NURTURING RELATIONSHIPS THROUGH DESIGN

Sutter Medical Foundation Roseville Oncology Clinic

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OVERVIEW

The psychosocial dimension of care for oncology patients is critical to supporting the emotional and physical aspects of cancer. When Sutter Medical Foundation hosted patient focus groups to inform the design of a new oncology clinic, patients indicated that the most important factor in cancer care is relationships. In response to those perspectives, Sutter Medical Foundation created a service delivery model and supporting clinic design aimed at optimizing personal relationships. Preliminary findings describe how different relationships, such as patient-clinician and clinician-clinician, are supported by the design and linked with increased quality of care.

Sutter Health
Sutter Medical Foundation

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ARCHITECTS

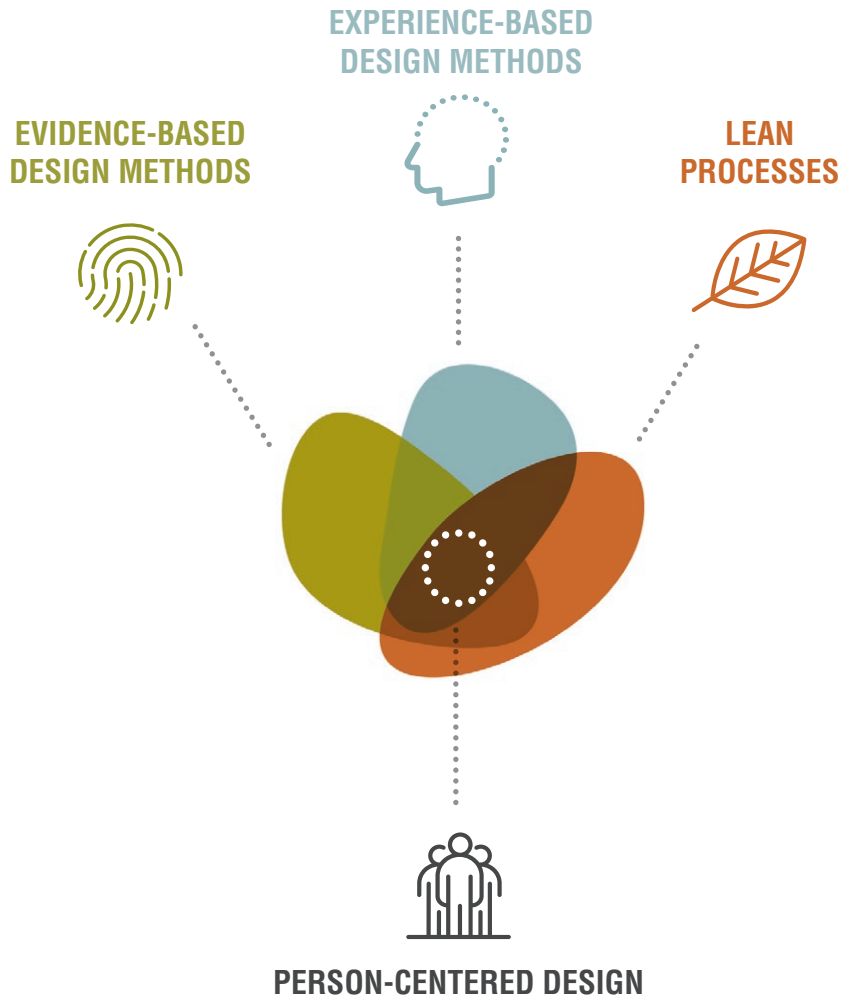
About Sutter Medical Foundation Roseville Cancer Center

The Sutter Health Valley Area Oncology Service Line, Sutter Medical Foundation, and Sutter Roseville Medical Center created an integrated cancer center on their Roseville campus to alleviate capacity constraints and offer significant advances in integrated cancer services to patients in the Roseville area.

TI size: 18,500 sf
Completion date: July 2016
Program: Medical Oncology, Surgical Oncology, Gynecological Oncology, Lab Services, and Supporting Services
Contractor: West Fork Construction

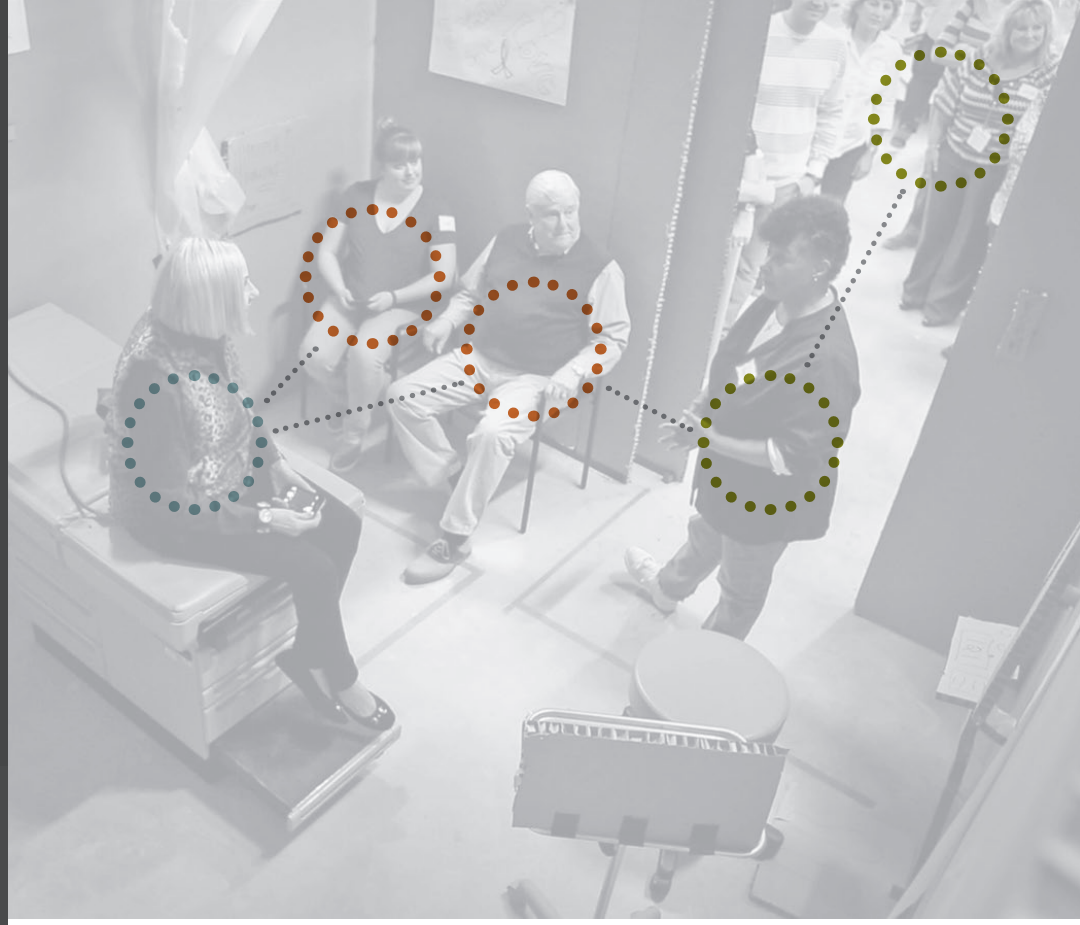
About Boulder Associates Architects

Boulder Associates embraces a person-centered design approach by incorporating user experience in our data collection and design strategies. Integrated with EBD and lean processes, we make use of a robust evidence base while recognizing that each person's healthcare journey is unique. We capture the patient and front-line worker perspective through focus groups, questionnaires, and in mock-up simulations. Ultimately, our person-centered design approach allows us to create processes and environments which are optimized for each client and patient.



A personalized, person-centered approach.

HOW DO WE NURTURE RELATIONSHIPS THROUGH DESIGN?



1

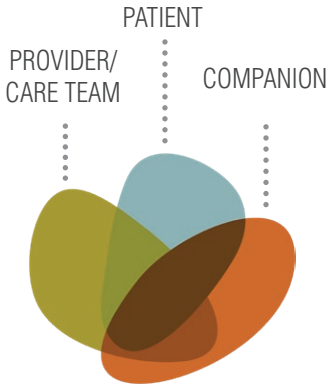
Identifying person-centered needs:
What are key psychosocial needs in caring for oncology patients?
What relationships do we need to nurture?

2

Designing relationship supporting spaces:
How can we tailor the oncology-outpatient clinic to oncology care?

3

Assessing outcomes:
How can we evaluate how well the design supports psychosocial aspects of care?



Design with and for patients and care team members:
During pre-design, Sutter Medical Foundation and Boulder Associates built full-scale mockups out of cardboard to test design ideas and run care simulations with patients and care team members.

IDENTIFYING PERSON-CENTERED NEEDS

Condition-Specific Care

While an oncology outpatient care center may present like any other outpatient care center in terms of its superficial program and space needs, cancer patients and cancer care clinicians, are unique from other preventive or acute care condition scenarios. Condition specific-care (Porter & Olmsted Teisberg 2006) describes an approach to "providing the entire set of resources that a patient with a particular condition needs." Since oncology care can be fragmented across specializations and treatments, efforts to connect these resources can improve care coordination among the care team and reduce the patient's navigation burden.

Psychosocial Dimension of Care

Among the unique needs of an oncology patient is an emphasis on the psychosocial dimension of care which the Institute of Medicine (IoM) described in their 2008 report as, "psychological and social services and interventions that enable patients, their families, and health care providers to optimize biomedical health care and to manage the psychological/behavioral and social aspects of illness and its consequences to promote better health." Recent research has suggested that the effects of cancer treatments on the brain's ability to produce new neurons are linked with "cognitive and mood-based deficits," and the development of depression and other neuropsychological deficits following cancer therapy (Dias et al 2014). Furthermore, medications taken for treatment of pain and/or anxiety have side effects such as nausea and dizziness with an increased "potential for altering a patient's sensorium and perception of his/her environment" (Miller 2013). Thus, the psychological state of patients undergoing treatment for cancer is often one governed by depression, generalized anxiety, pain, stress, and helplessness. While survival may be an explicit goal of cancer care, psychosocial relationships play an important role in the patient's ability to cope with cancer and it is essential that psychosocial care is integrated in a comprehensive care plan. Psychosocial services need to extend not only to the patient, but also to their companions and clinicians who experience elevated stress levels associated with supporting the cancer patient. The Institute of Medicine's Committee on psychosocial services to cancer patients/families in a community setting advocated that, "all clinicians providing care for patients with cancer should attend to psychosocial health needs as part of their practice, but that oncologists can and should lead the way in addressing these needs" through means such as facilitating effective communication between patients and clinicians, collocating psychosocial and biomedical services with regularly scheduled team meetings to facilitate timely and direct face-to-face communication among clinicians, and attend to the needs of the patient's family members (IoM 2008).

Empathy

Clinical empathy is an approach associated with positive outcomes for both discovering and treating the psychosocial correlates of a patient's condition. Clinical empathy is defined as the socio-emotional competence of a physician to be able to understand the patient's situation (perspective, concerns, and experiences), combined with a capacity to validate and communicate that understanding in order to act on that understanding with the patient in a therapeutic way (Pedersen 2010, Hojat 2007, Neumann et al 2007). Positive patient outcomes correlated with a clinician's empathy include higher satisfaction, better psychosocial adjustment, and decreased psychological distress (Lelorain et al 2012). Nonverbal cues such as eye-contact, social touch and length of visit have been linked with increased patient ratings of a clinician's empathy and the patient's liking for a clinician (Montague 2013). While empathy can provide beneficial outcomes for the patient, there are potential costs to the care clinicians. Understanding a patient's situation can put a provider at risk of having the same neurochemical empathetic response as the patient's fears and emotions are generating in his or her own brain: it is the brain's natural response to mirror people around them to generate understanding. The negative consequences of these empathetic responses and the clinician's own emotional difficulties related to having limited ability to prolong life can result in compassion fatigue and burnout (Shanafelt and Dyrbe 2012, Najjar et al 2009, McMullen 2007). Clinicians also benefit from providing empathetic support to each other.

Nurturing Relationships

Empathy, and nonverbal indicators of empathy, are effectively supported in a relationship-based practice. The National Cancer Institute's (NCI) report on Patient-Centered Communication in Cancer Care prioritized "fostering healing relationships" as one of six key functions of patient/family-clinician communication in cancer settings, with healing relationships being defined as, "continuous, not just single encounters" and "more than sources of information and expertise; they also provide emotional support, guidance, and understanding" (Epstein and Street 2007). According to this NCI report, patient-clinician-family relationships impact health outcomes directly by decreasing anxiety and reducing suffering, and indirectly by reinforcing an alliance that leads to continuity of care, patient satisfaction and a commitment to treatment plans which can ultimately reduce rates of morbidity and mortality (Epstein and Street 2007). The NCI report emphasizes the importance of patient-clinician relationships, as well as relationships with family members given that patients "with close supportive relationships often adjust better to the disease." There are few recommendations, however, on the role of clinician to clinician relationships in cancer care. This report, and other initiatives such as Cleveland Clinic's REDE model aimed at optimizing personal connections in three primary phases of a Relationship: Establishment, Development and Engagement (REDE) (Windover et al 2014) provide possible indicators for assessing relationships between patients and clinicians.

> "YOU'RE SCARED. YOU DON'T KNOW IF YOU ARE GOING TO MAKE IT. (WE NEED) THE PERSONAL TOUCH."

A NETWORK OF SUPPORT

Designing for and with Patients and Clinicians

Pre-design data collection included hosting a patient focus group with patients and companions, conducting a clinician survey, and engaging in a week-long lean event to design and simulate an oncology outpatient clinic co-created by patients, clinicians, administrators and designers. The importance of relationships in care was a dominant theme among all the data collected. As one patient expressed, "You're scared. You don't know if you are going to make it. (We need) the personal touch." The team prioritized project goals aimed at optimizing relationship-based outcomes as well as meeting efficiency performance standards.

PATIENT

SPECIALTY PROVIDER

SPECIALTY PROVIDER

CARE TEAM

COMPANION

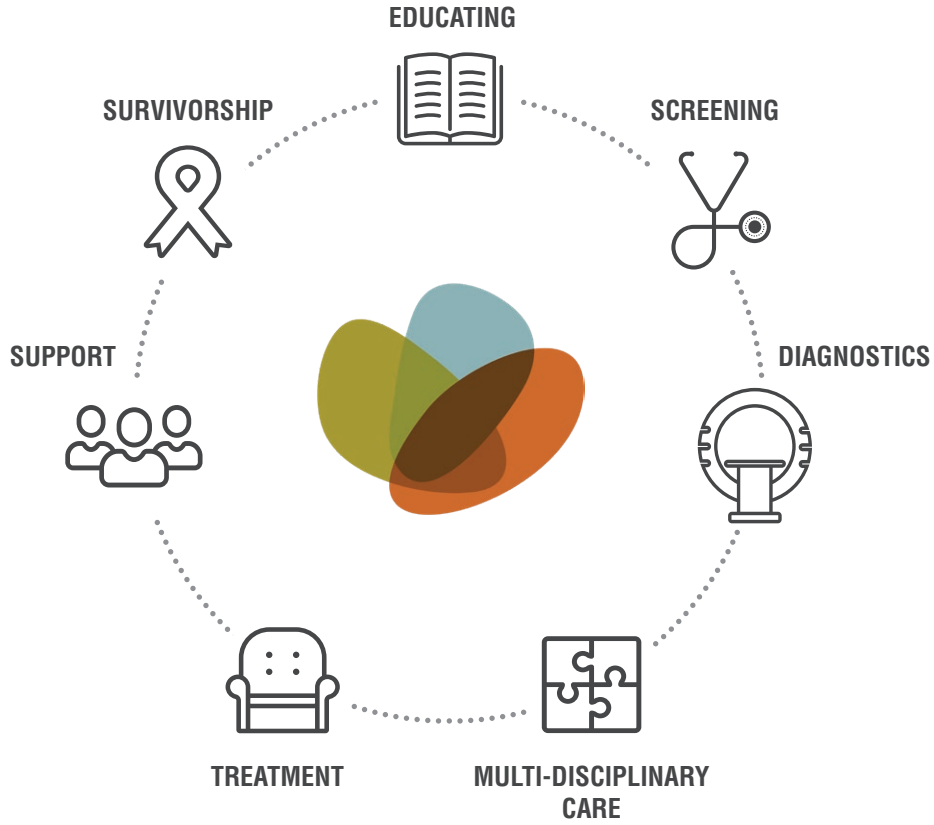
From the patient's perspective, the people above represent the key support network in their oncology care journey.

Watch the video at http://www.sutterroseville.org/cancer/new-cancer-center/roseville-cancer-center.html

Learn more about the Sutter Roseville Oncology clinic pre-design mock-up simulation event at **www.boulderassociates.com/project/sutter-medical-foundation-roseville-oncology-center**

DEFINING KEY RELATIONSHIPS IN THE PATIENT JOURNEY

One challenge in oncology care is how to provide support for a patient at every step of their care journey given the potential range of treatment types a patient might receive and the different specialty providers they may need to consult. Disruptions in continuity of care can result from disconnected relationships which are often a factor of disconnected spaces. In designing the Sutter Oncology Cancer Center, we aimed to create more points of human connection, and less overall disconnect during a patient's clinic visit.



The patient is supported at every step of their journey.

THE VALET PARKING TEAM IS ALWAYS PLEASANT AND HELPFUL; THEY ARE THE FIRST CONTACT FOR PATIENTS AND STAFF AND I APPRECIATE THEM! IT DOES NOT GO UNNOTICED.

– ROSEVILLE CARE TEAM MEMBER

The first touchpoint begins when the patient arrives.
In a recent study evaluating oncology patients' emotive response to treatment center design, parking garages were correlated with negative emotions, and shown to be sources of great frustration and anger in the patient journey (Sinclair 2017). Here, the valet warmly greets the patient, reducing stress associated with finding parking or being late to an appointment, and ensures that the patient and companion can enter the clinic together. The valet also provides a warm departure experience for patients when leaving the clinic.

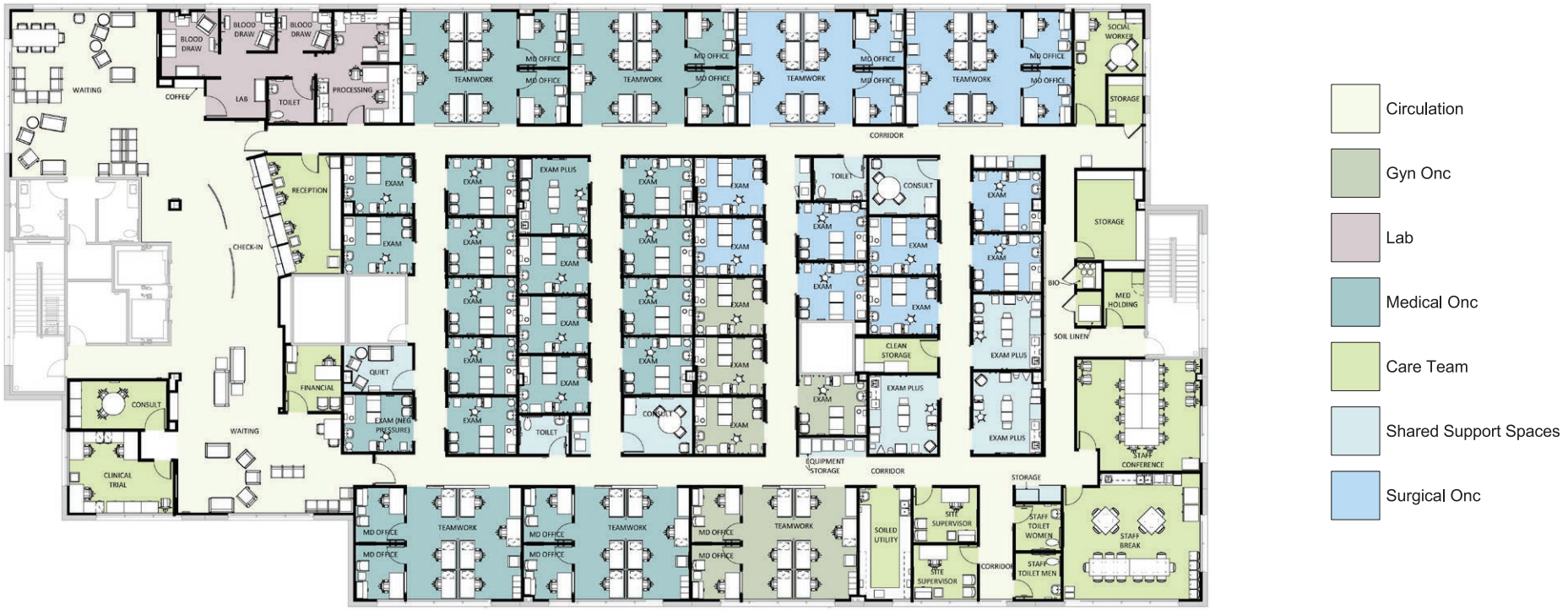
DESIGNING RELATIONSHIP SUPPORT SPACES

BUILDING STRATEGY: A HOME FOR ALL ONCOLOGY SERVICES

Located within the building are medical oncology, surgical oncology, laboratory services, clinical research, and the infusion center, which allow their clinicians to work together in a coordinated fashion.

Co-located services provide less disconnect among the disparate patient care needs and care teams.

THE FLOOR PLAN



Circulation
Gyn Onc
Lab
Medical Onc
Care Team
Shared Support Spaces
Surgical Onc

Floor plan showing co-located oncology departments and shared resources.

NURTURING PATIENT/FAMILY AND CLINICIAN RELATIONSHIPS: THE EXAM ROOM

The exam room was a significant focus of our mock-up design and simulation event. Moving care resources into the exam room supported the quality of a patient-clinician relationship by enabling the clinician to remain in the exam room for the duration of the appointment and eliminated another point of "wait" for the patient which previously occurred when the clinician left the room to retrieve printed care plan materials. Locating vitals within the exam room created a more fluid transition for the patient from public to private space. While the size of the exam room at Roseville (approximately 119 sf) is smaller than the exam room at their existing counterpart (approx. 125 sf), the exam room at Roseville achieves more usable space through a sliding, versus swing door, and better zoning. This zoning creates more room for companions to accompany the patient and be included in the care plan. The patient's support system is critical to providing emotional and physical support, and helping patients understand and manage their care plan. More than half of Sutter Roseville patients bring one or more companions to their appointments. The sliding door makes entry into the exam room easier for patients in wheelchairs. Further in support of patient dignity and privacy, staff commented that when they needed to interrupt a provider during a visit in the exam room, they were able to peek inside the exam room and make visual contact with the provider utilizing a minimal opening of the sliding door without visibility of the patient and without exposing the patient to the corridor circulation.

Key goals aimed at supporting the patient/companion-clinician relationship included:

Communication

- Provide eye level contact between patient and clinician.
- Create settings that feel private and intimate for difficult conversations.
- Set up room zoning to allow a warm greeting upon entry. Avoid instances where clinicians have back to patients and companions.

Engagement

- Utilize aids for helping patient/companion understanding treatment plan.
- Provide visual access to monitor for patient and companions when reviewing treatment plan.

Efficiency

- Minimize patient wait times.
- Allow for real time decisions from lab.
- Decrease movement and disfluency in the care center journey.
- Eliminate provider disruptions during appointment.
- Optimize visibility from work area to exam room.

Social Support

- Create a comfortable family zone for companions with the opportunity to create patient privacy while patient is dressing so that the patient/companion connection can be maintained for the duration of the visit.

Dignity

- Take vitals in the exam room to record sensitive patient information such as weight in a private, versus a semi-private, setting.
- Support patient mobility for patients in wheelchairs to access the exam room using a sliding door.
- Provide a privacy curtain between patient and companion zone.

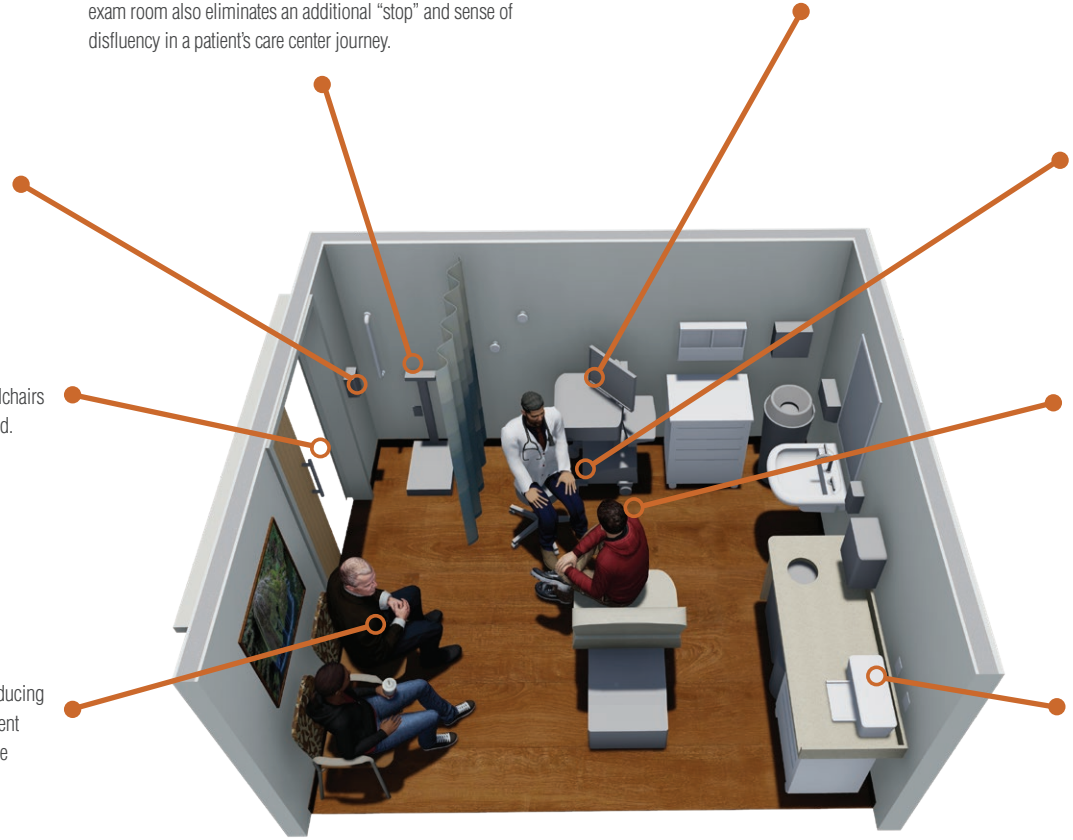
THE EXAM ROOM

DIGNITY
An in-room scale supports patient privacy and dignity by keeping sensitive patient information such as weight recorded in a private, versus a semi-private setting. Placing the vital station inside the exam room also eliminates an additional "stop" and sense of disfluency in a patient's care center journey.

ENGAGEMENT
Visual access to monitor engages patient and companions in reviewing treatment plan.

COMMUNICATION
A hand sanitizing station at the door allows the clinician to sanitize and warmly greet patients and companions upon entering the room.

COMMUNICATION
Clinician can swivel to face patient and companions.



ACCESS
Sliding doors optimize patient mobility for patients in wheelchairs to more easily access the exam room, assisted or unassisted.

COMMUNICATION
Layout and exam table height promote eye level contact between patient and provider.

SOCIAL SUPPORT
A dedicated family zone provides comfortable space for companions. A curtain partition supports patient privacy reducing the need for companions to leave the exam room while patient is dressing so that the patient/companion connection can be maintained for the duration of the visit.

EFFICIENCY
An in-room printer allows clinician to retrieve care plan materials without leaving the exam room, thereby eliminating an interruption and disconnect point in the visit. This also reduces the potential for patient privacy violations associated with shared printers where a clinician might retrieve and distribute another patient's information.

Exam rooms are set up so you have good visual contact with the patient and it is easy to get vitals. – Roseville Team Member

NURTURING CLINICIAN-CLINICIAN RELATIONSHIPS: THE TEAM WORK POD

Team work areas were designed around groupings of providers and their care team to support team integration and allow for enhanced collaboration among roles. Each pod maintained functional teams of 2 MDs, 2 RNs, 2 MAs, and 2 PSCs; a goal established in the pre-design simulation event.

Key goal and associated design strategies aimed at supporting the patient/companion-clinician relationship included:

Collaboration

- Support the ability to collaborate within level and with team by including two teams per pod.
- Co-locate specialty and support services to create opportunities to share information and integrate care plans.

Communication

- Promote visibility and communication between provider and care team with large window at provider office.
- Support easy communication through adjacent team workstations.

Privacy

- Enable provider privacy for situations such as attention demanding tasks and difficult phone calls through provider offices.

Efficiency

- Enable care team members to quickly find each other by optimizing visibility from pod to exam rooms.

Health

- Maximize accessibility to daylight and views for all care team members.

The pod design has improved care for our patients and for our team to stay on top of the patient's needs. – Roseville Care Team Member

TEAM WORK POD

COLLABORATION
Clinicians from all oncology specialties have a dedicated space to meet for morning huddle and coordinate care across departments.

COMMUNICATION
Window in provider office promotes visibility and communication between provider and care team.

PRIVACY
Provider office supports privacy during attention demanding tasks and difficult phone conversations.

HEALTH
Daylight and views are accessible by all team members.

WAYFINDING
Carpet patterns and architectural features cue patients to the quickest departure route.

RESPITE
Quiet and consult rooms designed to support patients are also utilized by clinicians who need a private respite.

EFFICIENCY
Visibility from pod to dedicated exam rooms enables care team members to quickly find each other.

CARE INTEGRATION
Co-located support services such as lab and dialysis, create opportunities to share information and integrate care plans.

COLLABORATION
Two teams per pod support the ability to collaborate within level and with care team.

COLLABORATION
Adjacent workstations support easy communication between care team members.

ASSESSING RELATIONSHIP-BASED OUTCOMES

Emerging research evidence supports the role that empathy driven relationships contribute to health and quality based outcomes for both patients and care team members. Disruptions in continuity of care are correlated with disrupted relationships, and disrupted relationships can be exacerbated by disrupted spaces. It is hoped that more research demonstrating the value of nurturing quality relationships in oncology care will help healthcare administrators validate a return on investment while balancing potentially conflicting space efficiency and utilization demands. Yet, how do we measure the quality of relationships? And how do we link that data to other quality of care outcomes? In our assessment, we explored several potential metrics correlated with key relationships in oncology care.

Patient & Companion - Care Team Relationships, Expressions of Empathy

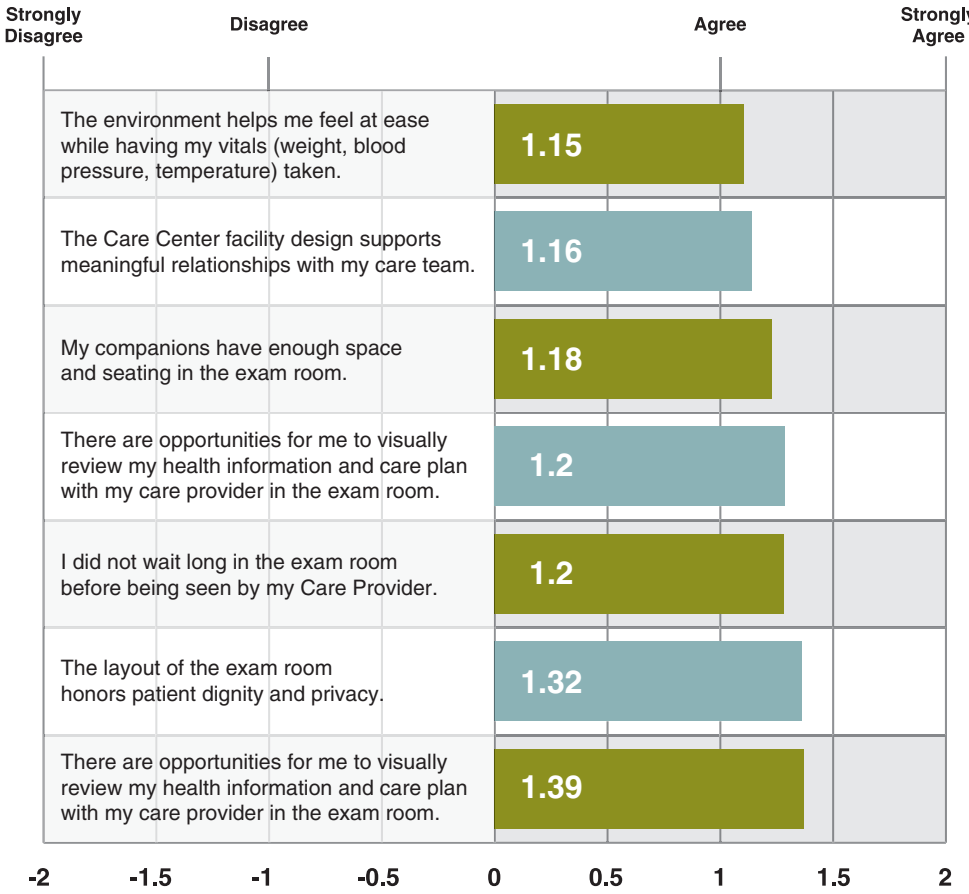
Patient-provider communication is one measure of the quality of a patient-provider relationship, but taken alone is inadequate (Epstein and Street 2007). Nonverbal indicators of a clinician's empathy or connectedness include length of visit, eye contact, and social touch (for example, a handshake, pat on the back or hug). These measures are also correlated with a patient's liking for a clinician (Montague 2013). Additional nonverbal behaviors supporting a patient-clinician relationship include: nodding, absence of distracting movements, and leaning forward to indicate attentiveness (Epstein and Street 2007). Verbal behaviors supporting patient-clinician communication include: avoiding interruptions, encouraging patient participation, validating the patient's emotions, asking about family, checking for patient understanding, and offering encouragement and support (Epstein and Street 2007). Indicators of a strong relationship include mutual trust as well as the patient's perception of feeling respected and supported emotionally.

High level goals around relationships and personal stories were shared by patients and family members in pre and post occupancy focus groups. Data assessing perceptions and satisfaction with specific relationship indicators targeting patient-clinician interaction were collected in post occupancy patient and clinician questionnaires, and compared with another Sutter oncology outpatient care center (Buhler oncology).

Expressions of Empathy	Measures
Dignity & Respect	• Patient questionnaire – perceptions of privacy, dignity • Clinician questionnaire – perceptions of patient privacy, dignity • Clinician error
Communication (Verbal & Nonverbal)	• Patient questionnaire – perceptions of eye contact, companion engagement, satisfaction of care plan review • Clinician questionnaire - eye contact, care plan review, companion engagement
Time Spent with Clinician	• Patient questionnaire - perceived length of time spent with provider
Emotional Support	• Measures of blood pressure accuracy • Reported instances of social touch • Patient questionnaire – satisfaction with companion comfort • Clinician questionnaire - open ended questions about connections with patients

In the post-occupancy focus group, one patient commented that, *"the doctor is right across from me,"* and another added that *"the computer can turn so everyone can see it"* validating the importance of the face to face communication and the use of communication aids in nurturing patient-clinician relationships.

ASSESSING PATIENT/FAMILY-CLINICIAN RELATIONSHIP-BASED OUTCOMES



Patient survey data reflect high ratings across questions targeting patient-clinician expressions of empathy in the exam room. A potential indicator of a patient's sense of feeling respected and at ease in the exam room is feedback received from patients and staff associated with the blood pressure process and location. In Sutter's existing oncology care centers, vitaling is done at a station en route from the waiting area to the exam room. Patients and clinicians expressed privacy concerns associated with discussing patient information such as date of birth in a semi-public space. Moreover, it created a sense of anxiety for patients already feeling insecure about changes to their body. One patient who had received care at the old Roseville location expressed, "Having the scale in the exam room and not in the corridor is amazing because it is private, not everyone sees it. When in the corridor, I would say "I'm not stepping up on that scale!" Not only did patients report feeling more at ease while having vitals taken (mean rating: 1.15; n = 60), but clinicians at the new Roseville care center rated their perception of "how well the clinic design helps patients feel at ease while having their vitals taken" higher than their counterpart care center where vitals are taken outside the exam room. The clinic administrator reported that, "We have a new process for taking the BP which allows the patient a chance to settle in the exam room before the BP is taken. We believe the patients are calmer and the reading is more accurate."

In a survey completed by clinicians at the new Roseville care center and an existing oncology center, clinicians were asked an open-ended question, "What space in the clinic do you feel provides the greatest sense of connection with patients?" with a follow-up comment box asking for more information on specific features which support or fracture interaction with patients. While this is a small sample size, the number of responses and positive comments from Roseville clinicians about the exam room suggest that it plays an important role in nurturing the patient-clinician relationship.

	Roseville Oncology (12)	Existing Oncology Care Center (9)
Exam	11	4
Front Desk / Waiting	1	3
Quiet Room	-	1
"There is not one"	-	1
Positive Comments	6	0
Negative Comments	0	1

CLINICIAN – CLINICIAN RELATIONSHIPS

A recent literature review found impacts on teamwork and communication in healthcare facilities associated with environmental dimensions including: design layout, location of walls and partitions, furniture, ergonomics, work station location, unit centralization/decentralization, visibility, accessibility, private peaceful spaces, and size and configuration of space (Gharaveis et al 2017). These general aims are consistent with the needs of supporting oncology clinicians with two notable emphases: a need for private retreat spaces in addition to teamwork spaces given the nature of emotionally-laden and focused attention work, and a need for social spaces to support socialization and mitigate effects of compassion fatigue and burn-out. Thus, our assessment focused on dimensions of teamwork, socialization, respite and overall morale to evaluate the health of clinician-clinician relationships.

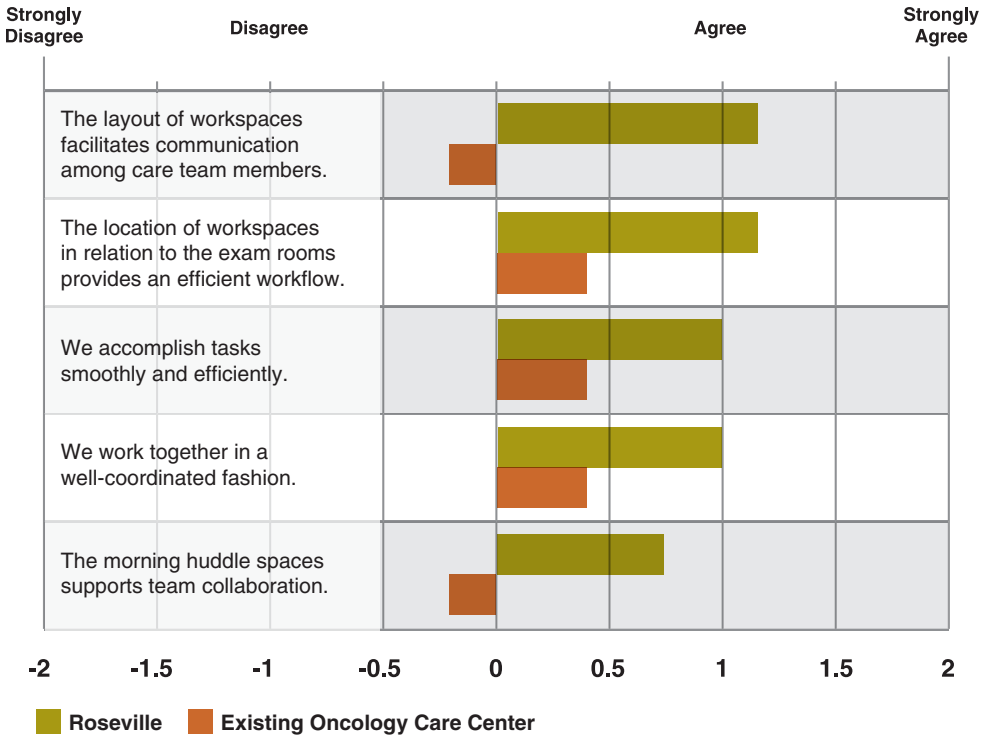
Aspects of Connection	Measures
Collaboration and Teamwork	• **Number, clinician role, and type of interactions observed in pod** • **Clinician questionnaire - perceptions of collaboration**
Communication	• **Visibility of team members from pod** • **Clinician questionnaire - perceptions of communication**
Efficiency	• **Observations of time spent on tasks** • **Clinician questionnaire- perceptions of accessibility of equipment and supplies**
Emotional Support	• **Clinician questionnaire- perceptions on accessibility of respite spaces** • **Clinician questionnaire- perceptions of fatigue** • **Clinician questionnaire - Open ended question about break and respite spaces**
Sense of Social Connection	• **Clinician questionnaire – Open-ended question about connections with coworkers** • **Room scheduling data, use of spaces for social events**

Pod design is great because I am sitting with my team and since there are 2 teams per pod, there is also collaboration among roles if I have questions, or need someone to cover for me while I take a break or am busy. – Roseville PSC

CLINICIAN – CLINICIAN RELATIONSHIPS (CONT).

Teamwork

Survey data was collected across domains associated with teamwork such as visibility, communication, efficiency and collaboration from clinicians at both the new Roseville care center and compared with responses from their counterparts at an existing oncology care center.



Working in the "Pod" with 2 of each discipline (DR, RN,MA, PSC) makes it much easier to get answers and hear what is going on with the patient so everyone can be on the same page. It provides better patient care when all hands know what is going on. It makes the team stronger and healthier as well. – Roseville PSC

CLINICIAN – CLINICIAN RELATIONSHIPS (CONT).

This sense of robust social and professional interaction at Roseville was also reflected in observations of the pod, where the team work pod, the number, type and persons interacting were documented. During a 50-minute period before patient appointments began when all team members were present in the pod, an equal amount of social and work-related interactions were noted at an average rate of about 1 every 2 and a half minutes between and among all care team members in the pod. After patient appointments began when some team members were engaged with patients, interactions still occurred among and between all roles with 30% being social and 70% being work related at an average rate of about 1 every 4 minutes.

Socialization

The social environment has been linked with improved team efficiency (Gharaveis et al 2017, Suter et al 2009) and providing protective effects on stress and burnout. Clinicians at the new Roseville care center and an existing oncology care center were asked where they felt the greatest connection between coworkers, and to identify features which supported that interaction. While this is a small sample size, clinicians at Roseville overwhelmingly identified the work pod area, while the majority of workers at their existing counterpart selected other or no spaces. Moreover, comments about features supporting interaction yielded more positive comments and less negative comments from clinicians at Roseville.

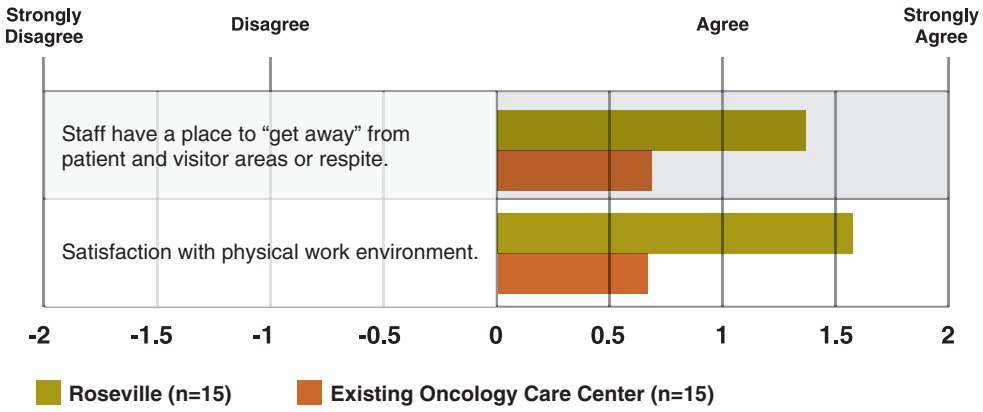
What space in the clinic do you feel provides the greatest connection between coworkers?

	Roseville Worker	Existing Oncology Care Center Worker
Work Area	10	3
Break Room	1	2
Conference Room	-	1
None	1	2

Respite

Important to maintaining relationships is the ability to have some control over being able to retreat from others. A place to support emotional respite, cognitive restoration, and the ability to make private personal phone calls all contribute to a care team member's sense of balance. Clinicians at the new Roseville care center rated their access to "a place to get away from patient and visitor areas for rest or respite" higher than their clinician counterparts at an existing care center.

Overall satisfaction with the workplace was also rated higher among Roseville clinicians than their counterparts at an existing clinic.



The exploratory descriptive statistics conducted in this evaluation suggest a positive trend in clinician-clinician relationship quality and overall clinician satisfaction.

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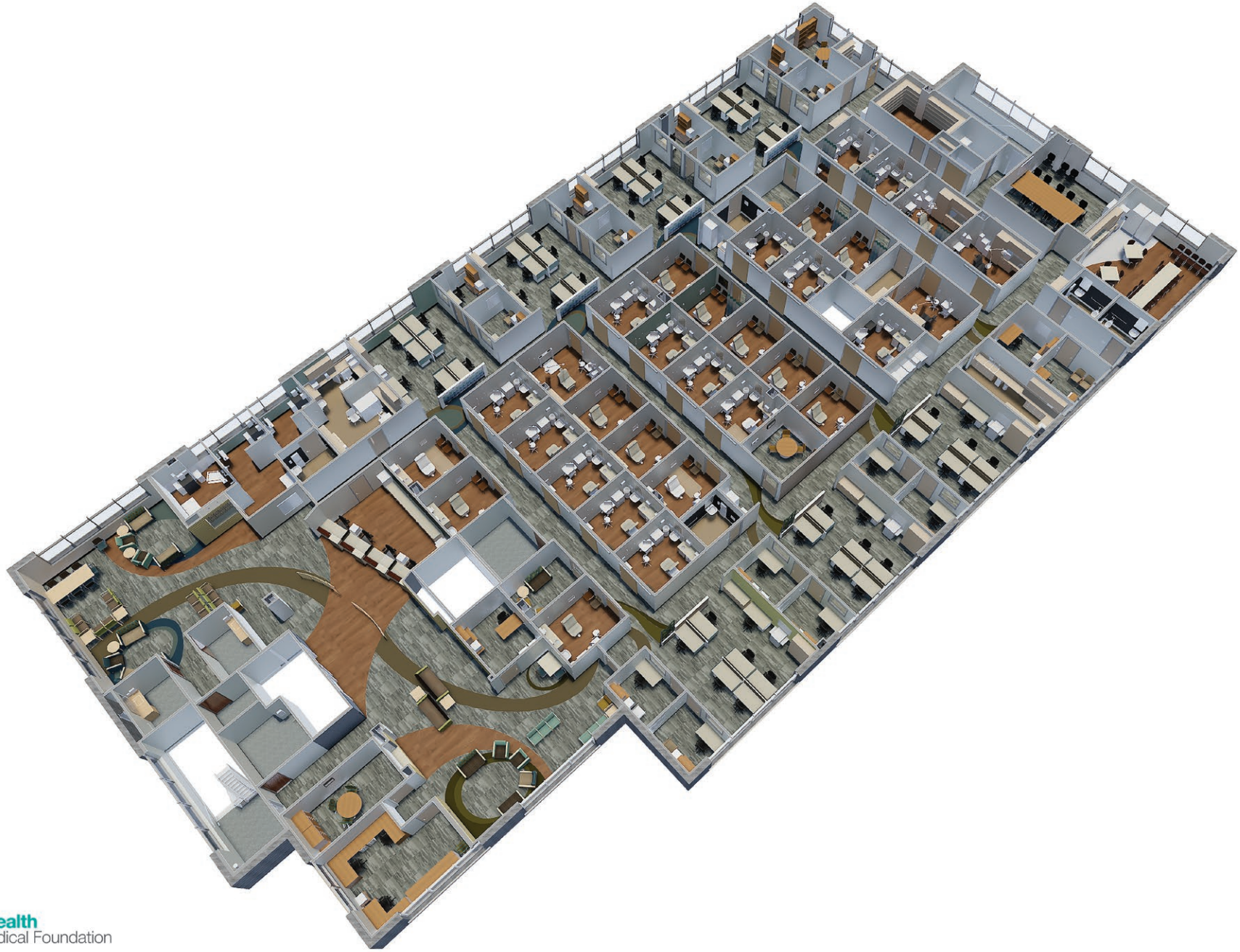
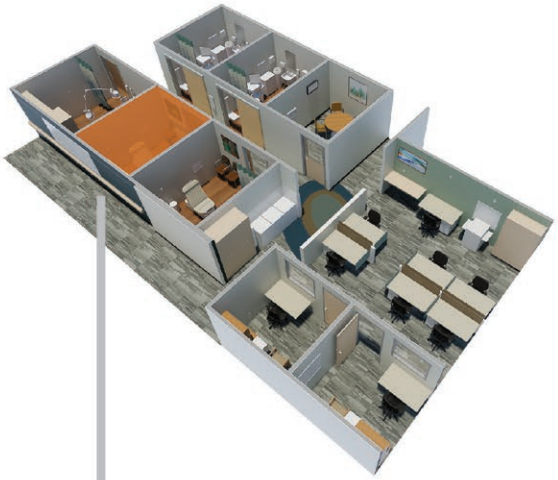
Overall Floor Plan



BOULDER ASSOCIATES ARCHITECTS

Sutter Health
Sutter Medical Foundation

Exam Room



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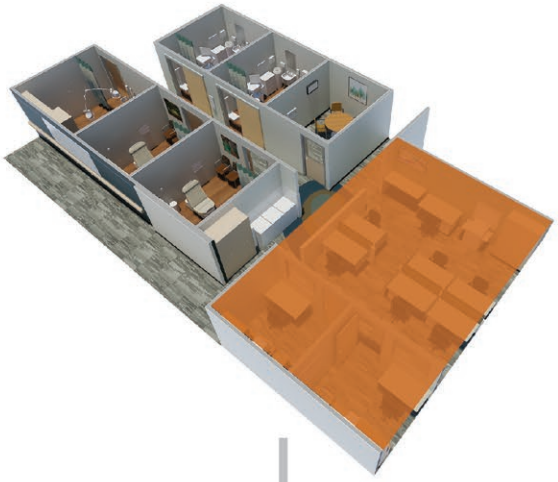
Sutter Health
Sutter Medical Foundation

Teamwork Pod



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