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Graphic Design and Morale: Helpful Widgets and Worthwhile Distractions for the Masculine Chemo Crowd

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GRAPHIC DESIGN AND MORALE:
HELPFUL WIDGETS AND WORTHWHILE DISTRACTIONS
FOR THE MASCUINE CHEMO CROWD

by

CARRIE WALLACE BROWN
Under the Direction of Elizabeth Throop, MFA

ABSTRACT

This thesis explores the possibility that graphic design can have a positive impact on the morale of a male undergoing chemotherapy for testicular cancer. The paper explains the concept of “morale,” why it is vital for patients at a cancer infusion center, and subsequently how graphic design can boost morale. The supporting research fostered a socially-responsible design solution—a mobile application that intertwines design, health, and technology. The application is geared to the patient experience. As such, it can reduce anxiety by providing a distraction in the form of entertainment (as well as providing tools and an anonymous connection for the individual patient to a similar patient population). Furthermore, the application is also designed for research purposes by establishing a framework for collecting measurable data. In turn, this data can be used to enhance the chemotherapy experience—thus contributing to a positive impact on the morale of the cancer patient.

INDEX WORDS: Graphic design, Mobile application design, Testicular cancer, Infusion center
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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of
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Office of Graduate Studies
College of Arts and Sciences
Georgia State University
May 2015
DEDICATION

For the Big Papas.
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I would like to express my special appreciation and thanks to my thesis committee, composed of Associate Professor Elizabeth Throop, Assistant Professor Jeff Boortz, and Associate Professor Dr. Ritu Aneja. You have each challenged my ideas, encouraged my research, and pointed me in new directions when I was at a stopping block. Your guidance has been invaluable. I look forward to staying in touch in the future. Also, I wish to express my thanks to the faculty and staff of the Ernest G. Welch School of Art and Design. Thank you for your support over the last three years.

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1 INTRODUCTION

In August 2013, my sister informed me that her husband had been diagnosed with testicular cancer. The “C-word” had never been used in my immediate family. Thus, we were all quite shocked and quick to formulate questions and make assumptions about the impact of his frightening diagnosis. A few Google searches later, it was evident that testicular cancer is considered a “good cancer” in contrast to forms considered impossible to survive. When caught early, (which was thankfully the case), his form of cancer is considered curable—a term not often applied in the cancer diagnosis realm.

Our family was thankful and extraordinarily relieved that the prognosis of my sister’s husband was positive. However, despite our relief, there was still great concern and worry among us regarding the surgery and a lengthy regimen of chemotherapy looming ahead for him. He and my sister had both recently completed graduate school, were thriving in their professions, and were the proud parents of an eight-month-old son. Physicians’ visits had revealed a long list of potential physical side effects from chemotherapy—in addition to possible psychological changes over the course of the treatment. These potential side effects caused worry for him and the family as to how this interruption would affect his familiar and day-to-day routines to which the family had become accustomed. Short-term side effects were inevitable. However, we worried as to whether there would be long-term side effects that would impact him for the rest of his life.

The concept of changed patient confidence and morale during chemotherapy got me wondering if it is possible for morale (an emotion influenced by forces beyond physical determinants) to be effected by graphic design. Clarity of message, aesthetic cohesion, and pristine craft are concepts that graphic designers are taught to value from the onset of their
careers. Equally important to graphic design itself is the emotional response of the viewer, in that—as designers—our common goal is to each be a problem-solver (and being a problem-solver includes overcoming emotionally-charged obstacles). Therefore, my goal in this project was two-fold: to assess if graphic design can affect health outcome, and to develop a patient tool to relieve the anxiety and stress of chemotherapy.

2 THE AUDIENCE

Cancer is a multifaceted issue, and with much conflicting published research based on different clinical studies involving data collection, analysis, and interpretation of findings. Therefore, the findings and conclusions should be considered in relation to the manner in which the study was conducted (i.e., size of the study population). It is important to recognize that all races, ages, and genders can develop cancer, and that receiving a diagnosis of cancer can occur at any time of life. Likewise, it is important to recognize that a cancer diagnosis also impacts the family and friends of the individual diagnosed with cancer. Meanwhile, the amount of stress and anxiety experienced by the patient can also impact that person’s treatment outcome.

For men, a diagnosis of testicular cancer can produce a high degree of fear and have a profound impact on their lives. According to the Testicular Cancer Society, “young men between the ages of 15-35 are at the highest risk” of developing this form of cancer. Additionally, “testicular cancer is 4.5 times more common in white men versus black men,” and “the risk for Hispanics, American Indians and Asians falls between that of white and black men.”

In 2011, the National Cancer Institute published the results of their Surveillance, Epidemiology, and End Results Program, and included testicular cancer trends over a 36-year period (1975–2011). Inclusive of all races within the US population, this study revealed a 0.8%

annual increase in testicular cancer cases, but stabilization in death rates—and concluded that early detection is vital to reducing the overall cancer death rate. The same study also revealed that 95.3% of men survive five years or more after being diagnosed with testicular cancer—99.2% if discovered in the first, localized stage.\(^2\) Thus, the prognosis of a patient is typically positive even if a shock to his perception of his masculinity and feeling of self-confidence.

For the purposes of this thesis, I will focus on testicular cancer patients undergoing chemotherapy treatment at an infusion center. Thus, the graphic design solution is targeted to this specific cancer patient population, and encompasses this populations’ similar experiences as patients interacting with healthcare staff during the course of their chemotherapy treatment.

3 CHEMOTHERAPY

The Testicular Cancer Society reports that cancer treatment depends on the type, stage, patient’s overall health, and individual preferences. In most circumstances, treatment involves at least one of the following: active surveillance after initial surgery, radiation therapy, chemotherapy, and retroperitoneal lymph node dissection (RPLND).\(^3\) Chemotherapy is a medication approach to eliminating, targeting, and killing rapidly dividing cancer cells. It does not target a particular part of the body (as opposed to radiation aimed at a specific area in the body); instead, chemotherapy usually acts on cells throughout the entire physiological system.

The emergence of chemotherapy to treat cancer occurred in the 1950s, and it can have systemic effects and cause challenging side effects. Since the 1950s, chemotherapy drugs have been created that have fewer side effects, and are more targeted to specific cancer cells.

Presently, patients typically receive a “cocktail” of intravenous or oral chemotherapy drugs to


\(^3\) "Testicular Cancer Treatment Options," Testicular Cancer Treatment Options, accessed November 30, 2014.
destroy cancer cells or impede the growth of these cells. Schedules of chemotherapy administration vary from patient to patient, but are typically determined by an oncologist and administered by a team of nurses. Depending on the stage at which malignant tumors or cells are discovered, testicular cancer patients may receive their chemotherapy treatment once a day, once a week, or even once a month.

The potential for side effects during the course of treatment is high, because chemotherapy medications frequently also destroy healthy cells in the body. Patients receiving chemotherapy could experience a range of side effects including: nausea, fatigue, vomiting, mouth sores, nerve damage, neutropenia, diarrhea, constipation, and hair loss. It is well known that chemotherapy treatments can be exhausting. Therefore, breaks are given between chemotherapy cycles, in order to allow the body time to rest and rebuild healthy cells that have been destroyed during the process. Unfortunately, halting chemotherapy can result in metastasis in which the affected cancer cells rapidly multiply and spread throughout the patient’s entire body. The likelihood of a positive outcome following adherence to chemotherapy regimen (versus the poor prognosis if the cancer is not treated at all) leads most patients to agree to chemotherapy despite the likelihood of exhaustion and side effects—as well as other potential risks (such as a reaction).

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4 INFUSION CENTERS

Cancer patients typically receive treatment at an outpatient infusion center. Infusion centers administer medications, fluids, antibiotics, pain relief, and various other treatments in an environment staffed with oncology nurses, patient care technicians, and often a dedicated pharmacist. In addition, patients are usually provided with blankets, drinks, and snacks—and some infusion centers provide dieticians and spiritual counselors. Furniture for patients is characteristically over-scaled and plush to increase comfort; flexible seating is regularly provided to the family and friends of the patient who visit during the process.

Length of stay at an infusion center depends on the type of cancer, treatment regimen, and the patient’s progress over the course of the treatment. Much of the time is spent administering “pre-drugs,” which help prepare the body absorb the chemotherapy—and all of the medications are typically administered intravenously through a port inserted just underneath the skin of a patient’s arm or chest. For the most part, patients entertain themselves or rest during the treatment period, while infusion center staff attend to the healthcare needs of the individual patients. However, chemotherapy can be a long-term and debilitating process; it can therefore lead to lengthy periods of physical weakness and psychological stress. Thus, it is not uncommon for the overall optimism and morale of a patient to decline over the full course of treatment.

5 MORALE

By definition, morale is “the mental and emotional condition of an individual or group with regard to the function or tasks at hand; a sense of common purpose with respect to a group; and, the level of individual psychological well-being based on such factors as a sense of purpose

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7 "Infusion Center," For Chemotherapy at Southeastern Regional Medical Center, January 01, 0001, accessed January 14, 2015.
and confidence in the future.” The rise in the number of patients receiving chemotherapy treatment, an over-worked medical staff, and the stresses that patients endure as they fight chemotherapy side effects can negatively affect patient morale.

Research studies focused on patient morale have included the impact of administrative and procedural changes (as well as interior design and architectural changes). On the other hand, no published research (or none that can be located in a database search) exists as to how graphic design can make a positive impact on morale in cancer patients. In order to begin to evaluate whether graphic design can make such a positive impact, it is first necessary to investigate the factors that contribute to the negative emotional transformation—and decline in self-confidence and morale—among cancer patients undergoing treatment.

5.1 Loss of Control

As the author of Changing Buildings, Building Change!, Jacques Mizan states that being able to experience a sense of control in this environment enables individuals to “attain a ‘sense of mastery’ over the unpredictability of illness, facilitating coping, and potentially improved clinical outcomes.” A feeling of loss of control is exacerbated by the combination of physical health unknowns (i.e., remission or not), interruption of normal life, and dependency on medical staff to treat their cancer. While there are tools (e.g., journals, organizers, and workbooks) that attempt to give a patient the ability to increase their sense of control and are intended to be helpful, these are usually generic and overly inclusive of “how-to” information—rather than

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8 "morale" Merriam-Webster, accessed October 10, 2014.
encompassing the patient’s emotional experience of fear and anxiety as related to their specific cancer diagnosis. For example, a pre-generated checklist of items to bring to a hospital stay, or a list of events that will happen on the day of your surgery are both generalized tools that do not meet the needs of individual cancer patients.

Balance of communication is also a critical factor in enabling the patient’s sense of control. Healthcare staff must manage expectations by communicating both efficiently and compassionately, as this can relieve the anxiety and sense of loss of control experienced by the patient. Likewise, patients must be compliant and clear about the need to maintain a trustworthy relationship with staff. An infusion center that provides health education tools that promote control, facilitate communication, and provide clearly understandable information can foster a healthy and life-affirming environment for patients and their family members along with the center’s staff members. In turn, this can improve the overall patient experience during their chemotherapy treatment, and the likelihood of a positive outcome.

5.2 “Chemobrain” as a Condition

Depending on whom you ask, a condition called “chemobrain” may or may not be grounded in scientific research. The MD Anderson Cancer Center at the University of Texas defines “chemobrain” as a “…a symptom reported by many cancer patients. Chemobrain, or difficulty in efficiently processing information, is a legitimate, diagnosable condition that may be caused by chemotherapy treatment, the cancer itself, or secondary medical conditions such as anemia.”

The negative cognitive effect of chemotherapy can contribute to a patient’s feeling of loss of self-confidence and morale—as well as contribute to a sense of loss of control. Psychological

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Side effects include difficulty concentrating on a single task, problems with short-term memory, feeling mentally “slower” than usual, confusing dates and appointments, and fumbling for the right word or phrase. While the cause of the decreased cognition is uncertain, researchers have found several coping mechanisms to ease frustrations associated with this particular side effect. These include short blasts of exercise, memory aids, sleep aids, easing stress, elevating mood, and minimizing distractions.\textsuperscript{12}

The concept of “chemobrain” (whether accepted by medical researchers as a side effect of chemotherapy or not) impacts the way information and graphics are presented in the overall design solution described in this paper. Therefore, the proposed design solution will not only provide information, but it will also assist patients in making lists of needed items, keeping track of doctor’s appointments, recording names of the medical staff, and locating important contact information. The mobile application is intended to be an all-inclusive tool that eliminates having to search through multiple notebooks, pamphlets, and websites for essential information. Additionally, entertaining games and curated entertainment (e.g., popular television shows, genre-specific movies, comedy routines, and even viral videos) can help the patient maintain a sense of normalcy under the abnormal conditions of spending time in an infusion center.

6 LAUGHTER IN STRESSFUL SITUATIONS

Men with testicular cancer face a difficult physical and mental journey. This disease becomes an immediate test of their mental capacity as a perceived threat to their masculinity as well as their lives. After diagnosis, this patient population is typically given an abundance of anxiety-producing and generic materials describing testicular cancer and their various treatment options. Subsequently, many of these patients turn to non-medical websites on the Internet, and

get engrossed in websites and chat rooms that heighten their confusion and fear regarding their diagnosis due to the prevalence of “medical shoptalk” and misinformation. In addition, well-meaning friends may express their own fears and sadness, thereby increasing depression and fear in the patient—as opposed to increasing the patient’s sense of humor (that can aid in their ability to psychologically cope with their diagnosis).

A 2013 study entitled *Humour in Adult Cancer Care: A Concept Analysis* notes that humor in the infusion center environment, “may ease the physical or metaphysical pain of the shock of cancer diagnosis and the psychosocial effects of cancer treatments on patients and their families.”13 I suspect that the presence of humor (or simply a lighter and more conversational voice within reading materials and tools) could be enormously beneficial for a chemotherapy patient.

Research indicates that men are more likely to deny that a personal health problem exists than women. Yet—once identified—men are more disposed to confront the issue directly and without reservation. Meanwhile, women deal with problems in a more emotional manner leaning on friends and family for advice and guidance.14

According to the authors of the 2004 study entitled, *The Role of Humor for Men With Testicular Cancer*, “Most people in our society assume that those who develop cancer have a death sentence. This is no longer true of testicular cancer, in which the outlook is optimistic, especially when compared, for example, to cancers of the lung, liver, or pancreas. Testicular cancer is not only much easier to cure than it was in the past but also very much in the news.” The study also suggests “men’s use of humor might sometimes [be] a reaction to this relief as

well as a way of reassuring others that they were not fearful about the diagnosis. Men with this disease often need to communicate, simultaneously, that they have cancer but that their life is not in danger… a fertile breeding ground for humor.”\footnote{A. Chapple, "The Role of Humor for Men with Testicular Cancer, "Qualitative Health Research 14, no. 8 (2004): pg. 1137, accessed December 12, 2014.}

In 2012, Bill Carter (a longtime television and entertainment author for the \textit{New York Times}) wrote an article, \textit{In the Tastes of Young Men, Humor Is Most Prized}, in which he discusses \textit{Comedy Central}. The main demographic of \textit{Comedy Central} is young men (18-34 years old) which is also the demographic most susceptible to developing testicular cancer. His findings note that, “more than music, more than sports, more than ‘personal style,’ comedy has become essential to how young men view themselves and others.”\footnote{Bill Carter, "In the Tastes of Young Men, Humor Is Most Prized, a Survey Finds," The New York Times, February 19, 2012, accessed January 10, 2015.}

An online survey of 2,000 people conducted by \textit{Nielson Entertainment Television} arrived at the following three conclusions: 1) 88\% said their sense of humor was crucial to their self-definition, 2) 74\% said “funny people are more popular,” and 3) 58\% said they sent out funny videos to make what might be called a special impression on someone else.\footnote{Bill Carter, "In the Tastes of Young Men, Humor Is Most Prized, a Survey Finds," The New York Times, February 19, 2012, accessed January 10, 2015.}

While television is still considered the number one source of comedy, the Internet and its ability to provide immediate laughter in the form instant imagery and videos is challenging the former role of “the tube.” Therefore, the Internet and mobile applications are assuming a greater role in providing needed comic relief to people in their everyday lives.

One should not disregard that the perception of something as “humorous” is a highly subjective reaction, and not universal among individuals. Likewise, what is perceived as “humorous” to a certain population (based on race, age, gender) may not be humorous to another
population or culture. Juliann Scholl (author of *The Use of Humor to Promote Patient-Centered Care*) published in the *Journal of Applied Communication Research*) suggests:

…one should not view humor as a panacea. While humor can supplement more traditional approaches, it should never be a replacement for proven treatments or sound medical advice. Rather, it can be a tool with which therapy is administered, not unlike a syringe used to inject a flu vaccine. However, this ethnography does suggest that humor can be used to endorse a patient-centered culture that thrives on individualized care, the promotion of goodwill, the self-expression of both patients and providers, and the enhancement of the patient-provider relationship.\(^{18}\)

The plot of a movie and the message of an ad campaign do not have a “one-size-fits-all appeal,” and neither will this graphic design solution. On the other hand, it needs to appeal to a sizeable portion of the target demographic—and therefore, the solution needs to encompass a comprehension of common interests and habits.

7 **SENSE OF BELONGING**

Belonging to a community of empathetic individuals can elevate the feeling of normalcy in cancer patients, and thereby reduce the stress associated with being a patient in an infusion center. Connecting with people that have similar diagnoses (not to mention overlapping interests and hobbies) has the potential to enable patients to maintain a realistic perspective and normalize their situation. In *A Pathway to Empowerment: Evaluating a Cancer Education and Support Programme in New Zealand*, the authors suggest, “a sense of empowerment emerges from awareness, belonging, and feeling of control; feelings that result in informed choices, fostering

realistic expectations, utilizing self-care strategies, increasing their confidence and communication skills, or feeling connected and inspired."

From diagnosis to chemotherapy completion, cancer patients need to feel secure about taking the initiative to ask questions of medical providers, perform research into their type of cancer and treatment options from reliable sources, and make connections with others who have a similar diagnosis. The design solution described in this paper will promote self-advocacy in order to provide that sense of belonging.

8 CASE STUDIES

By studying relevant projects focused on design-driven social change, I intend to demonstrate the impact that even a small idea can have on the health and wellness of testicular cancer patients. A specific set of criteria was used to determine which case studies are included in the following discussion, and the criteria for inclusion are: 1) humor as a guiding mechanism for making intimidating medical situations more approachable, and 2) smart use of technology to make an impact on the health and wellness of the intended audience.

8.1 Case Study 1—Technology to Boost Morale: StandWith App

The following statement describes the mission of Fuck Cancer: “to educate through storytelling to change the way people think, talk, and act about cancer.” In 2009, Yael Cohen (its founder and CEO) first personally encountered cancer when her mother discovered she had breast cancer. Cohen insists that it was early detection that saved her mother’s life. Subsequently,

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she felt moved to communicate that message through a foundation that brings awareness to the lifesaving aspects of early detection in an authoritative, courageous, and edgy way.

Cohen used her experience of cancer and know-how to develop a technology product that helps relieve stresses experienced by the caregiver of a cancer patient. Meanwhile, Cohen explained (in an interview with *Fast Company*’s Rebecca Greenfield) the uncomfortable and awkward—albeit well-intended—offerings of family, friends and acquaintances once a person has made their diagnosis public in the following statement: “… you've got 14 bouquets of flowers that are dying and nobody has walked the dog.”

Notably, Cohen’s own experience with being her mother’s caregiver and “organizer of gifts and favors” led her to develop the care management application called *StandWith* that creates a network of people through social media outlets.

The concept is inspired design with one simple message—to focus on something small to achieve something big. For example, *StandWith* can enable family and friends to decrease the overall stress experienced by a cancer patient through understanding that person’s immediate needs; thus, the family and friends can complete a simple errand much needed by that individual dealing with cancer (such as picking up much needed laundry detergent).

**8.2 Case Study 2—Humorous Voice: *A Girlfriend’s Guide to Pregnancy***

Vicki Lovine is an author (and mother of four offspring) who took it upon herself to advise women in a frank and humorous manner about the realities of pregnancy. According to Lovine’s website (*GirlfriendsGuide.com*), her book has been reprinted 41 times and translated

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into 12 languages. On her website and in her book, Lovine addresses pregnant women worried about the physical changes in their bodies—as well as discussing the embarrassing realities of giving birth, intimacy during pregnancy, and how to handle unwanted pregnancy advice. Additionally, Lovine provides “straight-talk” accounts of preparing for birth, giving birth, and what really happens once parents return home with the baby from the hospital. She doesn’t take the “blessings” of pregnancy of childbirth so seriously, but neither does she take them for granted.

Lovine’s style of writing appeals to mothers who prefer to avoid the popular “feel-good” pregnancy books so widely available in favor of straightforward and succinct storytelling. Due to the success of A Girlfriend’s Guide to Pregnancy, Lovine has gone on to write additional books on subjects relevant to her mostly female audience. While her audience may be considered niche, Lovine has excelled at addressing its needs, and thus created a loyal following among those who see her as a trusted advisor.

8.3 Case Study 3—Knowing Your Audience: Movember

The Movember Foundation is a global charity focused on raising awareness and funds for men’s health. This nonprofit targets the following three aspects of men’s health: 1) prostate cancer, 2) testicular cancer, and 3) mental health. Currently, it has funded 800 programs in 21 countries. According to its website, the Movember brand seeks to be “fun, accountable, transparent, humble, innovative, and remarkable in an effort to provide ‘constructive change’ and raising awareness for the cause.” In terms of testicular cancer, the aim of this foundation is to “seek to improve their physical and mental health, and reduce mortality.”

A main goal of the Movember Foundation is to provide a lighter approach to discussing men’s health, and to simply “start a positive movement.” In an interview for the New York Times, Joe Walters (co-author of Cause Marketing for Dummies) describes Movember by stating “Even though these are serious issues, they engage in a fun way. Women’s causes, children’s causes and pet causes often encourage you with sadness, but Movember engages you with humor.”

It is important to recognize that the Movember brand uses a simple and light-hearted way to bring attention to their cause. Movember asks men to grow mustaches during the month of November and use their new look to begin conversation on the issues. From there, people are encouraged to donate financially, as well. The brand possesses an inkling of silliness, and—with that—the ability to make awkward situations comfortable and approachable, by giving men the opportunity to discuss their masculinity without the fear of being labeled.

### 8.4 Findings from Case Studies

For most people, personal health is considered a sensitive and serious topic. The natural instinct is to be discrete about our bodies, maintain privacy, and certainly not make light of a serious situation such as cancer. The reason that each of these case studies is relevant to this project is that each demonstrates the capacity to humanize an uncomfortable situation along with normalizing conversations about medical needs. Yael Cohen, Vicki Lovine, and the Movember organization are passionate about meeting a large but unmet need in society. In turn, that passion has been successful in enabling positive changes for three distinct groups of people coping with health-related issues and needs.

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9 THE INFUSION ENVIRONMENT

Common sense tells us that the graphic design aesthetic of a medical environment should be light-hearted and “fresh” in order to maintain high patient interest and morale. Scenes from nature are commonly used to reduce anxiety and pain intensity. Natural light, therapeutic sounds, and pacifying smells can help ease “white coat syndrome” (so prevalent in the medical environment). Ample research exists for architects and interior designers who work to create these soothing environments, but there is no indication if the same principles apply to graphic design. It is recognized that graphic design is ephemeral, transitory, and most successful when speaking to a specific audience positioned to receive its underlying message. During my trips to two different infusion centers for this project, I focused on ascertaining the best opportunity and format for graphic design to make the greatest impact.

9.1 Northwestern Memorial Hospital Infusion Center (Chicago, IL)

I did not know what to expect upon visiting my first infusion center. The nurses at the Northwestern Memorial Hospital in Chicago, IL were gracious enough to invite me on a tour of the facility. I was poised to take note of the arrival experience, atmosphere, and how cancer patients occupied their time during the lengthy hours in the infusion center.

The hospital is located in downtown Chicago, and I was dropped directly in front of the building entryway (see fig. 9.1). From there, a 20-floor elevator ride took me to a nondescript office corridor, lined with artwork and photography focused on nature scenes (see fig. 9.2 and 9.3). Landscapes, mountains, rivers, and the human form in triumphant pose were prominently displayed in the infusion center’s waiting room. Rows of inhospitable institutional chairs and foam-filled sofas lined the walls, separated by an occasional side table obscured by verbose pamphlets (see fig. 9.4).
Figure 9.1 *Entrance*
Source: Google Street View\(^{27}\), Northwestern Memorial Hospital, Chicago, IL

Figure 9.2 *Corridor*
Source: Carrie Wallace Brown, Northwestern Memorial Hospital, Chicago, IL

Figure 9.3 *Corridor Artwork*

Source: Carrie Wallace Brown, Northwestern Memorial Hospital, Chicago, IL

Figure 9.4 *Waiting Area*

Source: Carrie Wallace Brown, Northwestern Memorial Hospital Infusion Center, Chicago, IL
The patient infusion center was an open environment. According to the nurses, this arrangement is preferred in that it allows medical staff to react quickly if something is going wrong. Except for scattered patches of navy blue, taupe, and mahogany, color was absent from the “space.” Other than the patient chairs, furniture was haphazardly placed in the rooms. While this particular location had the advantage of large windows that looked out towards Chicago’s skyline and Lake Michigan, the view for each session was not guaranteed since the patient seating arrangement (chair) was available on a first-come, first-served basis. Meanwhile, the chairs were turned toward the nurses (and away from the view) for monitoring purposes (see fig. 9.5 and 9.6).
Figure 9.6 Patient Infusion Station
Source: Carrie Wallace Brown, Northwestern Memorial Hospital Infusion Center, Chicago, IL

Lighting was set to full intensity. This created a difficulty for patients to completely rest in this setting. Personalization of the “space” appeared minimal; only a grouping of holiday cards posted behind the nurses’ station (see fig. 9.7). Curtains were provided for privacy. However, according to the nurses, the curtains were rarely used. Since I was at the center towards the end of the day, patient traffic was quite light and the atmosphere was calm during my visit.
9.2 Northside Hospital Infusion Center (Atlanta, GA)

My trip to the Northside Hospital Infusion Center was very different from my visit to the Northwestern Memorial Hospital. After a confusing parking situation that steered me to several incorrect locations, I finally located the entry corridor of this infusion center. The institutional hallways were long, and I found the gray paint and cinder block walls a disappointment in terms of a relaxing design for patients (see fig. 9.8). In addition, the walls were “accessorized” with black poster frames inset with under-scaled children’s artwork (see fig. 9.9).
Figure 9.8 Corridor
Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA

Figure 9.9 Corridor Artwork
Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
The waiting area was similar in feel to that of *Northwestern Hospital*, but inclusive of more pattern and color. Artwork was abstract in style, and a neutral color palette and institutional furniture greeted guests (*see fig. 9.10 and 9.11*).

Within this infusion center, patient stations were organized in a hierarchical manner based on duration of a patient’s prescribed regimen. All stations were semi-private; each was open on the front allowing the medical staff a point of visual reference. However, patients staying for shorter amounts of time were assigned to sit in the areas with lower partitions and providing less privacy (*see fig. 9.12, 9.13 and 9.14*).

![Waiting Area](image)

Figure 9.10 *Waiting Area*

Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
Figure 9.11 *Waiting Area*

Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA

Figure 9.12 *Patient Infusion Area*

Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
Figure 9.13 *Patient Infusion Area*

Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA

Figure 9.14 *Patient Infusion Area*

Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
As evident in the photos included in this paper, the furniture was chaotically placed, and medical equipment dominated the environment. At no point were patients able to physically or mentally separate themselves from awareness that they were seated in an impersonal medical center.

Departing Northside Hospital was as frustrating as my initial arrival. I was faced with extensive automobile congestion in the hospital parking deck (an all-too-common problem at hospital infusion centers, particularly in an urban setting). As I sat in my car, I wondered what it would be like to be nauseous, bewildered, and exhausted while trying to navigate out of the parking deck in order to commence the journey home (see fig. 9.15).

Figure 9.15 Exiting the Patient Parking Deck
Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA

I expected these two infusion centers to be similar to blood donation centers, so was not surprised at my frustrating experience. Common to both of these infusion centers was a large amount of dryly-written health education pamphlets and medical magazines—and placed in less
accessible places than optimal (i.e., stacked on a table or placed on a bookshelf in the corner) (see fig. 9.16, 9.17 and 9.18). Intended to inform (rather than entertain), these materials were filled with overly art-directed photography, paid advertisements, and a wide range of anxiety-provoking articles that can easily foster patient fear rather than decrease it. For example, in its Spring 2014 issue, the articles contained in *Cure* magazine were as follows:

- New frontiers in lung cancer research
- Risks of childhood cancer as a result of fertility treatment
- Anti-hormone therapy for breast cancer
- Potential to over-treat cancer
- New legislation for caregivers and caregiver advocacy
- Relationship of exercise and joint pain
- New pharmaceutical research findings
- How to verbalize your diagnosis
- How to create a to-do list for caregivers
- How to read biomarkers
- Guidelines for post-cancer living
- Risk factors of radiation
- General cancer prevention

Between each of these articles were paid advertisements for legal consultation, financial consultation, research clinics, and several self-marketing promotions from the magazine itself.

While outpatient settings in hospitals need not omit medical reading material containing valuable research and tools for patient education, the typical way this information is presented is confusing and conflicting to patients—which can lead to increased stress and anxiety. Infusion
centers have the responsibility of attending to physical and mental needs of a patient, so there should be a greater awareness of the reading material and design elements that patients will encounter. There is definitely the opportunity of the part of staff to consider patients’ needs in a more focused and strategic way, but this is usually not considered in the maintenance of the overall patient environment.

Figure 9.16 Brochure Shelves
Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
Figure 9.17 Collection of Infusion Center Materials
Source: Carrie Wallace Brown

Figure 9.18 Brochure and Magazine Racks
Source: Carrie Wallace Brown, Northside Hospital Infusion Center, Atlanta, GA
I did not get the impression that patients were actually upset about their surroundings, as most were focused (and dependent) on their own personal electronic devices for information and entertainment if they were not asleep. The surroundings were simply accepted as the “status quo,” and not something that patients can control. It was accepted as the normal state that patients need to entertain themselves. Even the presence of individual station televisions at Northside’s infusion center was an underused amenity. This awareness influenced me to focus my design direction at a solution that would create: 1) easily understood, specific, and engaging materials, and 2) a resource that helps patients pass the time via a format that empowers and provides a better-quality chemotherapy experience.

10 THE PROJECT

The objectives of the application are simple and deliberate in order to generate the best possible results. For the patient, the objective is to provide a single source for:

- Positive distractions that have can relieve stress and induce physical changes in the body, such as reduction of heart rate, lowered blood pressure, and muscle relaxation;
- Organization and communication tools as a therapeutic aide to decreasing the stress associated the medical journey and provide the opportunity of control; and,
- Anonymous online connection to a community of patients with similar diagnoses and who are undergoing similar therapy.

For medical staff, reduced anxiety and a less stressful work environment can create a byproduct of happier patients. For researchers, the new tool can enable vast amounts of invaluable data to be used for the betterment of the chemotherapy experience. Once developed,
the application will be accessible to any testicular cancer patient. An optional (no-cost) approach will entice patients to participate—thus becoming a valuable part of the research associated with it.

10.1 Messaging

The target patient population will know that the message is meant for them through appropriate copywriting as well as a brand presence compatible to those with which they already are loyal (e.g., Microsoft, Apple, The Onion, Comedy Central, Chive, and Fitbit). The messaging is humorous (but straightforward). Likewise, it is also sophomoric, but well intended—and self-deprecating, but empathetic. Meanwhile, the subtext of the message is actually “cut the bullshit”—and thereby moves beyond the generalized, “sugar-coated” approach to chemotherapy.

10.2 Security

This audacious approach to medical communication is certainly not immune to challenges. Even with its light-hearted and benign approach, gaining patient “buy-in” may be difficult. The dual purpose of this tool (for personal as well as healthcare utilization) may be daunting to patients. Measures will need to be taken to assure patient anonymity and security of the data. While any male within the target audience is welcome to participate, one parameter to ensure security will be that specific tablets will be assigned to specific infusion centers, and the data will not leave that location.

Participants using the tool will be informed of research goals. They will also be informed that the application studies generalized habits of patients, and privacy of information will be maintained. As explained by PC Magazine, the application is intended to perform as a walled garden in that it entails “a network or service that either restricts or makes it difficult for users to
obtain applications or content from external sources. The features of the tool will be a basic set of applications, but with no access to the Internet or download capabilities.

10.3 Name and Logo

The approach to naming and logo creation required ample research, brainstorming, word mapping, and sketching. Some requirements were that it be simple, memorable, timeless, and appropriate for design—and that cleverness would foster its success with the target demographic. The inspiration for the final name and mark was the sales question, “are you a boxers man or a briefs man?,” as its underlying message to men is the need for underwear—regardless of type of underwear. The metaphor of the best style of men’s underwear is relevant to testicular cancer, as it reinforces the concept that the application applies to all men within the target age range—not just those with a particular style preference.

A logo is often a person’s first impression of a brand. Thus, it was important to avoid clichés associated with the condition and accurately convey the voice of the application from the onset. Therefore, the mark includes an abstracted outline of each underwear style with a shared waistband in the center (see fig. 10.1).

In naming the application, the nouns “boxers” and briefs” are transformed into verbs describing the functionality of the application—an interface of boxed widgets (a shortcut to a larger application) and brief informational tools. Each is customized to fit within its respective undergarment and forms the brand name, Boxed and Briefed.

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Typography is also essential in conveying the personality of a brand. Simplicity and legibility is key in font selection, especially when the target audience is struggling to maintain a normal level of clarity and energy. The *Boxed and Briefed* logo utilizes one typeface (Bebas Neue), which then becomes the display face for the remainder of the application (see fig. 10.2). Bebas Neue is a straightforward font. It is all caps, sans serif, and is a condensed typeface that embodies a masculine “feel.” The typeface is also easily customizable, morphing soundly into the logo silhouette.

For the remainder of the application, Bebas Neue is paired with Montserrat—which is a more versatile and legible sans serif typeface (see fig. 10.2). In instances where there is a significant amount of text, Montserrat is used due to its easily recognizable and very legible letter shapes. Together, the typefaces convey masculinity, timelessness, and provide maximum clarity for a positive and functional user experience.
Humans are extremely responsive to color on both conscious and subconscious levels. Color includes multiple layers of meaning, inclusive of instinct and learned associations. Therefore, color psychology plays a key part of the brand experience. The *Boxed and Briefed* logo incorporates a color palette of vermillion and light aqua. The rustic vermillion implies energy and warmth (thereby makes the brand feel resilient and dynamic). Meanwhile, its orange undertone contributes a more modern and masculine feel. Light aqua is vermillion’s color-wheel compliment. The mixture of blue, green, and white within the hue conveys sincerity and calmness, which is a natural partnership with the energy of the vermillion.

Figure 10.2 *Project Typography*
Source: Carrie Wallace Brown
The remainder of the application incorporates a generous amount of color, each selected to reinforce the light-hearted spirit of the brand (see fig. 10.3). The color palette includes a wide spectrum of secondary and tertiary colors to maintain high energy throughout the user experience. With the exception of the neutral gray and black, each color is dedicated to a widget (providing breadcrumb navigation throughout the application).

![Color Palette](image)

**Figure 10.3 Project Color Palette**
Source: Carrie Wallace Brown

### 10.4 Platform and Interface

The platform for the application is a tablet (a portable computer with a touch-screen display and virtual keyboard). The tablet device is becoming a staple in our device-obsessed society. According to research firm *eMarketer*, “More than 1 billion people worldwide will use a tablet in 2015, representing nearly 15% of the global population and more than double the number three years ago. By 2018, the number of tablet users in the world will reach 1.43 billion.”

The ever-changing infusion center environment for the user dictates that the platform likewise be mobile and adaptable. In turn, this will allow the patient as a user the freedom to move with the tablet device throughout their session (rather than being confined to a specific location in order to use it).

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Yahoo’s CEO (Marissa Mayer) describes a quick and easy test to determine application design success. She explains, "Once you’re in the app, is it two taps to do anything you want to do? If yes, the app is a go. If no, it's back to the drawing board.” Mayer’s appreciation for the value of mobile device design and user experience has been a guideline for this project. The interface is modest and practical, not only to fit the smaller screen size, but also for the purpose of maintaining patient involvement (*see fig. 10.4 and 10.5*). Simple interface can transcend into a fantastic user experience—and, under these conditions, good user experience by the patient is a must.

The navigation of the application is largely driven by the use of pictograms and emojis. These symbols and “picture characters” are part of a universal language; they communicate more effectively and concisely than words. For centuries, pictograms have assisted people in navigating complicated environments (*e.g.*, hospitals, shopping malls, and airports) without the need for translation. What was once keyboard-typed “emoticons” has now evolved into smartphone keyboard emojis (a newly accepted form of communicating emotion in our exceedingly visual culture).

Personalization is a significant part of the *Boxed and Briefed* user experience. Today’s gaming industry often incorporates creation of user avatars, providing the ability for players to figuratively “leave their bodies” and enter a virtual world inclusive of anonymous play and communication. *Boxed and Briefed* has adopted this idea, but in the form of a personal badge. The user gets to create an identifier tailor-made to their interests via icons, and color preferences (*see fig. 10.6*). The patient is also able to select from an assortment of backgrounds that appeal to a wide variety of hobbies—from car enthusiasts to sports fans to fabric patterns (*see fig. 10.7*).

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These personalization attributes reinforce that the application is specifically tailored for the given patient (rather than being a generalized, impersonal piece of collateral attempting to meet the needs of everyone). This approach is empowering for the user, and intended to maintain interest and provide motivation for daily use.

### 10.5 Widgets

*Boxed and Briefed* is designed to be simple, comprehensible, and reflective of the user’s primary needs as an infusion center patient. Certain aspects of the application will interest patients more than others. To accommodate such individual preferences, the interface is a dynamically designed dashboard of widgets that allows the user to interact with the application to the degree that they wish. Ben Barone-Nugent (Content Strategy Lead and UX Strategist at *Proximity BBDO*) describes the “the concept of progressive reduction is core to our trade. It’s the idea that users should need less and less ‘hand holding’ as they spend more time with a product. Good products will quickly become second nature… Users won’t remember any single word or piece of content—they’ll just remember if your product was useful, fun, and beautiful, or if it wasn’t.”

At launch, the interface displays eight widgets, each fashioned to address one or more of the factors contributing to low patient morale. Design intent and functions of each are as follows:

- **Dashboard (see fig. 10.5):** This brightly colored home screen is “command central” for the patient. Personalization is evident along the top navigation bar as well as the top left corner of the grid where the user’s screen name and avatar badge reside. Widget names are conversational and whimsical, setting the tone of the application from the start of use. Each includes a tagline that provides a more

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succinct explanation of its function. Only two pages exist beyond the widget applications: 1) the settings page (which is a place to manage application preferences, personalization, and enter demographic data), and, 2) the sleep page (see fig 10.8) (which is a page that allows the user to temporarily log out while they rest, simultaneously generating data on patient sleep cycles).

- **Mood-O-Meter (see fig. 1.9):** The Mood-O-Meter provides a platform for patients to express how they are feeling both physically and mentally throughout their chemotherapy regimen. Simple “drag and drop” motion allows the user the ability to input the most appropriate emoji from the right-hand-side into the journaling area on the left-hand-side. Patients are provided space to add a brief point of reference note (i.e., “first day of cycle 2,” or “didn’t sleep at all last night”). Through this type of record-keeping, a patient can foresee what type of moods and feelings may occur in the next cycle of chemotherapy, or recall their evolution from the beginning of the process. Data gained from this widget can assist researchers in tracking changes in morale and moods associated with the phases of drug administration.

- **Guys Who ‘Get It’ (see fig. 10.10):** Providing a feeling of community is an important component of Boxed and Briefed. Belonging to a group affords motivation, a sense of pride, and an outlet to escape from focusing on worries and problems. Figure 10.10 shows the members of the Boxed and Briefed community that JEEPWAV3, for example, has approved in terms of connection. New message pictograms at the corner of members’ tabs indicate new running correspondence (see fig. 10.11).
• **The Chemo Brain (see fig. 10.12, 10.13, 10.14 and 10.15):** Information of all types (*i.e.*, medical, anecdotal, and administrative) inundates cancer patients from diagnosis through the end of treatment—and beyond. It is difficult for a healthy person to manage that facet of their healthcare, let alone one coping with routine demands at the same time as a health crisis. For a cancer patient, “chemo brain” makes that task virtually impossible. *The Chemo Brain* (as a play on words) is an icon-based hub for both critical medical information as well as general to-do and needs lists. Patients may utilize as much (or as little) of its data fields in order to feel in control of their situation. Using the data fields can relieve the fear of forgetting important points, and thereby offer the patient clarity of mind. The widget also includes the ability to send out lists via text should a patient need to refer to the information externally.

• **What’d They Say? (see fig. 10.16):** A cancer diagnosis and subsequent chemotherapy treatment comes with an expansive list of terms not easily understood (much less easily pronounced) by the average person. Add that complexity to the anxiety associated with the unknowns of cancer, and the result is a very scary scenario. Because physicians are most often well-educated and experienced experts in their field, patients typically accept that their physicians are worthy of their trust to aid them in making the best decisions in terms of the patient’s treatment options. This is an important aspect of the physician-patient relationship. However, medical expertise does not always equate to a good bedside manner—and beside manner also affects the patient’s morale. Even if
unintentional, talking over a patient’s head is common among healthcare providers. What’d They Say? is a widget that provides clarity when this occurs—affording awareness via an alphabetical list of medical terms relevant to the scenario. Patients are able to search for terms and create a personal list for reference as needed throughout their chemotherapy regimen, a feature which aims to help patients make more informed health decisions (see fig. 10.17).

- Thanks, I Needed That (see fig. 10.18 and fig. 19): As discussed, humor and laughter aid healing in that it improves psychological health and well-being. As a way to elevate mood and combat the uninspired surroundings of an infusion center, Thanks, I Needed That is a 15-minute rotation of humorous (borderline ridiculous) jokes. If nothing else, it is a way to pass the time quickly. Entertained patients are provided a countdown clock showing the arrival time of the next humorous anecdote.

- The Horse’s Mouth (see fig. 10.20): Having a physical health crisis can provoke a mental health problem, and people often do not quite know how to respond appropriately when informed that a family member or friend has cancer. Often, cancer patients are bombarded with inquiries on their current health status—along with offers to provide food, run errands, and so forth. The pressure to communicate with loved ones is stressful for a patient, and especially if the offers of sympathy and help occur in a disorganized or reactionary way. The Horse’s Mouth provides the user as patient a platform to compose and send updates on their own time. The widget also provides an archive of updates (see fig. 10.21) as
well as the ability to organize recipients into specific groups with which the patient may selectively communicate (see fig. 10.22).

- **Channel Surf** (see fig. 10.23): Time in a chemotherapy infusion center goes by faster when a patient’s mind is focused on something other than the activity in the room, outside pressures, or inward discomfort. The target users of *Boxed and Briefed* as cancer patients undergoing chemotherapy affords the chance to provide movies, television, sports, and even Internet videos specifically targeted to that patient pool’s interests. “Chemobrain” affects concentration and the ability to reason. Therefore, classic re-runs of popular television and movies can support full relaxation and allow the patient to escape into the mindless world of a channel surfing couch potato versus entertainment requiring heightened concentration, acute attention, and a high surge of adrenalin (see fig. 10.24, 10.25, 10.26 and 10.27).

- **The Arcade** (see fig. 10.28): Among testicular cancer patients, the oldest age demographic includes men who were introduced to video games in adolescence. In contrast, the youngest age demographic was born into an existent and widespread video gaming industry. Playing video games places a person in a virtual world, providing stimulation and relaxation for the player. Games fuel creativity and provide unstructured time—and this can benefit patient morale. However, the chemotherapy infusion time period is not the right time for cancer patients to participate in the in-depth games so widely marketed at present. If suffering from “chemobrain” or exhausted, these cancer patients most likely do not have the ability to concentrate or strategize through a complex interface. *The*
An Arcade widget contains simple, yet entertaining games with multi-player ability; another way to connect to the *Boxed and Briefed* community. Game titles incorporate self-deprecating humor and are intended to be light-hearted and amusing. Examples include:

- **Squirrel Bandit (see fig. 10.29):** users assist a squirrel with stealing nuts, dropping them into a bag at the base of a tree.

- **Ear Ring Toss (see fig. 10.30):** much like the carnival game, users toss rings at a moving target, this time an oscillating ear—mocking the common side effect endured by chemotherapy patients.

- **Lame Nodes (see fig. 10.31):** users tap on the heads of a lame node, the pesky cousin of a lymph node, to keep them at bay. The game is a parody of the classic *Whack-a-Mole* game played at brick-and-mortar arcades.

Competition has created a “home” for game-like apps in the health industry. For example, products like the *Fitbit*, *Jawbone* and *MyFitnessPal* provide motivation to get healthy in the form of group challenges and merit badges. The *Boxed and Briefed* games are an extension of that spirit and are meant to be easily enjoyed and challenge the mind at an appropriate level during chemotherapy.

The voice, the color, the imagery, and the messaging of *Boxed and Briefed* add up to a brand that is more patient-centered than the typical material that fills the bookshelves and tables in chemotherapy infusion centers. Some might find it strange to take cancer so light-heartedly, but emotional health and well-being is recognized to affect overall health outcomes in cancer patients. Therefore, my perspective is that letting cancer patients set the tone of their experience,
giving them a sense of control and diversion, and providing these patients with tools that reduce stress and anxiety is important to fostering a positive treatment outcome.

Figure 10.4 Login Screen
Source: Carrie Wallace Brown
Figure 10.5 Main Menu

Source: Carrie Wallace Brown
Figure 10.6 *My Badgemaker*

Source: Carrie Wallace Brown
Figure 10.7 *My Wallpaper*

Source: Carrie Wallace Brown
Figure 10.8 *Sleep Screen*

Source: Carrie Wallace Brown
Figure 10.9 *Mood-o-Meter*

Source: Carrie Wallace Brown
Figure 10.10 *Guys Who ‘Get It’ – Community*

Source: Carrie Wallace Brown
Figure 10.11 *Guys Who ‘Get It’ – Messaging*

Source: Carrie Wallace Brown
Figure 10.12 *The Chemo Brain*

Source: Carrie Wallace Brown
Figure 10.13 *The Chemo Brain – People*

Source: Carrie Wallace Brown
Figure 10.14 *The Chemo Brain – Transport*

Source: Carrie Wallace Brown
Figure 10.15 *The Chemo Brain – Contacts*

Source: Carrie Wallace Brown
Figure 10.16 What’d They Say? – Glossary

Source: Carrie Wallace Brown
Figure 10.17 What’d They Say? – Personal Glossary

Source: Carrie Wallace Brown
Figure 10.18 *Thanks, I Needed That – Joke*

Source: Carrie Wallace Brown
Figure 10.19 *Thanks, I Needed That – Answer*

Source: Carrie Wallace Brown
Figure 10.20 *The Horse’s Mouth – Email Composer*

Source: Carrie Wallace Brown
Figure 10.21 *The Horse’s Mouth – Archives*

Source: Carrie Wallace Brown
Figure 10.22 *The Horse’s Mouth – Settings*

Source: Carrie Wallace Brown
Figure 10.23 *Channel Surf – Menu*

Source: Carrie Wallace Brown
Figure 10.24 *Channel Surf – Movies*

Source: Carrie Wallace Brown
Figure 10.25 *Channel Surf – Television*

Source: Carrie Wallace Brown
Figure 10.26 *Channel Surf – Sports*

Source: Carrie Wallace Brown
Figure 10.27 *Channel Surf – Videos*

Source: Carrie Wallace Brown
Figure 10.28 Arcade – Menu

Source: Carrie Wallace Brown
Figure 10.29 *Arcade – Squirrel Bandit*

Source: Carrie Wallace Brown
Figure 10.30 *Arcade – Ear Ring Toss*

Source: Carrie Wallace Brown
Figure 10.31 *Arcade – Lame Nodes*

Source: Carrie Wallace Brown
CONCLUSION

The design of a mobile application for cancer patients is not a new concept. However, the design of a mobile application for a specific cancer demographic to be used in a specific environment is divergent from that concept. Changed patient confidence and morale during chemotherapy is a reality. Loss of control, chemobrain, the bleak infusion center atmosphere, and the need to belong to a community are all factors that contribute to this psychological change. Boxed and Briefed has been designed to address this emotionally charged obstacle. For the patient, it relieves stress, provides supportive organizational and communication tools, and connects them to an empathetic community. For medical staff, it contributes to a less stressful work environment. For researchers, the application provides invaluable data to be used for the betterment of the chemotherapy experience.

I believe that this project can make an undeniably positive impact in an infusion center. Therefore, I seek funding from an organizational entity that has the resources to enable development. Whether a foundation, pharmaceutical company, or health insurance company, its mission should include belief in patient-centered approaches to medical care and disease prevention.

Atlanta is home to the American Cancer Society—an advocate for the cancer patient and caregiver community. This nonprofit organization believes in providing “strong support for a patient while they are going through treatment.”\(^32\) It is my belief that the American Cancer Society’s guidance and knowledge base would be invaluable to kick-start Boxed and Briefed. Additionally, Atlanta is home to numerous technology incubators (including the Advanced Technology Development Center [ATDC] located just off the Georgia Tech campus. The

challenge for the future of my project is to find an organization that will provide support so that I can continue in my quest to develop *Boxed and Briefed* for cancer patients.

The concepts presented in this thesis centered on the development of *Boxed and Briefed* are a beginning point for me for further study. While I see *Boxed and Briefed* as a valuable tool for cancer patients, I understand that—once developed—it would need to be tested on patients in the infusion center environment in a future research study to see if its use boosted self-confidence and morale as intended (in a “pilot” study). However, I believe my project undertaken within the graphic design field intertwines the fields of design, health, and technology, and can be a collaboration between patients, designers, programmers, and health professionals that promotes the “design for good” movement.
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