Optimizing Space

Improve Efficiency, Engagement, and Satisfaction for Patients and Providers

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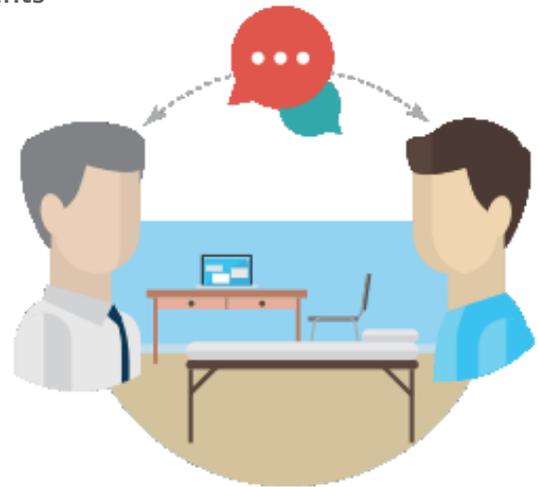
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How will this module help me?

1. Describes quick and cost-effective techniques to optimize the layout of your clinic's examination rooms and team areas.

2. Provides information about space design.

3. Identifies practices that have successfully implemented interior design ideas.

Introduction

The interior design of a practice can significantly influence patient experience as well as team culture. Simple design changes can improve patient–physician interactions, quality of care, workflow efficiency, and team collaboration. These changes impact both patients and the entire care team. Patients often have a higher perception of the quality of care that they receive and have less anxiety when visiting their physician when they find the practice environment attractive.[1] These design changes also improve communication skills, mood, alertness, and performance for the entire care team.[2]

Three STEPS for Optimizing Your Physical Space

1.   Develop Team Stations.

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2.   Create an Engaging Environment.

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3.   Incorporate Uplifting Designs to Alleviate Patient Anxiety.

1 Develop Team Stations.

Develop team stations that enhance team collaboration. Well-designed team stations or pods can improve practice efficiency and strengthen culture; they can help to improve communication, trust, collegiality, and may result in better patient outcomes and lower health care costs.[3] Placing exam rooms close to the team's work area minimizes the space that must be travelled between tasks and allows everyone to communicate easily during and between patient appointments. The proximity of exam and work rooms allows team members to manage patient flow because they are able to physically see which rooms are available for patient use.

A team station or pod should be a quiet space that has natural lighting and access to daylight through outside window views. This type of setting can enhance the team's mood and alertness—allowing them to gain more fulfillment out of their daily work.[2]

Team stations should be arranged in a manner that fosters communication. Glass partitions are ideal in this setting as they allow teammates to see and talk to each other while minimizing noise and ensuring privacy. Physicians and team members should be encouraged to use this space for in-person team communications, rather than emails or phone calls. In-person communications result in fewer emails to manage, more prompt completion of tasks, and a cohesive culture.

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We were inconveniencing our patients and creating unnecessary work
for ourselves. Focusing on better wayfinding for patients and grouping
like services together in the clinic revealed incredible opportunities
for us to better deliver a more efficient, patient-centered experience.

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—**Morris Gagliardi, MD, MBA;** Associate Medical Director, Gouverneur Health, New York, NY

Q&A

How do we create a central work space if we don't have the budget for a major remodel?

If you do not have the funds for a major remodel, you can create co-locations for physicians, nurses, and medical assistants. Some practices have been able to convert a centrally-located exam room or office into a team space with minimal remodeling. Another option would be to re-purpose existing individual stations into those that could be used for co-location.

What if the glass partitions are not enough to prevent distractions?

Distractions are a natural part of the work day, but it is important to have the ability to reduce distractions and create privacy when needed. Some practices have created a "quiet zone" in the co-located space for team members to use when they need to remove themselves from distractions or need to maintain patient privacy. This can be accomplished through the following:

- Section off a secluded area and put up signs that indicate that it's a "quiet zone." List quiet zone rules, such as "please whisper" or "use your quiet voice."
- You can use wall and floor materials that are designed to reduce ambient noise.

2 Create an Engaging Environment.

Reconfigure patient examination rooms so that they are welcoming and spacious. The following tips will help your practice create a calm environment that makes your patients feel involved and welcome:

- Use light, warm-colored paint on the walls to create a calming effect.
- Consolidate and organize examination materials and supplies on the countertops.
- Organize patient education materials so they are visible to patients when they are seated.
- Place examination tables on an angle to use the wall space for additional seating.

The furniture in the patient exam room should be arranged in a way that fosters patient engagement. This can be accomplished by giving the patient the opportunity to sit in a chair seated across from or next to the physician or medical assistant. This seating arrangement increases eye contact during the visit and can positively influence patient engagement.[4,5]

Patients and clinicians should both have access to the technology that is being used during the visit. Patients who can view what the physician is explaining often feel more involved and motivated to engage in their health care. When using the computer, the monitor should be mounted to the wall or put on a swivel arm. Teams can also use tablets or laptops as they can easily be passed around to involve the patient in the discussion.[6]

Q&A -

What are the benefits of having spacious examination rooms?

In large, open examination spaces, patients tend to feel less anxious, more comfortable, make more eye contact with the physician and are more likely to disclose sensitive information.[7–9] This response may be related to the actual size of the space, the increased brightness of the space, the ability to see more of the surroundings, increased freedom of movement, and perceived freedom. The more comfortable a patient is in the exam room, the more productive the visit will be.

What are the best desk shapes for encouraging patient engagement?

A moderately sized circular or semi-circular desktop allows the patient and physician shared access to the computer screen while still providing the ability to turn to one another for face-to-face discussion.[6,10] Patients and physicians can easily adjust their seating so they can choose to be side-by-side or across from each other. Desktops should be wide enough that a patient sitting across from a physician can choose to keep the physician's face from dominating the view, easily modify personal space boundaries, and share sensitive information without feeling awkward or embarrassed.[7]

What else can we do to facilitate the in-room connection between the patient and physician?

Many practices have started using a **team documentation** process, where a nurse, medical assistant, or documentation specialist helps with record keeping.[11] This can be done when a nurse or medical assistant sits shoulder-to-shoulder with the physician at the shared desk or stands at a rolling computer station. The key in each configuration is the ability of each person to participate and to read the visual cues of the other.

Apart from the desk, does the shape of other furnishings matter?

Rounded, curvilinear chairs, tables, and objects are calming and preferred over angular furnishings.[12] This is also safer for children, older adults, and individuals with injuries or disabilities.

Does posture and seating height influence the patient encounter?

Patients are more likely to comprehend information and be satisfied with their visit when their physicians sit at eye-level, lean forward (showing engagement), and make eye contact. Looking down at the patient, leaning backward in a power position, or frequently touching the patient can make the patient feel uncomfortable.[13]

3 Incorporate Uplifting Designs to Alleviate Patient Anxiety.

Incorporate uplifting designs that help alleviate patient anxiety. Patients will take in your clinic's surroundings, gathering clues about the quality of care they will receive. This will influence their confidence in the practice and

their experience throughout their clinic visit.[14] Sitting in the waiting area and examining room is stressful for many people; wait times can contribute to patient anxiety and dissatisfaction.[15,16] Patients who are anxious can have difficulties comprehending and retaining information from the visit.[17–19] Positive distractions and uplifting art work can help to divert attention away from stressors to create a positive mood.

Window views of natural settings and artwork featuring realistic images of natural landscapes have been shown to reduce patients' stress as well as pain.[20] These vistas and images should be in direct view of patients while they are waiting; artwork should be of an appropriate size for patients to make out details from where they are seated. Other positive distractions include magazines, informational material, and a flat screen tv that is set to a patient education loop. Plants in the waiting room can also ease patient anxiety and create a more natural, comfortable environment.[1,21]

Realistic images of landscapes with high visual depth, healthy spring and summer flowers and foliage, low hills, sweeping views of mountains, calm water surfaces, and positive relationships and interactions between people are best. Fish tanks have also been shown to decrease anxiety and lower blood pressure while in the waiting room.[22] Avoid abstract artwork as it can increase anxiety.[23]

Conclusion

The practice space can have a significant impact on the patient experience and team culture. Thoughtful space-optimization solutions can help to improve patient engagement, practice efficiency, and both patient and physician satisfaction.

AMA Pearls

Learn from small changes

One strategy might be to introduce a specific type of computer or desk in an exam room and evaluate how patient encounters in that space compare to others. Some practices conduct time and motion observations to identify bottlenecks and opportunities for improvement.

Case Reports

1   Optimizing Space Case Report: Beth Israel Deaconess Medical Center

At the Beth Israel Deaconess Medical Center Obstetrics and Gynecology Department, form did not follow function. The department, which is located away from the main clinic, had traditional offices, narrow hallways, and closed doors. The space did not reflect the department's collaborative culture. In response, the team looked to Google and Apple for space designs that inspired function and collaboration, and hired an architect to model opportunities. The department also collected data on the current usage of rooms and offices within the department. The results? The data showed that under the current space configuration, one third of the office space was rarely used.

In the new space design, physician offices were eliminated. Walls were torn down to create an inviting, co-located space for all members of the team. To build team culture and address privacy needs, team rooms were created within steps of each desk in the open workspace. An electronic booking pad in each team room facilitates communication and efficiency when reviewing patient scheduling. The glass doors encompassing the team rooms are glazed over to provide visual and auditory privacy. The department space is designed so that team members walk through all the common areas in order to access the team rooms and workspace, organically creating opportunities for interaction. This schematic helped the department achieve its goal to improve access between front-line team members and clinic leaders.

The Obstetrics and Gynecology Department found that the renovation made it easier to recruit staff with the right cultural fit. Hope Ricciotti, MD, Department Chair, shares advice for any practice considering practice redesign:

1. Consider your workflow.
2. Have an architect match the workflow.
3. Consider privacy and proximity issues.
4. Maintain a quiet room for staff who are unable to work in the open environment or for silent work activities.
5. Consider renovation expenses. Often, optimal space design is best suited for those building new workspaces. Pursue smaller changes until larger-scale redesign can be accomplished.

2   Optimizing Space Case Report: Parkland Health & Hospital System

Parkland Health & Hospital System redesigned their outpatient clinics considering the patient and team experience from check-in to the exam room, to the team station and check out. The design team observed patients, nurses and physicians as they moved through their day, including how they interacted with each other. Computer use and an isolated "home base" were identified as barriers that limited communication. Enhancing communication and collaboration emerged as key themes and the "connected clinic" design evolved from these discussions.

The team found that shared work stations increase collaboration and opportunities for interaction with physicians. The team stations were most effective when located on a corner, where they were:

- Highly visible

- Easy to reach

- Had enough space for any team member to accomplish work

Parkland Health & Hospital System found that patients were more likely to talk with nurses at an open, highly visible nurses' station (blue area in Figure 1) rather than in more closed areas (red area in Figure 1). Patient engagement also increased when a staff member was standing at their station, rather than sitting. In addition,

Parkland Health found that nurses were almost 20 times more likely to speak with physicians when co-located at interdisciplinary team stations rather than in separate spaces.

Figure 1.
In an outpatient oncology clinic at Parkland Health & Hospital System, an interdisciplinary team station with high accessibility and high visibility off of the main corridor and located at a corner is more likely to be used by care providers. The blue team space has more desirable visibility than the red team space, increasing opportunities for staff-patient communication. Image courtesy of BBH Design.
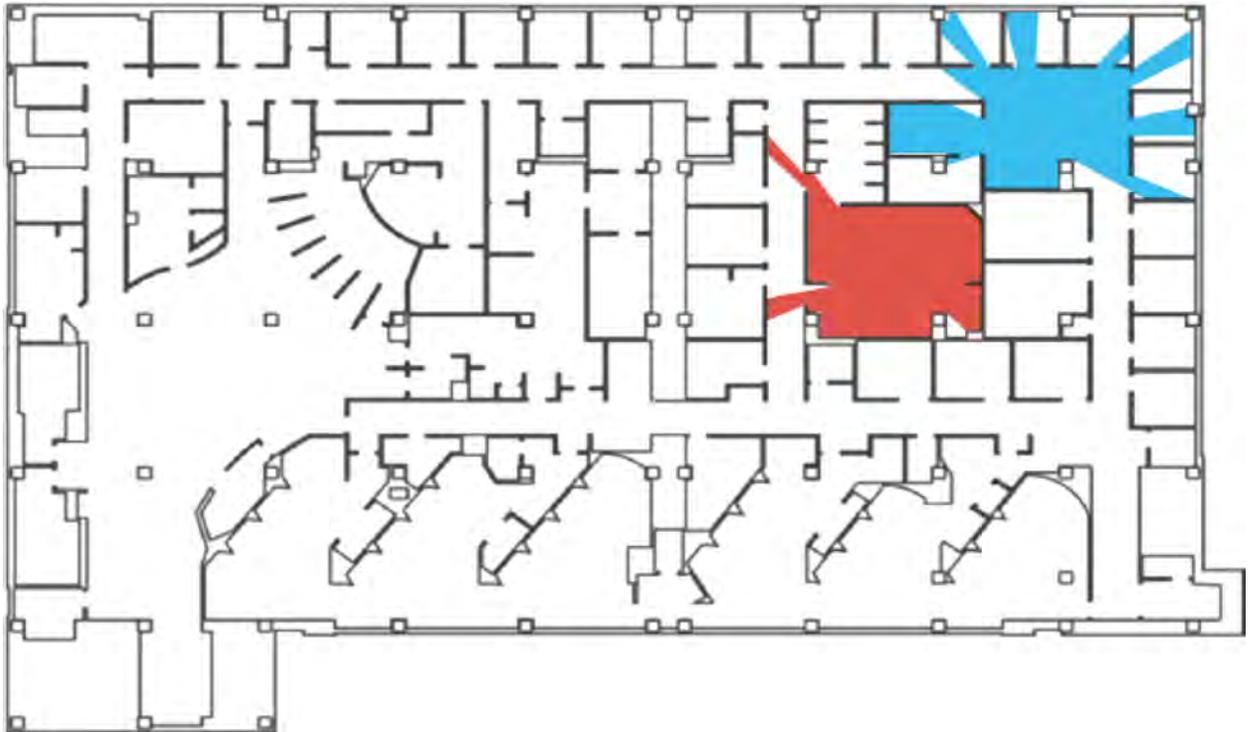
A team of nurses worked with designers on their ideal clinic layouts, workstations and examination rooms. Design ideas included:

- Hybrid work areas with modular furnishing and seating
- Transparent and translucent partitions/half walls with privacy gradients (see Figure 2)
- Multiple interaction points within the exam room (see Figure 3)
- Shared and portable technologies (e.g., screens that pivot and tablet arms)
- Exam rooms that can double as education/teaching areas

Figure 2.
The "onion" layout designed by a group of nurses at Parkland Health has an inner ring that can function as an independent practice or, when combined with an outer ring, can flex into a multi-provider practice. Image courtesy of BBH Design.
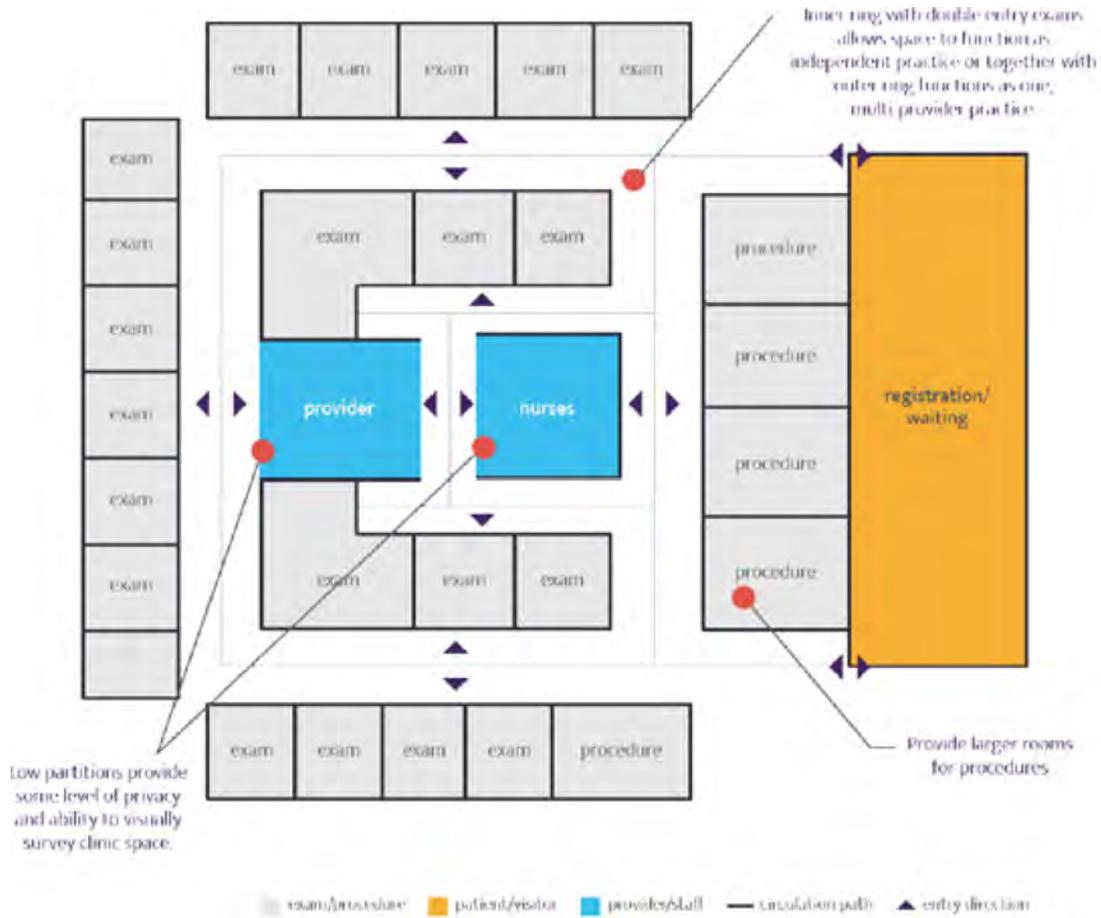

Figure 3.
In this "around-the-clock" exam room layout, care delivery revolves around the patient much like the hands of a clock. Image courtesy of BBH Design.

3 Optimizing Space Case Report: Gouverneur Health

Gouverneur Health, a part of the New York City Health and Hospitals Corporation (HHC), serves 250 patients per day in its two primary care practices. Within the clinic, patients struggled to find the way due to long corridors and minimal signage. Furthermore, the scattered practice teams had few places to interact, which inhibited the team from getting work done efficiently and contributed to long wait times for patients.

Gouverneur Health teamed up with a local design school to create better use of space, employing the following tools:

- Mapping Patient Flow: What was the patient path from arrival to departure?
- Literature Review: What had other peer-reviewed research uncovered?
- Space Inventory: How was the space currently used and did it match the intent?
- Interviewing Clinic Staff and Administrators.
- Observing Patient Flow and Behavior (Ethnography).
- Clinic Layout Analysis: How many spaces are there? Are the spaces visible and accessible?

The design team provided the following recommendations:

- Install programmable LED lighting to enhance wayfinding in corridors.
- Use art to alleviate patient anxiety and enhance the patient experience. Gouverneur has begun an art installation project to engage patients and staff in choosing appropriate artwork for practice spaces.
- Use standardized furnishings and equipment positions, including computer screens that are moveable or swivel, to enable face-to-face interactions with patients.
- Employ self-registration kiosks and patient-driven movement (e.g., self-rooming, where patients are assigned an examination or consultation space upon entering a clinic and proceed immediately to their assigned space, bypassing the waiting area) throughout the clinic from triage to the patient room and discharge area.
- Incorporate visual cues to indicate if a room is occupied, such as lights or flags.
- Expand outlet availability in areas where patients may be waiting to keep them connected and occupied.
- Use a variety of seating configurations, such as private seating or pods for small groups.
- Make better use of less visible or underutilized exam rooms, opening them up to act as team rooms or alternative work spaces for practice team members.
- Create team spaces in close proximity to, and ideally visibly accessible from, exam rooms.

Kenneth J. Feldman, Ed.D., FACHE, Associate Executive Director, Gouverneur Health, observed, "Our recently updated facility provides a nurturing, safe environment to deliver cutting-edge care."

4 Optimizing Space Case Report: Cherokee Indian Hospital

At Cherokee Indian Hospital's outpatient clinics, the space is designed to enable a patient-centered medical home (PCMH) care model. The key element is co-location, with three to four teams of providers and staff working in a shared, open team space. Co-location was first piloted in an older facility, where minor renovations created two team spaces. While there was some initial skepticism, they saw many benefits, primarily in increased efficiency and communication.

Patient scheduling, nurse case management and population health management functions all happen in the same space with the same team. All members of the care team, including MAs, case managers, nurses and physicians, report greater awareness of clinic activity; less time is spent looking for other team members and critical information is easier to access. Most of the providers' time is now spent in the collaborative space, where they remain available to each other to discuss complex cases or to conduct warm hand-offs of patients to

members of the extended care team. Patients have access to a pharmacist, nutritionist and behavioral health specialist during a visit. Patients like having direct access to this broader team, and the provision of care is more efficient and satisfying for care team members as well.

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> "As a physician, I am not running around to find the team members I need to coordinate care, and I don't have to worry about the patient not following up with a behavioral health specialist or dietician because we provide the warm hand-off in real-time.
>
> "

—**Michael Toedt, MD, FAAFP,** Family Physician, Cherokee Indian Hospital

Cherokee Indian Hospital will be opening a new facility in fall 2015 and is committed to using team rooms and co-location of the extended care team going forward. They have found that adjacent team rooms with partially open space between teams work best, and so there will be no private offices in the new facility. Care team members will face each other at round table work stations as opposed to having their backs to each other at desks around the perimeter of a room, facilitating team work, communication and efficiency.

5 Optimizing Space Case Report: Kaiser Permanente

In preparing to build a series of new medical office buildings, Kaiser Permanente realized it had an opportunity to transform care delivery by thinking differently about the human connections in physical spaces. For this to be successful, Kaiser Permanente knew the design of the new space would have to be a collaborative process that leveraged its integration as a health care delivery system. In setting out to design something different, Kaiser Permanente asked its facilities and information technology executives to shadow patients, physicians and staff to better understand the challenges being faced. Through this process, staff members who do not directly deliver care in the traditional sense—such as receptionists, architects, information technology leads and administrative partners—were able to realize the integral role they play in the care that patients receive.

Space embodies the idea of "Thrive" by promoting active lifestyles, health, and wellness

Upon arriving at the new medical office buildings, it is clear right away that this is not your standard physician office. The design of the space begins to live Kaiser Permanente's "Thrive" brand and extends its presence not only to its members, but to the community as well. The buildings and surrounding space are not just places for people to visit when they are feeling ill; patients will want to come when they are well, too. Kaiser Permanente was intentional in its use of outdoor spaces to expand care delivery, for example, using green spaces for a community game of kickball and outdoor kitchen areas for healthy cooking demonstrations

Service offerings in the Public Square expand the care team's influence

Kaiser Permanente found that, on average, patients do not spend more than a few hours in its system each year. Given this, it needed to leverage every opportunity to expand its care team's influence and spread messages of preventive health. With this in mind, Kaiser Permanente transformed its traditional waiting spaces into "public squares" that allow members options for connecting with their care in new ways. Digital signage shares up-to-date information and local happenings. The placement of "community" furniture encourages members to interact with one another. And, the "Thrive Bar" lets members informally connect with Kaiser Permanente to ask simple questions and learn more about its services.

In considering its care delivery model, Kaiser Permanente found that perhaps its greatest untapped resource is its patients. With the use of electronic tablets, patients are encouraged to share—with Kaiser Permanente as well as with others—their goals, values and what matters to them. Questionnaires that patients complete either in the Public Square or even on kp.org at home, are uploaded automatically into their electronic medical record to give providers more meaningful information.

Technology shifts unnecessary transactional tasks away from providers

Displays in the exam room allow Kaiser Permanente to share health education materials that augment a patient's visit and enhance the provider's ability to visually show patients the details about their specific diagnosis. This makes the patient-provider interaction more productive and meaningful.

Space, processes, and technology enable collaboration

Kaiser Permanente recognized the need to make collaboration easier. Today, technology and the built environment can get in the way of collaboration among providers. Being able to problem-solve with colleagues, partner on tough cases or even just socialize with them—these are all strategies that are known to improve work

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lives and help with recruitment. For this reason, Kaiser Permanente is using technology to create opportunities for collaboration, for example, through exam rooms that have telehealth capability and mobile devices that provide information at your fingertips.

Keep the entire care team in close proximity to the provider to deliver true team-based care

To deliver true team-based care, Kaiser Permanente created team spaces that break down physical barriers and lead to natural "collision points" throughout the day. These team spaces facilitate co-location of physicians and staff and allow Kaiser Permanente to leverage the collective knowledge of the health care team and improve collaboration on behalf of patients. This also reduces isolation and leads to greater staff satisfaction, and for patients, improved satisfaction and clinical outcomes. Where possible, Kaiser Permanente located supporting specialties adjacent to one another. For example, a Neurosurgery and Interventional Anesthesia team now share a space. Their proximity allows for non-surgical candidates to seamlessly be referred to Anesthesia for pain management and vice versa. The team space also allows more effective care for patients with chronic diseases such as diabetes, obesity or depression. Treatment of chronic disease is not an individual effort, but rather requires a team-based approach that centers on the patient.

At Kaiser Permanente, the newly designed spaces are augmenting relationships that are fundamental to good health. Fostering relationships between care teams, patients and communities is bringing back the joy in medicine.

6 ## Optimizing Space Case Report: University of Minnesota Health

In 2016, University of Minnesota Health consolidated 37 different specialty clinics into one building called the Clinics and Surgery Center. This afforded an opportunity to design a space that facilitated collaboration, not just within departmental clinic teams but also across specialties. The design also focused on social connections, which have been associated with reductions in physician burnout.[1] Improved collaboration and social cohesion make for a better patient and provider experience.

During the planning process, "zones" were created to improve patient flow and support relationship-building across care teams. Patient zones were shared waiting spaces across clinics. Patients move from the patient zone to the exam/treatment zone, which includes an intake area and vital sign station, exam rooms and procedure rooms. A collaboration zone runs across the entire building within the exam/treatment zone, connecting the clinical teams to one another. Staff-only zones are located behind the exam/treatment zone.

These zones have facilitated innumerable one-on-one, face-to-face conversations about patient care between clinicians. Before the clinics moved to the new shared space, these conversations were taking place over the phone, asynchronously within the electronic health record or not happening at all. As University of Minnesota Health Primary Care physician Kathleen Watson, MD, explains, "It's great having the urologist in the next clinic over. I have wandered over to talk with him when I need "curbside" advice about the workup of a urological condition before I send a patient to them. Boy, do they get excited whenever I have a patient with kidney stones! We also share many patients, and it's been helpful to talk face-to-face about some of the diagnostic and therapeutic dilemmas. It saves time, builds relationships and improves patient care, and I learn something new every time!"

As ambulatory and hospital care follow divergent career paths, practice is becoming more "siloed." With this separation, the social connectedness that grew from primary care and specialty physicians sharing patients within the hospital physicians' lounges has been lost. The design of the Clinics and Surgery Center makes it easy to find collaborating clinicians in a way that makes great things happen for patient care. "In the same way that I consult with my urology colleagues, it's not uncommon for me to walk over to orthopedics to ask an opinion about management or try to help get a patient's care expedited. Just last week, a patient came in for preoperative assessment for gastrointestinal surgery. She had accidentally fractured her distal radius on the night before her preoperative visit. I was able to talk to an orthopedist, stabilize the wrist and get her in to be seen the next day for proper immobilization. The patient was amazed and so was I!" says Dr. Watson.

Figure 1.

Flexible Modular Approach
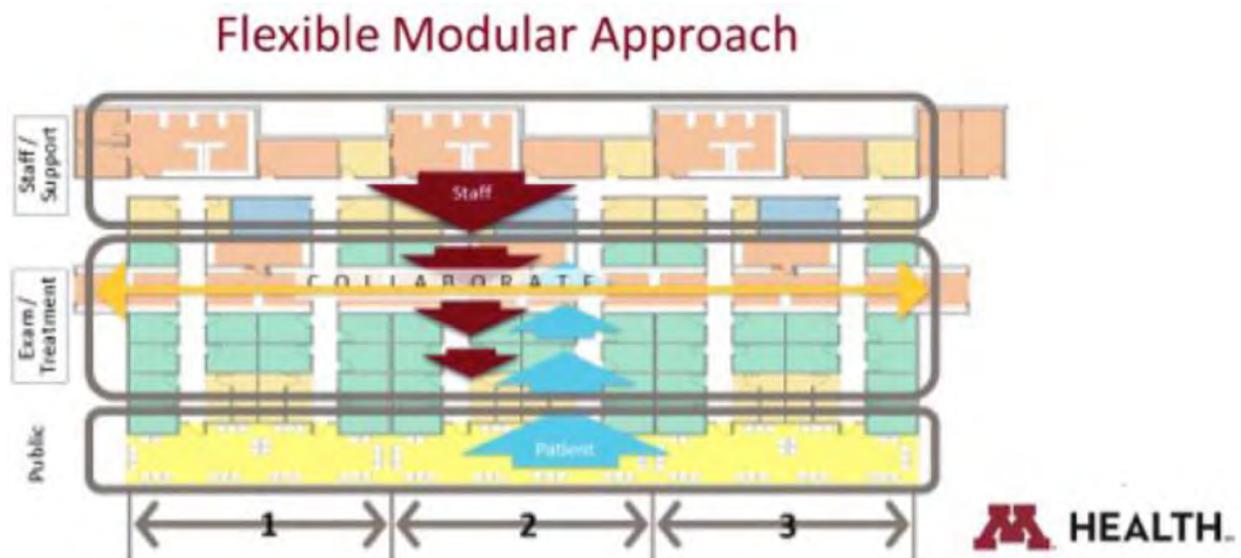
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Learning Objectives
1. Describe the importance of creating a space with well-designed team stations and clinic examination rooms
2. Identify the impact of positive distractions, within the clinic's surroundings, on the patient
3. List measures one can take to create a spacious and welcoming examination room
4. Recognize the value added to patient experience and engagement through shared computer screens and team documentation

Article Information

AMA CME Accreditation Information

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