicine. Health care is now more specialized with practitioners being experts in inpatient or outpatient care resulting in the “transfer of care from hospital-based providers to primary care physicians becoming increasingly common at discharge” (Kripalani et al., 2007 p. 315). Therefore, facilitating a process at discharge to enhance communication and increased collaboration may benefit the patient experience and improve patient-satisfaction.

An extensive review by Sheppard et al. (2013) found that the discharge process from the hospital include “poor communication between the hospital, follow-up care and community service providers” (p. 5). Thus, “inadequate communication between the secondary care and the post-discharge care setting can result in key clinical information not reaching primary care providers and patients remaining unaware of information that
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might help them manage their condition and prepare for discharge from the hospital” (p. 5). Hofflender et al. (2013) also argues that a barrier to effective discharge planning is the lack of communication and coordination among different care providers and patients. They suggest there is a need for improvement in communication and finding ways that Information Technology (IT) can support the discharge process as well as find ways to collaborate with current practices. Hofflender et al. (2013) lastly found that there is a success factor in the transfer of information between a variety of key players when using an IT-based system. The study also found through a systematic review that a structured discharge plan personalized to the individual would increase patient satisfaction and patient participation (Hofflender et al., 2013). Due to research findings of evident gaps in effective communication at discharge, the use of video-conferencing and involving all the key care providers in the discharge communication process may enhance the discharge experience providing face-to-face rich media transfer in real-time.

Another element to consider is the push to discharge patients from the hospital “quicker and sicker” than ever before (Kripalani et al., 2007). Since transitioning from hospital to home is a vulnerable time for a patient, effective communication strategies will support the patient with safe and quality care. There are valid concerns in the delivery of care due to breakdowns in verbal and written communication between care providers (Haig, Sutton & Whittington, 2006). The Cochrane Collaboration research on providing written and verbal communication at discharge found that the combination of both forms of communication improved knowledge and satisfaction of patients and/or family due to the enablement of standardized care information. Therefore, video conferencing should only supplement the current communication model for discharge and
not replace other forms of communication such as written materials.

**Shared Mental Model & SBAR Tool:**

A concept of effective communication between one or more persons includes having a shared mental model. A shared mental model is a high-level process where the transfer of information is understood amongst all members involved in the exchange of communication or “refers to the similarity or overlapping of teammate-held knowledge on the task and membership, which allows team members to cooperate in a like manner” (Xie, Zhu & Wang, 2009, p. 1153). When all care providers and the patient have a shared mental model at discharge this creates a fluid system of information exchange and communication with one another to transfer the patient from hospital to home in a safe and efficient manner. One communication process that can support the shared-mental model includes using the SBAR technique.

SBAR is a communication model that medical providers use for handing off patient information. Having effective communication is fundamental in the practice of medicine and especially crucial at the time of discharge (Krapalini, et al., 2007). Calkins et al. (1997) found a disconnect in what the physicians thought their patients understood of their discharge plan versus what the actual understanding is reported by patients. The study indicated a need for facilitating more effective physician-patient communication to lessen the disconnect and support patients in fully understanding the messages clinicians were sending them. SBAR can help standardize the communication exchange in a consistent manner. The SBAR model, developed by Michael Leonard, MD, is described as such:

“S” (situation) “state what is happening at the present time that has warranted the
communication”.

“B” (background) “explain circumstances leading up to this situation. Put the situation into context for the reader/listener.”

“A” (assessment) “what do you think the problem is?”

“R” (recommendation) “what you would do to correct the problem?” (Haig et al., 2006, p. 171)

Using this communication technique for discharge planning can continue to support care providers in consistent practices of passing pertinent medical information on to the appropriate person. By using the SBAR model it can provide a structured checklist for each care provider to follow allowing each person involved to reach a shared mental model with one another when handing off communication. This is important so each care provider or multiple care providers have a full understanding of the information being communicated to one other. Another advantage in using this communication model for discharge is it’s familiar to the staff and “communication handoffs are critically important in creating a shared mental model around the patient’s condition” (Haig et al. 2006, p. 167).

At the University of Minnesota Amplatz Children’s Hospital the SBAR technique is currently used for handoff communication between each nurse at shift change when a nurse hands off the care of the patient to a new nurse that will care for that patient. However, at the point of discharge there is not a formal communication technique that is used amongst care providers to handoff communication. Further exploration of having a standard communication technique at discharge is advised.
Use of Technology for Communication:

Using technology for communications may create a different feel compared to a face-to-face communication exchange. According to Xie et al. (2009) when people communicate through technology, compared to when they communicate face-to-face, they are more task-focused. Thus people are “more capable of processing task information, with greater ability to utilize cues and form shared cognition” (p. 1159). The findings are related to individual’s level of confidence affecting the way information is shared and accepted with the group. If an individual has a high level of confidence they may share information more readily versus if an individual has a low level of confidence. Also, if an individual has either a low or high level of confidence this may affect the individual’s presentation of information resulting in either high or low acceptance of the information by others based on the confidence level of the information presented by that individual. Therefore, caution needs to be taken with these findings. However, the study does support the application of the SBAR technique to create a shared-mental model between all care providers involved during the discharge process when using video conferencing.

Keeping the patient and family in mind as the direct users of technology can complement and extend existing health care services (Gustafson, Brennan & Hawkins, 2007). Technology can provide a pathway for the exchange of communication and information where patients and families can access their clinical records, patient-education programs and ensure privacy to create a best fit interactive model to fit their needs and preferences (Gustafson et al., 2007).

Hofflander et al. (2013) found in a Swedish study that in order to support and
enhance discharge planning there is a need for more innovation in implementing IT solutions. This is especially critical in the growing age of technology and moving towards a platform of content and communications being facilitated with the use of some sort of additional technology device. Hofflander et al. (2013) also found in a survey that the nurses agreed that IT improves workflow activity but nurses were “unsure about how IT would facilitate understanding and communication in the discharge planning process due to the respondents’ uncertainty regarding implementation and use of this new working tool” (p. 91).

A small amount of research in the area of staff perceptions and attitudes has found some valuable insights to analyze the effectiveness of implementing the use of technology for communication exchange. Hofflander et al. (2013) found that it can be challenging for the staff involved in the discharge process due to the need for organizing everyone to be in one place at a certain time to communicate with one another during the discharge planning session. Therefore, it may be easier to connect all key players simultaneously from a distance through use of video conferencing. However, there is a trade-off for both situations. A patient can either experience a face-to-face conversation with a physical presence of the care providers, but not simultaneously. Or, with the use of video conferencing, the patient can experience seeing all the care providers simultaneously still having a face-to-face experience but lack the physical presence of the care providers. Blatt et al. (2012) supports the latter stating, “mobile collaborative care can connect all pertinent parties within minutes to inform them of the hospital summary, the patient’s condition and any potential warning signs” (p. 1).

According to Kau et al. (2008) patient satisfaction was higher using video
conferencing for rounding due to the availability of physician presence. The study also found that “100% of the patients strongly agreed that video conferencing should be a regular part of patient care” (p. 1179). Patients also indicated they would be comfortable using the equipment if their physician was unable to be physically present. Overall, research supports moving towards a more fully integrated system of applying technology platforms as a modality for communication processes.

**Diffusion of Innovation Theory:**

Acceptance and use of new innovations is another variable that differs from person to person. “Adoption of an innovation is a complex interpersonal and intrapersonal process. Individuals progress through a decision-making process to adopt a new technology” (Gustafson et al., 2007, p. 21). Because there are different rates of acceptance and use of technology, care providers will integrate and use video conferencing as a communication tool in the discharge process differently. Because technology presents new ways to serve patient needs, and new technology is almost always an innovation, the *diffusion of innovation theory* is applicable (Gustafson, et al., 2007). Understanding the theoretical framework of how care providers and patients adopt innovation and how diffusion of innovation works can provide valuable insights in implementing video conferencing into the discharge planning process.

Rogers (1995) defines diffusion of innovation as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Gustafson et al., 2007, p. 20). Rogers’ theory looks at four main elements, the innovation itself, time, communication channels and the social system.

Within the element of innovation, Rogers’ theory also looks at five characteristics
(relative advantage, compatibility, complexity, trialability and observability), which help determine how an innovation is adopted or diffused (Swanson-Fisher, 2004). Looking at the elements and the characteristics described by Rogers’ theory allows a closer look at assessing the acceptance of video conferencing at the University of Minnesota Amplatz Children’s Hospital.

Swanson-Fisher (2004) defines compatibility as “a measure of the degree to which an innovation is perceived as being compatible with existing values, past experiences, and the needs of potential adopters (p. 55). The innovation itself, video conferencing, is already an accepted and utilized technology platform at the University of Minnesota Amplatz Children’s Hospital. Current staff are driven to support patients and families in using video conferencing for uses such as family connectedness. This could encompass a connection between a parent organ donor to the child organ recipient. Or it could enable a parent at the hospital to provide nurturing and parenting moments to their other children at home. Another use of video conferencing is for education. Video conferencing supports a patient to maintain a classroom connection, allowing the patient to attend and participate in class electronically. Video conferencing also offers school re-entry support or e-field trip opportunities to fully engage the patient and classmates in experiencing educational opportunities in real-time. Lastly, medical team communication can be facilitated allowing referrals in real-time between referring physicians and primary care physicians. Overall, the level of compatibility in using video conferencing at the University of Minnesota Amplatz Children’s Hospital is rather high which puts the hospital in a good position for continuous adoption of this technology.

When looking at the element of time, this may be a bit more complicated for
integration. Rogers’ characteristic that is tied into this element is the characteristic of complexity. Swanson-Fisher (2004) states complexity is “a measure of the degree to which an innovation is perceived as difficult to understand and use” (p. 55). For the care provider it takes time to set-up and connect the video conferencing technology as well as coordinate all care providers’ schedules for the same time, which may result in resistance to use because of the perceived difficulties it takes to set up. According to Wittenberg-Lyles et al. (2013) the use of technology amongst a variety of users is feasible yet the diffusion of the technology is “impacted by challenges such as user acceptance and privacy” (p. 117). Therefore, ensuring proper education to staff surrounding the use of video conferencing to make it a simple and defined process will be crucial in adoption of the use of this technology amongst the users.

With HIPAA guidelines and ensuring patient confidentiality practices the concept of trust is also important to consider. Technology is more and more complex and difficult to understand. Therefore, if there is a lack of trust in the technology system being used (e.g., fear of not protecting patient confidentiality) it will be harder to achieve acceptance amongst care providers and patients to use the technology.

In summary, there are multiple variables that need to be considered when integrating video conferencing as a new innovation. Despite the challenges that technology presents when used, as a communication tool, the research found in the literature is supportive and promising that video conferencing can be utilized effectively in the discharge process.

**Hypothesis / Research Questions**

H1: Care providers find that video conferencing can be an effective communication tool during the process of a patient discharge.
RQ1: How can the use of video conferencing improve communication between the doctor, pharmacist, care coordinator, patient-family and external care providers during a patient’s discharge?

RQ2: How do care providers perceive the use of video conferencing as a communication tool during a patient discharge process?

RQ3: How do parent/caregivers perceive the use of video conferencing as a communication tool during a patient discharge process?

Methods:

In order to get a broad data collection phase one of the study included two sources of evidence including structured personal interviews with medical care providers and an analytical survey of medical care providers. Phase two of the study included three additional sources of evidence including structured personal interviews with parent/caregivers and two analytical surveys, one of parent/caregivers and one of medical care providers. The mix of methods allowed the ability to collect a set of data that can offer anonymity and easy access of participants, depth and personal insights and evaluations of real application and use of video conferencing at discharge.

Phase 1

Quantitative Analytical Survey: (care providers)

A survey was designed to properly address care providers’ use of video conferencing and perceptions and attitudes towards using video conferencing at discharge. For clarity, the term video conferencing was defined to ensure all participants had the same understanding of this technology:

Definition of video conferencing: the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, Google hangout etc...)

The survey included a total of 18 questions using multiple choice, Likert Scale,
and demographic questions. A complete list of the questions included in the survey can be found in Appendix 7.

The survey was created, distributed and analyzed using Survey Monkey. A convenience sample was selected based on the hospital’s interest in implementing a quality improvement initiative on the Cardiovascular Intensive Care Unit (CVICU). Internal staff who work on the CVICU were recruited based on their role (physicians, nurses, therapists, care coordinator, social work). Some care providers who work on CVICU were excluded (chaplain services, nutritionists and Child-Family Life Specialists) as they are not key team members involved in discharge planning. The Advance Practice Nursing Specialist sent out an internal email on the author’s behalf. Of the approximate 200 participants that the survey was sent to, there were 43 total respondents, and 38 completed the survey.

**Qualitative Structured Personal Interviews: (care providers)**

The structured personal interviews were designed to allow health care providers to share expert knowledge and insights of their experiences of the discharge process, communication methods they use and personal perceptions and attitudes towards the use of video conferencing during discharge. The interview approach was preferable to gather more in-depth data directly from professional care providers involved in the discharge process of a patient. Just like the survey, for clarity, the interviewer defined *video conferencing* to ensure all participants had the same understanding of this term.

A convenience sample was selected including a total of four participants based on availability and having a personal work relationship with the interviewer. The interviews were conducted at the hospital in a private conference room and lasted about 30 to 45
minutes each. Selecting four different care providers, a medical doctor, nurse, pharmacist and care coordinator, allowed the ability to gather a broad perspective of expert opinions, information and expertise in playing an integral role in the discharge process. A list of the interview questions can be found in Appendix 8.

**Phase 2:**

*Qualitative Structured Personal Interviews: (parent/caregivers)*

Structured personal interviews were designed to gather information of personal experiences of the discharge process from the perspective of the parent/caregiver. Having the parent/caregiver perspective allowed knowledge and insights to be shared about preferred communication style from the care providers to the parent/caregiver as well as parent/caregiver attitudes and perceptions towards use of video conferencing during the discharge process. The interview approach allowed rich data from the parent/caregiver who is directly affected and involved in the discharge process. *Video conferencing* was defined during the interview to maintain clarity and consistency of this term.

Due to parent/caregiver stress of having a child in the hospital a convenience sample was used selecting four parents based on availability, an assessment of the parent/caregiver stress level by the interviewer and having a professional working relationship with the interviewer. The interviews were conducted at the hospital in a private conference room with each interview lasting about 30 minutes. Selecting four parents allowed flexibility in having a sample of parent/caregivers that have experienced short and/or long-term hospitalizations and parent/caregivers that have had two to three hospital admissions to ten plus hospital admissions. A list of the interview questions can
be found in Appendix 9.

**Quantitative Analytical Survey: (parent/caregivers and care providers)**

Upon completion of using video conferencing at discharge with a patient-family admitted to the University of Minnesota Amplatz Children’s Hospital, the internal care providers from Amplatz and external care providers from Gillette Children’s Hospital, all participants were sent an online survey that was designed to evaluate parent/caregiver and care provider’s experience of using video conferencing technology at discharge. (See Appendix 10 and 11 for survey questions). Due to complications of timing and having an appropriate patient-family discharging from the hospital to home a convenience sample was used selecting a discharge transfer from the University of Minnesota Amplatz Children’s Hospital to an external medical rehabilitation facility (Gillette Children’s Hospital). At this time, only one patient-family has utilized the video conferencing system at discharge.

**Results:**

**Phase 1:**

**Quantitative Analytical Survey: (care providers)**

A total of 47 participants took the survey with 42 respondents who completed the survey (See Appendix 9). Of the 47 respondents, four were male, 37 were female and the remaining six did not answer. The primary ethnicity of the participants was white at 95%. The largest group of participants was in the 25-34 age range at 47.6%. The respondents were primarily nurses at 66% but responses were also collected from attending physicians, a social worker, care coordinator, pharmacist, Nurse Practitioner and several therapists (PT, OT, speech). A more detailed breakdown of the demographics can be seen
in Appendix 12.

The quantitative research draws key insights to help answer RQ1 and RQ2 as well inform the hypothesis (H1). Although the survey found that 70% of participants have used video conferencing for either personal or professional use, most participants do not use video conferencing on a weekly basis. For personal use 76.7% never use on a weekly basis and for professional use 95.3% never use on a weekly basis. However, the survey findings do inform H1 as the majority of survey participants agree to agree very much with the statements, demonstrating that video conferencing can be an effective communication tool during the process of a patient discharge.

There may be some care provider resistance with the use of video conferencing as only 46% agree to agree very much (Q6) that he/she would use video conferencing at discharge to collaborate with care providers accountable for the patient’s outpatient and/or home care. However, 60% agree to agree very much (Q8) that video conferencing will create a better patient-family discharge experience. Seventy nine percent agree to agree very much (Q9) that video conferencing will support family members who are unable to be present in the hospital during discharge to participate more effectively in the patient’s care after discharge. Fifty seven percent agree to agree...
very much (Q10) that video conferencing will improve the accuracy of communication handoff between the patient-family and internal and external care providers. Sixty one percent agree to agree very much (Q11) that video conferencing will facilitate safer patient transitions to outpatient and/or home care. Fifty seven percent agree to agree very much (Q12) that video conferencing leads to increased collaboration amongst internal and external care providers across the patient’s care continuum.

For questions six to twelve there is a high percentage of respondents who answered they neither agree nor disagree with the question. This could be due to 65.2% of participants only being a little bit to somewhat comfortable in using video conferencing. Thus, participants may have been unsure how to answer the questions as they are not regular users and/or as confident in their skills in using video conferencing resulting in the inability to agree or disagree with the statement.

The data is also trending as such that care providers feel that video conferencing benefits the patient but perhaps not the care providers own work. Therefore, care providers would need to be made aware of the benefits to them for increased buy-in for using video conferencing. However, there could be other variables that affected respondents answers to neither agree or disagree and caution should be taken when interpreting these results.
When participants evaluated whether the use of video conferencing to communicate with professionals accountable for their patient’s outpatient and/or home care would decrease repeat admissions, improve the effectiveness of their work and improve the efficiency of their work the highest scores (questions 13-15) the highest percentage of respondents fell in the category of **neither agree or disagree**. However, the second highest percentages of respondents fell in the category **agree**.

The data may suggest that participants aren’t sure how to answer the questions. This could be due to their inexperience of using video conferencing and the inability to make an informed decision without having first hand experiences. (See Appendix 13 for a full summary report).

**Qualitative Structured Personal Interviews: (care providers)**

The qualitative data included an even representation of sexes, with two male and two female. Ethnicity was similar to the survey as three of the four participants were white. Three of the participants were in the 45-54 age range with only one participant
being 35-44 years of age. All four participants have been care providers for 20 plus years. Findings from the following interviews also complement Kau et al. (2008) and Hofflander et al. (2013) research studies.

A physician was interviewed because of his essential role in discharging a patient from hospital to home. A physician ultimately decides when the patient is medically ready to go based on a set of discharge criteria. A care coordinator was interviewed as her role in discharging a patient is complex and involves connecting and communicating with a variety of care providers, internal and external, on behalf of the patient’s needs in preparation for discharge. A nurse was interviewed as her role in the discharge process starts on day one, when a patient is admitted. A nurse is one of the front line staff that supports the patient in education about his/her health and is heavily involved in assisting the patient in answering questions and ensuring he/she is being taught the competencies he/she needs prior to going home. A pharmacist was interviewed as his role in discharge is focusing on the medications that the patient will discharge home with. On an as needed basis, the pharmacist also provides teaching directly to the patient to ensure understanding of medication type and dosing.

Each participant shared information throughout the interview that helps answer RQ1 and RQ2 as well as inform H1. Direct quotes from the individuals help answer RQ1. The care coordinator stated video conferencing can “help bring the family in, brings doctors that are long distance in, this can bring everyone together” suggesting the opportunity to have everyone together at the same time can improve communication. The physician shared “I want them (patient’s) to feel like they always have access to someone once they get home, so they don’t feel like they are on an island” suggesting the
importance of being available and creating a relationship together. The physician also shared “developing a better shared mental model is a good thing” which supports the literature review and his awareness of the importance of having a shared mental model during the discharge process amongst all relevant stakeholders involved in the process.

All of the care providers have both positive and negative perceptions of the use of video conferencing as a communication tool at discharge, which help answer RQ2. Positive perceptions include the care coordinator’s remark that there is “so much you can do with the video conferencing” and that video conferencing “enhances” the patient’s discharge experience suggesting advantages in using video conferencing. A nurse responded that “I would be able to connect to home care to do teaching, this would be fabulous!” suggesting her excitement towards using video conferencing to make that connection.

Participants agree that there are also disadvantages of using video conferencing including operational functions such as time and coordination. The care coordinator commented that a disadvantage of using video conferencing during a patient’s discharge includes “coordinating schedules with the care team”. A physician indicated that a disadvantage includes “timing of how you predict the flow of medical home to the flow of the sender” (primary care provider). The pharmacist remarked that a disadvantage includes the “time commitment, if multiple parties to connect”. The nurse indicated that a disadvantage is “time, having the additional time to make the connection”.

Because of the difficult barriers of getting everyone to connect to video conferencing at the same time, the ability to coordinate all care providers’ schedules to facilitate a video conferencing session and the length of time to facilitate the discharge
meeting, it is suggested to further investigate if utilizing video conferencing is the best strategic communication method to implement into the discharge communication process.

The participants made positive remarks helping inform H1. When asked if video conferencing is an effective communication tool the physician responded, “it is, the more you can do face-to-face communication is richer and better”. The physician also remarked, “it (video conferencing) can build the relationship between Amplatz staff and medical home”. The care coordinator commented that the use of video conferencing “makes it easier, whether it’s for Q & A, putting a face to a name or brings the family and doctors in together from a distance”. The nurse stated, “it would be an effective verbal tool and allow face-to-face time to ask real-time questions”. The pharmacist responded that video conferencing provides an opportunity for “a better community, you can know the people on the other side. It builds a relationship and then it’s easier to ask pertinent questions because you’re more comfortable talking to the person on the other side verses if you don’t know the person because of the lack of visual”.

In summary, the interviews provide insights to guide answers for RQ1 and RQ2 as well as inform H1. Overall findings from the interviews indicate that the discharge process entails an intertwined web of communications using a variety of methods (verbal (face-to-face and phone), fax, written letter/email, electronic medical records, use of the patient learning center (hands-on learning), business card and teaching videos (Get Well Network)) to communicate with one or more care providers.

Because of this intertwined web of communication between care providers, RQ1 can be answered in that video conferencing can be one way to improve communication between the doctor, pharmacist, care coordinator, patient-family and external care
providers during a patient’s discharge as it can connect and bring together all of these team members at one time providing a verbal and visual connection for the communication exchange amongst all participants.

When looking at how to answer RQ2, the participants have both positive and negative attitudes toward using video conferencing for discharge. Three of the four participants feel that using video conferencing can be an effective communication tool as it allows for a face-to-face interaction. However, all the participants easily listed disadvantages and barriers to using video conferencing including timing and coordination. Overall, the positive outweighs the negative and care providers perceive the use of video conferencing to be useful, complimentary to current discharge practices and a good resource to bridge communications with a team of people.

Findings inform H1 as all of the participants hold a high value on communicating with the outpatient and/or home care and feel that video conferencing should occur during the discharge process. Participants also agree that advantages in using video conferencing include the face-to-face presence, the ability to enhance the experience to provide a community and connected relationship amongst each other. See Appendix 14 for interview transcripts.

**Phase 2:**

*Qualitative Structured Personal Interviews: (parents/caregivers)*

Five parents were selected to be interviewed, one declined and one was not available within the time frame of the study. The remaining three parents included two females and one male. All of the participants were of white ethnicity, and each participant was in a different age group (25-34 years old, 35-44 years old, 45-54 years old). All of
the participants have had their child admitted to the University of Minnesota Amplatz 
Children’s Hospital at least once before and all of the participants are the primary 
caregiver for the child.

Feedback (see Appendix 15 for Interview Transcripts) from the parents during the 
interview helps answer RQ3 regarding how they perceive the use of video conferencing 
as a communication tool during a patient’s discharge.

Even though all the participants have used video conferencing previously and are 
open to connecting with external care providers via video conferencing a few of the 
parents expressed resistance and uncertainty. One parent commented, “if related to or 
need a care conference prior to discharge and the external care provider needs to be 
involved, then yes. Otherwise, no”. Another parent commented, “I wouldn’t be against it. 
Not sure how it would go though. I think it’d be great to have everyone on the same 
page”. Another parent didn’t appear to have any resistance towards using video 
conferencing to connect to external care providers as he stated, “it’d be a super idea 
because everyone could be together and all be on the same page.”

There are also mixed feelings expressed by the parents of whether it’s important 
to include external care providers in the discharge process as one parent feels that it’s 
only important to include home care. One parent expressed that it depends on the 
situation and one parent shared it’s important especially if there are other companies 
coming into the home to care for the child to ensure everyone is on the same page.

Overall, all the parents agree with who should be communicating with them at 
discharge as they mention key care providers including the physician, nurse, pharmacist 
and care coordinator that should be talking with them. All the parents feel that their
privacy and HIPAA guidelines would be maintained as long as a secure and encrypted system was being used and all the parents agree that at discharge both verbal and written communication needs to occur.

However, due to some of the mixed feelings and attitudes expressed by the parent/caregivers towards the use of video conferencing, whether it’s related to not having first-hand experience of what a discharge experience would be like, caution of interpretation of the data and further research is necessary.

**Quantitative Analytical Survey: (parents/caregivers)**

Thus far only one patient-family has participated in the discharge process using video conferencing. The patient-family was selected by an assessment of the Care Coordinator whom determined the patient’s complex medical situation (1A heart transplant status, needing inpatient rehabilitation care, current long inpatient admission on the intensive care unit and having multiple care teams involved in the patient’s care (transplant, cardiology, pulmonary, rehab, etc…)) and suggested using video conferencing to best facilitate a discharge care conference. The parent participated whom participate in the survey was female, of white ethnicity and 45-54 years of age. The parent was sent an online survey upon completion of the video conferencing experience and completed it fully. The survey did not include a neutral response category (ie., neither agree or disagree) to push the participant to choose a best fit answer to better measure the user experience and avoid having participants take a neutral stance. See Appendix 16 for a full summary report.

The parent had almost all positive reports of using video conferencing at discharge, which helps answer RQ3. The parent **agreed** she could easily communicate
with the external care providers, agreed that her care was enhanced through the use of video conferencing and was comfortable communicating through this method as well as agreed that she feels better about her the transition from the hospital to home / outside facility.

However, the parent felt that the quality of the video was fair and the audio was very good indicating further exploration of the technology equipment and Wi-Fi connection to make improvements for future uses to ensure a high quality video connection in order to maintain a rich media form of the face-to-face experience.

Because only one participant has been able to involved in this data collection there is not enough support to answer RQ3. However, due to her positive feedback of the experience it’s promising that future parent/caregivers involved in using video conferencing at discharge may have similar experiences.

**Quantitative Analytical Survey: (care providers)**

A total of 12 care providers participated in the discharge process using video conferencing. Upon completion of the experience, an email was sent with a link to the online survey to all 12 of the care providers involved. Six of the participants were internal care providers and six of the participants were external care providers. Out of the 12 participants only five responded. The respondents consisted of two nurses (one internal and one external), one care coordinator (internal), one child-life specialist (internal) and one chaplain (internal). Four of the respondents were female and one was male. All of the participants are of white ethnicity and the age varies ranging from 35-74 years old. See Appendix 17 for a full summary report.

Data collected from this survey can help answer RQ2 and inform H1. Findings
show that after utilizing video conferencing for a patient’s discharge care providers still have positive attitudes and perceptions towards using video conferencing as a communication tool during a patient discharge process. All of the respondents agree to strongly agree the video conferencing equipment was easy to use. All of the respondents agree to strongly agree their patient’s care was enhanced by the use of video conferencing. All of the respondents agree to strongly agree that if the primary care doctor was not able to make direct contact with the patient, video conferencing would be an acceptable alternative. All of the respondents agree to strongly agree that patient privacy was maintained during the use of video conferencing.

However, there is varied answers amongst respondents that video conferencing should be a regular part of patient discharge in the hospital as one respondent strongly disagrees, one respondent agrees, two respondents strongly agree and one respondent commented later in the survey that he/she neither agrees or disagrees with this questions as it is depends on the situation.

Also, the quality of the video and audio had scattered ratings as two respondents stated the video was of poor quality, one respondent stated the video was of fair quality, one respondent said the video was of good quality and one respondent said the video was of was excellent quality. Two respondents rated audio quality fair, two respondents rated audio quality good and one respondent rated audio quality excellent.

Due to the varied evaluation of the audio and video experience this may impact the effectiveness of video conferencing as a communication tool, especially with the audio and video connection. Further investigation should look into the technology being used and the Wi-Fi connection to ensure future users have a high quality video and audio
connection on both the internal and external side.

**Limitations and Future Research:**

A limitation with the research study includes a generalized assumption that there is a correlation between low patient-satisfaction scores and the discharge process. When dealing with retrospective recall, it presents difficulties in measuring data when the Picker survey participant has to think back to the occurrence to evaluate it. Therefore, when surveying a patient-care experience during a hospital admission it’s challenging to say where along the care continuum the participant is evaluating his/her experience. Is the participant evaluating the event closest to the beginning of the hospital experience (i.e., admission) or evaluating the event towards the end of the hospital experience (i.e., discharge)?

Another limitation is convenience samples were used resulting in the demographics not being very diverse. As such, the results should not be generalized to care providers at large. In both phase one and phase two the survey and interviews also included very small sample sizes, which suggests the results should be interpreted with caution. Having the ability to include more participants in the research study would increase the ability to capture a more diverse subset of the population as well as gather statistically stronger data.

Another limitation is in phase one of the study. Comments from the interview identified that the care provider and physician may have a biased stance on the subject matter due to their pre-existing vested interest or experience in using video conferencing at discharge or having another similar experience (i.e., physician referrals). Having this pre-existing vested interest and/or experience may skew some of the data to be more
positive if these care providers are passionate about and/or already have had positive experiences in utilization of video conferencing at discharge. Or vice versa, if care providers have had bad experiences with previous use of video conferencing they will not recommend further use or implementation of this technology at patient discharge and the data would show negative results.

However, having key players who have a positive vested interest in using video conferencing and having them involved in potential future implementation of video conferencing at patient discharge will be a huge asset. The care provider who is familiar and confident with the technology will be advantageous that he/she can assist other care providers with education and support who are new to using video conferencing at discharge. It’s advised that future research should include not only a larger sample size but also include both care providers who do and do not have a pre-existing interest or experience/s to represent a broad sample of varying levels of experience in utilizing video conferencing at discharge.

This leads to another limitation in which the data collection did not include a question related to asking care providers if they have had previous experience using video conferencing at discharge. This could be useful data collection to gather more in-depth information about care providers first hand experience/s and having them evaluate and share information about the experience, advantages and disadvantages and to assess if the perceptions and attitudes of non-users match real experiences.

Another limitation is the Hawthorne Effect. Campbell, Maxey & Wateson (1995) describe the Hawthorne effect as “the phenomenon of altered behavior or performance resulting from awareness of being a part of an experimental study” (p. 590). Although the
Hawthorne effect applies more to studies where participants are being actively observed, it could still apply to participants in a survey and/or interview in which the participant may feel that he/she is being observed based on his/her answers to the interview or survey. The Hawthorne effect implies that the participant may answer a question based on how he/she thinks the surveyor wants them to answer. This results in a limitation of accurate scores.

Another caveat is that participants who do not have any pre-existing vested interest in video conferencing may be unsure how to answer the questions. Therefore a participant may make a “best guess” on what the discharge process would be like when using video conferencing. If participants try to make a “best guess” due to not having any firsthand experience in using video conferencing for a patient’s discharge this may affect the respondent’s answers on the survey and interview and again not be an accurate representation in the data collection.

Lastly, another limitation includes limited research regarding new innovation, specifically the use of video conferencing at discharge. This leads to minimal support from other literature to help strengthen this research study. However, as technology continues to grow and is integrated into health care practices, an on-going review of literature will be key in staying up-to-date with current research and continuing to learn from other medical facilities that may be doing this type of innovation.

Discussion and Recommendations:

The purpose of this study was to look at communication surrounding the discharge process and integrating the use of video conferencing. Due to the University of Minnesota Amplatz Children’s current initiative for a quality improvement process
surrounding communication and discharge this enabled an easy connection for the author to move forward to integrate the research. The One Transition/Care team, physicians, manager of patient interactive services, data analyst and advanced practice nursing specialist were all very open to collaborating with the author.

However, even with open collaboration, connecting with all the key leaders in the hospital to facilitate the data collection was a slow and time-consuming process. Moving on a quick time line to meet the research study deadline did not fit with the pace of the hospital workflow. Current workload responsibilities and working in a fast-paced intense environment presents difficulties when adding “one more thing to do”. Because of the multitude of key players taken into account when working on a project of this scale there’s always a period of waiting which prolongs the time needed to collect data.

Also, when dealing with a fast-paced and high stress environment with chronically ill children it’s difficult to find appropriate parent/caregivers and patients to participate in a process improvement research study for the hospital. Parent/caregivers are focused on their child, personal life and work life all while trying to balance each of those areas. Asking them to participate in an interview or survey during their child’s hospitalization may be overwhelming due to the stressors they are already encountering. Participants need to be selected carefully based on care provider assessment of the parent/caregiver’s coping, adjustment and personal stress level.

The research study did not look closely at the rate of adoption amongst care providers in regards to using video conferencing. The survey found that 70% have used video conferencing for personal and/or professional use but also found that only 35.7% of participants are somewhat comfortable using video conferencing, therefore education and
training are recommended to support care providers in being confident and accepting of the innovation prior to using and integrating into health care practices.

It will also be important to educate care providers how the use of video conferencing will not only support the patient-family but also improve the care providers’ job performance and support patient outcomes. Illustrating this via a sample video conferencing session may empower the care providers to see and learn from a ‘live session’.

Because the study only includes one patient-family that trialed the use of video conferencing at discharge it is crucial to continue to explore additional cases to add more survey participants to the study for a richer data collection. It will also be important to include methods to document the benefits video conferencing at discharge has for both the patient’s and organization. One method would include if the University of Minnesota Amplatz Children’s Hospital could partner with NRC to code the Picker surveys that are sent to patient-families that were involved in using video conferencing at discharge differently. By using different coding this could help the hospital do a cross-comparison of scores of those patient’s that did not use video conferencing at discharge with those that did.

Another method may include reaching out to home care providers of chronically ill patient’s to conduct in-depth interviews regarding his/her thoughts regarding parent/caregivers responses, attitudes, independence and competency of the care to the child after the use of video conferencing at discharge compared to the previous regular discharge process.

Lastly, another important method may include doing a follow-up survey to the
care providers actively using video conferencing at discharge to continue to measure their confidence, competence and perceptions and attitudes towards the use of video conferencing and if it’s an effective and efficient tool to improve his/her work.

A key insight from the physician interviewed includes his statement that “besides HOW you are communicating it’s WHAT you are communicating” in which he suggested a checklist be used in the discharge communication approach similar to what is used for the Emergency Department communication handoff process (See Appendix 18). This expert opinion would be essential to evaluate as one of the key variables to include when integrating video conferencing into the discharge process. By doing so, this supports the literature review in reaching a shared mental model when a standardized communication technique is used.

By having a shared mental model, when using video conferencing at discharge, it will create a cohesive and integrated experience, a patient-family centered care experience. Using a standardized communication checklist, as suggested previously in the paper, will allow all the care providers and patient-family to be on the same page and hear the same message, which is the goal in reaching a shared mental model. By having each person involved in the communication process understand his/her role in handing off communication at discharge will ensure a consistent and effective manner in handoff of critical information. This also agrees with having a two-way symmetrical communication process between two or more people.

**Recommendations for Moving Forward:**

Overall, video conferencing may be an effective communication tool to provide health communications from a distance. Possible benefits of using video conferencing
include positive attitudes and interest in utilization that may impact quality of care and services, creating a shared mental model amongst care providers and the patient-family and improved patient-satisfaction scores. Video conferencing can replicate a face-to-face meeting by having both an audio and visual experience with multiple participants collaborating together no matter the distance.

The literature review supports the existing research study in moving forward with the integration and implementation of video conferencing during a patient’s discharge. However, to continue to evaluate and answer RQ1, RQ2, RQ3 and inform H1 the following are suggested:

• Collect on-going data (surveys) from care providers and parent/caregivers upon completion of using video conferencing for a patient’s discharge. This will help document what is going well and what isn’t going well for both the patient-family and organization in using video conferencing at discharge.

• Conduct in-depth observations (recordings) of patient discharge process using video conferencing to use to collect data as well as use for future teaching/education opportunities.

• Stay up-to-date on new literature relevant to the use of video conferencing at discharge.

The literature review and research study also found a lot of variables to consider when implementing a strategic communication model to connect patients and care providers during a patient’s discharge. Therefore, suggestions to focus on include:

• Create a standardized communication pathway to support a shared mental model amongst all participants involved during the video conferencing session.
Video conferencing at patient discharge: a strategic communication model

at discharge (i.e., Discharge Communication Checklist).

• Collect information regarding staff’s preferences about the best ways to learn a new technological innovation (i.e., video conferencing).

• Provide teaching and education to care providers on how to use the technology equipment.

• Perform thorough assessment of the patient-family to indicate if they are appropriate candidates (i.e., a complex medical case, long-distance from home / primary care facility, multiple care providers and/or medical teams involved in the patient’s care, language barrier / using interpreter, etc…) for utilization of video conferencing.

• Perform on-going evaluation/data collection of whether using video conferencing at discharge is indeed a process improvement supporting patient-centered care and communication surrounding discharge to increase patient-satisfaction scores.

Conclusion:

In conclusion, the University of Minnesota is in a very good position to move forward with using video conferencing at discharge to provide health care services. Currently, the University of Minnesota Amplatz Children’s Hospital has already proven to integrate video conferencing successfully in other ways to support patient-family connectedness as mentioned earlier in the paper. It will be important for the existing work groups (One Care/Transition & CVICU pilot teams) to learn from this study and adapt and integrate the tools (interviews and surveys) as needed as they continue to move forward on their project.
Using a strategic communication model at discharge will continue to support the hospital’s business operations to improve communication across the care continuum. By having an IT tool to support the communication process may benefit the hospital as a whole by improving patient outcomes and increasing patient satisfaction related to discharge. However, it’s not about just having an IT tool but it’s about having a thought out and well planned strategy to facilitate a communication process that can be a benefit to the patient-family and care providers (internal and external) that is mutually exclusive.

With any new quality improvement process there will be some trade-offs in implementation. In the case of implementing the use of video conferencing for a patient’s discharge there will be a learning curve amongst care providers whom will use and integrate video conferencing into their practice. This learning curve is in part due to the varying rates of adoption amongst care providers using video conferencing. Each participant will pick up and adopt the use of video conferencing at different rates. Some barriers to adoption may be lack of interest, slower learning styles, and resistance to learn new technology or feeling overwhelmed with the current workload. Therefore, it will take time to teach, learn, show and use the technology to support care providers to gain a sense of confidence and comfort in implementing the technology into his/her practice.

It will be important to have a lead facilitator to implement video conferencing, such as the care coordinator, whom can continually assess appropriate patient-family use of video conferencing at discharge. Due to the care coordinator role of being very aware of the patient-family psychosocial dynamics he/she will be a prime care provider to assess such elements including the patient-family’s hospital length-of-stay, complex medical issues, need for an interpreter, family members that may be long-distance, the
patient-families home location in relation to the Twin Cities metro area and/or if the patient has multiple care providers and/or care teams involved in his/her care. By doing this assessment it will help determine appropriate use of video conferencing to be utilized for a maximum benefit to the patient-family and care providers.

By using a strategic communication model, the business focus for the University of Minnesota of Amplatz Children’s Hospital will support the patient-family experience, which pairs well with the hospital’s mission and vision (http://www.uofmchildrenshospital.org/About/MissionVision/index.htm) to provide a patient-family centered care experience during the hospital stay and overall healthcare journey.
References


Video conferencing at patient discharge: a strategic communication model


Appendix: 2

SURVEY INSTRUCTIONS

Please do not fill out this survey unless you are the parent or guardian who accompanied the patient named on the cover letter.

Please think about your experience when you accompanied your child to Alpha Hospital on March 3, 2005 as you provide your best answers to each of the following questions.

1. Are you the parent or guardian of the child named on the cover letter? 42067
   ① Yes
   ② No (STOP, please return the survey in the envelope provided)

2. Were you with your child during this hospital stay? 42068
   ① Yes
   ② No (STOP, please return the survey in the envelope provided)

ADMISSION THROUGH THE EMERGENCY ROOM

3. Was your child's hospital stay an emergency or planned in advance? 42069
   ① Emergency
   ② Planned in advance (Go to #8)

Please answer the following questions about your experience in this hospital's emergency department before your child was admitted to his/her room in the hospital.

4. Was your child checked into the emergency room and evaluated in a timely manner? 42070
   ① No
   ② Yes, somewhat
   ③ Yes, mostly
   ④ Yes, definitely

5. While your child was in the emergency room, did you get enough information about his/her medical condition and treatment? 42071
   ① No
   ② Yes, somewhat
   ③ Yes, mostly
   ④ Yes, definitely

6. How organized was the care your child received in the emergency room? 42072
   ① Not at all organized
   ② Somewhat organized
   ③ Very organized
   ④ Completely organized

OVERALL RATING OF THE EMERGENCY ROOM

7. Using any number from 0 to 10, where 0 is the worst facility possible and 10 is the best facility possible, what number would you use to rate this hospital's emergency department? 42073
   ① 0  Worst possible
   ② 1
   ③ 2
   ④ 3
   ⑤ 4
   ⑥ 5
   ⑦ 6
   ⑧ 7
   ⑨ 8
   ⑩ 9
   10  Best possible

ADMISSION INTO THE HOSPITAL

If your child was treated in the emergency room, please try to think about your and your child's experience AFTER the emergency room as you answer the rest of the questions.

8. How long was the wait to get a bed in the hospital? 42074
   ① Did not have to wait
   ② Not too long
   ③ A little too long
   ④ MUCH too long
9. How organized was the admission process?
   1. Not at all organized
   2. Somewhat organized
   3. Very organized
   4. Completely organized

YOUR INTERACTIONS WITH NURSES
10. How often did nurses treat you with courtesy and respect?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

11. How often did nurses listen carefully to you?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

12. How often did nurses explain things in a way you could understand?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

13. How often were you able to discuss your worries or concerns with a nurse?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

14. How often did you have confidence and trust in the nurses treating your child?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

YOUR INTERACTIONS WITH DOCTORS
15. How often did doctors treat you with courtesy and respect?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

16. How often did doctors listen carefully to you?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

17. How often did doctors explain things in a way you could understand?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

18. How often were you able to discuss your worries or concerns with a doctor?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

19. How often did you have confidence and trust in the doctors treating your child?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

THE HOSPITAL ENVIRONMENT
20. How often was your child's room and bathroom kept clean?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

21. How often was the area around your child's room quiet at night?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

YOUR CHILD'S OTHER EXPERIENCES IN THIS HOSPITAL
22. After you or your child pressed the call button, how often did help arrive as soon as you wanted it?
    1. Never
    2. Sometimes
    3. Usually
    4. Always

23. Did your child have any pain?
    1. Yes
    2. No (Go to #26)
24. How often was your child's pain well controlled?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

25. How often did the hospital staff do everything they could to help your child with his/her pain?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

26. Was your child given any medicine?
   ① Yes
   ② No (Go to #31)

27. Before giving your child any medicine, how often did hospital staff tell you what the medicine was for?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

28. Before giving your child any medicine, how often did someone from the hospital staff check his/her ID band or otherwise confirm your child's identity?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always
   ⑥ No meds given

29. Before giving your child any medicine, did the hospital staff ask about your child's allergies or other medications he/she may have been taking?
   ① No
   ② Yes, somewhat
   ③ Yes, mostly
   ④ Yes, definitely

30. Before giving your child any medicine, how often did hospital staff describe possible side effects in a way you could understand?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

31. How often were the different doctors and nurses consistent with each other in providing you information about your child's care?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always
   ⑥ I did not notice

32. How often did the hospital staff include you in discussions about your child's care?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

33. How often were you allowed to be with your child as much as you wanted?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

34. How often was there good communication between the different doctors and nurses?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

35. How often were you given enough input or say in your child's care?
   ① Never
   ② Sometimes
   ③ Usually
   ④ Always

36. During this hospital stay, do you think your child got all the care he/she needed?
   ① No
   ② Yes, somewhat
   ③ Yes, mostly
   ④ Yes, definitely

GOING HOME

37. Did someone from the hospital staff explain when your child would be allowed to leave?
   ① No
   ② Yes, somewhat
   ③ Yes, mostly
   ④ Yes, definitely
38. Did you know who to call if you needed help for your child or had more questions after you left?
   1. No
   2. Yes, somewhat
   3. Yes, mostly
   4. Yes, definitely

39. Did someone on the hospital staff spend enough time with you discussing how to care for your child at home?
   1. No
   2. Yes, somewhat
   3. Yes, mostly
   4. Yes, definitely

**OVERALL RATING OF THE HOSPITAL**

40. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital?
   1. 0   Worst possible
   2. 1
   3. 2
   4. 3
   5. 4
   6. 5
   7. 6
   8. 7
   9. 8
   10. 9   Best possible

41. Would you recommend this hospital to your friends and family?
   1. Definitely no
   2. Probably no
   3. Probably yes
   4. Definitely yes

42. Is there anything else you would like to say about the care your child received during this visit?

**ABOUT THE CHILD**

43. In general, how would you rate your child's overall health?
   1. Excellent
   2. Very Good
   3. Good
   4. Fair
   5. Poor

44. Does your child have special needs?
   1. Yes
   2. No

45. Is your child of Spanish, Hispanic, or Latino origin or descent?
   1. No, not Spanish/Hispanic/Latino
   2. Yes, Puerto Rican
   3. Yes, Mexican, Mexican American, Chicano
   4. Yes, Cuban
   5. Yes, other Spanish/Hispanic/Latino

46. What is your child's race? Please mark one or more.
   1. White
   2. Black or African-American
   3. Asian
   4. Native Hawaiian or other Pacific Islander
   5. American Indian or Alaskan Indian or Alaskan Native
   6. Other (please print):
ABOUT THE PARENT/GUARDIAN

47. What is your age?
   ① 18 to 24
   ② 25 to 34
   ③ 35 to 44
   ④ 45 to 54
   ⑤ 55 to 64
   ⑥ 65 to 74
   ⑦ 75 or older

48. Are you male or female?
   ① Male
   ② Female

49. What is the highest grade or level of school that you have completed?
   ① 8th grade or less
   ② Some high school, but did not graduate
   ③ High school graduate or GED
   ④ Some college or 2-year degree
   ⑤ 4-year college graduate
   ⑥ More than 4-year college degree

50. What language does your family mainly speak at home?
   ① English
   ② Spanish
   ③ Some other language

51. How are you related to the child?
   ① Mother or father
   ② Grandparent
   ③ Aunt or uncle
   ④ Older brother or sister
   ⑤ Other relative
   ⑥ Legal guardian
   ⑦ Someone else (please print): ____________________

Thank you for taking the time to complete this questionnaire! Your answers are greatly appreciated.

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## Appendix 3

### Response Rates from Apr 1, 2012 to Mar 31, 2013

<table>
<thead>
<tr>
<th>IP Peds</th>
<th>Univ. of MN - Fairview</th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Unit</td>
<td>Sampled</td>
<td>Non-Deliverable</td>
<td>Returned</td>
<td></td>
</tr>
<tr>
<td>Univ. Minnesota Children's</td>
<td>797</td>
<td>14</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>UMC Overall</td>
<td>797</td>
<td>14</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>4/BMT</td>
<td>88</td>
<td>0</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>5 Med/Surg</td>
<td>337</td>
<td>7</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>6 Med/Surg</td>
<td>362</td>
<td>7</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>UR 10A</td>
<td>10</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 4: Picker survey comments

### RE: continuity and transition / discharge

<table>
<thead>
<tr>
<th>Comment Type</th>
<th>Valence</th>
<th>Comment Text</th>
<th>Coded As</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Alert</td>
<td>Negative</td>
<td>...I did not know how or where she was injured, how long recovery would take, or if there was permanent damage or other follow-up needed for her current condition...</td>
<td>Continuity/Transition</td>
</tr>
<tr>
<td>General</td>
<td>Negative</td>
<td>...It seemed as when we were told in the AM she could go home (and we didn’t end up leaving until 8PM), the nurses seemed far and few between, which was disappointing.</td>
<td>Discharge</td>
</tr>
<tr>
<td>General</td>
<td>Negative</td>
<td>...Discharge planning was what we would say needs improvement- probably due to it being a weekend.</td>
<td>Discharge</td>
</tr>
<tr>
<td>General</td>
<td>Negative</td>
<td>On this visit there was inconsistent information given by the doctors and home health care. There were wrong orders given by a doctor to home health care that made things very confusing.</td>
<td>Continuity/Transition</td>
</tr>
<tr>
<td>General</td>
<td>Negative</td>
<td>Was a bit disappointed with the confusion about home healthcare coming to see us. The discharge person told us we would be receiving help that we didn’t get.</td>
<td>Continuity/Transition, Discharge</td>
</tr>
<tr>
<td>General</td>
<td>Negative</td>
<td>They noticed something not right around dismissal time and got more help-ended up keeping us another day for necessary reasons.</td>
<td>Continuity/Transition</td>
</tr>
</tbody>
</table>
### Amplatz Children's Unit Comparison Stoplight Report

**Discharge Dates From April 1, 2012 to March 31, 2013**

<table>
<thead>
<tr>
<th>Picker Dimensions</th>
<th>Benchmarks</th>
<th>Rolling Ave</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NRC 50th percentile</td>
<td>NRC 90th percentile</td>
</tr>
<tr>
<td>Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital?</td>
<td>56.97%</td>
<td>67.20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Drivers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q#38: Did you know who to call if you needed help for your child or had more questions after you left?</td>
<td>Continuity / Transition</td>
<td>73.30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q#39: Did someone on the hospital staff spend enough time with you discussing how to care for your child at home?</td>
<td>Continuity / Transition</td>
<td>73.10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q#37: Did someone from the hospital staff explain when your child would be allowed to leave?</td>
<td>Continuity / Transition</td>
<td>68.70%</td>
</tr>
</tbody>
</table>
## Rolling Averages on 3/22

Amplatz Children's Hospital Inpatient Overall

<table>
<thead>
<tr>
<th>12 months</th>
<th>Qtr 1 2013</th>
<th>Qtr 4 2012</th>
<th>Qtr 3 2012</th>
<th>Qtr 2 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.8% PR=46</td>
<td>72.80%</td>
<td>72.70%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>63.9% PR=9</td>
<td>59.20%</td>
<td>72.70%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>58.1% PR=8</td>
<td>57.80%</td>
<td>58.50%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Appendix 6

Discharge Process Map

Attending Physician
- Determines when patient is clinically stable to discharge based on set of criteria. Informs family.
- Places discharge orders in EMR (which talks to all internal care provider’s involved in d/c process).
- On-going communication w/internal team & patient.

Care Coordinator
- Coordinates discharge process logistics (i.e., sets up education classes, contacts external services/providers)
- On-going communication w/internal team and patient.

Nurse
- Provides daily bedside care
- Provides teaching/education, assists in Q&A with patient-family.
- On-going communication w/internal team and patient.

Pharmacist
- Ensures proper medication orders to home. Coordinates with care coordinator re: home care
- Provides med teaching/education to patient.

Physcosocial care team
- Supports with coping/adjustment-emotional & spiritual.
- On-going communication w/internal team and patient.

Rehabilitation care team
- Provides rehab services and education of rehab exercises.
- On-going communication w/internal team and patient.

External care providers
- Home care: Provides teaching/education and meets patient-family re: home care services
- Care coordinator: communicates and coordinates services based on patient’s outpatient care needs.
- Attending physician: sends referral to patient’s primary care physician

Patient-Family

67
Quantitative Data: Survey Questions

As the University of Minnesota Amplatz Children’s Hospital continues to strive to provide the best patient-centered care this survey will provide more information to continue to move forward in various initiatives surrounding the discharge process.

5 minutes of your time would be greatly appreciated to respond to the following questions about hospital discharge and video conferencing.

Please answer to the best of your knowledge and ability. All of your answers will be completely confidential.

Thank you for participating!

1.) Please identify your role: (*)
   - Attending Physician
   - Resident Physician
   - Nurse
   - Therapist (PT, OT, Speech)
   - Pharmacist
   - Care Coordinator
   - Social Worker
   - Other:
     Please specify

Definition of video conferencing: the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, Google hangout etc…)

2.) Have you used video conferencing for personal or professional use?
   Yes
   No

3.) How often do you use video conferencing for personal use in a week?
   a.) 0
   b.) 1-2
   c.) 3-4
   d.) 5 +

4.) How often do you use video conferencing for professional use in a week?
   a.) 0
   b.) 1-2
   c.) 3-4
   d.) 5 +
Appendix 7

5.) How comfortable are you using video conferencing technology?

not at all
a little bit
somewhat
quite a bit
very much

Please indicate how much you agree or disagree with the following statements considering the use of video conferencing (as defined below) to prepare a complex patient for discharge from the hospital to home and/or other facility.

**Definition of video conferencing:** the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

6.) If an easy to use system for video conferencing was available I would use it to collaborate with my patient’s external care providers during the discharge process.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

7.) I am confident that HIPPA guidelines can be followed when a secure and encrypted system is in place.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

8.) Use of video conferencing will create a better patient-family discharge experience compared to the current method.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

9.) For family members who are unable to be present in the hospital during the discharge process, video conferencing will support them to participate more effectively in the patient’s care after discharge.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

10.) Use of video conferencing will improve the accuracy of communication handoff between the patient, family and internal and external care providers.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

11.) Use of video conferencing will facilitate a safer patient transition to
Appendix 7

outpatient and/or home care.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

12.) Familiarity between internal and external providers, generated during video conferencing, leads to greater collaboration regarding a patient’s care across the continuum.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

13.) Use of video conferencing to communicate with medical professionals accountable for my patient’s outpatient and/or home care will:

- decrease repeat admissions.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

- improve the effectiveness of my work.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

- will improve the efficiency of my work.

* disagree very much * disagree * neither agree or disagree * agree * agree very much

14.) Is there anything else you feel is important to know regarding using video conferencing as a communication tool during a patient’s discharge?

(free text)

Demographics:

Are you male or female?:
  Male
  Female

What is your age?:
  18-24
  25-34
  35-44
  45-54
  55-64
  65-74
  75 or older

What is your race?: Please mark one or more
Appendix 7

- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other
Appendix 8

Qualitative Data: Interview Questions

Hi, thank you for taking time to participate in this survey. I am gathering information about patient discharge and the use of video conferencing to continue to improve initiatives to support patient-centered care at the University of Minnesota Amplatz Children’s Hospital. Your answers will be kept completely confidential. If you are at any time uncomfortable or unable to answer a question feel free to let me know you’d like to skip that question.

1. Describe your role in discharging a patient?

2. What types of communication (verbal, written instructions, etc..) do you use during a patient’s discharge process? What is the key information that you want to communicate and get across to the patient/family?

3. What is your role in communicating discharge information to medical professionals who will be accountable for the child’s care after discharge?

4. Which professionals are you typically responsible for communicating patient discharge information to (e.g., primary care physician, home care nurse, therapist, etc…)?
   What types of communication methods (phone call, fax, written letter, etc…?) do you currently use during this process?

5. How important is it to include and communicate with outpatient and/or home care during the discharge process?

Definition of video conferencing: Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, etc…)

6. Would you be open to using video conferencing during a patient’s discharge process to connect to a medical professional accountable for that patient’s care outside of the hospital? Why or why not?

7. Do you think using video conferencing is an effective communication tool? Why or why not?

8. What, if any, do you see as advantages of using video conferencing during a patient’s discharge?

9. What, if any, do you see as disadvantages of using video conferencing during a patient’s discharge?

10. Do you feel that video conferencing could enhance the communication process at
Appendix 8

discharge to prevent readmissions? Why or why not?

11. Do you feel using video conferencing allows enough privacy when discussing patient information? Why or Why not?

12. What else would be important for me to know about the potential use of video conferencing to facilitate discharge communication in this setting?

Demographics:

Are you male or female?:
  Male
  Female

What is your age?:
  18-24
  25-34
  35-44
  45-54
  55-64
  65-74
  75 or older

What is your race?: Please mark one or more
  White
  Black or African-American
  Asian
  Native Hawaiian or other Pacific Islander
  American Indian or Alaskan Indian or Alaskan Native
  Other

Role in the medical profession:

Years as a medical provider:
Appendix 9: Interview Questions Parent/caregiver

Hi, thank you for taking time to participate in this survey. I am doing a research study about patient discharge and video conferencing. Your answers will be kept completely confidential. If you are at any time uncomfortable or unable to answer a question feel free to let me know you’d like to skip that question.

Are you the primary caregiver of the child in the hospital?

2.) Is this your first time at this medical facility?
   Yes
   No

How many times have you been hospitalized previously?:
   2-3 times
   4-5
   6-7
   8-9
   10+

1. Who do you think should be communicating with you during the discharge process?

2. What things do you expect to get communicated to you at discharge?
   How do you want this information communicated to you? (ie., verbal, written, etc…)

3. Do you think it’s important to include external care providers during the discharge process? Why or why not?

Definition of video conferencing:

4. Have you used video conferencing previously? Tell me what you think about this type of technology for communication.

5. How do you feel about using video conferencing as a way to communicate with external care providers (RN, MD, care coordinator, pharmacist, etc…) during discharge?

6. Would you be open to connecting with external care providers via video conferencing at discharge? Why or why not?

7. Do you feel the privacy of your health information being discussed will be
maintained when using video conferencing as long as a secure and encrypted system is being used? Why or Why not?

**Demographics:**
Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other
Appendix 10: Survey Questions Care Providers

Dear care provider:

Please take a few moments to answer the following survey questions related to using video conferencing during the discharge / transfer process of your patient that you recently experienced. Your feedback is greatly appreciated. Thank you.

Circle the best response that most accurately describes your experience.

1. The video conferencing equipment was easy to use.
   * strongly disagree * disagree * agree * strongly agree

2. My patient’s care was enhanced by the use of video conferencing
   * strongly disagree * disagree * agree * strongly agree

3. I feel that if the primary care doctor was not able to make direct contact with the patient, video conferencing would be an acceptable alternative.
   * strongly disagree * disagree * agree * strongly agree

4. I feel that video conferencing should be a regular part of patient discharge in the hospital.
   * strongly disagree * disagree * agree * strongly agree

5. Patient privacy was maintained during the use of video conferencing.
   * strongly disagree * disagree * agree * strongly agree

6. The quality of the video was . . . (poor, fair, good, very good, excellent)

7. The quality of the audio was . . . (poor, fair, good, very good, excellent)

Additional Comments:

Demographics:
Please identify your role:
   Attending Physician
   Resident Physician
   Nurse
   Therapist (PT, OT, Speech)
   Pharmacist
   Care Coordinator
Social Worker
Other:
   Please specify

Are you male or female?:
   Male
   Female

What is your age?:
   18-24
   25-34
   35-44
   45-54
   55-64
   65-74
   75 or older

What is your race?: Please mark one or more
   White
   Black or African-American
   Asian
   Native Hawaiian or other Pacific Islander
   American Indian or Alaskan Indian or Alaskan Native
   Other
Appendix 11: Survey Questions Parent/caregiver

Dear Parent/caregiver:

Please take a few moments to answer the following survey questions related to using video conferencing during your discharge process that you recently experienced during your hospital stay. Your feedback is greatly appreciated. Thank you.

Circle the best response that most accurately describes your experience.

1. I could easily communicate with external care providers using video conferencing.
   * strongly disagree * disagree  * agree  * strongly agree

2. I understood the information given to me during discharge.
   * strongly disagree * disagree  * agree  * strongly agree

3. My care was enhanced by the use of video conferencing.
   * strongly disagree * disagree  * agree  * strongly agree

4. I feel that video conferencing should be a regular part of patient discharge in the hospital.
   * strongly disagree * disagree  * agree  * strongly agree

5. I would feel comfortable communicating with external care providers via video conferencing besides just at discharge.
   * strongly disagree * disagree  * agree  * strongly agree

6. I feel better about my transition to home by having my external care providers involved via video conferencing at discharge.
   * strongly disagree * disagree  * agree  * strongly agree

7. My privacy was maintained during the use of video conferencing.
   * strongly disagree * disagree  * agree  * strongly agree

8. The quality of the video was . . . (poor, fair, good, very good, excellent)

9. The quality of the audio was . . . (poor, fair, good, very good, excellent)
Additional Comments:

**Demographics:**
Are you male or female?:
  - Male
  - Female

What is your age?:
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65-74
  - 75 or older

What is your race?: Please mark one or more
  - White
  - Black or African-American
  - Asian
  - Native Hawaiian or other Pacific Islander
  - American Indian or Alaskan Indian or Alaskan Native
  - Other
Appendix 12: Phase 1 Survey Demographics

Please identify your role:

- Resident Physician
- Nurse
- Therapist (PT, OT, Speech)
- Pharmacist
- Care Coordinator
- Social Worker
- Other (please specify)

Are you male or female?

- Male
- Female
### 1. Please identify your role:

<table>
<thead>
<tr>
<th>Role</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Physician</td>
<td>12.8%</td>
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</tr>
<tr>
<td>Resident Physician</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Nurse</td>
<td><strong>66.0%</strong></td>
<td><strong>31</strong></td>
</tr>
<tr>
<td>Therapist (PT, OT, Speech)</td>
<td>10.6%</td>
<td>5</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>2.1%</td>
<td>1</td>
</tr>
<tr>
<td>Care Coordinator</td>
<td>2.1%</td>
<td>1</td>
</tr>
<tr>
<td>Social Worker</td>
<td>2.1%</td>
<td>1</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4.3%</td>
<td>2</td>
</tr>
</tbody>
</table>

answered question 47
skipped question 0

### 2. Have you used video conferencing for personal or professional use?

<table>
<thead>
<tr>
<th>Response</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>70.2%</td>
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<tr>
<td>No</td>
<td>29.8%</td>
<td>14</td>
</tr>
</tbody>
</table>

answered question 47
skipped question 0
3. How often do you use video conferencing for personal use in a week?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>76.6%</td>
<td>36</td>
</tr>
<tr>
<td>1-2</td>
<td>17.0%</td>
<td>8</td>
</tr>
<tr>
<td>3-4</td>
<td>2.1%</td>
<td>1</td>
</tr>
<tr>
<td>5 or more</td>
<td>4.3%</td>
<td>2</td>
</tr>
</tbody>
</table>

answered question: 47
skipped question: 0

4. How often do you use video conferencing for professional use in a week?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1-2</td>
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</tr>
<tr>
<td>3-4</td>
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<td>0</td>
</tr>
<tr>
<td>5 or more</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

answered question: 47
skipped question: 0

5. How comfortable are you using video conferencing technology?

<table>
<thead>
<tr>
<th>not at all</th>
<th>a little bit</th>
<th>somewhat</th>
<th>quite a bit</th>
<th>very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.7% (10)</td>
<td>32.6% (15)</td>
<td>32.6% (15)</td>
<td>13.0% (6)</td>
<td>0.0% (0)</td>
<td>2.37</td>
<td>46</td>
</tr>
</tbody>
</table>

answered question: 46
skipped question: 1
6. If an easy-to-use system was available, I would use video conferencing to collaborate with medical professional's accountable for my patient's outpatient and/or home care during the discharge process.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.0% (3)</td>
<td>16.3% (7)</td>
<td>30.2% (13)</td>
<td>39.5% (17)</td>
<td>7.0% (3)</td>
<td>3.23</td>
</tr>
</tbody>
</table>

answered question 43

skipped question 4

7. I am confident that HIPPA guidelines can be followed when a secure and encrypted system is in place.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.7% (2)</td>
<td>7.0% (3)</td>
<td>14.0% (6)</td>
<td>62.8% (27)</td>
<td>11.6% (5)</td>
<td>3.70</td>
</tr>
</tbody>
</table>

answered question 43

skipped question 4

8. Use of video conferencing will create a better patient-family discharge experience compared to the current method.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.3% (1)</td>
<td>9.3% (4)</td>
<td>27.9% (12)</td>
<td>51.2% (22)</td>
<td>9.3% (4)</td>
<td>3.56</td>
</tr>
</tbody>
</table>

answered question 43

skipped question 4
9. For family members who are unable to be present in the hospital during the discharge process, video conferencing will support them to participate more effectively in the patient’s care after discharge.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7% (2)</td>
<td>9.3% (4)</td>
<td>7.0% (3)</td>
<td>60.5% (26)</td>
<td></td>
<td>18.6% (8)</td>
<td>3.79</td>
<td>43</td>
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</table>

answered question 43
skipped question 4

10. Use of video conferencing will improve the accuracy of communication handoff between the patient, family and internal and external care providers.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
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<td>40.5% (17)</td>
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<td>16.7% (7)</td>
<td>3.55</td>
<td>42</td>
</tr>
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</table>

answered question 42
skipped question 5

11. Use of video conferencing will facilitate a safer patient transition to outpatient and/or home care.

<table>
<thead>
<tr>
<th></th>
<th>disagree very much</th>
<th>disagree</th>
<th>neither agree or disagree</th>
<th>agree</th>
<th>agree very much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
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<td>9.5% (4)</td>
<td>28.6% (12)</td>
<td>50.0% (21)</td>
<td></td>
<td>11.9% (5)</td>
<td>3.64</td>
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</table>

answered question 42
skipped question 5
12. Familiarity between internal and external providers, generated during video conferencing, leads to greater collaboration regarding a patient’s care across the continuum.

<table>
<thead>
<tr>
<th>Disagree Very Much</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Agree Very Much</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
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<td>38.1% (16)</td>
<td>47.6% (20)</td>
<td>9.5% (4)</td>
<td>3.62</td>
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</table>

Answered question: 42
Skipped question: 5

13. Use of video conferencing to communicate with medical professionals accountable for my patient’s outpatient and/or home care will:

<table>
<thead>
<tr>
<th>Disagree Very Much</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Agree Very Much</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease repeat admissions</td>
<td>4.9% (2)</td>
<td>2.4% (1)</td>
<td>70.7% (29)</td>
<td>22.0% (9)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Improve the effectiveness of my work</td>
<td>4.9% (2)</td>
<td>9.8% (4)</td>
<td>48.8% (20)</td>
<td>34.1% (14)</td>
<td>2.4% (1)</td>
</tr>
<tr>
<td>Improve the efficiency of my work</td>
<td>5.0% (2)</td>
<td>17.5% (7)</td>
<td>42.5% (17)</td>
<td>30.0% (12)</td>
<td>5.0% (2)</td>
</tr>
</tbody>
</table>

Answered question: 41
Skipped question: 6

14. Is there anything else you feel is important for us to know regarding the use of video conferencing during a patient’s discharge?

| Response Count |
|----------------|----------------|
| 5              | 5              |

Answered question: 5
Skipped question: 42
### 15. Are you male or female?

<table>
<thead>
<tr>
<th>Gender</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>9.8%</td>
<td>4</td>
</tr>
<tr>
<td>Female</td>
<td>90.2%</td>
<td>37</td>
</tr>
</tbody>
</table>

- answered question: 41
- skipped question: 6

### 16. What is your age?

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
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<td>18-24</td>
<td>9.5%</td>
<td>4</td>
</tr>
<tr>
<td>25-34</td>
<td>47.6%</td>
<td>20</td>
</tr>
<tr>
<td>35-44</td>
<td>19.0%</td>
<td>8</td>
</tr>
<tr>
<td>45-54</td>
<td>14.3%</td>
<td>6</td>
</tr>
<tr>
<td>55-64</td>
<td>9.5%</td>
<td>4</td>
</tr>
<tr>
<td>65-74</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>75 or older</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

- answered question: 42
- skipped question: 5
17. What is your race? (Please mark one or more)

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
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</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>95.0%</td>
<td>38</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Asian</td>
<td>5.0%</td>
<td>2</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>American Indian or Alaskan Indian or Alaskan Native</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**answered question** 40
**skipped question** 7
Appendix 14

**Interview Transcripts: Care Providers**

1.) Care Coordinator

1. Describe your role in discharging a patient?

Care manager, meet w/ family, gather info and demographics- make sure accurate- who is their care team- specialty provider, need to know info on insurance. If complex d/c (quite a bit) need all these components ready between primary care provider, home care, etc.. working with many many people. Very big role. Plan all care conferences. Home care set-up, PT/OT, pharmacy sometimes comes, SW, dietician- coordinate that BIG care conference. Arrange for ambulance transfer- for pt. to come home if parent nervous of.

From start to finish- day 1 over here, some pt’s very complex

Some kids come in w/ trach vents so d/c planning starts on day 1 b/c sometimes have to reassign needs for that patient depending on what they go home with.

Look at EPIC- who were the key players last time, were there any existing appointments- need to cancel it.

2. What types of communication (verbal, written instructions, etc..) do you use during a patient’s discharge process? What is the key information that you want to communicate and get across to the patient/family?

A lot of conference calls- it’s important to make sure everyone is on the same page- there’s so much going on. I asked for video conf b/c so complex and this allowed for a face-to-face meeting between new providers (externally) and allow pt to meet them and them meet him. B/C of complexity I wanted to try.

Other cases it’s phone conference- family, home care, etc… I want everyone to have that opportunity to be involved to hear and speak

Also use to connect internationally- our language and their language (ie., did a conference call to all talk) re: charges that getting charged

Conference all in discharge- so many outside providers not in the “Fairview system” and they don’t have rights to be here so this was able connect via conference call.

Sending back to another state- needed to work with insurance company as well as hospice in place (from a distance) lots of ?’s about child going back, etc… and how do we get him home. Had a phone call with all key providers and worked really really well.

Phone communication, phone conferencing, video conferencing otherwise we
Appendix 14

communicate via fax, email at times, visits (home care comes in for in-person visits).

3. What is your role in communicating discharge information to medical professionals who will be accountable for the child’s care after discharge?

Insurance companies, home care, PT/OT is very important, foster families or county workers, all specialty providers, staffing people (f/u appointments), sometimes a pt can have up to 10 specialty providers to connect with so I do a lot of coordinating to have all those appointments on the same day.

Pt sent to London: had to talk to “flight team” (ie., O2 needs)

4. Which professionals are you typically responsible for communicating discharge information to (e.g., primary care physician, home care nurse, therapist, etc…)?

What types of communication methods (phone call, fax, written letter, etc…?) do you currently use during this process?

What I mentioned previously

5. How important is it to include and communicate with outpatient and/or home care during the discharge process?

You have to, otherwise you fail. Once I know home care in place- I’m calling weekly for updates. It’s SO important- I have home care come in, I have family go to PLC for education and then home care repeat. VERY VERY important. Not a number to rate.

Definition of video conferencing: Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, etc…)

6. Would you be open to using video conferencing during a patient’s discharge process to connect to a medical professional accountable for that patient’s care outside of the hospital?

Why or why not?

Yes. It makes it easier whether it’s for Q & A, face to name, makes next time so much easier as people support it. There’s one more component to it. So much you can do with the video conferencing

7. Do you think using video conferencing is an effective communication tool?

Why or why not?

It is. Especially for people who live a long ways away or for families that can’t be there, it helps bring the family in, doctors that are long-distance this can bring everyone
Appendix 14

together. Just to have a the ability to have a face to face or virtual tour would have been huge to the mom transferring to Boston.

8. What, if any, do you see as advantages of using video conferencing during a patient’s discharge?

Enhances it. Have to be selective who gets video conf. Not necessary for every child. Docs don’t have time to always do this. Have to juggle a lot of schedules to get docs to be at a conference so it’s hard to schedule them to be in video conf. I think it’s a good idea, not for every child b/c you don’t need that but if it’s complicated can help it.

9. What, if any, do you see as disadvantages of using video conferencing during a patient’s discharge?

Coordinating schedules with care team members
Depending on who working with- do they have access – different social status and some families may or may not have the access to this technology so it can be a problem.

10. Do you feel that video conferencing could enhance the communication process at discharge to prevent readmissions?

Why or why not?

Not always. If a parent wants to come back in they’ll come back in. Video conferencing will help support the process but may not prevent the readmission. So many kids are so complex and that demographic area is changing (ie., North Dakota doesn’t have capabilities to care for that patient) so they do a lot of coming back b/c they need high level care.

Vide conferencing can add to the experience (ie., take BP at home and see the child at home) or have a conference with

It won’t change it substantially, maybe a little.

If a child is sick, or parents wants to come, they will still come in.

To decrease readmission rate need to focus on primary care physician and focus on those relationships so trust is there. But based on child’s assessment or MD doesn’t have tools to care for them they will still come back.

11. Do you feel using video conferencing allows enough privacy when discussing patient information?

Why or Why not?

Good question. I think it involves enough privacy. But, good questions- but is there any way to hack into that? Should we be trying something before we use it? I’m not sure.
12. What else would be important for me to know about the potential use of video conferencing to facilitate discharge communication in this setting?

It’s good to utilize it, not sure it will work for everyone in every situation. It shouldn’t be mandatory. There’s a difference between patients and so needs to be careful how presented and how it’s used. Make sure family has info need to be involved.

FILL OUT AT END OF INTERVIEW:

Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other

Role in the medical profession: Care Coordinator

Years as a medical provider: 20 +

2.) Medical Doctor

1. Describe your role in discharging a patient?

I ultimately decide if pt ready for d/c, through interpretation of data/reports from team whether pt has met criteria for d/c. My involvement is at d/c summary.

My role is to empower other team members to make decision- just as important.

2. What types of communication (verbal, written instructions, etc.) do you use during a patient’s discharge process? What is the key information that you want to communicate and get across to the patient/family?
Appendix 14

All verbal for me, I do give contact info – not all the time but sometimes if they have ?’s once they go home (especially over the weekend) I can help transition them if they have questions at home. Business card- phone, email, etc… I give permission to contact me.

Key info: feel like they always have access to someone once they get home, so they don’t feel like they are on an island

3. **What is your role in communicating discharge information to medical professionals who will be accountable for the child’s care after discharge?**

My role is to communicate with them directly – EMR, phone, or by fax. We have systems developed that it’s automatic notification of d/c with d/c summary within 24hrs. As much as I can I try to call medical home or leave msg with RN or provider directly. For pt’s that are on EPIC- I send comm. to primary care doc through EPIC.

4. **Which professionals are you typically responsible for communicating patient discharge information to (e.g., primary care physician, home care nurse, therapist, etc...)?**

Mostly primary care physician, hard for me to know what systems “they” have in place in their practice so I feel need to call their doc and then they can use info as appropariate.

5. **How important is it to include and communicate with outpatient and/or home care during the discharge process?**

An 8-10 range on a 10 point scale. Significant role for pt’s condition need to get info that’s critical to pt’s home that is important to take care of that child

1.) what in hospital for, meds, f/u is? Pending labs, etc…

**Definition of video conferencing:** Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, etc...)

6. **Would you be open to using video conferencing during a patient's discharge process to connect to a medical professional accountable for that patient's care outside of the hospital?**

   Why or why not?

Yes, we did this pilot. Grant through FPA(Fairview Physicians Associates)- innovation grant. Fairview inpatient to Fairview clinics (1 clinic) that FaceTimed. Outside clinic set-up time in schedule to do the video conferencing.
Appendix 14

**Julia Nagel (did this pilot)- 3-4 years ago

7. Do you think using video conferencing is an effective communication tool? Why or why not?

It is- the more you can do face-to-face communication is richer and better.

8. What, if any, do you see as advantages of using video conferencing during a patient’s discharge?

Face to face- builds the relationship between Amplatz and medical home in the region. If with families present, have more faith in handoff that happens between hospital and medical home. Potential for closure in communication b/c scheduled time to do it- ask question’s about d/c rather than doing on the fly. Assuming the receiver and sender of the dynamic are both available and not distracted.

9. What, if any, do you see as disadvantages of using video conferencing during a patient’s discharge?

Operational barriers- not technology but timing of how do you predict the flow of medical home day to the flow of the sender (primary). We may schedule but all the sudden something happens on the floor.

(similar barriers to the handoff from ED to inpatient now)

10. Do you feel that video conferencing could enhance the communication process at discharge to prevent readmissions? Why or why not?

I don’t know. I don’t think so. Maybe. Because, the one thing it would help is it would help develop a shared mental model of what is going on with the pt. b/c if you as sender say pt is vulnerable for x, y, z it allows the receiver to prepare and get ready for those x, y, z. The notion is developing a better shared mental model is a good thing. Whether it actually prevents readmissions is harder to measure.

11. Do you feel using video conferencing allows enough privacy when discussing patient information? Why or Why not?

So this was an issue- depends on what video conferencing using ie., movi vs. skype. Facetime I’m not sure what firewalls are regarding that. I yeah, it would allow enough privacy.

12. What else would be important for me to know about the potential use of video conferencing to facilitate discharge communication in this setting?
Appendix 14

Talk to Julia Nagel. I think we need to set important to set expectation that it’s reliable, important to know WHO is the sender (attending, resident, fellow, etc.) WHO would actually do video conf. HOW scheduling would work. Require scheduling w/ both sides. Does other side have the technology on their end. That’s why we did tablet b/c relatively inexpensive.

Besides how communicating it’s WHAT communicating- (ie a checklist). I would assume similar checklist to implement (sample)

Sender needs to sit down with info readily available (EPIC) to go through it in systematic way to receiver. Minimum expectations of what to say.

ED to floor handoff- there is data of surveys at 6 months and 1 year. Pretty compelling data- survey with residents, RN’s, faculty. All felt better handoff.

**FILL OUT AT END OF INTERVIEW:**

Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- **American Indian or Alaskan Indian or Alaskan Native**
- Other

Role in the medical profession: **Medical Doctor**

Years as a medical provider: **15+**

3. **Pharmacist**

   1. *Describe your role in discharging a patient?*
Appendix 14

Medical team knows when pt is going- I will make sure that if family has questions when rounding to take care of those ?’s. If I know there is a need, I’ll have my med teaching team to come in (I page them to let them know) that they qualify for med teaching class. There’s things we wish were MORE involved in the d/c process- but EPIC doesn’t allow for this (ie., when doc writes d/c med orders we don’t see them). We would like to preemptively fix d/c orders- we’ve tried to be part of that process but it’s not working. EPIC doesn’t allow us to review these orders currently.

2. What types of communication (verbal, written instructions, etc..) do you use during a patient’s discharge process? What is the key information that you want to communicate and get across to the patient/family?

Verbal, written (we can print off drug info). Key info is 1.) what should they take, how often to take, and why should take it- beyond that info is common side effects and adverse reactions where may want to call back to clinic with ?’s. (but harder for families to retain).

3. What is your role in communicating discharge information to medical professionals who will be accountable for the child’s care after discharge?

For pt’s who are on more complex therapies (ie., home care) where home care would take over cares we try to touch base with the pharmacist/RN home care on the other end to fill in on the complexities. In general we would contact home care/home infusion. Doesn’t happen for everyone but for those that aren’t as straight forward.

4. Which professionals are you typically responsible for communicating patient discharge information to (e.g., primary care physician, home care nurse, therapist, etc...)?
   What types of communication methods (phone call, fax, written letter, etc...?) do you currently use during this process?

Home care/home infusion as well as care coordinator, SW- mostly done verbally but fax and email done occasionally.

5. How important is it to include and communicate with outpatient and/or home care during the discharge process?

Pretty important. Very important for certain populations and not as important for other populations. So in the grand scheme- pretty important. Definitely an area we can improve on. It’s all about how much time we have. It would be nice to have some form of communication between all these people – somewhat like a “rule” to have less chances of error.

For IV meds- working with care coordinator works well but if not IV med we don’t see those orders.
**Definition of video conferencing:** Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, etc...)

6. **Would you be open to using video conferencing during a patient’s discharge process to connect to a medical professional accountable for that patient’s care outside of the hospital?**  
   *Why or why not?*

Yes. It would have to be a workable situation for the flow of the day. That would be the tricky part- if you had 5 pt’s d/c’ing and had to try to connect with home care would be really hard…but if all done at one sitting…

7. **Do you think using video conferencing is an effective communication tool?**  
   *Why or why not?*

I don’t know how it would compare to other kinds of communication such as compare to a phone call.

8. **What, if any, do you see as advantages of using video conferencing during a patient’s discharge?**

A better community- you can know people on the other side vs. just a simple phone call b/c you would be more of a team. It builds a relationship and then it’s much easier to ask pertinent questions because you’re more comfortable talking to the person on the other side vs. if you don’t know the person (because lack of visual).

9. **What, if any, do you see as disadvantages of using video conferencing during a patient’s discharge?**

Time commitment if multiple parties to connect with

10. **Do you feel that video conferencing could enhance the communication process at discharge to prevent readmissions? Why or why not?**

I think it would capabilities to- b/c less chance of error happening. Video conf. both people can express what is the desired outcome. The plan would be less apt to be misinterpreted.

11. **Do you feel using video conferencing allows enough privacy when discussing patient information? Why or Why not?**

I’m not sure how that would effect privacy- I suppose that would depend where that video conferencing happens.
12. What else would be important for me to know about the potential use of video conferencing to facilitate discharge communication in this setting?

Covered it- opportunity to have discharge plan not misinterpreted. This would be an improvement if it can be found to fit in the busy workflow.

**FILL OUT AT END OF INTERVIEW:**
Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other

Role in the medical profession: Clinical pharmacist

Years as a medical provider: 22 years

4.) Registered Nurse (RN)

1.) Describe your role in discharging a patient?

As a nurse I think about discharge upon admission. I’m thinking ahead of education needed for discharge day. I’m reinforcing education as happens. I’m asking questions- what do they need education on? Support services at home? I involve care coordinator so on day of discharge I can just focus on orders- the meds and then effectively sending home

2.) What types of communication (verbal, written instructions, etc..) do you use during a patient’s discharge process?
Verbal only. I use patient learning center as a tool for education there. I use video teaching- GWN (Get Well Network). Paperwork order- paperwork that has written information about medication and care to do at home

Follow-up question: What is the key information that you want to communicate and get across to the patient/family?

ALL the information- it’s so important because often mom gets home and doesn’t know what to do so reinforcement of education is important.

3.) What is your role in communicating discharge information to medical professionals who will be accountable for the child’s care after discharge?

None- that information is provided via a different system (the physician)

4.) Which professionals are you typically responsible for communicating patient discharge information to (e.g., primary care physician, home care nurse, therapist, etc…)?

I can answer this better as a charge RN
3 things: 1. Discharge rounding in AM- care coordinator, SW, d/c pharmacy 2. Discharge huddle with physician- just primary physician currently and 3. In future: Proactive care conf. involving all medical consults for the patient (general pediatrics team only)

Follow-up question: What types of communication methods (phone call, fax, written letter, etc…?) do you currently use during this process?

Verbal

5.) How important is it to include and communicate with outpatient and/or home care during the discharge process?

Very important b/c of home care having to PROVIDE care to pt and communicating effectively will be key to that care.
As an RN care coordinator role it’s vital to help that person (home care)

Definition of video conferencing: Video conferencing is the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, etc…)

6.) Would you be open to using video conferencing during a patient’s discharge process to connect to a care professional accountable for that patient’s care outside of the hospital?
Appendix 14

Why or why not?

Yes, in my role that would be home care, which I would be able to connect to home care to do teaching- this would be fabulous!

7.) Do you think using video conferencing is an effective communication tool? Why or why not?

It would be effective verbal tool- face to face. A real time to ask questions. Good idea.

8.) What, if any, do you see as advantages of using video conferencing during a patient’s discharge?

Face to face- any question’s- demo’s are possible (ie dressing change) can happen again during this interaction due to the visual that can take place.

9.) What, if any, do you see as disadvantages of using video conferencing during a patient’s discharge?

Time- additional time to have that connection.

10.) Do you feel that video conferencing could enhance the communication process at discharge to prevent readmissions? Why or why not?

Yes, but not sure if it’ll help because of the types of readmissions that occur that I deal with the patient has to come in anyways (ie., fever, etc..)

11.) Do you feel using video conferencing allows enough privacy when discussing patient information? Why or Why not?

I do, it would be private here on our end and hopefully on the other end not doing during lunch.

12.) What else would be important for me to know about the potential use of video conferencing to facilitate discharge communication in this setting?

Need staff education. It’s important for medical people to be involved- have them available (during video conferencing) to answer questions as needed.

FILL OUT AT END OF INTERVIEW (if comfortable):

DEMOGRAPHICS:

100
Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other

Role in the medical profession: RN / Core Charge RN

Years as a care provider: 23
Appendix 15

**Interview Transcripts: Parent/caregiver**

**Interview #1:**

Are you the primary caregiver of the child in the hospital?

Yes

2.) Is this your first time at this medical facility?

Yes

How many times have you been hospitalized previously?:

- 2-3 times
- 4-5
- 6-7
- 8-9
- 10+

1. Who do you think should be communicating with you during the discharge process?

Well, now that I know how it works- the care coordinator, nurse practitioner, pharmacy, if home health care is involved then that person to be able to connect with for questions.

2. What things do you expect to get communicated to you at discharge?

Future appointments, medication and schedule dosing, reasons to call back, what to watch for and why and then what number to call, diagnosis…I’m sure I’m forgetting some things.

How do you want this information communicated to you? (ie., verbal, written, etc…)

Verbal and written so I can compare what I heard to what’s written down because sometimes I’m told one thing but the written instructions say another.

3. Do you think it’s important to include external care providers during the discharge process? Why or why not?

Just home care, because then it can include the nurse, PT, OT and speech to all be on board. Other clinic appointments we just set up on our own and they know we are coming in for whatever reason.
Appendix 15

**Definition of video conferencing:** the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (i.e., Skype, FaceTime, Google hangout etc...)

4. Have you used video conferencing previously? Tell me what you think about this type of technology for communication in general.

Yes- skype and Facetime. It’s so useful, very useful.

5. Would you be open to connecting with external care providers via video conferencing at discharge? Why or why not?

If related to or need a care conference prior to discharge and the external care provider needs to be involved, then yes. Otherwise, no.

6. Do you feel the privacy of your health information being discussed will be maintained when using video conferencing as long as a secure and encrypted system is being used? Why or Why not?

Yes.

**Demographics:**

Are you male or female?:

- Male
- Female

What is your age?:

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more

- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other
Appendix 15

**Interview #2:**

Are you the primary caregiver of the child in the hospital?

Yes

2.) Is this your first time at this medical facility?

Yes

No

How many times have you been hospitalized previously?:

2-3 times

4-5

6-7

8-9

10+

1. Who do you think should be communicating with you during the discharge process?

The nurse, on a day-to-day basis. Hearing in morning rounds with the MD there and them talking about the goals is part of discharge planning so this is good. If the direct physician (the heart surgeon) was involved this would be good but, I’m okay with it just being the nurse because the doctor is so busy.

2. What things do you expect to get communicated to you at discharge?

Anything that it takes to get the patient where she needs to be (ie., lovanox shots). Clear explanations of things like medications, follow-up appointments and what’s expected of me to take care of her. I’m asking for a print out of everything so I can share with the doctors in Sioux Falls (primary care physician) so I can stay on top of things to communicate to them.

How do you want this information communicated to you? (ie., verbal, written, etc…)

Both- verbal and written. I like to hear and then retain it by being able to read it later.

3. Do you think it’s important to include external care providers during the discharge process? Why or why not?

It depends on the situation, if there is a lot of follow-up needed, then yes. There should be communication back and forth from the doctor here and doctor at home to explain things medically, I assume there is some sort of communication back and forth, but this is my assumption. I don’t know.
Definition of video conferencing: the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (ie., Skype, FaceTime, Google hangout etc...)

4. Have you used video conferencing previously? Tell me what you think about this type of technology for communication in general.

My first time was here. I loved it! Especially for me as a parent that hasn’t seen my children at home, it was great!

5. Would you be open to connecting with external care providers via video conferencing at discharge? Why or why not?

I wouldn’t be against it. Not sure how it would go though. I think it’d be great to have everyone on the same page. All hearing the same thing.

6. Do you feel the privacy of your health information being discussed will be maintained when using video conferencing as long as a secure and encrypted system is being used? Why or Why not?

I’m a trusting person and if I was told that it was secure and you weren’t leaving me astray, then yes.

Demographics:
Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
Interview #3:

Are you the primary caregiver of the child in the hospital?

Yes

2.) Is this your first time at this medical facility?

Yes

No

How many times have you been hospitalized previously?:

2-3 times

4-5

6-7

8-9

10+

1. Who do you think should be communicating with you during the discharge process?

The discharge care coordinator, the nurse practitioner, someone from the team because sometimes communication gets lost. The team really understands what is going on.

2. What things do you expect to get communicated to you at discharge?

I honestly haven’t been very involved as my wife primarily is. But, it never seems to be well organized, seems like we are told we’ll discharge at a certain time and then we never do because X, Y and Z are not coordinated and then we never get out. But, I think hearing things like future appointments, medication and education about the medication like side effects or what to look for. But, the pharmacist only needs to directly communicate this if there is a certain point to get across.

How do you want this information communicated to you? (ie., verbal, written, etc…)

Verbal, I’m a verbal person, but it should be in both because if I don’t remember everything I can have the paperwork to reference.

3. Do you think it’s important to include external care providers during the discharge process? Why or why not?

Yes, if I’m going to have other companies come in like home infusion then everyone needs to be on the exact same page, everyone needs to be on the same page.
Appendix 15

**Definition of video conferencing:** the ability to connect with one or more persons through the use of technology to have a face-to-face conversation in real-time (i.e., Skype, FaceTime, Google hangout etc...)

4. Have you used video conferencing previously? Tell me what you think about this type of technology for communication in general.

Yes. But I don’t really use it so I’m neutral on it because I don’t use it very much. I don’t like to text but now I’m forced into the texting world.

5. Would you be open to connecting with external care providers via video conferencing at discharge? Why or why not?

It’d be a super idea because everyone could be together and all be on the same page such as the pharmacist talking to home infusion. Everyone could get the same answers at the exact same time.

6. Do you feel the privacy of your health information being discussed will be maintained when using video conferencing as long as a secure and encrypted system is being used? Why or Why not?

Yes, it’d have to be if it’s an encrypted system. If you talk medical records though, that’s all different rules…

**Demographics:**

Are you male or female?:
- Male
- Female

What is your age?:
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

What is your race?: Please mark one or more
- White
- Black or African-American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaskan Indian or Alaskan Native
- Other
## Appendix 16
### Video Conferencing for Discharge Patient/Family Evaluation

1. I could easily communicate with external care providers using video conferencing.

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answered question 1
skipped question 0

2. I understood the information given to me during discharge.

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3. My care was enhanced by the use of video conferencing.

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answered question 1
skipped question 0
4. I feel that video conferencing should be a regular part of patient discharge in the hospital.

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5. I would feel comfortable communicating with external care providers via video conferencing besides just at discharge.

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6. I feel better about my transition to home / outside facility by having my external care providers involved via video conferencing at discharge.

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7. My privacy was maintained during the use of video conferencing.

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Answered question 1

Skipped question 0

8. The quality of the video was...

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Answered question 1

Skipped question 0

9. The quality of the audio was . . .

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Answered question 1

Skipped question 0
10. Additional comments:

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- answered question 0
- skipped question 1

11. Are you male or female?

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- answered question 1
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12. What is your age?

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- answered question 1
- skipped question 0
13. What is your race? Please mark one or more.

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answered question 1

skipped question 0
1. The video conferencing equipment was easy to use.

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answered question 4
skipped question 1

2. My patient’s care was enhanced by the use of video conferencing.

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<td>strongly disagree</td>
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</tr>
<tr>
<td>disagree</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>agree</td>
<td>40.0% (2)</td>
</tr>
<tr>
<td>strongly agree</td>
<td>60.0% (3)</td>
</tr>
<tr>
<td>Rating Average</td>
<td>3.60</td>
</tr>
<tr>
<td>Rating Count</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0

3. I feel that if the primary care doctor was not able to make direct contact with the patient, video conferencing would be an acceptable alternative.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>disagree</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>agree</td>
<td>40.0% (2)</td>
</tr>
<tr>
<td>strongly agree</td>
<td>60.0% (3)</td>
</tr>
<tr>
<td>Rating Average</td>
<td>3.60</td>
</tr>
<tr>
<td>Rating Count</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0
4. I feel that video conferencing should be a regular part of patient discharge in the hospital.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0% (1)</td>
<td>0.0% (0)</td>
<td>25.0% (1)</td>
<td>50.0% (2)</td>
<td>3.00</td>
<td>4</td>
</tr>
</tbody>
</table>

answered question 4
skipped question 1

5. Patient privacy was maintained during the use of video conferencing.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>80.0% (4)</td>
<td>20.0% (1)</td>
<td>3.20</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0

6. The quality of the video was...  

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.0% (2)</td>
<td>20.0% (1)</td>
<td>20.0% (1)</td>
<td>0.0% (0)</td>
<td>20.0% (1)</td>
<td>2.40</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0

7. The quality of the audio was . . .

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellent</th>
<th>Rating Average</th>
<th>Rating Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0% (0)</td>
<td>40.0% (2)</td>
<td>40.0% (2)</td>
<td>0.0% (0)</td>
<td>20.0% (1)</td>
<td>3.00</td>
<td>5</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0
### 8. Additional comments:

<table>
<thead>
<tr>
<th>Answered question</th>
<th>Skipped question</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

### 9. Please identify your role:

<table>
<thead>
<tr>
<th>Role</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Physician</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Resident Physician</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Nurse</td>
<td>66.7%</td>
<td>2</td>
</tr>
<tr>
<td>Therapist (PT, OT, Speech)</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Care Coordinator</td>
<td>33.3%</td>
<td>1</td>
</tr>
<tr>
<td>Social Worker</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Answered question</th>
<th>Skipped question</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

10. Are you male or female?

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20.0%</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>80.0%</td>
<td>4</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0

11. What is your age?

<table>
<thead>
<tr>
<th></th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>25-34</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>35-44</td>
<td>20.0%</td>
<td>1</td>
</tr>
<tr>
<td>45-54</td>
<td>60.0%</td>
<td>3</td>
</tr>
<tr>
<td>55-64</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>65-74</td>
<td>20.0%</td>
<td>1</td>
</tr>
<tr>
<td>75 or older</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

answered question 5
skipped question 0
### 12. What is your race? Please mark one or more.

<table>
<thead>
<tr>
<th>Race</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>100.0%</td>
<td>5</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Asian</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>American Indian or Alaskan Indian or Alaskan Native</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>answered question</strong></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>skipped question</strong></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
### Page 1, Q8. Additional comments:

<table>
<thead>
<tr>
<th></th>
<th>Comment</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Useful for long term patients who are very complex.</td>
<td>Apr 28, 2013 9:42 PM</td>
</tr>
<tr>
<td>2</td>
<td>There were some auditory delays, possible b/c they were using a laptop, I believe. I think video allowed for more natural conversation and staff were more likely to add comments as they could see staff's facial expressions and responses.</td>
<td>Apr 24, 2013 2:47 PM</td>
</tr>
<tr>
<td>3</td>
<td>Number one and 4 neither agree or disagree, (should be an option). Picture was fussy due to the use of a lap top at Gillette</td>
<td>Apr 24, 2013 2:42 PM</td>
</tr>
</tbody>
</table>

### Page 2, Q9. Please identify your role:

<table>
<thead>
<tr>
<th></th>
<th>Role</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>chaplain</td>
<td>May 13, 2013 8:45 AM</td>
</tr>
<tr>
<td>2</td>
<td>Child Family Life Specialist</td>
<td>Apr 24, 2013 2:47 PM</td>
</tr>
</tbody>
</table>
Appendix 18

Hand-Off Communication Checklist
Know the Plan – Share the Plan – Review the Risks

1. Introduction: Names, Roles

2. Pt Name: _______________ DOB: __________

3. Diagnosis: ____________________________

4. History of Present Illness

5. Relevant Past Medical History

6. Relevant Social History

7. Relevant Allergies

8. Assessment
   Physical Exam
   Lab/Rad Results

9. Interventions
   Lines, Drains, Airways
   Medications

10. Impression
    Plan of Care

11. Observation Status: Y / N

12. Things that need Follow-Up

13. Things that you’re worried about

14. Questions?

Conference Call: 612.XXX.XXXX Code: XXXX