Optimizing space in medical practices

Design for meaningful and efficient patient visits

How will this module help me design physical space for improved patient encounters?

1. Quick and cost-effective techniques to optimize the layout of your clinic’s examination rooms and team areas
2. Answers to common questions about space design
3. Case studies that show how practices have successfully implemented interior design ideas
Increasing administrative responsibilities—due to regulatory pressures and evolving payment and care delivery models—reduce the amount of time physicians spend delivering direct patient care. Implementing solutions for optimal space design can boost team performance, efficiency, engagement and satisfaction, as well as improve patient satisfaction and outcomes.

### Optimizing space in medical practices

**Release Date:** October 2015  
**End Date:** October 2016

**Objectives**

At the end of this activity, participants will be able to:

1. Identify quick and cost-effective techniques to optimize the layout of clinic examination rooms and team areas
2. Utilize technology to encourage patient engagement
3. Improve the layout of examination and consultation room spaces to ease patient anxiety
4. Develop team stations to enhance team interactions

**Target Audience**

This activity is designed to meet the educational needs of practicing physicians.

### Statement of Need

As time available for examinations and consultations continues to shrink, the environment where patient encounters occur is pivotal to physician satisfaction and patient satisfaction and engagement. Practices can incorporate proven design solutions to enhance team and patient interactions, which can boost team performance, efficiency, engagement and satisfaction, as well as improve patient satisfaction and outcomes. In this module, physicians will learn how to take simple and cost-effective steps to improve their practice design and consider solutions to improve team satisfaction, workflow efficiency and patients’ safety, health, satisfaction, comprehension and adherence.

### Statement of Competency

This activity is designed to address the following ABMS/ACGME competencies: practice-based learning and improvement, interpersonal and communications skills, professionalism, systems-based practice and also address interdisciplinary teamwork and quality improvement.

### Accreditation Statement

The American Medical Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

### Credit Designation Statement

The American Medical Association designates this enduring material for a maximum of 0.5 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### Claiming Your CME Credit

To claim **AMA PRA Category 1 Credit™**, you must 1) view the module content in its entirety, 2) successfully complete the quiz answering 4 out of 5 questions correctly and 3) complete the evaluation.

### Planning Committee

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### About the Professional Satisfaction, Practice Sustainability Group

The AMA Professional Satisfaction and Practice Sustainability group has been tasked with developing and promoting innovative strategies that create sustainable practices. Leveraging findings from the 2013 AMA/RAND health study, “Factors affecting physician professional satisfaction and their implications for patient care, health systems and health policy,” and other research sources, the group developed a series of practice transformation strategies. Each has the potential to reduce or eliminate inefficiency in broader office-based physician practices and improve health outcomes, increase operational productivity and reduce health care costs.

### Disclosure Statement

The content of this activity does not relate to any product of a commercial interest as defined by the ACCME, therefore, neither the planners nor the faculty have relevant financial relationships to disclose.

### Media Types

This activity is available to learners through Internet and Print.

### References


Introduction

The design of a practice influences the relationship between physicians and patients. You can take simple design steps to enhance workflow efficiency and patient safety, as well as patient and team interactions and satisfaction.¹⁻⁸

“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.”

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

Five steps for optimizing your physical space

1. Develop team stations that enhance interactions
2. Place furnishings to encourage patient engagement
3. Add positive distractions to alleviate patient anxiety
4. Reconfigure rooms to feel spacious and welcoming
5. Connect with patients while incorporating technology
Well-designed team stations or **pods** can improve efficiency and strengthen **culture**

For example, placing exam rooms close to the team’s work area minimizes the space that must be travelled between tasks and improves visibility to the exam rooms. Creating opportunities for team members to naturally interact improves collegiality and may result in better patient outcomes and lower health care costs.⁹

**Q&A**

**We don’t have a central work space and can’t afford a major remodel. Do you have any suggestions?**

Some practices have been able to convert a centrally located exam room or office into a team space with minimal remodeling. One clinic created two spaces for MA-provider co-location by converting an MAs’ station at one end of the hallway and a providers’ station at the other.

**What is the ideal layout of a team station?**

An ideal space is quiet and yet still supports communication. For example, glass partitions allow teammates to see each other while conserving privacy and minimizing noise. In addition, many practices have found that co-locating the physician with the other team members increases opportunities to communicate in person, resulting in less messaging, more prompt completion of work and a stronger, more cohesive culture. Access to daylight and outside views will lift providers’ moods and alertness.¹⁰

**What are the benefits of having a team station?**

The care team works more closely with physicians, enabling nurses and medical assistants (MAs) to function more effectively and efficiently and for the team to “gel” as a unit. Team stations that are within visual and physical proximity to examination rooms also help the team develop “situational awareness” (e.g., seeing which rooms are ready to be used, where a call light is on) that helps them manage patient flow throughout the day.¹¹

**What about noise from dictation or telephone conversations?**

Some practices have created a library-like atmosphere in the co-located space to maintain patient privacy and a quiet work environment. This can be accomplished by doing the following:

- Team members speak in quiet voices
- Dictation is done in the exam room with the patient or in sound-absorbing carrels
- Wall and floor materials are chosen to specifically reduce ambient noise

**Place furnishings to encourage patient engagement**

The arrangement, shapes and types of desks, examination tables and chairs can all work together to encourage productive interactions and eye contact. The patient can sit in a chair to speak with the physician or MA instead of spending the entire visit on the examination table. Computers can be mounted to the wall on a swivel arm or the team can use laptops, so they are free to shift their position and face the patient.

**Pod:** the typical clinic pod consists of three to four examination rooms, a team station and a supply area.
What are the best desk shapes for encouraging patient engagement?

A moderately sized circular or semi-circular desktop allows the physician and patient shared access to the computer screen while still providing the ability to turn to one another for face-to-face discussion. Moreover, physicians and patients 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.

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

Rounded, curvilinear chairs, tables and objects are calming and preferred over angular furnishings. These also are safer for children and the elderly and in case of falls.

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 into a power position or frequent touching of the patient can make the patient feel uncomfortable.

Add positive distractions to 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. Being in the physician’s waiting area and examining room is stressful for many people. Waiting can contribute to patient anxiety and dissatisfaction. Moreover, an anxious patient comprehends and retains less information from the encounter. Positive distractions divert attention away from these stressors and create a positive mood.

What are some positive distractions that create a feeling of calm and confidence?

Window views of natural settings and artwork featuring realistic images of natural landscapes have been shown to reduce patients’ stress as well as pain. These views and images should be in direct view of the patient while they are waiting and sized so that patients can make out details from where they are seated. Other positive distractions are magazines, informational material or a flat screen set to a patient education loop. Plants in the waiting room can also ease patient anxiety and create a more natural, comfortable environment.

What type of artwork provides the best positive distractions?

Realistic images of landscapes with high visual depth, healthy flowers and foliage during warm weather, low hills, sweeping views of mountains, calm water surfaces and positive relationships between people are best. Avoid abstract artwork as it can increase anxiety.

Positive distraction: a design feature that effortlessly holds the attention of the patient and produces positive feelings while preventing fear and anxiety.
Is television an effective positive distraction?

Televisions can exacerbate the stress of waiting. Patients typically cannot control the programming and program intervals cause patients to be more aware of the actual time that has elapsed.

Reconfigure rooms to feel spacious and welcoming

You do not need to tear down walls or build new rooms to make an examination space seem more spacious. Rearranging the location of the examination table, chairs and desk can make a small room feel much more open and comfortable. Brightening up a consultation space with additional lighting, softening harsh overhead lighting or rearranging the furniture can make a smaller consultation space seem more spacious and comfortable to patients.24

• Place examination tables at an angle to free up wall space for more chairs along the wall
• Use light, warm colored paint on the walls and natural, soft artwork
• Consolidate the amount of “stuff” in the room, such as materials and supplies on countertops or instruments that are left behind after another patient’s procedure
• Organize the patient education material on the wall, only including what is necessary and up to date
• Create an effective electronic health record (EHR) solution, such as using a semi-circular desk or laptop. Placing the computer on a desktop or counter that faces a wall will force the physician to face the wall instead of the patient, making the space and experience less positive and engaging

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.14,26-27 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.

Connect with patients while incorporating technology

Increased eye contact during visits and sharing the computer screen with a patient can positively influence patient engagement and adherence.28-29 Mobile or easily shared technology such as laptops, tablets and large monitors can help physicians involve patients in discussing information with them.22

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,35 where a nurse, MA or documentation specialist helps with record keeping. In some practices, the nurse sits shoulder-to-shoulder with the physician at the shared desk. In others, the assistant 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 one another.
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.

Conclusion

The physical space in a clinical practice can impact how the people within that space interact. Thoughtful space-optimization solutions can improve efficiency, engagement and satisfaction for patients and providers alike.

STEPS in practice

How’s it working in Boston, MA?

At the Beth Israel Deaconess Medical Center Obstetrics and Gynecology Department, form did not follow function. The department, which is located away from the clinic, had traditional offices, narrow hallways and closed doors. The space did not reflect the department’s collaborative culture. The staff 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 data showed that one third of the office space was rarely used.

In the new space design, physician offices in the clinic space were eliminated. All walls were torn down to create an inviting co-located space for all members of the team. To build a team culture and address privacy needs, team rooms were created within steps of each desk in the open workspace, complete with electronic booking pads to efficiently address patient scheduling during conversations. The glass doors encompassing the team rooms were glazed over to provide visual and auditory privacy. The department was designed so that staff walk through all the common areas in order to access the workspace, organically creating opportunities for interaction. This schematic helped the department achieve its goal to improve access between front-line staff and clinical leaders.

The Obstetrics and Gynecology Department found that the renovation made it easier to recruit staff with the correct 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

How’s it working in Dallas, TX?

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.

How’s it working in New York City, NY?

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 throughout the clinic (such as self-rooming) from triage to the patient room and discharge area

**Self-rooming:** Patients are assigned an examination or consultation space upon entering a clinic and then go to that space without waiting in a designated waiting 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, ideally visibly accessible, to exam rooms

Our recently updated facility provides a nurturing, safe environment to deliver cutting-edge care.

Kenneth J. Feldman, Ed.D., FACHE
Associate Executive Director, Gouverneur Health

How’s it working in Cherokee, NC?

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 scepticism, 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.

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.
Get implementation support

The AMA is committed to helping you implement the solutions presented in this module. If you would like to learn about available resources for implementing the strategies presented in this module, please call us at (800) 987-1106 or click here to send a message to StepsForward@ama-assn.org

References


