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Healing Architecture: Unraveling the Spatial Problematic of the Emergency Room Waiting Area Through Tactical Urbanistic Intervention

Elizabeth Tepler

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HEALING ARCHITECTURE

Unraveling the Spatial Problematic of the Emergency Room Waiting Area through Tactical Urbanistic Intervention

Elizabeth Tepler
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Advisers | Pinar Batur and Tobias Armborst

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“The time has come to approach architecture urbanistically and urbanism architecturally.”

–Aldo Van Eyck, Team 10 Primer
INTRODUCTION

Analyzing and improving hospital emergency rooms is crucial, first and foremost, because they are truly public spaces that serve an enormous number of people. Under the Emergency Medical Treatment and Active Labor Act (ETALA), which was passed by Congress in 1986, emergency departments remain open 24 hours a day, and every hospital that accepts Medicare and Medicaid must legally treat every patient who enters the building, regardless of citizenship, legal status, or ability to pay (Brody 2). As a result, hospital emergency room departments in the United States receive approximately 120 million visits annually, only 16 million of which are considered emergent (Harris and Leibrock 277). The number of visits continues to increase, only worsening the overused condition of the emergency room and reducing the quality of care available.

Despite the fact that hospital emergency rooms are so commonly and freely experienced by users of all types, the space and its waiting room have been given much less consideration than most major parks, plazas, and streetscapes. Edmund Einy argues, “While hospitals and medical facilities are the last truly public buildings in our culture, architects have not approached the design of our medical facilities as significant public spaces” (Einy 26). While the clinical space of the emergency room is anything but pleasant, its design is highly regulated and constricted by medical protocols. Furthermore, its limited options of orientation are functional and efficient. Therefore, it is most advantageous to look at an equally critical space that requires less regulation and thus has greater potential for change: the waiting room.

The emergency department waiting room is a powerful and influential space that prepares patients for the chaotic experience ahead. This area is also critical due to the nature of the activities carried out there, and its role as a major access point to the hospital. Within this space,
patients experience anxiety regarding impending consultation, and simultaneously develop first impressions about the quality of care they will receive. Barish writes, “The ER is more than a hospital department; it has been called ‘a room with a view’ into our healthcare system” (Barish 309). Arneill and Devlin (2002) confirmed this hypothesis in their study regarding the relationship between the physical environment of an emergency department waiting room and patient satisfaction or perceived quality of care. They concluded, “If the environment communicates that the doctors, nurses, and staff care about its appearance and function themselves and design it with the patient in mind, then the patient enters the system with a positive image of the healthcare process” (Arneill and Devlin 358).

At stake, then, are the emotional stability, trust, and satisfaction of the millions of patients and families moving through these spaces. Under such conditions, careful design is warranted.

The Problem

Emergency waiting rooms today are far from the healing spaces they claim to be. They are concentrated loci of sick and desperate people, all experiencing stress, confusion, and sensory overstimulation.

The most widely acknowledged source of problems in emergency rooms and their waiting areas is overcrowding. Increased emergency room usage has resulted from the rise of uninsured patients, the lack of primary care physicians available after-hours and on weekends, the reduced number of physicians accepting Medicaid patients due to declining reimbursements, growing consumer demand, both natural and man-made disasters, and inefficiencies throughout the system (Harris and Leibrock 114, 277). Overcrowding causes long waiting times, which can be both physiologically and psychologically harmful to patients, in addition to negatively impacting patient-staff relationships (Brody 2, Wellstood et al. 2369). Dr. Jose Fernandez of the
Weill Cornell Medical Center Emergency Department at New York Presbyterian Hospital does not see this trend ending soon. He predicts that this overcrowding will quite possibly increase with the recent passing of the Affordable Care Act, for there are now increased numbers of insured patients, yet they do not yet have established primary care doctors, causing them to use the emergency room services instead (J. Fernandez, personal communication).

Poor architectural and spatial design frequently compounds the negative impact of overcrowding on the patient’s experience. Emergency waiting room design often fails to take into account sensorial experiences, as well as the importance of patient privacy. In addition, the increased systemization of the emergency care process has led to a loss of individual control and a feeling of dehumanization.

Each of these conditions results in a multitude of tangible problems with the emergency waiting room experience, four of which I will address. The fundamental issues I will be discussing and working to resolve are problems of 1) insufficient space availability, 2) the unavoidable stressful and chaotic experience for both patients and staff, 3) the sense of stagnancy and inability to move through what is a transitional space, and 4) the process of dehumanization associated with the space.

The task, therefore, is to use design to expand accessibility to care without incurring significant renovation costs, as well as to create a space where patients and families feel empowered and not overwhelmingly stressed. Einy writes, “The public nature of hospitals gives architects the opportunity to design public spaces that transcend mere function and practicality.” He continues, “We need places that are pleasant—that help allay our fears, to promote a healing state of mind, and to accommodate our friends and families hours, even days, in an alien environment” (Einy 26). The objective is a space that encourages well-being, defined by
ecopsychologists as a “healthy balance between met and unmet needs…include[ing] social and emotional needs and needs for self-actualization” (Cattell 545).

The Waiting Room as a Hybridized Urban Public Space

Building on established understandings of healing space, I propose to use logics of urban improvement to rethink the space of the modern hospital emergency room. In many ways, hospitals function as miniature urban systems. Architect Stephen Verderber suggests, “Metaphorically, [hospitals] are comprised of their own unique counterparts to streets, neighborhoods, districts, landmarks, complete with a housing realm, a governance realm…connections to public transit, and even a commercial-business realm” (Verderber 121). By using established theories and understandings of urban public spaces, I extend this metaphor to the public space of the emergency room.

The emergency room waiting room challenges traditional logics of public space by embodying elements of both transitional and contained loci. As a space of contradictions, it is public, yet one does not go willingly; it is transitory, yet one cannot move freely through it to a chosen destination of emergency room care; it is at once a non-space of programmatic ambiguity and in-betweenness, as well as a multifaceted and charged space, where diverse urban inhabitants gather under critical, life-threatening circumstances.

The waiting room acts as a transitional urban space, much like an underground tunnel connecting subway stations or the stairwell from an underground station to the sidewalk above. It achieves this in two primary ways: first, it marks the transition from one urban system, characterized by the external city, to another, defined as the hospital complex. As the interface between two systems, when both the exterior system of daily life and the interior system of medical practice are visible, it serves the function of softening the shocking transition from the
natural to the unnatural and from an environment of open encounter to one of intensity. Second, the waiting room is programmatically a transitional space in that it serves as a means to reach a destination of medical care, rather than being a destination itself.

The challenge of the emergency room lies in the idea that, though it serves as a transitional space, it is one of semi-stagnancy and gathering, where individuals lose their ability to quickly move through it. It therefore exhibits elements of the public plaza or park, a space of localized and concentrated encounter. This hybridized nature of the public space of an emergency department’s waiting room is what makes it so difficult to improve; a space that untraditionally extends across private and public, transitory and stagnant spheres complicates the established approaches taken by urbanists to develop methods of positive change. Understanding that the space is hybridized, however, is the first step towards devising solutions; because the waiting room is defined by multiple types of public spaces, its solutions too must be hybridized and multifaceted, drawing from theories of transitional, congregational, public, and privatized space, while rejecting others.

In defying theoretical categorizations of public space, this often overlooked, yet highly complex and influential place of urban encounter allows us to realize the limitations of urban ideologies and pushes us to rethink how solutions for different types of public spaces can be in constant dialogue.

My approach involves drawing from both established techniques of interior design for well-being, as well as urban understandings of how to construct positive public spaces of both gathering and transition. My solutions primarily align with those of tactical urbanists in that they are short-term, small-scale actions that are realistic, obtainable, and low-risk, despite the fact that they can result in substantial positive and constructive change. This approach is based on the
notion that long-term change is best established through short-term experimentation and observation (Lydon 1-2).

In Chapter One, I discuss established tactics utilized to design spaces that encourage well-being. The rapidly growing field of “evidence-based design” has established a significant body of research affirming that certain elements of one’s physical and social environment have direct impacts on his or her overall physiological and psychological health. I explore the importance of physical interventions, such as nature, art, light and color, ventilation and aromatherapy, acoustics, and wayfinding devices, focusing specifically on the ways by which they affect the human sensorium during stressful events.

In Chapter Two, I establish principles of urban theory in order to define the elements that contribute to functional and well-used public spaces of gathering and of transition. Using ideas of numerous theorists, architects, and researchers, such as Kevin Lynch, William H. Whyte, and Jan Gehl, I explore the ways encounter, flexibility, integration of distinct contexts, and imageability affect the human experience of interaction with public space, all the while acknowledging at which points the hospital waiting room departs from these theories. The space of the emergency room waiting area compellingly complicates and reconfigures these basic tenets of urban understanding.

In Chapter Three, I apply both established elements of “healthy” space and urban concepts of functionality in nodes, edges, and paths to derive solutions for each of the four problems of the emergency room space: insufficient space available, the stressful and chaotic experience of the space, the sense of stagnancy and inability to move through what is a transitional space, and the dependably dehumanizing experience. I offer practical solutions to issues of lacking privacy, control, and contextual understanding using interventions such as flexibly arranged seats, transparent windows into other units, and personally operable lamps.
Finally, Chapter Four is a case study exploration in which I bring these suggestions to life as I analyzed the working emergency waiting area at Weill-Cornell Medical Center/New York Presbyterian Hospital in New York City for legibility, flow, visual engagement, privacy and encounter, and sensory stimulation. As a waiting room that exhibits many of the problems listed above, the space serves as an excellent model for my application of tactical urbanistic design interventions. I articulate these suggestions, proposing the addition of semi-private seating among options of encounter, clearly articulated pathways, and certain critical and engaging visual elements. Each of these features would contribute to the emergency waiting room setting by creating a serene sense of empowerment, control, and aesthetic comfort without a massive architectural re-working of the space.

By integrating understandings of health and urban design, I hope to contribute to a larger dialogue about how spaces of healthcare can be designed to aid their users. Verderber discusses the future of healthcare architecture, referring specifically to its expansion into interdisciplinism:

New hybrid interdisciplinary subfields will have emerged on the ethical dimensions of sustainable design for health, historic preservation, public health policy, and effective community-based participatory planning. The agendas and methodologies of this hybrid discipline will be rendered on newly stretched canvases... (Verderber 110).

The future of health care design lies in this fusion of health, architecture, and urban studies. My project, therefore, is an extension of this prediction; it is an exploration of the future, where we will use our knowledge of human functionalism within the living urban system to design functional and pleasant interior spaces.
CHAPTER ONE

Modern Understandings of Therapeutic Architecture

The process of designing spaces that promote well-being is complex. Designers must recognize that humans respond differently to sensory stimuli and possess distinct aesthetic preferences; designing a space for healthcare involves embracing a diversity of perspectives. A hospital’s overall architectural character may encourage well-being: for example, the machine-like approach, as illustrated in the Klinikum Aachen in Aachen, Germany, engenders a sense of trustworthiness through scientific precision; the institutional style, as in the Shugaung Hospital in Shanghai, China, conveys monumentality, organization, and prioritization of human medical activities within repetitive, undistinguished spaces; a contemporary space, like the Evelina Children’s Hospital in London, UK, defined by fashionable materials of luxury such as glass or marble, conveys a message of high quality standards; a domestic concept, as in the Maggie’s Centers in the UK, encourages a sense of humanism and normalcy; similarly, an organic style, as in Herzog and de Meuron’s proposed Children’s Hospital of Zurich, Switzerland, characterized by fluid edges, distinctive spaces, and natural materials, communicates a certain attention to and respect for the complexity of the human experience.

Hospital design has come a long way since ancient times, but this evolution is also cyclical, as understandings of therapeutic space have repeatedly returned to and rejected certain concepts. Over the past six decades, the field of health care architecture has advanced dramatically to include the design of spaces that foster not only physiological, but also psychological health. This overview of current design theories in the field reflects a move
towards holistic, healing architecture. These approaches, which focus on physical intervention through manipulation of the human sensorium, on experiences of vision, scent, acoustics and sound, and bodily tactility and kinesthetics, are fundamental to our understanding of functional, “healthy” space and will serve as a platform for further exploration of the emergency room space.

The following accepted architectural and design tools, which have each proven beneficial to users of hospital space, are successful due to their evocation of experiential flexibility, sensorial variation, positive distraction, and maintenance of normalcy. Stephen Verderber, Professor at the School of Architecture, and Adjunct Professor in the Department of Public Health Sciences at Clemson University, proposes that environmental support comes in four primary forms: instrumental, aesthetic, emotional, and spiritual (Verderber 118). Instrumental support is the degree to which the architectural forms facilitate the daily functional needs of its users; aesthetic support “consists of the abstract, largely interpretive role of built form and the meanings it possesses”; emotional support is “the ability of the built environment to help expand inner horizons and to increase competency”; and finally, spiritually supportive spaces help users feel comfortable and motivate them to reflect and “self-actualize” (Verderber 118). Ultimately, the design elements that compose a supportive space are those that produce experiences of agency and access, personal control, visual and emotional satisfaction, comfort, and security in the users.

The evolution of this field has largely been motivated by a new set of methodologies, defined by the term, *evidence-based design*. This process echoes the traditional protocols of investigation utilized by the medical and legal fields, and its implementation has revolutionized the art of design by augmenting its emphasis on aesthetics and function with objective numerical support. Evidence-based design is a fairly familiar and self-explanatory process, defined as “a
process for creating healthcare buildings, informed by the best available evidence, with the goal of improving outcomes and of continuing to monitor the success of designs for subsequent decision-making” (Ulrich, 2004, 26).

The process is rooted in three primary assumptions: first, the concept that patients should be able to focus on healing without their process being hindered by an unsupportive built environment; second, that healthcare providers should be able to provide care without being harmed in any way, through injury, contraction of infection, or psychological impact due to an unsupportive built environment; and finally, that healthcare institutions should not contribute to the maintenance of an unhealthy and unsupportive urban built environment by consuming unsustainable amounts of energy (Verderber 169). Using actual physiological and health outcomes, such as length of stay, amount of pain medication needed, complication rates, and patient stress, mood, and satisfaction indices, healthcare researchers, architects, and designers can assess the ways by which architectural features in hospitals are linked to health benefits (Sternberg 215). Interestingly, this somewhat new approach to design is an integral practice of urban ethnographers and planners, therefore highlighting just one of the many ways by which spaces of healthcare and the urban sphere overlap.

By this approach, hundreds of studies published in the past few decades have identified several design interventions that can make a substantially beneficial differences in the hospital experience. Among those, design involving nature, art, light and color, ventilation and aromatherapy, acoustics, and wayfinding devices have proven particularly influential and feasible throughout all areas of the hospital system.

Nature
In an effort to define and explore the concept of porosity between external nature and internal space, Verderber coins the term *theraserialization*, a word composed of ‘therapeutic’ and serialize.’ This term defines the “peeling away, or dematerializing, [of] the physical and symbolic barriers that cut the interior of a building off from the outside world,” thus serving as the essential process that permits the inclusion of nature in interior space (Verderber 52). His articulated strategy for achieving this condition in a hospital space is essentially defined by the inclusion of natural elements, such as water and gardens.

The result of theraserialization is the liberation of a “two-way continuum between interior and exterior,” creating a building that can “breathe” (Verderber 52). More importantly, however, is that in blurring the abrupt line of demarcation between the interior and exterior of a hospital and bringing natural forms into a sterile space, the user’s experience transforms in several beneficial ways (Verderber 52); Roger Ulrich, Ph.D., perhaps the most influential researcher in the field, published works, most notably a study in the 1984 issue of *Science*, that revolutionized hospital architecture by bringing these benefits to the forefront of architects and medical professionals’ attention.

Ulrich’s 1984 study, “View through a Window May Influence Recovery from Surgery,” revealed the importance of interaction with nature throughout the healing process. He placed twenty-three post-operative patients in a room with only a view of a featureless brick wall and placed the other twenty-three in identical rooms with views looking out onto natural scenes. All patients were recovering from the same cholecystectomy procedure, the removal of the gallbladder. He found that patients with a view of nature, as opposed to one of a brick wall, had shorter post-operative stays, had fewer negative comments by nurses, and required the use of fewer strong analgesics (Ulrich, 1984, 421). He therefore concluded that natural elements, such as vegetation and water, induce positive responses, and in doing so, reduce fear and stress,
maintain alternative interest, block negative or stressful thoughts, and foster a sense of well-being (Ulrich, 1984, 420). He conducted another study in 2004 with Craig Zimring, Ph.D., in which his research teams from Texas A&M University and Georgia Tech read through over 600 studies regarding the impact of hospital design on clinical outcomes (Ulrich, 2004, 3). This review confirmed his findings: “Many studies of populations other than hospital patients have produced strong evidence that even fairly brief encounters with real or simulated nature settings can elicit significant recovery from stress within 3-5 minutes at most” (Ulrich, 2004, 21).

There are multiple benefits of either visually or physically infusing nature into the built environment. First and most straightforward, nature has calming effects; the use of water in small fountains, ponds, and waterfalls promotes visual, aesthetic, auditory, kinetic, and even olfactory calm (Verderber, 45). In Ulrich’s 1991 study, he found that the body’s physiological response confirmed this idea, for experiencing nature positively affected the body’s blood pressure and heart activity (Ulrich, 2004, 21). Yet the presence of nature also plays a large role in providing variation and distraction from the circumstantial irregularities as a patient or family member experiences intensive stress and pain. Ulrich’s 1984 study presents this idea: in his concluding remarks, he suggests, “Although the findings suggest that the natural scene had comparatively therapeutic influences, it should be recognized that the ‘built’ view in this study was a comparatively monotonous one, a largely featureless brick wall” (Ulrich, 1984, 421). Referring to his 1991 study, he later explains, “Positive distractions refer to a small set of environmental features or conditions that have been found by research to effectively reduce stress.” These positive distractions can take the form of music, companion animals, laughter or comedy, art, and certainly nature. “The focus here is on the last, nature,” he emphasizes (Ulrich, 2004, 21). Gardens serve as flexible design interventions, particularly in the art of distraction, because they can be experienced both actively and passively.
Other authors point to the importance of integrated nature for both physiological and localized orientation. Providing views of the sky and ground from within the space, for example, allow the maintenance of circadian rhythms and temporal orientation (Leibrock and Harris 254). This element is important in both the wards and the emergency department, where long waits often extend from dawn till dusk. Verderber also emphasizes the importance of natural elements such as water in establishing *genius loci*, or the sense of place, in the larger hospital institution (Verderber 45).

The larger effect of these byproducts of the re-serialization is a sense of normalcy and personal autonomy. In an account published for the Glass Garden Horticultural Therapy program at New York University’s Rusk Institute, a patient describes her experience with horticultural therapy during her hospitalization. She explains that existing within the hospital setting stripped her of all individuality and autonomy: “You are at the mercy of a complex system and schedule which recognizes and treats your physical needs but often neglects your psychological ones” (Snider). Her experience with horticultural therapy was overwhelmingly positive and she characterizes that experience as being the force that got her through one of the most difficult times in her life. Experiencing nature in the Rusk Institute’s Glass Garden, which has since been demolished, allowed her to regain her sense of identity, which she felt she had lost upon entering the hospital space. She explains, “It was as if I were suddenly my old true self again; no longer an anonymous patient, but someone with an identity outside the hospital institution” (Snider). She concludes, “I remember those afternoons—the quiet talk with the patients, therapists, and volunteers; learning about each plant; feeling the earth on my hands…it was therapy and it got me through one of the most difficult periods of my life” (Snider). Taking part in natural processes allowed this patient to regain a sense of normalcy.
Finally, integrating nature into hospital space significantly eases the transition between exterior and interior experience. Backed by numerous studies and experiences, it is an element of evidence-based design that should never go forgotten, for it addresses some of the most critical issues of sterility, monotony, and a loss of personal autonomy associated with healthcare architecture.

**Art**

Art has been included in European hospitals since the 14th century. Originally, art served the purpose of preparing the sick for death by illustrating religious scenes of one’s entrance into heaven (Behrman 584). Even before then, the ancient Greeks included musical and cultural performances within spaces of healing. The concept of healing enrichment through visual means, however, did not surface again until the Victorian age (Behrman 584). Few studies have been done on the optimal types of art to be used in the hospital setting, most likely due to the subjectivity of aesthetics. Results suggest, however, that patients negatively respond to chaotic or abstract artwork, while have positive reactions to representational art, particularly of the type that portrays natural scenes (Ulrich, 2004, 22-3).

Art in hospitals also serves the crucial role of contributing to wayfinding and spatial orientation. Verderber emphasizes the idea of art defining landmarks and nodes for user recognition: “Art as wayfinding…requires the establishment of a familiar theme, intervals/nodes to instill thematic reinforcement, additional items to reinforce landmarks, and key corridor juncture design points” (Verderber 132). Like elements of nature, placing art in a space can grant that space identity and *genius loci* (Verderber 131). The use of art is important to, like nature, reinstate a sense of normalcy and connection to the world beyond the hospital walls.
**Light and Color**

In reality, color in the health care environment is one of the most hypothesized and least-understood design decisions. Since ancient times, color was thought to be important: ancient Roman baths involved bright earthy tones and reds, ancient Islamic hospitals included colorful tiles, and Florence Nightingale placed a special emphasis on the use of white to create a pure, antiseptic environment that would reveal all contaminants and demand constant maintenance (Verderber 139). Still, she was a strong proponent of the use of color to promote healing; in her “Notes on Nursing,” she writes, “the effect in sickness of beautiful objects, and especially of brilliancy of colour is hardly at all appreciated [by the authorities]…[The] variety of form and brilliancy of colour in the objects presented to patients are actual means of recovery” (Behrman 584).

Indeed, warm colors are considered positive for social interaction and energy; intense colors, like purple and reds tend to agitate; cool colors tend to promote a sense of calm; neutrals are balancing; and dark hues are also to be avoided (Verderber 139 and Poulin 248). Then comes the question of variation, for too much of fluctuation results in overstimulation and too little can lead to under-stimulation (Verderber 139).

While there is less definitive evidence of the influence of environmental hues on health outcomes, light directly affects both patients’ and visitors’ psychological state. Light has important effects on agitation, circadian rest-activity rhythms, depression, and other psychological disorders (Ulrich, 2004, 20). As with the integration of nature into the hospital setting, allowing the maintenance of bodily rhythms is crucial for orientation and mood. Maintaining circadian rhythms is particularly important in the emergency room environment, where patients and families may be sitting for hours on end without access to outdoors. Similarly, access to light is critical for inpatients. Ulrich references a strong study in 2004
conducted by Walch et al, in which patients’ psychosocial health and analgesic needs were assessed with relation to amount of sunlight in their hospital rooms. Those patients placed in the bright room, as opposed to the dim one, experienced less perceived stress and pain, and consequently used 22 percent less analgesic medication per hour (Ulrich, 2004, 20).

As an essential element for emotional stability, it is important that users of the space have some sense of control over their exposure to light. Harris and Leibrock recommend maximizing flexibility and variability to increase personal control and accommodate the widest range of color and light preferences by providing options in lighting, such as control in adjusting lights and lamps, chromaticity of lamps, the direction of light, dimness, and natural daylight (Leibrock and Harris 242). Similarly to the use of art and nature, variations in lighting and surface color can also play a significant and effective role in demarcating and defining space, thus contributing to the process of wayfinding (Verderber 145 and Cooper 11).

**Ventilation and Aromatherapy**

Reduction of airborne transmission can be achieved through the critical process of ventilation. Ventilation techniques have come a long way since the age of windows and balconies during the Nightingale and Modernist eras. Ventilation ducts can now be designed to prevent negative pressure and backwards air flow, therefore preventing the contamination of surrounding spaces. The type of air filter, the direction of airflow and pressure, the humidity, and the cleaning and maintenance of the system all directly affect the effectiveness and efficiency of a ventilation system. High-efficiency particulate air (HEPA) filters have proven to be most effective in controlling airborne infection and thus have become a crucial design technology.

The aesthetics of the air inhaled by patients, families, and staff can also be considered an element of design. Beyond the question of air as a transmitter of contagion, air can also be
enhanced with scent to transform a spatial experience. New understandings about the strength of aromatherapy are being considered in hospital design. At the Monell Center in Philadelphia, the incorporation of *environmental aroma* into public spaces in being explored (Sternberg 251). Aromas are effective tools for the design of the sensorial experience of the hospital, for they can evoke pleasant memories and hide unpleasant smells. Considering aromatherapy pushes the concept of interior healthcare design into a new dimension of spatial experience beyond the visual realm.

**Controlled Acoustics**

Hospitals are particularly noisy for two primary reasons: first, there are many sources of noise due to the high volume of bodies in the space and the rapidity with which they move and respond: Ulrich identifies a few of these disturbances as paging systems, alarms, adjusting bedrails, phones, ice machines, tubes, and trolleys, not to mention the voices of staff, patients, families, and children (Ulrich, 2004, 15). Second, common material choices in hospital design, such as metal, stone, or tile, influence the acoustics of such produced sounds; these hard materials and surfaces, which are usually the easiest to clean and therefore maintain sanitary conditions, are acoustically reflective (Sternberg 219). A good solution to this issue of noise reverberation is the installation of sound-absorbing ceiling and floor tiles (Ulrich, 2004, 16). Acoustics in hospital space exceed the recommended level of thirty-five decibels, which is about the sound of a quiet office, often falling between forty-five, characteristic of a room conversation, and sixty-eight decibels, the level of loud music in headphones, if not higher (Sternberg 218).

Controlling the acoustics of a hospital space is important for a variety of reasons. First, uncontrolled acoustics greatly hinder the degree to which patients and families can maintain their
privacy, particularly in the emergency room. Ulrich recounts a study by Barlas et al. (2001) in which patients were assigned to either spaces surrounded by solid walls or multi-bed spaces that were simply partitioned using curtains. They compared the auditory and visual privacy of the patients in these distinct spaces, finding that 5 percent of the patients who were enclosed in curtained spaces reported having withheld information while recounting their medical histories and declined full physical examinations due to a lacking sense of privacy. None of the patients in enclosed rooms reported having withheld information (Ulrich, 2004,14). Therefore, designing acoustically optimal spaces is directly related to the success of medical treatment, for a nurse or doctor who does not know a patient’s full history cannot offer as effective and individualized care as possible.

Excessive noise also has a direct impact on the human sensorium, increasing the stress and awareness experienced by the patient or family member. Verderber explains, “Excessive street traffic, corridor traffic, alarms, the sound of equipment, all are sources of environmental stress” (Verderber 138). Multiple studies have confirmed that excessive noise heightens blood pressure and heart rate, which results in poor sleep patterns for inpatients (Ulrich, 2004, 17). A study by Blomkvist et al. (2004) focused on the impact of high-frequency versus low-frequency impacts on patient outcome in a coronary intensive-care unit by periodically changing the ceiling tiles from sound-reflecting to sound-absorbing tiles. As hypothesized, the results indicated that improved sound control resulted in lower sympathetic arousal, and therefore less stress and improved sleep. Furthermore, the study reported that under these conditions, nurses were able to provide better care (Ulrich, 2004, 17). With attention to controlled acoustics, evidence-based researchers and designers could create a more pleasant, comfortable, and private space.

Improved Signage
Perfecting a hospital’s wayfinding system is essential, and yet so frequently disregarded. In addition to being critical for emergency visits and time-sensitive ailments, dysfunctional or confusing wayfinding systems can negatively impact the psychological health of patients and family members (Ulrich, 2004, 7). The stress of disorientation and a lack of control can also have physiological effects, such as increased blood pressure, fatigue, headaches, as well as overall feelings of helplessness (Leibrock and Harris 254). Elements that complicate the experience of navigating through hospitals include a lack of standardized terminology, expansion of facilities that result in multiple entrances, repetitive and indistinguishable décor, areas of restricted access, and overwhelmingly cluttered visual messages (Cooper 2-4).

Beyond the wayfinding tools mentioned earlier, such as the use of art and nature to act as spatial landmarks, the most common approaches are the manipulation of signage and mapping. Clear signage is particularly important and effective for direction to the Emergency Department, the main hospital parking, and the drop-off area (Ulrich, 2004, 18). Directional signs should be located at or before major intersections, destinations, or where important visual cues, like flooring material, change (Ulrich, 2004, 19). Contrast, proportion, and redundant cuing are important elements of signage that facilitate wayfinding. The contrast, particularly of white letters on a dark background, are accessible to both the color-blind and partially-sighted users (Leibrock and Harris 251). Furthermore, the use of pictograms can universalize messages so that those using different languages and learning skills can navigate (Leibrock and Harris 251). With each of these solutions, it is important to avoid overstimulation as a byproduct of excessive visual guidance (Cooper 12).

With regards to overall campus maps in the form of signs and hand-held pamphlets, a study by Wright et al. (1993) found that such maps improve the effectiveness of signage when used in conjunction with it (Ulrich, 2004, 18). Cooper discusses the up-and-coming use of
“contained positioning systems (CPS),” which act as GPS systems for a single building (Cooper 11). However, these instruments have not yet proven their worth, for they still can result in confusion regarding the terminology and selection of possible destinations.

The result of a more navigable space is increased accessibility and an individualized sense of control. While these physical interventions improve wayfinding considerably, exploring urban approaches to citywide and spatial legibility will provide insight into alternative solutions.

The field of healthcare architecture and design is nowhere near what it was just a few decades ago. Today, health is defined differently; it is the biological and physiological maintenance of the body, without disease or discomfort, yet it is also intrinsically rooted in psychological wellbeing. With the help of new methodologies of evidence-based design and an evolving health care profession, hospital space has already transformed dramatically to meet new understandings of healing spaces. It is important to appreciate the potted plants, the bright sculptures, the skylights, and the comprehensible signs that have transformed the sterile healing machine of the 1920s and 30s into the communal space of healing. These are the qualities of the current and future hospital, yet there is still much to be learned regarding how we can humanize the healing experience through design and thought. Using these established conceptions of ‘healthy’ space as a platform for exploration, we will delve into the logic of the urban sphere, and in doing so, derive new logics for the rapidly evolving investigation of therapeutic physical and socio-spatial design.
CHAPTER TWO

Theoretical Frameworks for Constructing Public Spaces of Gathering and Transition

Urban theory provides important insight into the ways by which people interact, move, and function within their city spaces. There are infinite types of public spaces, ranging from spaces of gathering and halted movement, like plazas, to transitory spaces of momentary pause, like subway platforms, even to spaces of transition and constant movement. When these spaces serve as paths, they function as channels of movement, along which other elements of the city are visible. As edges, they serve as boundaries between two phases, seams along which two regions are joined together (Lynch 46). What is unique about the emergency room waiting area is that, while it fulfills these roles of transitional space, it also serves as a “node,” defined by Lynch as a junction or place of stillness, a moment of shifting and change, or simply just concentrations (Lynch 47). This untraditional overlapping of public spaces presents new challenges; it involves mixing, matching, and reconfiguring urban standards of space. By exploring elements of functional and pleasant nodes, or spaces of gathering, and similarly successful zones of transition in the form of paths and edges, a hybrid solution to the emergency room arises.

Public spaces of gathering, most commonly defined as plazas, squares, parks, and town greens, are shaped by two key elements: the degree to which social encounter is encouraged and accounted for through design and the extent to which such design allows for multi-functionality and flexibility. These qualities define the usability of the space, thus shaping the relationship between urban inhabitants and their city. Such elements play similar roles in hospital waiting areas, yet their points of difference are fascinating; while hospital waiting areas are
circumstantially different spaces, their points of overlap and divergence are telling of the values that remain constant throughout loci of human congregation.

First, the act of encounter serves a fundamental role in defining space as place. Amin describes the act of encounter as “a formative element in the urban world” (Amin 30). He articulates ‘places’ as, not physically enduring sites, but rather as “moments of encounter…twists and fluxes of interrelation” (Amin 30). He therefore emphasizes both the fundamental nature of social interaction in formulating an experience of a space, as well as the transitivity of each moment of encounter, thus making the experience of the space stimulating and dynamic.

Encounter among individuals in a public space, whether familiar or not, also plays a critical role in cultivating a sense of well-being. It does this by functioning as a positive distraction from stressful elements of daily life, by contributing to a sense of community, safety, and belonging, and by encouraging self-identity, therefore minimizing anonymity. Regarding its role in positive diversion, Jan Gehl affirms that social interaction in public spaces satisfies a basic need for stimulation and distraction in everyday life: “Compared with experiencing…inanimate objects, experiencing people, who speak and move about, offers a wealth of sensual variation…The number of new situations and new stimuli is limitless” (Gehl 23). Cattell further suggests the positive influences of social encounter on one’s sense of well-being: “Social interaction in spaces can provide relief from daily routines, sustenance for people’s sense of community, opportunities for sustaining bonding ties…and can influence tolerance and raise people’s spirits” (Cattell 544). Furthermore, social interaction in public spaces provides support, esteem, a sense of belonging and social integration (Cattell 546). She concludes that these indicators of safety and community lead to a strengthened sense of identity: “[positively experienced] bonds provide a framework for both individual and communal aspects of identity” (Cattell 556).
In the emergency waiting room, interaction with other users of the space is a complex consideration. As in urban public spaces, social encounter strongly defines the character of the hospital space, but it can often serve as a negative presence in this type of high-stress environment. Not only are users of the space individually anxious and ailing, but they are also completely surrounded by patients and families in the same situation, some more expressive than others. It takes only one patient crying out in pain to flood the entire space with an ambience of misery. However, Roger Ulrich sustains that the benefits of encounter in public spaces hold true in the hospital environment. Ulrich argues that positive social support and interaction can reduce stress in the hospital setting, in addition to offering positive distractions, as Gehl suggests (Ulrich, 2004, 23).

The degree to which encounter exists among strangers in waiting rooms is dependent upon a number of factors. In my observation of three distinct emergency room waiting rooms, one in New York City and two in Poughkeepsie, NY, I found dramatic differences in levels of interaction among users of the space. In Weill Cornell Medical Center’s Emergency waiting room in New York City, I observed that few patients interacted. I spoke to the Patient Services coordinator, who is stationed in the waiting room to offer patient assistance; when asked whether he finds that patients interact among themselves while waiting, he noted that they usually do not here, although in other hospitals where he has worked, which served smaller, less-affluent communities, interaction was substantially more common (Patient Services Coordinator, personal communication). My observations confirmed his remarks when I visited Vassar Brothers Medical Center and St. Francis Medical Center in Poughkeepsie, NY, where I saw more communication among strangers. While these observations and considerations are anecdotal and unsupported by rigorous investigation, they are reminders of the complexity of the social space that comprises the hospital setting. The degree of encounter in any hospital waiting room
therefore may not only be dependent on the medical circumstances, but also on the culture and size of the community served.

The way to design for positive encounter in the hospital setting is through flexible intervention. Flexible design does not assume the positive or negative impact of encounter and rather leaves users in control of it. Ulrich explains that the opportunity for interaction and community can be designed into the space by providing lounges and waiting rooms with comfortable and movable furniture that can be “arranged in small flexible groupings” (Ulrich, 2004, 23). Referencing studies by Holahan (1972) and Sommer & Ross (1958), he explains that arranging seating side-by-side along room walls, as opposed to in flexible groupings, inhibits social interaction (Ulrich, 2004, 23).

The notion of flexible design and multi-functionality is another critical element of congregational public space that satisfies the conditions of the hospital waiting room in some ways, but not in others. Flexibility of design in urban public spaces of gathering is important for a few reasons: it acknowledges diversity of users, therefore expanding the user demographic capable of engaging with the space. This expansion of user demographic heightens the dynamism and cultural value of the space. In the process of placing spatial use in the hands of its users, the space empowers them, minimizing a sense of anonymity that so commonly accompanies the public experience.

In acknowledging and encouraging diversity, multi-functionality of space consequently allows users to attain well-being through a multitude of means, depending on personal preference. Cattell explains, “Some appreciate a chance for reflection in public spaces, others derive satisfaction from belonging, from perceptions of safety and attachment to place” (Cattell 558). Borden argues that, in addition to responding to multifaceted uses of space, urbanists
should design to embrace differences among elements that shape vibrant user identities, such as race, age, class, sexuality, gender, and personal enthusiasms (Borden 157).

Flexible design not only accommodates for differences among users, but it also stimulates physical, mental, and artistic expression of selves through the autonomous and shared use of space. Borden writes, “Using design to stimulate people—but without trying to wholly determine their actions—means that we take risks with our fellow citizens…but also encourage the full range of positive human actions and qualities” (Borden 157). What results, then, is a dynamic and culturally remarkable space in which users are exposed to foreign bodies in a way that spurs innovation.

This freedom to embody the space the way one sees fit produces a positive sense of control. William H. Whyte’s theories on the importance of movable furniture in the design of public plazas directly address this positive outcome. He explains, “Chairs enlarge choice…the possibility of choice is as important as the exercise of it. If you know you can move if you want to, you can feel all the more comfortable staying put” (Whyte, 1988, 120-121). He uses this framework to explain the extremely common practice of approaching a chair and moving it just a few inches before sitting down, although for no apparent reason or outcome. Simply enough, these slight movements are “a declaration of one’s free will to oneself” (Whyte, 1988, 121).

In the hospital setting, flexibility in design is beneficial to a certain extent. As mentioned, adaptability of furniture and other objects of utilization plays a significant role in creating an environment where patients feel comfortable, in control of their own space, and welcomed into a community of social support. Echoing the theories of Whyte, Verderber similarly emphasizes the importance of this personal control in the healthcare setting: “The inability to adjust one’s immediate personal space is asserted to adversely impact the healing process and to manifest in adverse behavioral outcomes” (Verderber 81). In addition to improving the patient experience,
multifunctional furniture and their arrangements make a space highly adaptable to changing flows and fluxes, allowing for improved crowd management. For example, a seat for handicapped individuals must also be usable by able individuals if no handicapped patients are present and all other spaces are occupied.

Where the emergency room waiting room departs from the traditional public space of gathering, however, is in its strong distinction as an entirely *useful* space, rather than one of cultural expression or even one that embodies an integration of the two. Foucault explains that in Middle Ages, spaces were distinct, hierarchical, and dichotomized; there were clear distinctions between spaces of sacredness and profanity, of protection and exposition, and of urban and rural (Foucault, 1984, 22). Today, we exist in what Foucault labels the “epoch of simultaneity” or the “epoch of juxtaposition” (Foucault, 1984, 22). Within this world of superimposition, however, it is important to acknowledge what we as humans have determined to keep distinct and categorized: family and social space, spaces of leisure and work, private and public space, and cultural and useful space (Foucault, 1984, 23). Modern approaches to urbanism have continued to degrade these remaining structural boundaries through theories of multi-functionality. However, in the hospital setting, the freedom and flexibility of the cultural space can only be infused to the extent that it does not impinge on its usefulness.

Unlike flexible furniture design and orientation, multi-functionality of the actual space and program itself does not promote efficiency or order in the hospital environment. Spatial demarcations function advantageously by minimizing the spread of infection, preventing unnecessary stress resulting from exposure to drastically diverse ailments, and creating spaces of privacy and order for personal retreat. Given the nature of emergency rooms, individuals come with incredibly diverse concerns, ranging from fevers to gunshot wounds, to psychiatric crises and pediatric fractured bones. This wide range of medical concerns is further broadened by the
health care system in the United States, by which many patients come to the emergency with primary care concerns due to a lack of insurance or consistent primary care physician. Sharing a space with individuals suffering from serious and often unimaginable ailments can be traumatic, as well as inefficient for health care providers. Distinct spaces for privacy, seclusion, and distraction, such as window seats, niches for breastfeeding mothers, media centers, and access points to the outdoors, further improve the experience of being in the emergency room waiting area. These points of departure from contemporary urban theory illustrate the ways by which the hospital waiting room functions as an unconventional public congregational space. Still, such considerations of encounter and flexibility reveal how design affects the user-spatial relationship in a static space of gathering.

Public spaces of transition, like those of gathering, are most functional when they are flexibly configured for individualized use. However, two types of transitional public places, edges and paths, draw from additional theories, most of which apply directly to the waiting room area. When a transitional zone acts as an edge, or more precisely, an inter-penetrable “seam,” it functions well if it softly transitions one space to the other (Lynch 100). Gehl focuses on the importance of urban transitional zones in smoothing the changeover from private to public and vice versa:

Flexible boundaries in the form of transitional zones that are neither completely private nor completely public…will often be able to function as connecting links, making it easier, both physically and psychologically, for residents and activities to move back and forth between private and public spaces, between in and out.

(Gehl 115)

With regard to physically designing that transition, Gehl explains, “It is expedient and often important that transitions…are indicated physically, but at the same time it is important that the
indication is not so firm a demarcation that it prevents contacts with the outside world” (Gehl 63). The softening of demarcations, particularly between private and public spheres, can be achieved through visually connective design. Spatial permeability involves designing spaces that expose the user to both contrasting experiences. For example, in the case of the private-public dichotomy, achieving visual and spatial permeability requires creating pockets of privacy from which users can observe, at a distance, the public sphere. Using the example of a residential project in Byker, Great Britain, Gehl illustrates this fluid demarcation of distinct residential groups through the design of semi-permeable portals and gates, which allow residents to visit others as they please (Gehl 63).

In the hospital waiting room setting, this element of positive transitional space should be adopted, not only across the private-public boundary, but also between the natural and constructed sphere. Most importantly, the hospital waiting room serves as a transitional space between one urban system, the urban context in which the building lies, and that of the hospital, a highly distinct and regulated system of its own. Verderber attempts to diminish this disparity by extending elements of the urban experience into the hospital settings. He explains, “Window seats, alcoves, and places to stop for an informal conversation contribute to the hospital as urban streetscape. Metaphorically, one should have many options for walking through its neighborhood and its mosaic of public, semi-public, and private realms” (Verderber 136). Therefore, using tropes of private and public articulation, the urban context is woven into the hospital sphere.

When a transitional zone acts as a path, rather than an edge, its functionality depends heavily on the degree to which it renders one’s larger context legible. Increasing the legibility, and consequently, imageability, of one’s larger urban context has critical implications for the user. Lynch explains, “A good environmental image give its processor an important sense of emotional security. He can establish an harmonious relationship between himself and the outside
world” (Lynch 4). In addition to contributing to personal psychological well-being, a legible city also gains cultural value: “Were [the city] legible, were it truly visible, then fear and confusion might be replaced with delight in the richness and power of the scene” (Lynch 119-20). “Paths,” he suggests, “are the most potent means by which the whole can be ordered” (Lynch 96). While the paths from the street, through the waiting room, and to the emergency department lack the element of motion characteristic of most urban pathways, they play a similarly important role in this spatial ordering process.

Paths function as tools of legibility through, again, visual connectivity to surrounding loci, in addition to clarity of direction and visual distinctiveness. As mentioned, visual connections most evidently allow the user to place himself or herself in relation to his or her destination, resulting in the formation of a more complete and comprehensible image. Whyte suggests an “out of sight, out of mind” type phenomenon to validate the importance of site lines. In explaining the relationship of a streetscape to surrounding spaces, he writes, “Sight lines are important. If people do not see a space, they will not use it” (Whyte, 1988, 129). While this concept does not translate completely in the hospital sphere, it serves as a reminder that visual access is strongly tied to acknowledgement and mindfulness of either surrounding or terminal spaces. Transparent materials and views of corridors and other units from the common waiting area facilitate the formation of these visual connections. This may allow patients to observe activities prior to entering, while alternatively, may serve as an orientation cue for those being treated within the emergency room (Leibrock and Harris 254).

Clarity of direction in paths is another fundamental method of developing legibility in transitive spaces. Lynch identifies the way one can achieve this through design. First, its orientation noticeably contributes to its clarity; a straight path is clear, as well as one with “a few well-defined turns close to 90 degrees” or one “of many slight turns which yet never loses its
basic direction” (Lynch 96). Second, the presence of a gradient, achieved through surrounding design features can help direct the user. Lynch explains, “A street is perceived, in fact, as a thing which goes toward something. The path should support this perceptually by strong termini, and by a gradient or a directional differentiation, so that it is given a sense of progression…” (Lynch 97). The funneling of space, the transitioning of color or texture of plantings, the condensing of signs or stores are methods by which this gradient can be achieved (Lynch 97). In the emergency room, the waiting room itself serves as a pathway from the street to the emergency room, but it also includes a multitude of other paths from registration desks to seating areas to triage stations, and to other departments. Ulrich explains that increasing accessibility and “integrating routes,” meaning providing minimal deviation options, contributes to greater clarity, and therefore less stress-inducing confusion in the hospital setting (Ulrich, 2004, 19).

Finally, urbanists identify visual distinctiveness of paths as a fundamental feature of an imageable city. Paths should not only be defined by a given destination, but rather should become experiences in and of themselves. Lynch writes, “Where the journey contains…a series of distinct events, a reaching and passing of one sub-goal after another, the trip itself takes on meaning and becomes an experience in its own right” (Lynch 97). Distinctive qualities of a path can be activities along its margins, a defining spatial quality, a specific floor or façade texture, lighting patterns, smells, sounds, or even plantings (Lynch 96). This process of distinguishing the transitional space of the waiting room is particularly important in the hospital, a stereotypically repetitive and monotonous type of building. Foque and Lammineaur add that, particularly in hospitals, this monotony can be broken through the “widenings and narrowings of the circulation areas” (Foque and Lammineaur 45). This approach urges the user of the space to engage and acknowledge it without experiencing overstimulation.
As a space of contradiction and exceptionalism, the waiting area of an emergency room challenges and destabilizes principles of modern urbanism; it is a space that at once disregards and glorifies functional specificity, encourages yet suspends movement, stresses yet relieves its users, and engenders, while counteracting, human encounter. However, even as it refocuses and shifts the standards of conventional urban approaches to space, its overlaps illustrate the universality of the human condition within a given context. Ultimately, understanding the user-space relationships that define the emergency room waiting room help us decode it as a complex space of both human gathering and transitional movement. Using these frameworks, I will re-approach the spatial problematic with a stronger foundation in how humans engage with their surroundings, particularly in a space accessible by all.
CHAPTER THREE

Solving the Waiting Room Problematic

There are many elements that make the emergency room waiting room experience an unpleasant one: the illness, the noise, and the long waits, just to name a few. Among the broad array of issues with the space, I will focus on several of the most prominent and impactful conditions: the insufficient availability of space, the stressful and chaotic ambience, the sense of stagnancy felt by waiting patients and families, and the experience of dehumanization. While each of these dimensions of the waiting room problematic may seem inherent to the hospital experience, they can each be improved through small, tactical design interventions that draw from urban theoretical frameworks of congregational and transitional public spaces, as well as established tenets of evidence-based design.

Insufficient Space

Today, the average American patient waits between six and eight hours to be seen and treated in the emergency room (Verderber 160). While the entirety of this wait is not spent in the waiting room space itself, it does result in a consistently backlogged and delayed system in which spaces become overcrowded. When mass disasters arise, an urban emergency department often cannot respond effectively. This issue of overcrowding in inadequate spaces is particularly important to consider due to the fact that, in addition to being a health and safety hazard for spreading infection and obstructing movement through the space in case of emergency, overcrowding in small spaces also induces psychological destabilization and stress.
A few practical solutions can serve to both improve the functionality of the space and expand it in such a way that provides psychological ease. First, seating arrangements can dramatically affect the degree to which patients feel the pressures of crowding depending on orientation and seating capacity. There are several approaches that can be taken in the waiting room: chairs may be arranged in airport-style rows, which minimize patients contact and provide substantial surface area; movable tables and chairs provide optimal flexibility for both groups and individuals, though this arrangement does not utilize available space as well as others; the serpentine arrangement functions in both providing extensive surface area and allowing choices for individuals to either sit in groups or alone; another concept is a scattering of four-sided chairs, which provide personal space, but do not accommodate for groups and optimize available space usage as well. Figure 1 illustrates these options and quantifies the number of spaces available for each. These diagrams suggest that the serpentine arrangements and four-sided chairs provide maximum seating options.

There should also be specially demarcated seating areas for physically disabled individuals, not only so that they have easier accessibility to the emergency room, but also so that they do not obstruct paths used by able individuals, particularly in high volume situations. In general, seating options should be flexible so that patients can sit in a space that prevents them from feeling claustrophobic.

Based on theories by Lynch regarding spaces of transition and Verderber on health care architecture, the waiting room space can also be designed to feel larger and more expansive through techniques of “theraserialization,” smoothing the transition from the open exterior to the enclosed interior space by integrating elements of the two. As mentioned, Verderber defines “theraserialization” as “the interpretation of space as being serialized, as layered, collaged, superimposed, transparent, and fluid” (Verderber 59). This “breathing” quality between spaces
can be achieved through design features such as transparent windows and walls, as well as the use of natural materials. Achieving it horizontally is slightly more costly, for it can involve the use of high ceilings, skylights, and clerestories. Creating large windows between the waiting room and the outside sphere, as well as between the waiting room and the other hospital units is another way to achieve this sense of openness. Finally, clarifying the connection between the gathering space and surrounding corridors suggests options for potential expansion, whether functionally or subconsciously.

**Stress and Chaos**

The emergency room waiting room is a stressful place because it is overcrowded, but also due to the inherent fear of infection and contagion. All the while, the human sensorium experiences considerable overstimulation as a result of loud and repetitive noises, unfamiliar and institutional odors, and unpleasant images, both from the television as well as from adjacent suffering patients waiting to be seen. Another taxing source of anxiety is the sense of disorientation and disconnection from one’s larger context, which results from the fact that people do not frequent the space under normal conditions and thus are unfamiliar with it. As suggested by Lynch, carefully designed signage, visual connections, and demarcated pathways can enhance the user’s understanding of the space. Signs are explicit indicators of programmatic space and can be helpful if they are placed strategically and visibly, as well as if they are well dispersed and not clustered.

Again, transparent windows between the waiting room and the outside world serve to expose users to nature, an important therapeutic quality proven by Ulrich. Similarly, such visual connections into the medical space, such as the triage station, provide an understanding of one’s situation. Visual cues should not be blocked by any sort of tall accessories or structural elements.
in order to increase legibility of the space, as well as for those patients with hearing impairments to maintain visual connection with the triage station (Leibrock and Harris 255). Paths should also be demarcated by distinct colors or textures. They can be further clarified through the use of chromatic, textural, or width gradients and peripheral demarcations using objects such as planters. These paths should be apparent as soon as one enters the lobby; the reception desk should be visibly accessible at that moment as it marks the initiation of those pathways (Leibrock and Harris 254). Figure 2 illustrates these different techniques of directional and spatial demarcation of paths.

The use of aesthetically and sensorially pleasing elements, which provide normalcy, variation, and positive distraction, also greatly contribute to stress relief. As proven by Ulrich, elements of nature play a substantial role in enhancing one’s sense of well-being in the health care setting. Nature can be integrated as a literal presence, through plants, windows, and small fountains, or can be implicitly integrated through material choices of wood and stone. Art can also reduce stress by serving as a source of positive distraction and engagement, in addition to creating a sense of normalcy, as proposed by Behrman. Artwork that portrays natural scenes is, as Ulrich shows, particularly beneficial to stress reduction. On-site murals are also effective and engaging due to their site specificity and contextual importance. For example, a mural contributed to by a few successfully healed patients from that hospital sends a positive message of trust and optimism to waiting patients. For example, at the Helen DeVos Children’s Hospital in Grand Rapids, Michigan, Elaine Tolsma-Harlow created a multi-media work entitled “Nests of Hope,” of a nest, constructed of strips of paper on which unwell children had written their wishes (Ford) (Figure 3). The work at once engages the viewer with both its aesthetic beauty as well as with its hundreds of meaningful messages.
Multi-spectrum lights and lamps play a role in creating a peaceful environment as well, either by echoing daylight or a domestic feel through the use of lamps. In the Jiaikai Amani Hospital in the United Arab Emirates, the main waiting room is lit by a central, glass-enclosed rock garden directly below a small skylight. The rays of light fall into the small space of the garden, but then diffuse throughout the waiting room space to create a sense of exteriority (Verderber 215). While skylights are often challenging to include, particularly in a multi-level hospital, they can dramatically affect the entire space. Ventilation and aromatics can also be used to reduce stress by including releasable windows and screens for circulation in addition to installed HEPA filters. Acoustics and sounds are also strong producers of stress, particularly in the emergency room waiting area. Auditory peace can be found by playing calming, classical music and muting television programming, to be replaced with subtitles. Sound absorbing ceiling tiles, upholstered furniture, and the provision of private alcoves can also minimize taxing auditory stimuli. Additionally, small interventions, such as provision of hand sanitizer dispensers, can be taken to reassure control of infection in the space of gathering.

Finally, demarcated spaces for semi-seclusion, such as window seats, personal alcoves, and personal isolation chairs, provide both a sense of control over one’s space and a blended experience of public and private immersion to lessen the impact of public interaction. Verderber emphasizes the importance of such alcoves or “semi-private nodes” for individuals coping with difficult circumstances who need personal space without complete situational disconnection (Verderber 145). Gehl further explains that, in public seating areas, people prefer to sit along facades and spatial boundaries, “seeking support from the details of the physical environment” rather than in the middle of a space (Gehl 159). Semi-enclosed booths and window seats along the periphery of a waiting area are particularly effective because they enclose without minimizing the medical staff’s ability to oversee patient conditions. Similarly, the use of frosted
Glass dividers are effective in defining personal boundaries, while allowing users to maintain
cognizance of surrounding bodies. They additionally allow for the dispersal of light throughout
the area. Figure 4 illustrates these seating options for semi-seclusion.

Along similar lines, flexible and movable seating options such as moveable tables and
chairs, as well as versatile serpentine arrangements, four-sided chairs, and arc-shaped sofas
reduce circumstantial stress by allowing users to maintain control over encounter while
permitting them to engage with other patients, often to gain a sense of social support. Figure 5
indicates the different permutations of encounter and solitude among different seating
orientations. The serpentine arrangement offers the greatest number of seating options for both
conditions.

Stagnancy

Emergency room waiting rooms are transitional spaces, yet patients and families cannot
move through them freely to their destination, resulting in a sense of stagnancy in a critical
moment of emergency. While this is the inherent nature of a waiting room, there are certain
design interventions that can help reduce the stress associated with that sense of stagnancy.
Clear signage and labeled corridors, first, function to relieve this frustration by allowing the
waiting individual to fully understand and plan where he or she will go when the time comes.
Again, transparent windows into the destination space of medical care also function by
exhibiting signs of progress within the system of the emergency room. Multi-story ceilings, as in
Charlotte R. Bloomberg Children’s Center at The Johns Hopkins Hospital in Baltimore,
Maryland, are ideal because they provide waiting patients with views into the fast-paced system
into which they are about to enter. They also vertically expand the space to relieve a sense of
entrapment. The constant activity on each of these levels then plays a role in activating the
waiting area space below so that it exudes a sense of dynamism, rather than stagnancy. Along similar lines, spatial and functional distinction through design can also offer a varied experience. Different types of plants, lighting concepts, color, and textural schemes can contribute to the dynamism of the space.

Other features that function particularly effectively in distracting and encouraging positive engagement are relaxing music tracks, positive, cultural television displays, and detailed works of art, both one-dimensional and three-dimensional. At the Charlotte R. Bloomberg Children’s Center at The Johns Hopkins Hospital, set designer Robert Israel’s whimsical, oversized sculptures are scattered throughout waiting areas, activating and diversifying the visual texture of the spaces; his works include the 22-foot-tall, colorful *Ostrich* suspended in the hospital atrium, the *School of Puffer Fish* above the main stairwell, *Cow Jumping Over the 28 Phases of the Moon* above the main reception desk, and the *Pair of Rhinos*, which marks the entrance into the emergency room waiting room (Figure 6). The sculptures in the main waiting area share the space with a bright red, vertically looping bench, designed by Fabio Novembre, which serves as a seating option for both individuals and groups as well as an entertaining work of art (Johns Hopkins Hospital) (Figure 7). This original and engaging artwork serves as a positive distraction by normalizing the space as a cultural node.

*Dehumanization*

Being unwell is a private and emotional experience. The ways emergency rooms and their waiting rooms are designed today still disregard that emotional complexity by eliminating privacy and a sense of control, while increasing systemization and providing minimal positive interaction. Einy argues that recent growth in outpatient services has reinforced the industrial,
anti-humanistic approach to health care design as larger influxes of patients require increased systemization of the hospital experience (Einy 26). Design features that instill personal control, respect individual needs, provide a degree of privacy and comfort, and allow for positive human interaction help shape a more humanistic environment.

Elements that enhance a sense of control, an idea proposed by Whyte and Verderber, are personally controllable lamps, a muted television with subtitles, available headphones that either cancel noise or provide a selection of music, and an assortment of different types of artwork. By placing users in control of their auditory and visual experience, thus preventing negative overstimulation, the space respects the human sensorial experience. As mentioned, movable tables and chairs also allow a sense of control. On one hand, heightened interaction among patients, usually as a result of such seating arrangements, allows for an enhanced sense of community, which minimizes feelings of anonymity. Most importantly, however, patients should feel that they can find a space of privacy during a stressful and emotional time without sacrificing awareness of the triage nurses’ announcements.

Acknowledging the diversity of users’ physical and psychological needs through functional design is another approach to humanizing the waiting room experience. Chairs of different sizes and styles should be provided for visitors, patients, and children of different sizes, abilities, and preferences. Gehl suggests the importance of this point in any public seating area: “A well-equipped public space…should offer many different opportunities for sitting in order to give all user groups inspiration and opportunity to stay” (Gehl 161). He explains that elderly people, for example, prefer seating that is both easy to sit down and get up from, as well as comfortable for spending extended periods of time (Gehl 161). Demarcation of specific spheres within the larger space, such as an alcove for personal phone calls, internet use, or breastfeeding
mothers, a pediatric corner if there is no room for a separate department, a psychiatry room, and several individual-use restrooms also illustrates attention to individual needs.

Another technique by which architects can humanize the waiting room is by domesticizing the space. Certain key design elements cause users to register a space as homey, such as upholstered furniture with sophisticated patterns, comfortable furniture like ottomans, personal lamps, and tables. This domesticizing action softens the institutional, systematized atmosphere so common to the waiting room.

Finally, although less achievable through design, warmer and more casual patient-staff relationships have perhaps one of strongest impacts on the extent to which patients feel stripped of their dignity in the waiting room setting. Ulrich laments, “Considering the well-established importance of social support, it is unfortunate that there is only a moderate amount of research concerning how hospital design can facilitate or hinder access to social support” (Ulrich, 2004, 23).

Nevertheless, there are adjustments that can be made to create a sense of domesticity, community, and respect among patients and staff, while maintaining the public character of the space. One of the primary ways by which health professionals have motivated the evolution of the hospital space into a psychologically restorative one is by sharing social space with their patients. Michel Foucault, in *Discipline and Punish: The Birth of the Prison* (orig. 1975), explores this concept of shared space in great depth, primarily through the lens of criminal punishment institutions. Foucault’s primary argument centers on the architectural model of panoptical observation, devised by Jeremy Bentham in the late eighteenth century, in which space is excessively shared between the observing professionals and those being held in the institution. In Bentham’s *Panopticon*, an observation tower is surrounded by an annular building, a ring of cells with two windows each; while one window faces the observing supervisor, the
other faces the exterior so as to provide clear backlighting on the prisoner or patient. Feeling constantly exposed, the prisoner or patient experiences visibility as a “trap” in which his or her actions are under constant observation (Foucault, 1995, 200). He rests his model of the ideal institution, one that instills control and discipline on its users, on the concept of “hierarchized surveillance” in which the architecture itself encourages strict observation (Foucault, 1995, 171-2).

The panopticon therefore represented a model of the extreme condition of unidirectional, shared space in which the patient would lack all privacy, and thus comfort, while the health professional would maintain an emotionally and visually distanced relationship. This framework reflects a crucial idea: that the role of the professionals and their the relationships with their patients have a direct influence on the comfort of those patients, and thus therapeutic quality of that space. His exploration of the panoptical model therefore introduces the concept of shared space and its tendency to transform the institutional experience.

Unlike other areas of the hospital, such as the ward, the social space of the emergency room waiting room has maintained a panoptical quality. Patients wait, aware that they are under constant surveillance by triage nurses, yet they are often unable to see the nurses themselves. The effect is an uncomfortable sense of hierarchy, where the patient’s visual parameters are significantly unequal to those of the medical professionals. Architecturally, this unidirectional discomfort can be relieved by transparent windows or even open triage stations so that, while nurses monitor patients, waiting patients can also observe and share the nurses’ space. Furthermore, creating paths that force nurses to walk through the waiting room space from one unit to another diminishes the material boundaries that stratify social authority, resulting in a shared, semi-domestic, and therapeutic space. These solutions illustrate the small ways by which design can impact the social space that so strongly defines the waiting room experience.
Approaching each of these distinct problems with often overlapping design-based solutions illuminates the extent to which small, inexpensive interventions can dramatically improve an individual’s experience in a public space of any kind. The emergency room area offers a remarkable series of challenges, both physical and psychological. Through methods of tactical urbanism, installing movable chairs, adjustable lamps, murals, and plexi-glass windows can transform a space of stressful stimuli, minimal personal space, and distressful degradation into one of therapeutic relief. The time has come for architects, urbanists, interior designers, and even health care professionals to advocate for the reconsideration of the hospital waiting room, not only as an instrument of functionality or a transitory path to transcend as quickly as possible, but rather as a preparatory zone of physical and psychological equanimity.
CHAPTER FOUR

Case Study: Rethinking the Waiting Room at Weill Cornell Medical Center

The Weill Cornell Medical Center at New York- Presbyterian Hospital is a large university hospital, located on the Upper East Side of Manhattan. The hospital, along with its counterpart, the Columbia University Medical Center branch of New York-Presbyterian hospital, prides itself in serving an enormous area of New York residents, particularly in the counties of New York, Queens, Kings, Bronx, and Westchester (NYP Community Service Plan). As such a broadly-serving hospital, its emergency department receives a tremendous flux of patients with highly diverse needs.

The Space

The entrance to the emergency room at Weill Cornell is located at a drop-off circle, adjacent to the main entrance of hospital. Upon entering the emergency room lobby, the patient is greeted by either a group of “greeters,” who are registrars and nurses, seated to the right, or the nonmedical Patient Services employees, seated to the left. Straight ahead is the triage station, surrounding by transparent walls. At this point, the patient can turn left to sit in the elongated, rectangular waiting room, which shares the space with this lobby area; alternatively, the patient could also turn right to enter the Urgent Care Center, which has its own small waiting room, or walk straight down a hallway to Emergency Pediatric Care. Down the hallway and to the left, one finds the Psychiatric Emergency Care Center. After a patient is called into the triage station from the waiting room, he or she may be sent into the depths of the emergency room, which lies behind the station. Figure 8 illustrates a general plan of this entrance space.
The Emergency Department at Weill Cornell is divided into three zones. Zone A holds the sickest patients with the most emergent cases. The space is elongated and rectangular in shape, with administrative stations running down the center like a spine, holding clerks, nurses, doctors, social workers, and supply rooms for medications, food, and clean equipment. Along the perimeter of the space are the patient rooms. On one side, there are five patient rooms with solid walls, and on the other are curtained off patient booths. Zone B is an elongated continuation of this space; however, it holds less emergent cases to be dealt with by physicians assistants. Both Zones A and B were designed and built in 1999, while Zone C was fairly recently created in 2006. Zone C, originally intended as a geriatric emergency unit, now serves other functions for isolation patients and well known public figures due to its considerably improved design and private, pressurized rooms.

The entire department has 45 patient rooms, but on any given day, there can be over a hundred patients admitted to the Emergency Room. The result of this overcrowding is the haphazard arrangement of stretchers, lined up outside patient rooms and booths. These stretchers, in addition to machines on wheels, clutter the hallways, contributing to an environment of limited mobility, chaos, stress, and limited privacy. While treatment spaces of the emergency department are considerably unpleasant, it is evident that they are thoughtfully organized for optimal management and capacity. Furthermore, the space is highly regulated by medical protocols.

We therefore turn to the waiting room, a space that has clearly received less consideration in terms of its design, comfort, and efficiency (Figure 9). The waiting room at Weill Cornell is functional and considerably large, but it is in no way the pleasant, or at the very least, neutral, space that it could be. Upon walking into the emergency room lobby, the patient or visitor is hit with a shocking wave of muggy, warm, and foul-smelling air. Low ceilings, fluorescent lights,
brown-yellow walls, and gray linoleum floors instantaneously envelop the individual, communicating a sense of emergency through a clear disregard for aesthetics. After registering with the greeters at the desk to the right and asking a few questions of Patient Services on the left, the individual turns left to see four rows of differently-sized red and gray chairs, each row facing another. At the end of the elongated room are a coffee station and a large, unused and blocked-off booth covered in plastic plantings. To the right are two bathrooms, and above them, a small, yet loud, television eternally stuck on CNN world news reports.

The visual experience of the space is fascinating on multiple levels of visual and cognitive perception. Functionally, the signage in the room is lacking in some areas and overwhelming in others. Upon entry, the only visible signs are the “Urgent Care” sign to the right, the “Emergency Department” sign above the hallway straight ahead, and the “Pediatric Emergency Department” sign at the end of that hallway. There is no indication of which station to go to first out of the three possible options if greeters, patient services, and triage nurses. Below the television, however, is a plethora of signs and legal documents, indicating patients’ rights in type that is too small to be read from further than a foot away.

The space also lacks stimulating and engaging artwork. The only artwork provided is in the form of framed color blocks of yellow, red, and blue graph paper. This lack of artwork does not lessen the focus of the patient or family on pain or anxiety, and rather results in an enhanced focus on the television as an object of distraction.

The physical space is expanded through a series of virtual screens and windows. While these elements contribute to a sense of openness, they are also quite anxiety provoking. The television expels images and scenes of violence on the newscasts, not to mention irritating sounds and conversations. There is also a fairly large window, allowing for some natural light to
stream in, but revealing the primary image of the concrete wall of the main hospital across the drop-off circle.

Perhaps the most interesting spatial expansion of the waiting room is a result of the transparency of the triage station and urgent care center. In this room, nurses examine patients to assess the severity of their conditions. The motivation behind the transparency of the room is that the triage nurses can constantly monitor the waiting room to make sure that waiting patients are not experiencing emergencies. The effect of the transparent station, however, is multifaceted for the patient in the waiting room. On one hand, the sense of medical disaster spills into the waiting room, provoking further anxiety, while invading the privacy of the patient being seen. On the other hand, a transparent triage system provides a calming element of informed progress and proximity to the waiting patient’s goal in an otherwise stagnant space, therefore acting like a loading indicator bar on a computer screen. Despite all other flaws, the waiting room at Weill Cornell achieves this mutual visibility quite successfully, allowing for constant medical surveillance from the triage nurses and a sense of circumstantial understanding and movement for the waiting patient.

*Rhythmanalysis*

One Wednesday, in the late afternoon, I sat in the waiting room for around an hour, soaking up auditory cues that the typical patient or family member would experience while waiting to be seen. There were babies crying, elderly patients coughing, and conversations, both two-sided and one-sided as people forcefully muttered into their cell phones. There were voices echoing through loud speakers, as well as individual voices calling out names. There was, of course, the television’s constant stream of disturbing noises. There were doors opening and slamming, followed by loud noises of feet shuffling across the linoleum floors. It soon became
clear to me that much of the background noise was a result of staff members walking through the space to other parts of the hospital. Through focusing on the many layers of the waiting room’s soundscape, it is possible to acknowledge which sounds are detrimental and which can be reduced through intervention. Sounds coming from the television and from the heavy foot traffic on the squeaky linoleum floors seemed to be the most feasible to control.

**Movement Analysis**

My movement analysis revealed several fascinating and important patterns, which in turn displayed the ways by which the space is used, as well as some of its flaws. My findings played a critical role in my reconsideration of the waiting room’s design. Figure 10 illustrates these observations.

First, I found that handicapped individuals had trouble placing wheelchairs in locations that would not block paths. A Patient Services employee noted that this is often a problem. Among these flaws, the flow of patients through the space also revealed that the coffee station at the back of the room is a great success. It was one of the first stops by many of the patients and their families after checking in.

The most common pathway through the waiting room space was, interestingly, entirely unrelated to the Emergency Room. Medical staff would enter through the front doors and traverse the entire seating area to exit through a door in the back corner as a shortcut to another department in the main hospital. This fascinating pattern of flow implies an additional meaning for the space as one of transition. In addition to serving as a shift from the exterior urban grid to the enclosed system of the hospital and a transition to a destination of emergency care, the emergency department waiting room serves as a transitional space in the ambiguity of its program; it at once serves as a place for patients to wait, as well as an important pathway for
medical professionals. Understanding this pathway is important for two reasons: first, its popularity indicates an element of convenience and efficiency that must be respected and continued through the redesign of the space. Second, the enormous foot traffic and unrelated movement through the space may be detrimental to the experience of patients and families; in addition to adding substantially to the amount of noise in the waiting room, the popularity of the pathway is confusing. Therefore, while the path should be respected, its relationship to the rest of the waiting room should be reconsidered.

Another significant observation is the degree to which Emergency Room nurses share the space with patients by moving through the waiting room. As illustrated in Figure 10, the nurses take a defined path through the lobby in order to travel between the Emergency Department and the Urgent Care Center. This sharing of space between the medical professionals and patients positively degrades a sense of hierarchy.

In my analysis, I paid special attention to the elements that distinguished patient paths from those of the staff. Upon analyzing these observed webs of movement, it becomes clear that there is a considerable disparity between the quality of patient and professional paths; while patient paths rarely overlap in a unified course through the space, those of the staff do. This indicates that the space is unreadable and illegible to those unfamiliar to it. Using these observations, I sought to transform the space into one that was legible, spatially aware of handicapped individuals, and serenely detached from other stressful and distracting movement stimuli.

**Recommendations**

While the changes I propose to improve this space primarily take the form of an interior design concept, my approach was largely inspired by the practice of tactical urbanism, as well as
the principles of functional and pleasant public spaces that exist within the urban fabric.

Applying these principles to the interior space of the waiting room meant reassessing the way users engage with the space in terms of where they sit, how they encounter public and private pockets of space, where they move, and how they respond to specific visual and auditory stimuli. The details of these suggestions are illustrated in Figure 11 below.

Seating

My recommendation for seating in this space involves incorporating multiple seating styles and orientations to provide options for patients and families with different preferences. The primary seating option is a serpentine like sofa, which allows for spaces of encounter for groups as well as spaces for individuals to sit alone. Along the center of the double-sided sofa are a series of power outlets and attached lamps, which can be individually adjusted to be on, off, or dimmed. I also included movable tables and chairs, each with a plant resting on the surface, in order to maintain a sense of normalcy and accommodate groups. There is also an arc-shaped bench with a long planter along the back, facing the tables and chairs. Along the edge of the path demarcated for staff, I placed a series of large chairs, tables, and bays for handicapped patients to park their wheelchairs so that they are both close to the triage station and are not blocking other patients. Finally, I included a series of isolation chairs in the style of Arne Jacobsen’s “Egg Chair,” facing the window for semi-seclusion.

Semi-seclusion

As it is currently designed, the waiting room does not include any spaces that provide a sense of privacy and semi-seclusion without dislocating the patient or family from the triage communication loop. For example, as it stands, users of the space can walk through the space
and essentially out of it to find a private phone booth in the back corridor. However, this “privacy” is, in itself, considerably stressful, for being in a waiting room means waiting on edge to hear one’s name called.

I propose a series of improvements given these limited options of seclusion. First, the area includes a rather large booth in the far back corner, which was once designed for immediate and noninvasive examinations, but now remains closed off, utilized as a storage space and speckled with a few plastic plants. In my plan, I transform the space into a private booth, equipped with a comfortable couch, a large chair, and a landline telephone. The booth would redesigned to include a functional curtain or door that delimits the space, as well as frosted glass divider walls, transparent only along the upper portion to maintain sight lines throughout the space. The walls would not reach the ceiling in order to maintain auditory connection to important announcements.

I additionally propose a series of built in bench alcoves, which carve into the walls to provide a sense of shelter, protection, and personal space. Within each of these booths are upholstered seats with cushions, personal lamps, outlets, and artwork. The isolation chairs facing the window additionally provide options for semi-seclusion.

Pathways

As I looked to reevaluate and redesign the waiting room space at Weill Cornell Medical Center, one of my primary goals was to simplify and clarify the pathways throughout the space, for I found disorientation to be a major source of confusion and stress for the users. My first adjustments involve moving the patient services desk so that it does not take part in the user’s initial understanding of the space; patient services are only needed after the patient has checked in with the greeter nurses to the right, and it therefore should not be placed in a spatial hierarchy
equal to that of the greeters. Instead I propose to position it against the wall on the left of the entrance so that it is immediately behind the patient upon entering, only to be approached after following initial protocols.

Next, I addressed the most obvious issue of signage. The space must include signs for the greeter desk, the triage station, the emergency department entrance, and the psychiatric unit. In addition, the sign for Emergency Pediatric Care must be in the immediate lobby space, rather than at the end of the hallway. The Urgent Care Center is properly labeled at this time. Furthermore, I would remove the patient legal notices to be in a few binders on coffee tables throughout the waiting space, so that patients and families can read them at their leisure where they would like to sit. This change makes room for engaging artwork on the walls.

Finally, I proposed a system of floor paths, demarcated by gradual shifts in material, width, tone, and delineating plantings. The path, beginning at the doorway, is comprised of mixed wood, which begins light and transitions into darker tones as the user approaches the primary destinations of the entrance into the emergency department, the waiting area, and the pediatrics unit, and the Urgent Care Center. The path curves towards the right first in order to push the user toward the greeter desk. It then branches out into a system of limbs, which change in width as they reach the primary destinations within the space.

To demarcate the disruptive staff pathway, which serves as a shortcut from the emergency room entrance to another area of the hospital, I placed short plantings along the edge of the worn path so as not to block triage nurse visibility. By severing the pathway from the waiting area and pushing it to the perimeter of the space, the passage both directs staff movement and limits disruption and confusion to seated patients. This pathway is not articulated using the mixed wood material, thus clarifying the irrelevancy of the passage for patients who are
unfamiliar with the space. Instead, remaining floor areas should be covered by sound-absorbing flooring to control acoustics.

*Light, Color, Art & Nature*

A reinterpretation of this space to create a more healthy and therapeutic experience would be incomplete without attention to aesthetic and sensory-based improvements, such as lighting concepts, color, artwork, and involvement of nature in the space. In addition to providing lamps, I recommend sculptural lighting fixtures that can soften the glare of the existing fluorescent lights while functioning as an engaging and imaginative works of art. Although there is no available wall space for a mural, hanging just a few two-dimensional works of art would dramatically improve the experience of the space. I would also adjust the color schemes that currently characterize the space: the yellow-brown walls could be repainted to be an elegant and relaxing shade of cream or tan. Similarly, the flatly colored red and gray of the faded chairs could be substituted for softer greens and blues. I include a few bright red isolation chairs to provide a small and unobtrusive pop of color to contrast against the calmer color scheme found throughout the rest of the space. Planters should be placed wherever possible; I proposed that they be situated beneath the windowsill, hanging above the private alcove, behind the arc sofa, and on individual tables.

While the waiting area at Weill Cornell Medical Center currently serves its function, it does so in a way that disregards the aesthetic and psychological needs of its patients and families waiting to be seen. The suggestions offered here are fairly minimalist, inexpensive, and manageable. However, as with tactical urbanistic approaches to improving a city streetscape or intersection, these small shifts in the way the space is visualized can have a dramatic effect on how it is consequently interpreted and experienced.
CONCLUDING REMARKS

The Implications of Hybridized Public Space

The design of hospital waiting rooms often goes overlooked; as spaces of temporary and transitional presence, they inherently fall between the cracks of strongly demarcated programmatic spaces of medical treatment. In addition to this lack of attention, problems with the waiting room are rooted in a certain quality that contradicts traditional urban paradigms: while the space is transitional by definition, it functionally acts as a locus of stasis and gathering. In reconfiguring standards of public space, the hospital waiting room becomes a complex urban paradox of hybridized space; it therefore requires a multi-faceted solution.

By exploring tenets of these distinct types of public spaces that comprise the waiting room, I sought to extend valuable urban understandings about how humans engage with unfamiliar, shared spaces to specific problems within the emergency room waiting area. Using these principles, I addressed spatial and circumstantial obstacles of insufficient availability of space, stress and chaos, forced immobility, and dehumanization.

While my observations of these specific and often-overlooked spaces was ultimately incredibly revealing, the process had certain limitations that should be acknowledged. First, in order to preserve patient confidentiality, I did not take photos of the space. I was thus limited in my ability to continuously reevaluate the space’s features. Additionally, as patients using the space were stressed and in pain, I did not conduct any interviews with them, as this would not have resulted in productive and mindful insights. This constraint therefore limited my access to first-hand patient impressions and motivated me to gain most of my insight from reading body language and speaking with patients who had had past experiences in such spaces. Furthermore, additional observations after implementing the proposed adjustments would have beneficially
contributed to my findings. Despite these limitations, I was able to observe, consider, and question the ways users engaged with the waiting room space in relation to my academic and theoretical findings.

The approach I took was only one of the many ways we can challenge this critical space. While the majority of my findings focused on illuminating architectural and design interventions, it is also important to acknowledge the sociological implications of the waiting room space and the ways by which social space can be manipulated to improve the patient experience. So much of the healthcare experience lies in patient-nurse relationships; these relationships can engender therapeutic environments by instilling a degree of personal agency, social variation, and normalcy into the patient’s experience. The role of health professionals therefore continues to shift so that, while they still maintain their primary jobs as caregivers, promoting healing and comfort, they also serve the crucial role of defining the social space in the hospital as one of psychological wellbeing. Health care staff can create homey, flexible spaces of comfort through two major processes: first and foremost, through shared space between professionals and patients, and through a more recent paradigm, attempting to meet patient expectations and needs as though they were consumers. In rethinking spaces of healthcare through the social lens in addition to the physical, we can gain greater insight into the ways by which the waiting room can be humanized.

Acknowledging, studying, and reworking the problematic of the emergency room waiting room is important for a few reasons: on a practical level, the experience of the emergency room affects the majority of the American population. If we as urbanists, architects, and medical professionals could transform these universally dreaded spaces so that they empower and relieve the users of the space, we would be making a monumental difference in what has become a reality of everyday life. The moment a patient enters the hospital, the healing process must begin,
both physically and psychologically. A waiting room that fails this task inherently fails to fulfill its programmatic responsibility as a public space within a system of health care.

On a conceptual level, the waiting room is also worth considering because it complicates our understanding of public spaces and how they function within the larger urban fabric. Its hybridized nature as a simultaneous node, edge, and path extends across urbanistic categorizations and frameworks. The implications of this fascinating public space are well articulated by Le Corbusier, particularly in his technical document, the *Rapport Technique*, which accompanied his unrealized design of the Venice Hospital (1964) to be located Venice, Italy. His vision was to fabricate a schematic structure in which the patient-city relationship was streamlined and interconnected in a valuable way. He juxtaposed urban units of street-like and plaza-like spaces in order to achieve a certain dynamism where “the hospital stops being a static organism and acquires the flexibility required both to follow the medical innovations and to accommodate the possibility of future growth” (Psarra 3-4).

Not only did he intertwine the urban fabric into the hospital through repetition of certain tropes of urbanistic spatialization, but he also emphasized the importance of the hospital-city interface as a valuable transitional moment of exchange. Le Corbusier writes, “By opening the ground floor directly onto the city, one allows for a city-hospital encounter and facilitates the visual transmission of medicine toward the outside” (Le Corbusier 2001 in Psarra 8).

By incorporating urban logics into the architecture of the hospital, specifically the waiting area, the space not only emulates, but also becomes embedded into the larger urban context, a collection of overlapping, distinct public spaces. Therefore, in addition to focusing introspectively on the problematic of the waiting room space, we must also remember to recognize its role in constructing the city. The presence of this distinctly hybridized space
revolutionizes and diversifies the larger urban fabric in which it is embedded. In this sense, it is not to be ignored.

The waiting room is a public space like no other; it at once shapes and is fashioned by its individual users, their emotional states, and their physiological needs. Even more, it both internalizes and colors the urban context in which it is situated. As hospitals continue to evolve through technological advances, health care policy reform, shifting urban populations, and innovative understandings of health, we must continue to question and reassess how spaces of healthcare can acknowledge and treat both biological and psychological needs of patients, their families, and their friends. The public spaces of a hospital waiting room are loci of foreign encounter, hardship, anxiety, and existential reconsiderations of life, but most of all, they are tools. They are tools that, when designed with consideration of human needs and tendencies, can help achieve exactly what every man, woman, and child wants and needs; they can, quite simply, heal.
APPENDIX

Figure 1. Seating Arrangements to Maximize Capacity

a) Rows

b) Tables and Chairs

78 seats

32 seats

80 seats

c) Serpentine

d) Four-sided Chairs

86 seats
Figure 2. Techniques of Directional and Spatial Demarcation of Paths

- a) Chromatic Gradient
- b) Textural Gradient
- c) Object Gradient
- d) Width Gradient
Figure 3. “Nests of Hope” by Elaine Tolsma-Harlow, *Helen DeVos Children’s Hospital in Grand Rapids, Michigan*
Figure 4. Seating options for semi-seclusion

a) Window Seat

b) Personal Bench Alcove
c) Semi-permeable Dividers

d) Personal Isolation Chairs
Figure 5. Permutations of encounter and solitude among different seating orientations

a) Tables and Chairs

b) Serpentine
c) Shared Corners

d) Arc Overlays
Figure 6. Sculptures by Robert Israel at the Charlotte R. Bloomberg Children’s Center at The Johns Hopkins Hospital: *Ostrich, Cow Jumping Over the 28 Phases of the Moon, School of Puffer Fish, and Pair of Rhinos* (Dean and Weller)

Figure 7. Sculptural seating designed by Fabio Novembre at the Charlotte R. Bloomberg Children’s Center at The Johns Hopkins Hospital
Figure 8. Ground plan of Emergency Department entrance at Weill Cornell Medical Center, New York, NY
Figure 9. Current design of the waiting room at Weill Cornell Medical Center Emergency Department in New York, NY
Figure 10. Movement analysis of the waiting room at Weill Cornell Medical Center Emergency Department in New York, NY.
Figure 11. Proposed design for the waiting room at Weill Cornell Medical Center Emergency Department in New York, NY
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