Connector

Team
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Problem and Solution Overview
Teenagers in hospitals, even when not in strict isolation, lack the volume of social interaction that is vital to developing a sense of self and learning to get along with others. This can lead to severe loneliness; many children end up only having contact with family and staff. Our solution is a hospital-centered, socially-oriented game platform. Focused around fostering communication, this platform would encourage teens to interact in various mini-games, chat with each other, and hopefully be more willing to meet in person. Various game actions would tie in with real life, including allowing teens to upload pictures or express themselves. Through socialization, the teens could get upgrades to their character avatar or in-game cosmetic items, enhancing the experience. Requiring teamwork to complete certain in-game activities could also foster connections. Finally, hospital administrator could oversee the environment as well as add to the game by posting hospital events and activities for the teens to see.

Users and Contextual Inquiry Participants
Our project deals with a societally sensitive group of primary stakeholders, namely minors. Unfortunately, we were unable to directly interview them in the hospital due to the legal complexities involved. Instead, we turned to previous primary stakeholders as well as secondary stakeholders. We were only able to interview these stakeholders rather than conduct a full contextual inquiry because of these restrictions. As volunteers and workers at Seattle Childrens, two of our interviewees fell into the category of secondary stakeholders since they work closely with children. While they would not directly use the application, they would still interact with it, including potentially taking on some administrative roles. Our third interviewee, who experienced long-term care as a teenager, had a unique perspective on his experience.

1.) Rachel*
Rachel is a clinical manager at Seattle Children's Hospital, in Seattle, Washington. She currently helps to manage and direct the Childlife Specialist Program. As an employee of Seattle Children's for 24 years, she has worked closely with sick and hospitalized children for an extensive period of time. More recently moving towards a managerial role, she now helps direct Childlife Specialists, volunteers who help children socialize in the hospital. Their goal is to support children by playing with them, talking to them, and encouraging them to interact with each other. As Rachel only had a few spare moments to chat with us, we conducted the interview over the phone, during her shift at Childrens. Because time was limited, we kept questions very general, and allowed her to direct the conversation to the topics she felt most

important and relevant. She presented us with a caretaker's perspective on children's social interactions.

2) John*
At the age of 17, John was involved in a motorcycle accident which left him as a paraplegic. To recover from his injuries as best as possible and to learn to cope with the loss of motion in his legs, John spent three months at the Shepherd Center in Atlanta, Georgia, which focuses on the recovery of those with spinal injuries. There, he recovered alongside a group of teenagers and young adults who had been in similar accidents. By recounting his recovery journey as well as the push by hospital staff to connect the teenagers in his recovery group, he gave us valuable insight into the challenges of being social while in the hospital for an extended period of time.

3) Jeff*
Jeff is a 19-year-old pre-med student at the University of Washington who has volunteered at Seattle Children's Hospital for six months. He interacts mostly with children ages 0 to 18, often bringing toys and games to their rooms to play with them. However, due to the hospital's volunteer policy, he is not able to see the same patient more than once in order to ensure that no child receives special treatment. Because we got in contact with this interviewee last-minute, we were not able to conduct the interview at Seattle Children's Hospital, so we talked with Jeff at a café on the UW campus.

*Real names have been switched to protect the identity of our interviewees. If you have legitimate need to see the names, contact any of the group members to explain your case.

Design Implications

Fact:	Most of our primary stakeholders, teenagers aged 13 to 18, are considered minors under federal law. 18 year olds are considered legal adults.
Implication:	We must design our application to comply with federal and state laws regarding privacy of minors, especially on a social media platform. There may be additional laws at a county or city level, as well as rules in place at specific hospitals. We must remember that the application cannot be a cookie cutter application for all hospitals across the United States.
Fact:	There is a team of volunteers and employees who oversee and help promote socialization among children in the hospitals.
Implication:	We should design our application to allow admin roles to allow a subset of this team of people to both better understand the teens' needs/interests as well as help facilitate the interactions in the application. We must design a system to minimize inappropriate or hateful remarks, spam, or unwelcoming environments.
Fact:	Patients will spend different amounts of time at the hospital depending on their diagnoses and treatment plans.

Implication:	We must design our application such that it has a long immersion lifecycle. While some games may take hours or weeks to finish, we have to be prepared to give new and interesting things for the teens to do. We should also consider how to pull in new data to keep each visit to the application fresh.

Interview Results

The interviewees all expressed difficulties getting children to willingly socialize in the hospital. John said he felt that he required outside assistance to be actively social; the recent trauma he had been through would have otherwise left him wanting to be alone. Rachel mentioned that while the kid's playroom often had lots of activity and many children were playing in it, the "teen room" was often empty; teenage patients were less likely to frequent the room. She had no specific reason for this behavior other than the fact that teens in general are less likely to be open to their peers. In our interview with Jeff, this speculation was confirmed. He said that many teens chose to stay in their rooms and keep to themselves, perhaps because they found it awkward and uncomfortable to approach people that they were not acquainted with. This led us to consider changing our target age range from all children to teens age 13 - 18 to facilitate connections in a difficult age group.

Similarly, the difficulty of making and maintaining person-to-person contact was a common theme. Rachel mentioned cases of children in isolation or the intensive care unit, who may not be able to have contact at all outside of their own hospital room. John said that even though he was mobile, it was hard to know when he could visit other patients in his hospital wing. In addition, any movement in itself was difficult because he was recently paraplegic.

In terms of electronic means of communication, John said he avoided using Facebook to post about his experiences in the hospital, but enjoyed using chat to talk to friends. In fact, he preferred this method at first to interacting in person because his new paralysis would not be part of the conversation in any way. Through an online medium, he was not any more disabled than his friends.

Another interesting point John mentioned was that in his experience, knowing something about someone made it easier to meet them. He suggested allowing users to see some information about each other to facilitate chatting and connecting. While Rachel also mentioned this, she shied away from this, not wanting to address the issues of privacy and HIPPA. She instead suggested that we utilize a very simplified profile model, including only such things as gender and age. Jeff recommended that we find a way to connect teens who are in the hospital for similar reasons, which would allow them to form intimate support groups.

One unique aspect of John's experience was the fact that his hospital was a center that specialized in his condition; he was recovering alongside peers in his own age range. He was very grateful for the interaction with the others that this required of him. John mentioned that he

was not extremely social, so getting out and meeting people would have been hard, even without having the recent trauma. John's experiences demonstrated the need we had foreseen for facilitating social interaction, particularly among hospitals without the already specialized nature similar to John's.

Jeff voiced a concern that if we created an online game, children could become hooked and be even less likely to pursue real life friendships. He has encountered a boy at the hospital who was so invested in the game Candy Crush that he would not even talk to the nurses or volunteers. He also mentioned Seattle Children's Hospital's recent adoption of a program called the GetWell Network, a program with a Wii-like remote available on the television in each room. Among other things, it allows children to watch movies and play games, but not collaboratively. Since this system is very new, many details regarding its functionality are still unclear.

Design Implications

Fact:	Teens in the hospital do not have the energy we would normally expect; recovering from illness or injury takes a lot of energy, which can make it difficult to find the motivation to socialize.
Implication:	The application we develop should be easy to use. It should be engaging enough for teens to want to use it, even when their energy is low.
Fact:	Teens have varying ability to socialize outside of their own hospital rooms. Teens in isolation are not allowed visitors. Teens with mobility issues can find it hard to travel. Further, chatting online allows for communication without disruption by disabilities; because you are not in-person, medical equipment does not become distracting.
Implication:	The application should encourage and allow both in person and online contact. Teens should be comfortable and safe with the amount of contact they make with those they meet through our application.
Fact:	Sharing a condition can be both incentive and disincentive to meet. (John found that he did not want to be friends with the people he was "supposed" to. I.E., meeting other people with his same condition felt forced. However, his program allowed him to recover alongside others in a similar situation, and the connections he made were important to his happiness.)
Implication:	The ability to know who is in your same ward or has your same condition could be a useful way to start connections. It could also come across as forced. We should not emphasize why someone is in the hospital, but we may want to make that information available.
Fact:	13 - 18 is an age range in which teens often begin to care about being "cool," and will probably not use an application if they think it is childish.
Implication:	We must design our application with the appropriate level of

	sophistication to keep the attention of the teens.
Fact:	Teens expressed the feeling that it was awkward to approach others in person if they did not already know them.
Implication:	Our design should allow children to become partially acquainted within the virtual environment in order to make them feel more comfortable when it comes to pursuing a relationship in real life. As Rachel suggested, our design could have a minimalistic profile, perhaps containing only such things as gender and age. We will need enough information to give teens a idea of who they're talking to, but not to the extent that privacy would be sacrificed. We could give children the option to share their condition if they are hoping to meet others who are in the hospital for the same or similar reasons.

Tasks

View future hospital events *(Easy)*

We want to facilitate spreading the word about various hospital events. While children may not hear about them if they remain in their room, they will be able to see upcoming events through the application, and possibly to interact regarding the events (through posting of photos and such). A hospital administrator would be the perfect person to post and manage internal events to keep these up to date, and prevent abuse of the system. This task should be easy for patients to perform frequently; patients should have the ability to quickly determine what social events they may want to take part of in the future.

Other methods of hearing about events include boards around the hospital, emails, and word-of-mouth. Our application will not replace these, but will add another route of visibility to hospital events, and will hopefully increase ease of access to information.

Send a message to a friend *(Moderate)*

We envision this as one of the core tasks of the application. The goal is to foster communication; allowing chatting will assist in creating and maintaining connections. Through our contextual inquiries, we found that some patients would be more interested in messaging their friends rather than posting updates on social media. To cater to this preference, we want to allow the children to be able to communicate with each other. Already established friends can use the app to easily chat between hospital rooms. New connections can also be made through the game. People online can see other online users and initiate a chat with them. Users should also be able to control their online visibility by either appearing as invisible or blocking others. This task should be of high frequency; we want the patients to keep in touch with each other. Long chats or frequently initiating conversations with other patients will be one of the main components of our application.

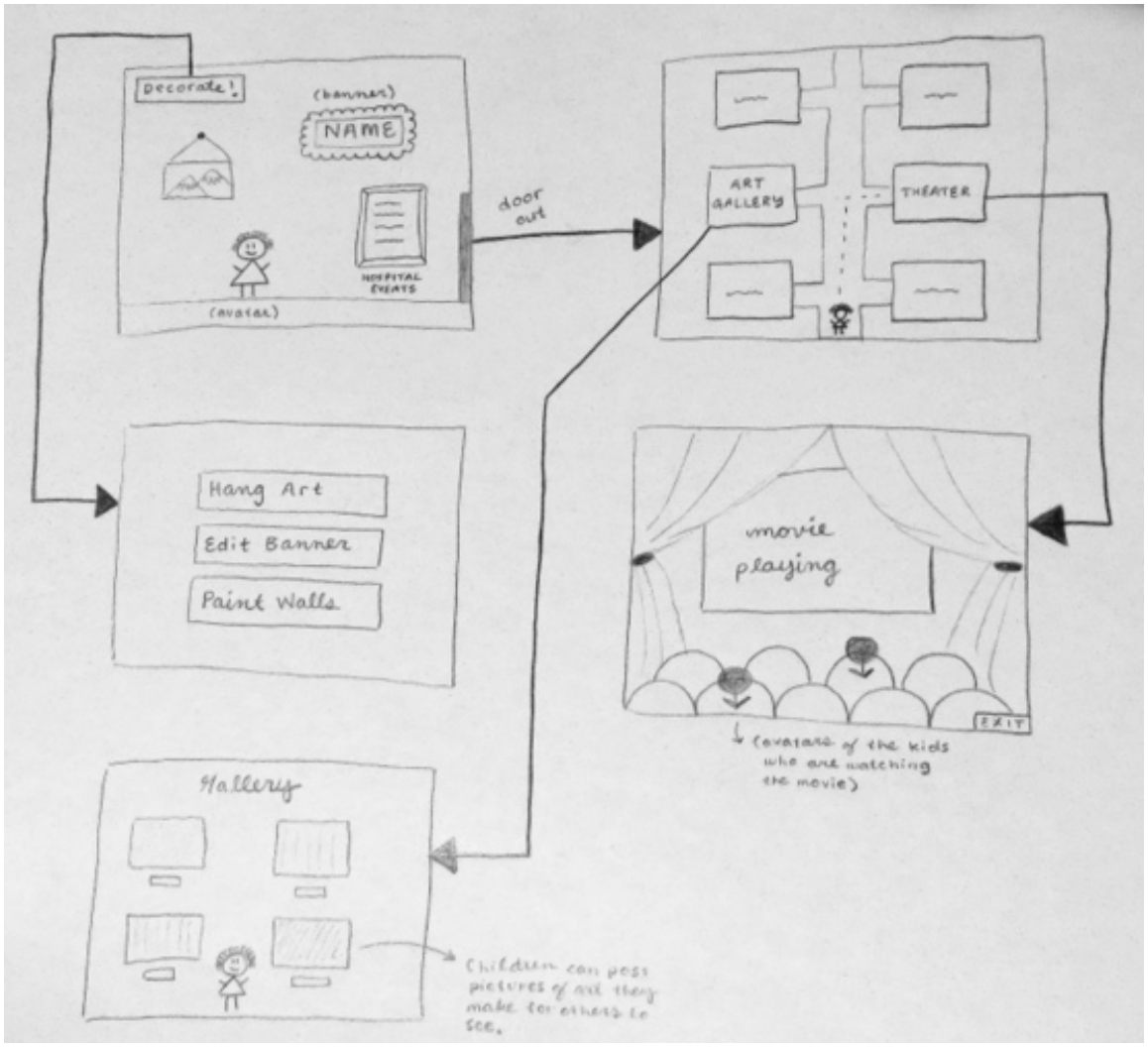
While many mediums already exist for messaging friends, this will be a closed network within the hospital, enabling them to message new people who are still within a constrained group.

Meet someone with similar interests *(Difficult)*
As mentioned by at least one interviewee, knowing something about another person can encourage real-life connection and interaction. We've found that people are more open to having conversations with others that they have similar interests with; it gives them an initial topic to discuss. While we want to protect patient privacy, patients should have a way to discover information about each other. To this effect, patients will be able to enter information in a profile, which will not be initially publically visible. Individual patients would be able to control the visibility of their information, potentially allowing others to see their interests. Additionally, after connecting through some mechanism similar to friending users would be able to view each other's private information (anything beyond username, and maybe a few basic details). Users will be able to initiate 'friend' requests with each other, which the other user can accept or deny.

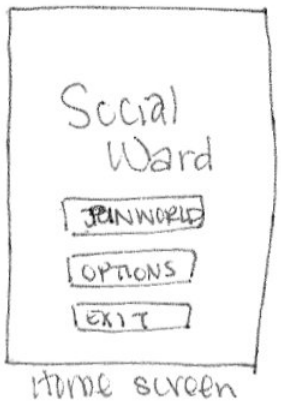
While other applications exist to encourage this in some form, none of them address the unique circumstances around being in a hospital. Our application will address these, and allow connections based on the realities unique to patients in the hospital for long periods of time.

Sketches:
These sketches were made after our interviews, so we felt we had no significant changes here from the last deliverable. We took into account what we learned, and the interfaces reflect our current findings. Further, the feedback on our sketches from the last deliverable was solely positive. In the next section we've added storyboards detailing the use of each of these interface designs.

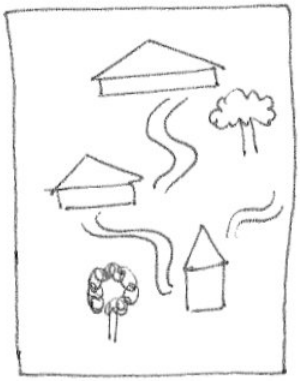
Version 1: Web

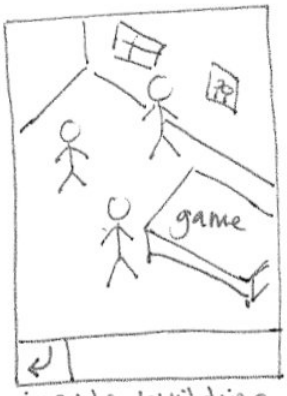


Version 2: Mobile



Home screen

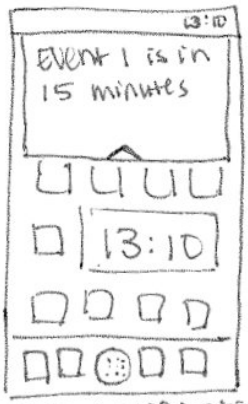

map



inside building

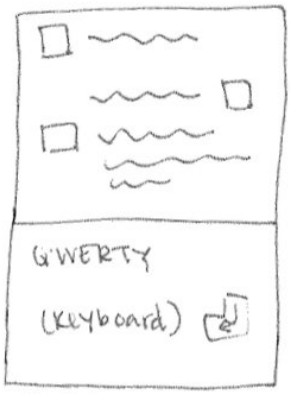
customize avatar

view events/rsvp

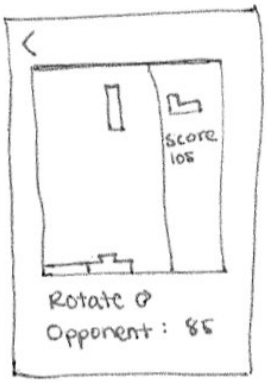


push notifications

menu for another avatar

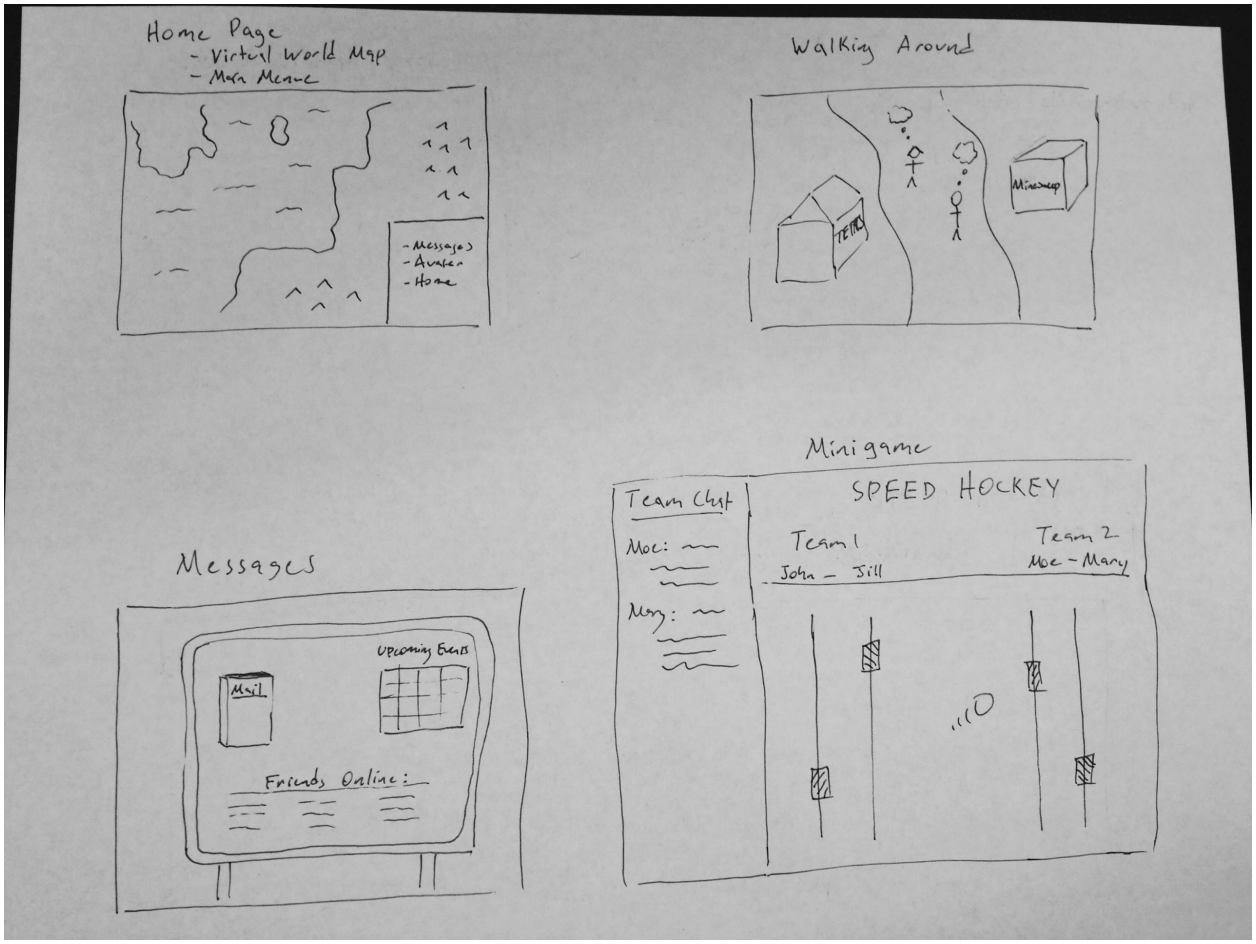


chat

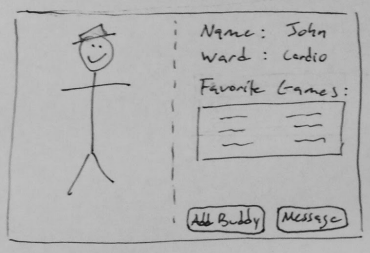


games

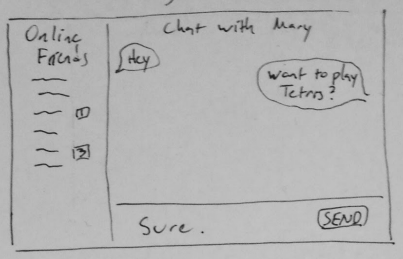
Version 3: Web



Profile

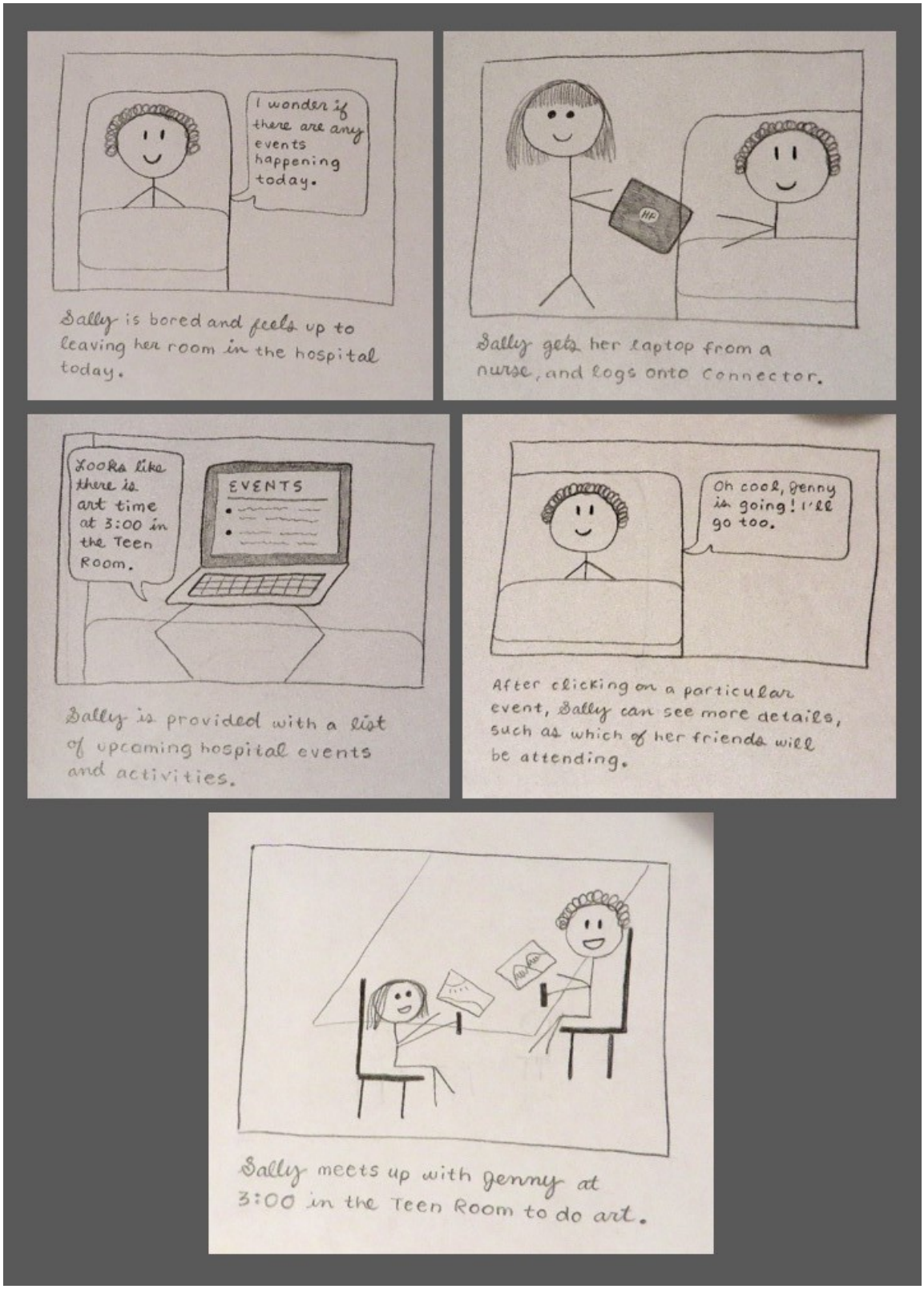


Message Screen

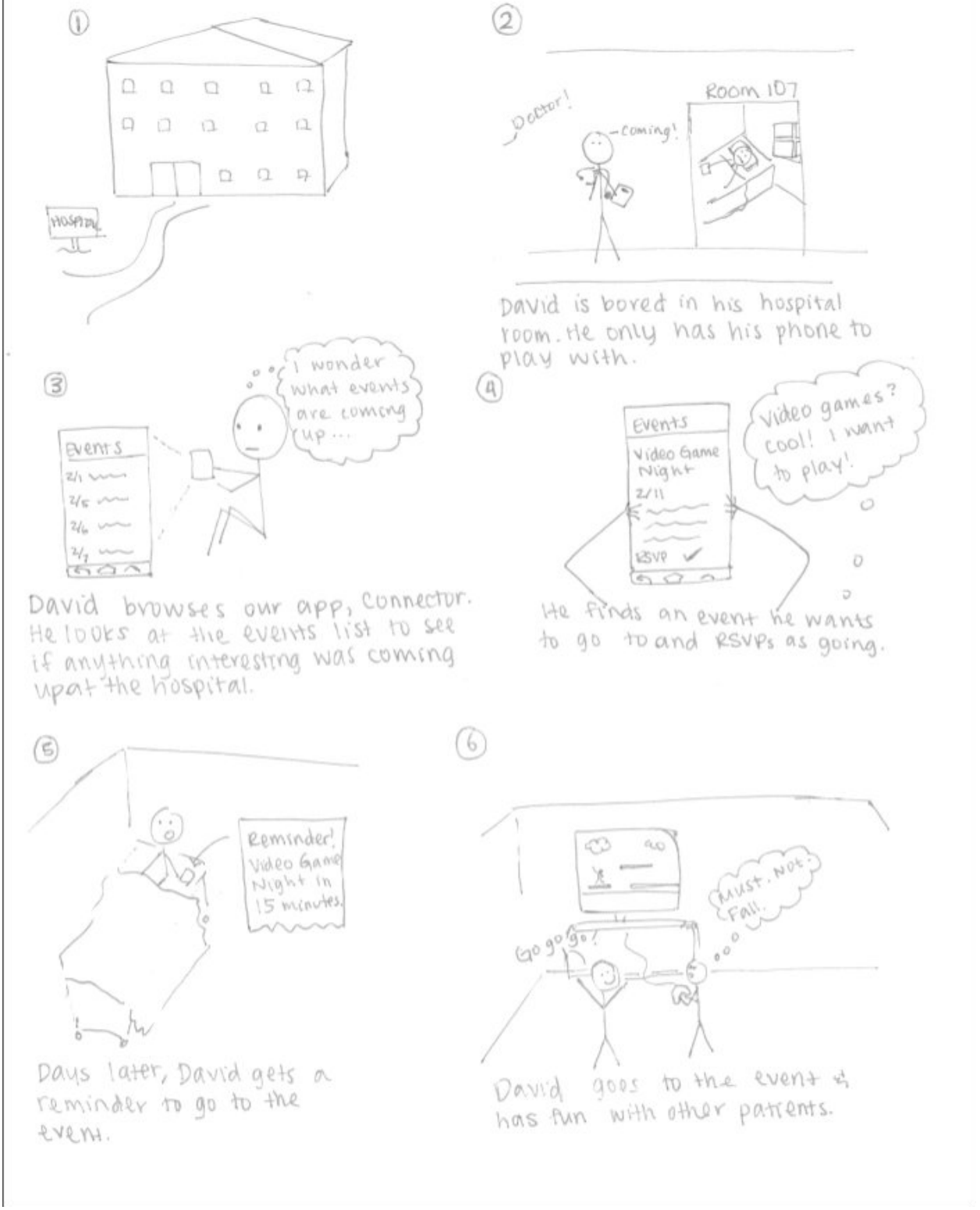


Storyboards:

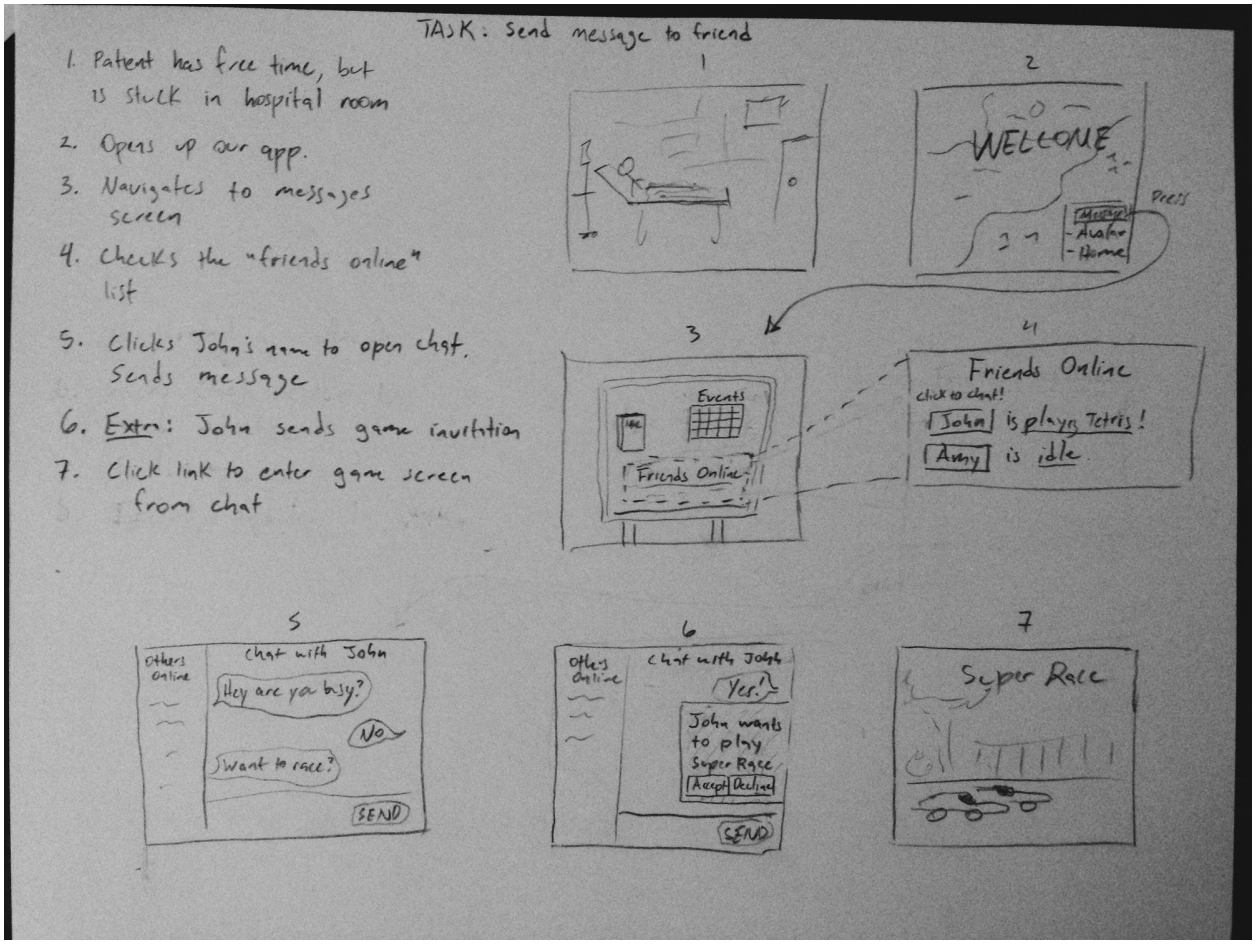
Version 1:



Version 2:


1
Hospital
2
Doctor!
-coming!
Room 107
David is bored in his hospital room. He only has his phone to play with.
3
I wonder what events are coming up...
Events
2/1
2/5
2/6
2/7
David browses our app, Connector. He looks at the events list to see if anything interesting was coming upat the hospital.
4
Events
Video Game Night
2/11
RSVP
Video games? cool! I want to play!
He finds an event he wants to go to and RSVPs as going.
5
Reminder! Video Game Night in 15 minutes.
Days later, David gets a reminder to go to the event.
6
Go go go!
Must. Not. Fall.
David goes to the event & has fun with other patrents.

Version 3:


TASK: Send message to friend
1. Patient has free time, but is stuck in hospital room
2. Opens up our app.
3. Navigates to messages screen
4. Checks the "friends online" list
5. Clicks John's name to open chat. Sends message
6. Extra: John sends game invitation
7. Click link to enter game screen from chat
1
2
WELCOME
Press
Messages
- Avatar
- Home
3
Events
Friends Online
4
Friends Online
click to chat!
John is playing Tetris!
Amy is idle
5
Others Online
Chat with John
Hey are you busy?
No
I want to race?
SEND
6
Others Online
Chat with John
Yes!
John wants to play Super Race
Accept
Decline
SEND
7
Super Race

Design Choice
The design we have decided to move forward with is Version 2 above: an application for mobile devices. This choice was made because of several factors:

Ideal Interface: The main uses of our application (communication and play) lend themselves to a mobile interface. Teens are used to playing mini-games and communicating with friends using a mobile-based interface. Jeff's story of a boy in love with Candy Crush can attest to this.

Mobility: Phones are easy to keep on one's person at all times; most people have their phone with them constantly. This allows for use of the application even if a user has left his or her room, but it will also not impede use within the room. Further, it allows for functionality like event reminders and chat notifications that we are used to seeing on smart phones.

Target Audience: According to a study done by Nielsen, 13 - 17 year olds are the fastest growing user group for smart phones, with 58% now owning a smartphone compared with 36% just a year ago[1]. This makes it more likely than not that a user would have access to a platform on which to run our application. Further, this platform is one that our target audience enjoys using. However, we will have to put thought into making the application accessible to those without smartphones.

[1] Nielsen. "Young Adults and Teens Lead Growth Amoung Smartphone Users". Nielsen. 10 September 2012. Web. http://www.nielsen.com/us/en/newswire/2012/young-adults-and-teens-lead-growth-among-smartphone-owners.html