

# Flexibility In Healthcare Environments

Leveraging  
flexibility can  
help improve  
experiences and  
reduce costs.

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#### How To Use This Booklet

Steelcase collaborated with the Center for Advanced Design Research and Evaluation (CADRE) and HKS Architects to research the topic of flexibility in healthcare with the goal of improving dialogue and shared understanding among leaders, facility managers, clinicians, architects and designers. You can find the final published FleXX report at <http://www.cadreresearch.org/flexx>.

Use this booklet to review the research highlights and recommended framework, then focus on the flexibility attribute(s) most meaningful to your current and upcoming projects.

# Introducing the Flexibility Framework

Healthcare organizations are tasked with reducing costs as they strive toward other Quadruple Aim goals, including increasing patient satisfaction, enhancing the clinician experience and improving overall health measures for the populations they serve. A key opportunity for cost savings is the creation of flexible healthcare spaces.

While this opportunity is generally agreed upon, the route to realize flexibility benefits is littered with unsuccessful projects, higher costs and spaces that don't flex in the ways they were intended.

In collaboration with the Center for Advanced Design Research and Evaluation (CADRE) and HKS Architects, Steelcase conducted an extensive review of flexibility literature and surveyed healthcare leaders, clinicians and facility managers to ask: could a commonly accepted flexibility framework allow healthcare organizations to plan for — and realize — cost savings and revenue enhancements while meeting the evolving challenges of change?

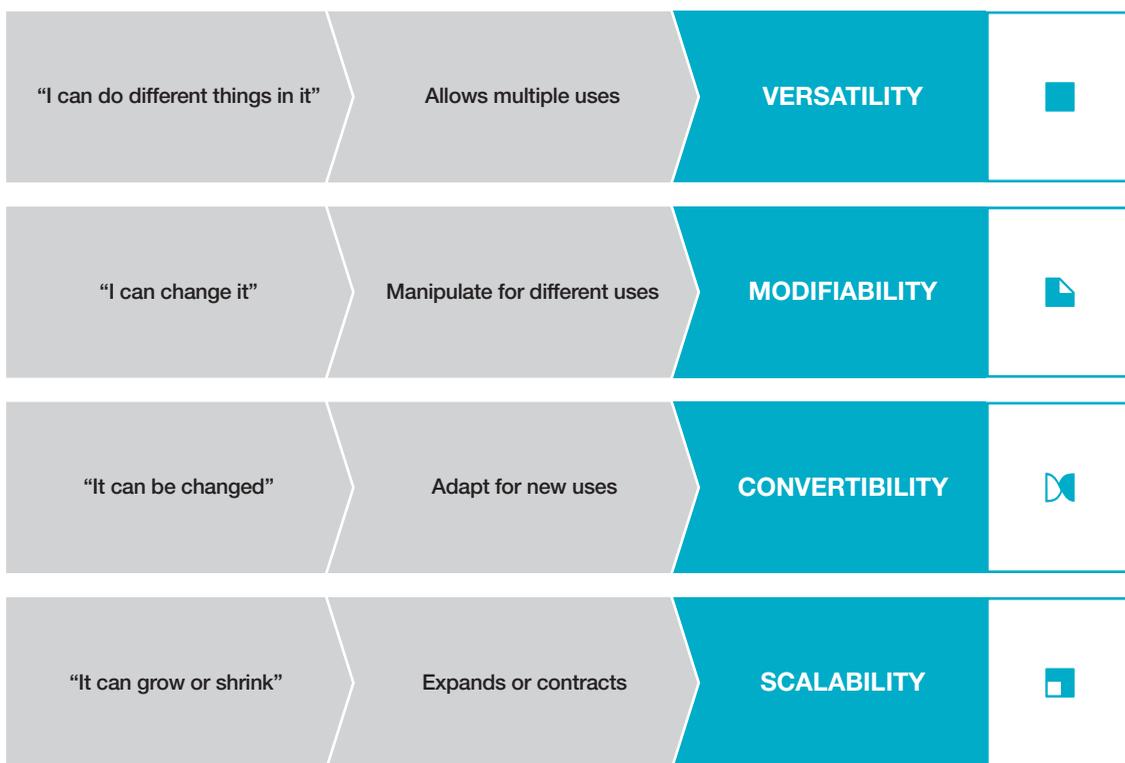
## The Flexibility Framework

A review of existing peer-reviewed and gray literature underscored the confusion around describing flexibility: terms are often used interchangeably, but with different meanings for different people.

However, a winning framework emerged from the research (Monahan, 2002), one that clarified both the conceptual and built environment implications of flexibility.

## Flexibility At A Glance

This framework clarifies spatial flexibility by attribute: who changes or makes the change, the type of change and the ease and cost of changes. A common platform can enable transparency and understanding during planning, as well as deployment once a space is fully in use.



## Flexibility Perspectives

In addition to the literature review, a subject matter expert survey was conducted (n = 143) with healthcare decision-makers, including nurse managers, facility managers and healthcare administrators.

All stakeholders agreed that facilities must become flexible, either operationally or functionally, in order to meet industry demand for adaptation and change. Respondents also indicated that key flexibility drivers are the ability to respond to changing patient needs and new technologies.

The majority of respondents (72%) felt that flexibility did not necessarily equate to a higher cost. The key was to incorporate flexibility as an operational strategy from the outset. If considered later in the building's life, it would mean a higher cost.

Respondents were willing to invest 20% more in capital costs if they could produce a significantly greater return, improve their bottom line, improve efficiency and productivity, or have more options for adapting as needed, particularly in the attributes of scalability.

Qualitative data suggested that an owner may be thinking of operational *scalability*, but by definition mean building for *convertibility*. An early, precise conversation can reduce the risk of over-designing and underutilizing flexibility affordances.

**The majority of respondents (72%) felt that flexibility did not necessarily equate to a higher cost. The key was to incorporate flexibility as an operational strategy from the outset.**

## Stakeholder Insights

### Healthcare Administrators

Organizationally focused

Greater references to the market, community and efficiency

### Nurse Managers

Operationally focused

Preference for ability to adapt, change, adjust, shift function and modify in response to patient care and employee needs

Work-life balance was a recurring theme

### Facility Managers

Spatially focused

Concerned with changing technology, standardization, modifiability, surge capacity, utilization/efficiency and multiuse

## Key Insights

The four core attributes for flexible healthcare environments are: versatility, modifiability, convertibility and scalability.

**Terminology  
Is Critical**

Flexibility, especially scalability and modifiability, allows organizations to respond efficiently to emergent needs and delivery modes.

**Build for  
Agility**

Spending up to 20% more for flexible space options is an investment many stakeholders are willing to make.

**Spend for  
Scalability**

Stakeholders have operational lenses for thinking about flexibility, too. These lenses include time, roles and resources.

**Flex  
Beyond  
Space**

# Versatility

Versatility is the ability or intention of a space to be used for multiple and different functions with zero change to tangible building attributes. Like a multipurpose zone that replaces a traditional waiting room, versatile spaces allow people to work, interact, self-educate or even shop before or after their appointment. Organizations can reduce costs by designing for versatile spaces that serve multiple purposes.

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## Design Principles

### **Consider Size + Function**

Properly size the space and incorporate relevant technology to accommodate different uses.

Select furniture, accessories and equipment that are multipurpose and multifunction.

Consider future use cases when planning.

### **Support Individual Experiences**

Allow for individual control over sensory environment (like temperature/lighting).

Select quality materials that respond to both light and heavy use.

Coordinate schedules to maximize room utilization.

# Versatility At A Glance

“I can do  
different  
things in it”

## Attributes

Allows for multiple uses

Changes in minutes

Easy to change

Low cost

Adapts between uses

## Examples

Multifunctional  
equipment and furniture

Multiuse spaces

Open hall spaces

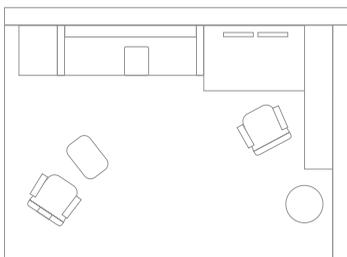
One space supports  
multiple departments  
or service lines

# Administrator's Office

Positive employee experiences can lower personnel costs through increased engagement and retention. Versatile office spaces support a person's physical, cognitive and emotional needs, and afford the ability to work seamlessly with peers and technology.



15'6" x 9'8"



- 01 Embold chair
- 02 Turnstone Campfire Skate table
- 03 Surround lounge collection
- 04 Ology height-adjustable desk
- 05 Universal Storage
- 06 FLOS Tatou standing lamp

### Focus Zone

Adjust desk height, seating and monitor arms to maximize comfort throughout the day.

Multilevel storage keeps materials easily within reach.



### Collaboration Zone

Comfortable guest seating and an occasional table provide a gathering space for peers. Clear sight lines to the monitor make it easy to share digital information.



### Respite Area

The high-recline arm and integrated sliding table support respite and relaxed postures.

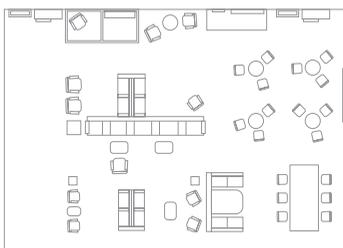


# Transition Space

Comfortably accommodating patient and family members and supporting activities of daily living can help improve satisfaction scores — and affect outcomes. Versatile waiting spaces can also be used to host events, education sessions or staff training.



43' x 36'



01 Regard modular lounge system

02 V.I.A. modular walls

03 Embold seating

04 Convey modular casework

05 Turnstone Campfire Big Table

### Privacy Zone

Acoustic privacy provides a space for people to make phone calls, work or simply enjoy a moment of solitude and respite.



### Social Zone

Seating arrangements with privacy shielding encourage natural interaction among small groups.



### Working Zone

Café tables can be used for eating or working while the large worksurface offers easy access to power. Additionally, clinical staff could hold meetings here before or after hours.



# Modifiability

Modifiability is the attribute that welcomes a user or owner to actively change a space or object without needing support from facilities or contractors. Modifiable elements, like height-adjustable desks or rolling equipment, do not require any permanent structure change and are among the most popular methods for providing ad-hoc flexibility to any space. Organizations save money with furniture that supports multiple functions or can be updated without decommissioning.

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## Design Principles

### **Consider Size + Function**

Properly size the space and incorporate relevant technology to accommodate different uses.

Select furniture, accessories and equipment that are multipurpose and multifunction.

Consider opportunities for standardization across service lines while also leaving room for continuous improvement of workflows.

### **Support Individual Experiences**

Allow for individual control over ergonomic and sensory experiences in the environment.

Select materials that respond appropriately to different uses.

# Modifiability At A Glance

“I can  
change it”

## Attributes

Accommodates the user

Changes in minutes  
to weeks

Low/moderate ease  
of change

Low cost

Adapts between uses

## Examples

Modifiable furniture:  
Height-adjustable desks  
Mobile partitions  
Rolling equipment

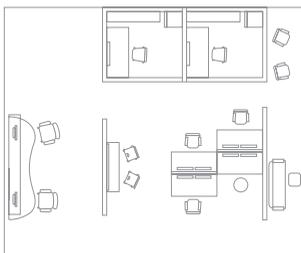
Furniture that can be  
repaired without taking  
the object fully out  
of commission

# Clinical Team Station

Research shows clinicians value the ability to adapt in response to patient and team needs, so designing with modifiable furniture can not only improve their work experience but also provide ergonomic support to fight fatigue. Eliminate lost time and money with modular elements that can be changed without decommissioning the entire area.



28' x 24'



- |                                  |                          |
|----------------------------------|--------------------------|
| 01 Sync clinician workstation    | 05 Amia Air task chair   |
| 02 Pocket mobile work surface    | 06 Verge stool           |
| 03 V.I.A. modular walls          | 07 Embold seating        |
| 04 Ology height-adjustable bench | 08 Regard personal table |

## Designer Consideration

Select clinical worktools that support different users, such as adjustable monitor arms and ergonomic features in task chairs.



## User-Driven Change

Height-adjustable desks and chairs can be modified easily by the user to boost well-being and fight fatigue.

## Facilities Team Consideration

As needs change, modify existing furniture to support new uses. Easily reconfigurable arms allow for various configurations in multiseat units.

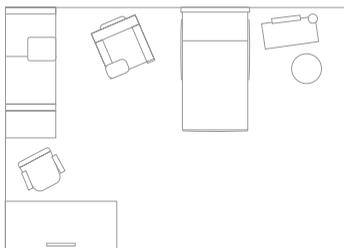


# Patient Room

HCAPS scores can increase by improving the patient and family experience. Modifiable furniture and equipment can be adjusted to support daily living activities, maximize comfort and enhance clinician communication.



15' x 28'



01 Surround lounge collection

02 Empath recliner

03 Verge stool

04 Relay monitor arm

### Designer Consideration

Select materials that support a range of different uses, including coordinating with other settings.



### User-Driven Change

This sofa supports daily living activities and can easily modify to a sleep surface at night.



### Facilities Team Consideration

Add new features, such as a light or a coat rack, without taking the room out of commission.



# Convertibility

Convertibility adapts a space and its objects for new use by replacing the infill of a building from one functional layout to another. This attribute helps organizations meet new or changing needs by repurposing existing spaces, such as changing an exam room to a virtual care office. When designed strategically within the footprint of mechanical systems, convertibility can be used to save money over time.

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## Design Principles

### **Plan Systems for Change**

Strategically position stack systems in central locations.

Locate mechanical systems on corridor walls or in-floor.

Use continuous ceiling grid and modular lighting fixtures.

Consider prefabricated, modular or structural systems.

### **Plan Space for Change**

Specify modular sizes that conform to different room types.

Use universal planning and structural modules, such as universal headwalls.

Select modular prefabricated furniture in lieu of millwork.

Consider planning room adjacencies with demountable partitions.

# Convertibility At A Glance

“It can be  
changed”

## Attributes

Replaces infill of  
a space to serve  
a new purpose

Changes in  
weeks to months

Changes with  
moderate ease

Moderate investment

Adapts to a new state

## Examples

Demountable partitions

Convert temporary  
offices to clinical spaces

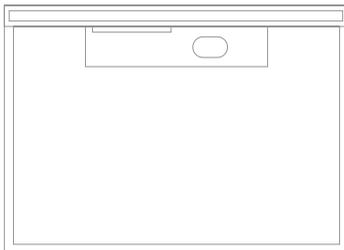
Power and data built-in  
for expected growth

# Repurposing a 10'x12' Room

Convertible spaces adapt for new uses while minimizing the cost of renovations. Changing room functions can be faster and more cost-effective when mechanical systems are located on corridor walls, and when continuous ceiling grids and modular lighting are used. Versatile and modifiable elements are often used in convertible spaces to realize the most benefit.



10' x 12'



01 V.I.A. modular walls

02 Convey modular casework

## Infusion Room

### Patient care focus

Adding modifiable furniture creates a comfortable and private patient space by providing the seating and tools necessary for patient care.



## Break Room

### A place to relax

Casework can be changed to add appliances and counter seating. Selecting versatile furniture can offer clinicians a place to relax and enjoy meals.



## Work Space

### Team collaborations

Additional storage and a versatile worksurface create a convenient drop-in space for team collaboration or small meetings.

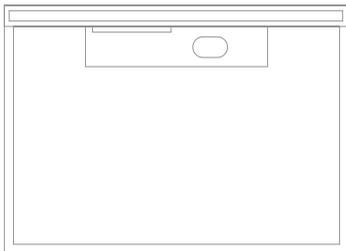


# Modular Casework

Steelcase Convey modular casework supports cost-effective changes. Fully modular, this solution installs with ease, minimal disruption and components can be repurposed later.



10' x 12'



01 V.I.A. modular walls

02 Convey modular casework

### Remove Base Cabinets

Repurpose storage components to another location and make room for more people in this exam space.



### Add Storage Cabinets

Add additional storage for more in-room equipment and supplies.



### Add Upper Cabinets

Change from a clinical space to a break room with the addition of appliances and open upper cabinets.



# Scalability

Scalability allows a building to expand or contract. When planned for, scalability can provide a key competitive advantage: allowing organizations to quickly and cost-effectively respond to changing market conditions. Operationally, scalability attributes can improve the patient and clinician experience, creating spaces that enhance privacy, smooth transitions and support shared teaching and learning.

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## Design Principles

### **Plan Systems for Change**

Plan services and utilities for short- and long-term needs.

Consider operational implications of future build-outs, such as noise, materials movement and adjacencies.

Strategically position stack systems in central locations.

Locate mechanical services on corridor walls or in-floor.

Consider prefabricated, modular or structural systems.

Plan for energy-efficient utilities and a robust IT infrastructure with built-in expandability.

### **Plan Space for Change**

Use systems, modular furniture and casework to add or subtract user capacity or storage.

Use universal planning and structural modules, such as universal headwalls.

Consider planning room adjacencies with demountable partitions.

# Scalability At A Glance

“It can grow  
or shrink”

## Attributes

Expands or contracts space

Changes in months to years

Change is a significant undertaking

Significant investment

Adapts to a new state

## Examples

Shell spaces for future growth

Expansion by wall removal

Early planning for mechanical systems

Savings of consolidating satellite locations

# Flex Floors or Buildings

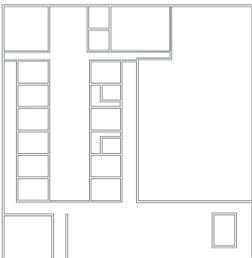
Healthcare services scale to meet patient needs, like virtual care or the growing volume of outpatient procedures. Using standards, universal grids and demountable walls, spaces can be economically created, combined or subdivided over a period of time.



## Scale Buildings

Shell space within a building can be equipped with floors, walls, windows and a roof — even basic HVAC, plumbing and electrical. These spaces can be sublet or scaled quickly as needs change.

110' x 110'





## Scale Floors

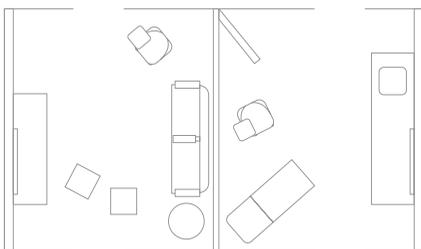
Using modular space planning, units can be quickly built out with movable walls and grid-based utility systems. Buffering in ceiling heights, additional cabling and generously planned storage areas also aids in future scaling.

# Modular Walls

V.I.A. for Health modular walls can be efficiently relocated to expand, contract or combine spaces. V.I.A. can also be used to enhance the patient experience. When built to allow for operational scalability, exam and consultation suites can allow greater privacy and seamless transitions, or larger space to accommodate bigger families.

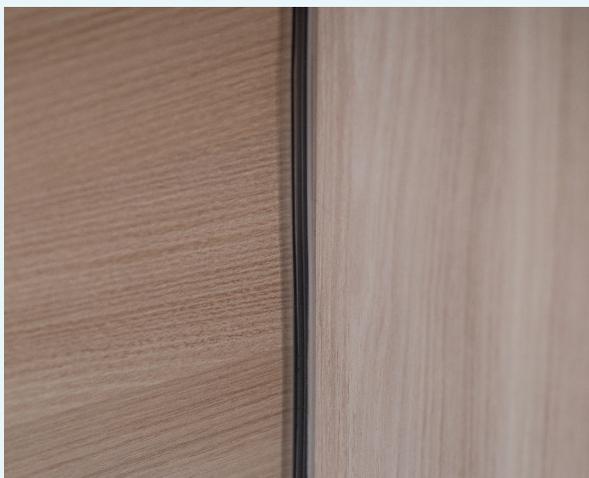


12' x 22'



### V.I.A. for Health

V.I.A. modular walls can be reconfigured to support new uses, and skins can change to support new technologies.



### Built for Infection Control

Smooth, seamless connection points reduce the possibility of infection transfer by limiting hidden spaces for germs to live and grow. By design, V.I.A. is built for easy and effective cleaning in healthcare spaces.

### Acoustic Performance

The very same seals that create a liquid barrier for effective cleaning allow for maximized acoustic privacy — a critical factor in patient and family experience.



# Steelcase Health Can Help

Wherever organizations are in their project journey, Steelcase Health can help meet Quadruple Aim goals. While new construction or renovation projects are ideal candidates for flexible solutions, existing buildings can still flex to meet emerging needs with versatile, modifiable, convertible and scalable planning strategies. These approaches can enhance the patient and family experience, as well as the clinician experience.

Steelcase Health can also help organizations reduce their total cost of ownership for furniture and convertible architecture investments. Consider that the initial cost of furniture is only a portion of the lifetime cost of ownership. The balance of the total cost comes when organizations factor in the time it takes to manage procurement, track assets and perform maintenance and repairs of the product after the purchase is made.

Flexible financing options, an extensive dealer network, performance management services and integrated sensing technologies can all provide additional flexibility benefits, helping to maximize real estate utilization and lower acquisition, moves and maintenance costs. Steelcase Health is your one-source partner when designing for flexibility. One order, arriving on one truck, installed by one team.

Contact your Steelcase Health representative to learn more or to schedule a time for a flexibility consultation.







Call 800.333.9939 or visit [SteelcaseHealth.com](https://www.steelcasehealth.com)



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