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## Rethink the Outpatient Clinical Space: Efficient Exam Room Design





Healthcare is currently undergoing significant change brought on by the Affordable Care Act, unsustainable cost burdens, new technologies, changing patient demographics and the COVID-19 pandemic. As these forces continue to shape the healthcare industry, increased focus is being placed on new patient-centered approaches to diagnosis, treatment and wellness in outpatient spaces.

This rethinking of the clinical space is helping health systems take a renewed look at patient-caregiver interaction, clinical outcomes and the entire point of care experience. The design of the space, as well as technology and equipment decisions, has an undeniable impact on workflows.

This white paper is designed to help healthcare systems consider a patient-centered view of outpatient spaces, primarily exam rooms, by identifying key design elements that can improve workflows for your unique care paths.

# Benefits of Patient-Centered Design

The benefits of implementing a patient-centered design approach in the clinical space can vary. Each health system and their corresponding facilities have unique care paths that require an understanding of the expected outcomes, taking into consideration patient demographics, specialty, menu of services, etc. Following are a number of potential benefits that can be realized when a more patient-centered design approach is applied.

## Efficiency

One thing to consider when improving efficiency in the exam room is how technology and connectivity is used in the space, whether through electronic medical records (EMR), digital diagnostic devices, telehealth or decision support tools. The use of mobile workstations to create a flexible workspace at the point of care can help improve patient engagement. Think about connectivity as a consumable essential in the delivery of care, like a 4 x 4 or a bandage. How can space design enable delivery of the right data, at the right place and the right time?

The use of mobile or wall-mounted workstations can also bring devices, supplies and technology within arm's reach, decreasing the caregiver's need to move within the space and maximizing face-to-face engagement with the patient. All necessary data is accessible at the point of care and can be shared at the provider's discretion. The patient is seated on a low-height examination chair throughout the entire visit. A low-height chair is ideal for flexibility in patient positioning (e.g., seated, prone, flat, supine, etc.,) as clinical exams may be necessary, even in a consultative visit. With everything the provider and patient needs within reach, there are no delays in transferring the patient from other areas in the room. Digital and physical care interfaces are within the same work zone, and the movement of the care provider is minimized as constant contact with the patient is maintained.

## Safety

It is essential that patients and staff feel safe and confident throughout the healthcare experience. If a patient does not feel safe and comfortable, whether accessing the facility, transferring to the exam chair or during care delivery, they can become anxious and tense. This can result in an unsatisfactory visit, inaccurate diagnostic data, and potentially poor care outcomes, such as low patient satisfaction scores.

Today, there are more than 46 million adults age 65 and older living in the US. By 2050, that number is expected to grow to almost 90 million.<sup>1</sup> As the average age of patients continues to rise, it is more likely that patients will need assistance in accessing the exam or procedure chair. In many facilities, the burden falls on staff to lift or assist the patient in accessing the exam or procedure chair, which can present a high potential for injury to one or both of the parties involved. In fact, one out of every five injuries reported in the US is healthcare related. And healthcare workers are almost three times as likely to suffer from work-related injuries than construction workers.<sup>2</sup>

## Accessibility

As the healthcare industry continues to evolve, providing the same access to healthcare for patients with disabilities and mobility limitations as for those without such limitations is an increasingly important issue for health systems.

<sup>1</sup> <https://www.ruralhealthinfo.org/toolkits/aging/1/demographics#:~:text=Today%2C%20there%20are%20more%20than,increase%20by%20almost%2018%20million.>

<sup>2</sup> <https://www.bls.gov/iif/osch0060.pdf>

# Elements of Patient-Centered Design

The following design considerations can assist health systems in providing equal access to care for all patients regardless of disability or mobility limitations:

1. An accessible facility design that can be navigated easily by everyone. For instance, a universal design approach to public spaces can help provide healthcare for everyone, whether ambulatory or limited in mobility. Keep in mind these are healthcare facilities, not retail businesses. Inaccessible spaces, even if grandfathered from a code standpoint, can have health ramifications for your patient demographics.
2. Inclusive appointment policies and exam procedures that provide for all types of physical and communication needs.
3. Exam rooms designed with a “mixed use” approach that manages both consultative and clinical paths without the need to segregate patients during check-in. While this lean approach allows for a higher utilization of spaces and resources, it should be considered based on facility and practice needs. Some healthcare facilities separate consultative visits from clinical visits with two care paths. Depending on patient demographics and the type of care the practice is delivering, this approach may present challenges during execution.
4. Accessible equipment such as low-height exam and procedure chairs, diagnostic equipment and scales to accommodate those who may or may not use mobility devices.
5. Staff trained to understand and respond with sensitivity to people with different types of disabilities, including less visible impairments such as deafness, cognitive impairments and depression.

To fully understand the significant role a patient-centered design approach can play in a clinical environment, it is important to take a deeper look at the clinical space.

## Exam Chairs

The focus of the outpatient facility is the exam chair as it is the place where caregivers truly deliver care to patients—it touches nearly every patient. Today’s exam chair combine of clinical device and with the design elements of a chair. The exam chair is also the patient positioning device. Examinations require clinical positioning capabilities, something that is not offered in a simple recliner or chair. In many ways, the exam chair has evolved into a clinical hub where diagnostics, patient engagement and treatment intersect. Results can be gathered within and seamlessly transferred to the EMR. The right exam chair can increase efficiency, comfort and safety, resulting in better workflows for your facility.

With the average age of patients on the rise, it is more likely that patients will need assistance in accessing an exam or procedure chair. Many facilities still require staff members to lift or assist the patient. This sort of patient/staff interaction often results in emotional and physical discomfort to one or both of those involved. Accessible exam and procedure chairs can reduce the likelihood of distress and injury to patients who may have difficulty in accessing a fixed examination chair including those who are elderly, disabled, obese or pregnant. Therefore, it is important that an accessible chair be a central fixture of any patient-centered design.

The federal agency providing leadership and guidance for accessible design, the US Access Board, recommends an exam chair with a low, uncompressed seat height of 17” to 19”, so patients are able to access the chair with little or no assistance whenever possible. This can increase the patient’s comfort, protect their dignity and help enable physicians conduct a more thorough and accurate exam, as well as helping facilitate more informed diagnoses and treatment decisions. Chair rotation can also be beneficial as it allows the caregiver to move the patient to the treatment areas instead of requiring the devices or physician to move.

### **Vital Signs + Diagnostic Equipment**

Digital diagnostic testing (e.g., vital signs acquisition, spirometry and ECG) has joined EMRs in becoming a reality across the medical healthcare industry. A combination of easy-to-use diagnostic devices and software solutions that are designed to increase efficiency, reduce errors and advance patient care can be used to support improved workflows, efficiency and adherence to clinical standards.

For instance, the acquisition of vital signs is the beginning of most patient-caregiver interactions. Vital signs assessment provides critical information related to changes in patient health and plays an important role in a physician's treatment decisions. However, the vital signs process hasn't changed significantly in the last 30 years. The integration of EMRs and automated vital signs devices (e.g., BP, temperature, pulse, SpO<sub>2</sub>) can have a positive impact on the overall efficiency of the vital signs acquisition process. Time is saved by reducing patient conveyance and eliminating the need for manual vital signs capture. The results most often are imported directly into the EMR, increasing efficiency and reducing the chance of transcription errors.

### **Mobile Workstations**

As the practice of healthcare evolves, technology will continue to play a larger role in the exam room and in how physicians and caregivers interact with patients. Without proper planning and the right equipment, integration of technologies such as EMRs and other technology at the point of care could negatively impact the overall efficiency of the care process. Mobile workstations designed to improve patient-caregiver interaction enable organizations to easily bring digital information to the point of care wherever care is needed.

Many mobile workstations are designed to provide the flexibility needed to support technology within the exam room, from room to room, or when a space-saving solution is needed. Height-adjustable mobile workstations allow physicians to work the way they are most comfortable, whether seated, standing, mobile or stationary. Certain workstations adjust in height (29" to 47") while offering tilt and rotation that allows for a proper working position to be maintained without sacrificing eye contact with the patient.

### **Cabinetry**

Cabinetry designed specifically for medical environments is often more durable and will not break down during medical use, unlike common wood cabinetry. While cabinetry does have an impact on the image and brand perception of the practice to patients and staff, it also can be tied closely to patient-centered design.

For instance, cabinetry can be used at the point of care to bring supplies and instruments to the care zone and minimize the need for the physician to move away from the patient. Locating the sink in the corner brings a countertop surface closer to the working environment and isolates splashing to eliminate potential slippery spots on the floor. Another important area on the cabinetry is the kick area of the base cabinet. This should be high enough to allow the legs of the stool to slide under the edge of the base cabinet while the user's foot is positioned on the base of the stool.

### **Physician Seating**

For a physician, the ideal stool should feature a contoured seat that molds to the shape of the body and provides maximum comfort and support for the buttocks, feet and torso. It should also feature a strong base structure that offers stability and minimizes the risk of tipping.

The stool should be easily adjustable and maneuverable, allowing physicians to find the most comfortable working height and effortlessly interface with the patient. The adjustable height can also allow physicians to maintain neutral postures, keeping shoulders relaxed and the head balanced and looking essentially straight ahead, while minimizing overreaching and sustained bending and twisting.



# Redefining the Clinical Space

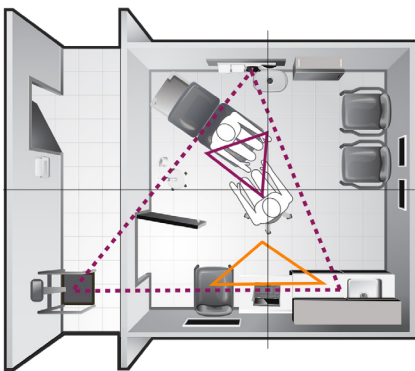
A fully connected point of care ecosystem balances new technology, connectivity and workflow to improve clinical standardization, realize greater efficiencies, enhance patient-caregiver interaction and contribute to better clinical outcomes. At Midmark we take an evidence-based design approach beyond treatment decision-making and care delivery to encompass the design and layout of the healthcare environment. In an effort to help healthcare executives and caregivers rethink the clinical space, Midmark developed a number of workflow design options that help provide the right clinical work environment to effectively advance patient care, efficiency, accessibility and adherence to clinical standards.

## Traditional Exam Workflow



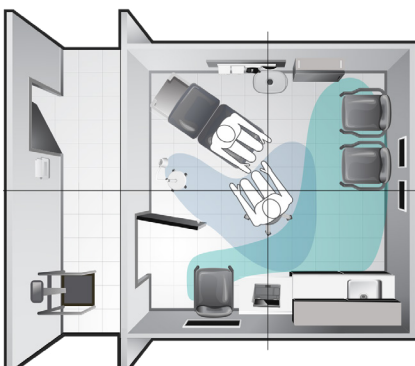
### Traditional Exam Workflow

The traditional exam workflow illustrates how exam rooms have been set up for decades. While this traditional design can set the foundation for basic patient-caregiver interaction, there are areas of concern that can pose challenges to a health system when trying to improve the patient experience and outcomes.



### Traditional Workflow

Patient care is divided into separate zones for the patient interview and patient exam area. While the traditional exam room supports immediate patient care, many times historic patient data and additional medical data that support patient care are retrieved from outside the exam room.



### Public/Private Zones

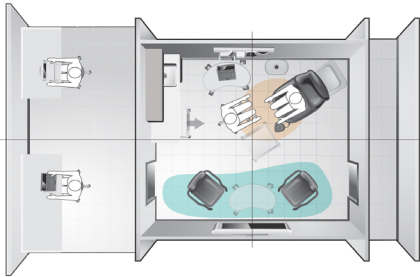
The public zone includes side chairs to seat family/visitors, as well as a dressing nook for patients. The private (or patient care) zone provides space for the initial patient interview including equipment, supplies and a work surface at the point of care. Overlap of these zones can lead to inefficiencies in the exam room workflow.

# Dual Access Exam Workflow



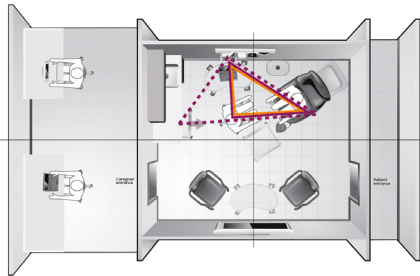
## Dual Access Exam Workflow

The culture in today's healthcare delivery systems is shifting to a lean, integrated care model to help improve collaboration between healthcare providers, medical technicians, schedulers and the patient. The use of two sliding doors in this dual access room design improves workflow by providing separate flow paths for the patient and clinicians. Two entry points permit safe, clear patient navigation away from clinical clutter. A self-rooming workflow can be used to eliminate the waiting room, improve patient flow and help minimize the risk of spreading infection among patients and providers. Separate entry points also allow for resupply and cleaning via the provider access point and away from the patient flow path.



## Consultation Zone

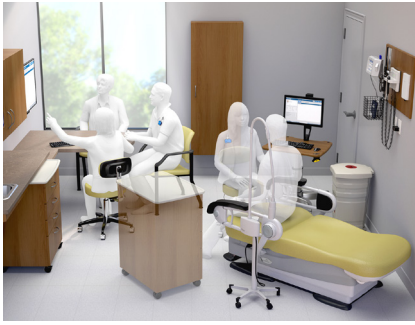
The consultation zone is easily accessible from both entrances and includes seating and a mobile work surface to exchange information. A display is incorporated to view patient-related information and educational information. The display is large enough to view patient information during the care exchange. A separate care team work area is free of patient interruption.



## Efficient Care Zone

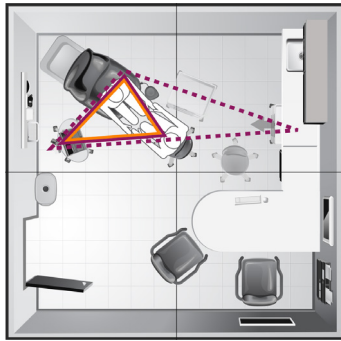
With the patient seated on a barrier-free exam chair throughout the visit, there is no delay due to transfer or repositioning. All critical care elements are in close proximity, reducing the need to move away from the patient. A mobile supply cart can be retrieved from the adjacent cabinet to provide an additional work surface to organize instruments and supplies.

# Continuous Care Exam Workflow



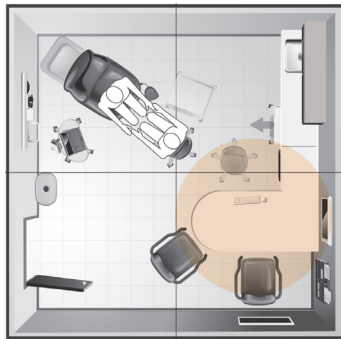
## Continuous Care Exam Workflow

Effective patient care extends far beyond the office door. Exam room design must be more flexible and functional, providing the means for ongoing monitoring of patients in addition to scheduled office visits. This design features a designated consultation zone that enables physicians to stay in contact with caregivers and monitor the patient's health more closely. Remote diagnostic tools provide a means of feedback and ongoing monitoring, supporting the continuous patient-care relationship.



## Flexible Care Zone

The care zone is designed to allow left- or right-sided access and the ability to retrieve instruments and supplies at the point of care. Flexibility and proximity are important for increasing caregiver efficiency and reducing the need to move away from the patient to retrieve instruments and/or supplies.



## Consultation Zone

The consultation zone is designed around a shared interactive display for the caregiver and patient. It allows the caregiver to review medical records and educational materials as well as set schedules for medication, reinforcing a long-term care relationship.



## Telehealth

Communication is focused on engaging the patient beyond the visit by using online tools such as reminders, educational materials and a means of feedback to monitor progress. For maximum efficiency, the caregiver may use the consultation zone for remote communication between face-to-face visits, saving time and utilizing fewer exam rooms.



# Dedicated Zones Workflow



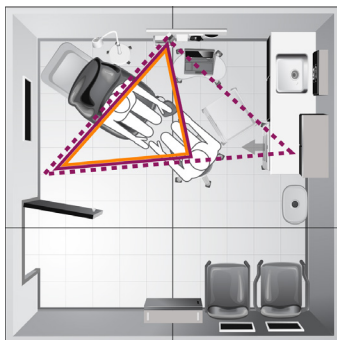
## Dedicated Zones Exam Workflow

This workflow design provides clear separation between the care zone for caregiver interaction and the family/visitor zone with guest seating. It features a full-function, height-adjustable exam chair with integrated scale, an automated vital signs device and EMR connectivity for added efficiency and ease of patient handling. The computer workstation is located adjacent to the exam chair for optimal access of digital data at the point of care. In addition, supply storage is placed within arm's reach with a mobile cart for easily accessed supplies.



## Public/Private Zones

The family/visitor zone, also known as the public zone, is easily accessible from the entrance and includes seating as well as a dressing nook for the patient. It provides privacy, but does not infringe on the efficiency of the care zone, also known as the private zone.



## Efficient Care Zone

With the patient seated on the height-adjustable exam chair throughout the visit, there is no delay due to transfer or repositioning. Flexibility and proximity help increase the efficiency of the caregiver, reducing the need to move away from the patient to retrieve instruments and/or supplies.



## Supply Proximity

A mobile supply cart with well-organized drawers can be retrieved from a dock in the adjacent cabinet to be in close proximity to the care zone. The supply cart can also serve as an additional work surface, positioned left or right of the caregiver.



Healthcare and its delivery systems are changing. Innovations in patient care, technology and connectivity are emerging.

As the industry looks to the future, there is much to consider in facility design, access, control, comfort, workflow and the patient-caregiver relationship. Growth and change are inevitable, and healthcare environments must be flexible to adapt to the integration of new technologies and healthcare protocols.

Now is the time to rethink and redefine workflow, shifting to a patient-centered design. By designing the clinical space around the patient, practitioners can significantly enhance efficiency, effectiveness, safety, comfort and quality of care.



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