Caregiver spaces

Supporting the people that help others heal

14%

of US workers are employed in healthcare.

Nearly 1 in 5

healthcare workers quit during the pandemic.

Supporting the people that help others heal

Dr. Mike O'Neill, 2022

It is no secret that the pandemic has caused its own epidemic of stress and mental health challenges for many people.

It is fair to say that no one group has been harder hit by work stress than healthcare workers. This is a huge population of workers, 22 million total[1], accounting for 14% of the US workforce, of which 3 million are nurses in the US.[2]

> *"Healthcare worker burnout has reached crisis proportions and spaces designed to better support staff can play a key role in combating stress."*
>
> **- Stan Gray, VP of Healthcare, OFS & Carolina**

Healthcare worker well-being is at a low point - and so is risk to patient safety.

For healthcare providers, compassion fatigue, depression, and stress are driving them to retire early or quit the profession in increasing numbers. This is not only a problem for the workers themselves. When hospitals are understaffed, or its staff is stressed it increases errors, reduces healthcare quality and patient satisfaction and safety. Turnover and work errors also have significant organizational costs.

Nearly 1 in 5 healthcare workers have quit their jobs during the pandemic, citing burnout as one of the primary reasons for this decision[3]. Many nurses are retiring earlier, and younger nurses have turnover rates between 30% and 60%. **Burnout has significant economic costs for healthcare systems, estimated at $16,736 spent per nurse, per year employed on nurse burnout-related turnover costs.**[4]

[1] L. Laughlin, A. Anderson, A. Martinez and A. Gayfield (April 2021). 22 Million employed in health care fight against COVID-19. **https://www.census.gov/library/stories/2021/04/who-are-our-health-care-workers.html**, accessed January 27, 2022.
[2] Bureau of Labor Statistics (2019).
[3] G. Galvin (October 2021). Nearly 1 in 5 Healthcare workers have quit their jobs during the pandemic. Morning Consult Global. **https://morningconsult.com/2021/10/04/health-care-workers-series-part-2-workforce/** accessed January 27, 2022.
[4] Muir, K. Jane BSN, RN*; Wanchek, Tanya N. PhD, JD†; Lobo, Jennifer M. PhD†; Keim-Malpass, Jessica PhD, RN*,‡ (October, 2021). Evaluating the Costs of Nurse Burnout-Attributed Turnover, Journal of Patient Safety: Volume - Issue - doi: 10.1097/PTS.0000000000000920

Medication errors represent the most common medical error, causing 7,000 to 9,000 deaths and costs of nearly $21 billion annually.[5,6] Interruptions and resulting distractions are a leading cause of errors in dispensing medication.[7] A nurse may be distracted, on average, 6.7 times an hour.[8] During medication preparation, major sources of interruption include other nurses and searches for missing medications and equipment.[9] One study showed a 3.6% clinical error rate for sets of prescriptions administered with an average of 1.8 interruptions.[10]

To address worker stress and burnout, healthcare systems are making investments in lowering nurse-patient staffing ratios, optimizing electronic health records systems, and increasing pay. But there is another important investment they can make to reduce caregiver stress and burnout – that in the very spaces they work within.

Re-imagining caregiver spaces

The design of caregiver spaces can play an important role in moderating stress, thus reducing burnout, work errors and turnover in healthcare workers. The design of healthcare spaces can be used to help bolster the social support between staff members, help them focus when needed and emotionally restore themselves, thus increasing staff resilience to stressful situations. Besides preserving staff well-being, it can enhance the consistency and quality of patient care and reduce organizational costs.

Well-designed environments can promote staff well-being in several ways:

Caregivers need to emotionally restore and recharge during their work shift. Dedicated **respite rooms** can serve this need and be a space for staff to focus on completing work tasks uninterrupted, reducing stress.

Good ergonomics within all staff spaces can improve caregiver physical comfort and reduce work stress.

A home-like feel to spaces in which staff and patients interact and staff spaces, can create a feeling of safe harbor and lower the emotional temperature of the conversation, reducing caregiver stress.

Using home-like design and furnishing cues, internal staff conference rooms can double as social spaces to **enhance social support**, connection and belonging which is key to staff engagement and builds resilience against stress.

In all spaces, provide proper **technology and connectivity**, including WIFI and power connections, display and projection capability.

Medication errors are the most common medical error

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$21 **Billion Annually**

"Our goal is to foster collaboration, communication and education among physicians and our medical teams to advance and enhance our care for patients. They are our number one priority."

- Jeff Myers President & CEO, Hamilton Health Care System

[5] Tariq RA, Vashisht R, Sinha A, et al. Medication Dispensing Errors and Prevention. [Updated 2021 Nov 14]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-.
[6] The Costs Associated with Medication Errors (2018). Smartsense. **https://blog.smartsense.co/medication-error-costs**. Link accessed January 31, 2022.
[7] Reiling J. (2007). Safety by Design: Designing Safety in Healthcare Facilities, Process, and Culture. Oakbrook, Terrace, IL: Joint Commission Resources
[8] Chaudhury H, Mahmood A, Valente M. The Effect of Environmental Design on Reducing Nursing Errors and Increasing Efficiency in Acute Care Settings: A Review and Analysis of the Literature. Environment and Behavior. 2009. 41(6), 755-786.
[9] Tucker AL, Singer SJ, Hayes JE, Falwell A. (2008). Front-Line Staff Perspectives on Opportunities for Improving the Safety and Efficiency of Hospital Work Systems. Health Services Research Journal. 43(5 Pt 2), 1807-1829.
[10] Johnson M, Sanchez P, Langdon R, Manias E, Levett-Jones T, Weidemann G, Aguilar V, Everett B. (2017). The impact of interruptions on medication errors in hospitals: an observational study of nurses. J Nurs Manag. 25(7):498-507. doi: 10.1111/jonm.12486. Epub 2017 May 22. PMID: 28544351.

Nurse stations

Nurse station planning and design can reduce staff stress and fatigue, improve patient safety, and improve quality of healthcare delivery.

The nurse station is the center of activity on the inpatient hospital floor. Virtually every healthcare activity occurs at the nurse station, often concurrently, representing a wide range of staff roles. It is an environment that needs to enhance social interaction and work collaboration and simultaneously support focus work.

There are three schools of thought in nurse station design: centralized, decentralized and hybrid.

In centralized planning, nurses and staff work together in a central location. Quick access to colleagues supports smooth workflow and communication, social support, learning and mentoring, and efficient communication. Access to supplies and technology is centralized for space savings and efficient work.

However, centralized nurse stations offer less proximity and visibility to patients, and they increase congestion, noise and distractions because they are a central hub of activity. This can lead to increased fatigue and work errors.

A decentralized nurse station has no central hub. Individual nurse stations are located throughout the unit, typically outside patient rooms. In this model, nurses are closer to patients, there tend to be fewer distractions and each nurse has their own workspace. The downside of this model is that nurses are separated from their colleagues, which reduces opportunities for staff mentoring, social support and work interactions.

In some cases, there are opportunities for a hybrid configuration that offers individual workstations between rooms while also providing a centralized hub. The sub-stations allow for focused work effort and support monitoring and interaction with patients and their families, while the central nurse station provides the interactive work environment that enhances social support, mentoring and access to resources.

Design considerations

Regardless of the planning model used, there are several factors to consider when designing a nurse station:[11]

- **Ergonomics for control over work process.**
  Features and furnishings should be adjustable and movable to reduce physical strain and to improve workflow, reducing cognitive load and stress.

- **Functional support of a variety of work processes**
  The spaces and their adjacencies need to support the activities of the users. The space should accommodate a variety of roles (doctors, nurses, radiologists) and different types of work activities (such as charting, group rounds, medication preparation and delivery).

- **Optimize adjacencies of resources**
  The spatial relationships between different activity areas should be planned to optimize adjacencies between them and to tangible resources, medications, food, supplies, and intangible resources, information, social support, advice, and mentoring.

Spaces need to support a variety of user activities and should be optimally adjacent to resources.
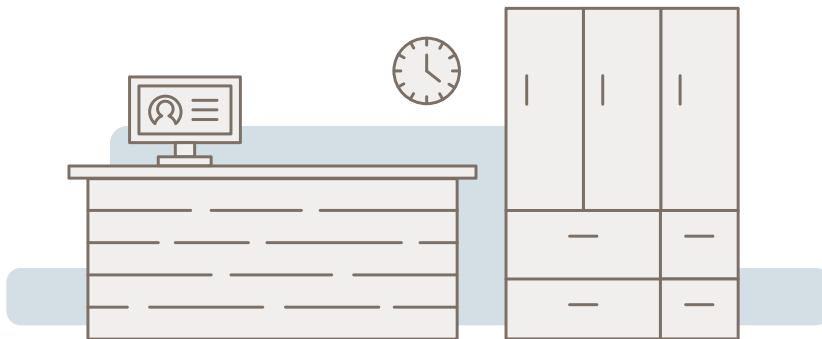
- **Work collaboration, mentoring and social support**
  The nurse station needs to support simultaneous collaboration, mentoring and focus work, as well as allow for different group sizes.

- **Reduce distractions**
  Distractions can cause confusion, fatigue, work errors and burnout. The nurse station needs to support many different types of information exchange but must do so while helping staff reduce distractions. Design the spaces and acoustical materials to minimize noise and visual distractions.

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[11] Healthcare Design (2006). Planning and designing highly functional nurse's stations. **Planning and Designing Highly Functional Nurses' Stations - HCD Magazine (healthcaredesignmagazine.com)**

Caregiver respite spaces

Nurses need to take care of themselves before they can take care of others. Healthcare staff need places to recharge, step away and recover during their shift.[12] When stressful situations arise, or a break from workload demands is needed, respite spaces are important to protect caregiver mental health and well-being – or just provide a distraction-free place to catch up on work.

Many healthcare systems have significantly altered their policies to protect their workers from stress and burnout since the pandemic. However, staff shortages, unsupportive work culture or managers, or even the lack of legal right to take a break in some states can be factors in the adoption of respite spaces.

Sometimes referred to as "on-call rooms", respite spaces are important to protect caregiver mental health and well-being.

Design considerations

There are several design considerations for designing a respite space:

- The respite room should not simply be a large break room that serves an entire ward. Respite spaces do not have to be large – 120 square feet is sufficient.

- Plan to place respite rooms along main circulation paths, allowing them to be physically removed from the main floor but only steps away from the action.

- Outdoor views are desirable, bringing in natural daylight and views to nature can support relaxation.

- Since patient areas are flooded with bright lighting, the respite room should have dimmable overhead lights and small lamps. The ability to adjust curtains to reduce glare is helpful.

- Offer a "homey" ambiance that contrasts with clinical spaces by using soft seating and lounge furniture, ottomans, rocking chairs and recliners to relax and get off their feet, and lower illumination levels.
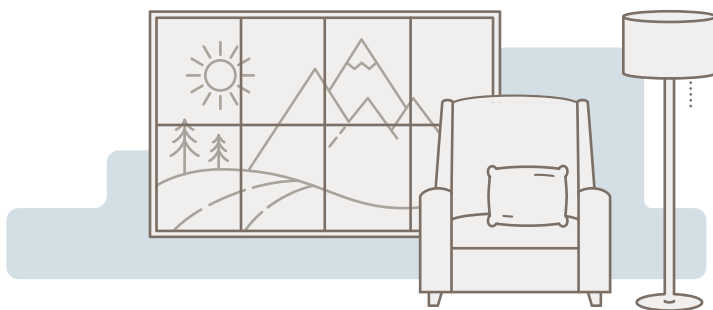
- To fully support occasional work tasks even with soft seating, offer pillows that the user can position for functional support during use of laptop or tablet. Provide floor lamps or task lighting that can be positioned to reduce glare for work tasks using mobile technology.

- Consider an HVAC upgrade for better air exchange, filtration, and temperature and humidity control to reduce risk of airborne disease transmission, and to improve air quality within the space. Better air quality can reduce allergy symptoms, eye irritation and is shown to increase cognitive performance.[13] If an HVAC upgrade is not in the budget, high quality portable HEPA filtration units could be used.

Biophillia is the innate human instinct to connect with nature and other living things. In design, it is used to increase connectivity to the natural environment and foster a sense of well-being. Studies have shown it has many positive impacts on physical & mental health.

Color and materiality are all important considerations when designing an effective respite room. Restorative spaces should use soft, nature-inspired color palettes that give the user a place to relax. Rich, authentic textures and comfortable furnishings help people to feel safe and comforted.

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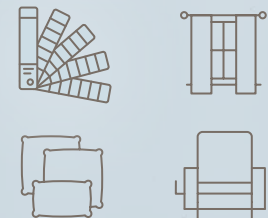
[12] OFS Workplaces: Renewal Rooms for Nurses (2019). https://dashboard.mazsystems.com/webreader/69732?page=38
[13] Jose Guillermo Cedeño Laurent, Piers MacNaughton, Emily Jones, Anna S Young, Maya Bliss, Skye Flanigan, Jose Vallarino, Ling Jyh Chen, Xiaodong Cao and Joseph G Allen (2021). Associations between acute exposures to PM2.5 and carbon dioxide indoors and cognitive function in office workers: a multicountry longitudinal prospective observational study. Environ. Res. Lett. 16, 094047, https://doi.org/10.1088/1748-9326/ac1bd8

Exam rooms

As part of a streamlined experience, patients now spend most of their time in the exam room instead of moving around between waiting areas, consult rooms, labs, or other spaces. Exam rooms are being designed to offer a patient-centric experience and accommodate ever-changing technology.

Primary care exam rooms are the backbone in the continuum of care, the primary place where patients interact with caregivers.

Design considerations

There are several design considerations to consider when designing exam rooms:

Layout of staff zone
- Convenient and standardized location of medications, supplies, and equipment to minimize unnecessary searching and movement by staff.[14]
- Easy-to-access electrical outlets for using/charging instruments and other technology.

Patient zone
- Furniture layout that allows patient and staff equal access to the computer screen with minimal height differential between patient and provider to maintain good eye contact.
- Screened dressing spaces with lockable storage for personal items.

Family zone
- Sufficient seating for patients and their extended families and other support professionals.

Windows, walls, and ceilings
- Offer a full-length mirror for patients to check their appearance before leaving the room.
- Art featuring scenes of nature can offer a relaxing visual break.
- Use sound-absorbing ceiling materials for noise reduction.
- Employ windows and/or skylights to provide plenty of direct or indirect natural light.
- Offer views to nature through the windows.
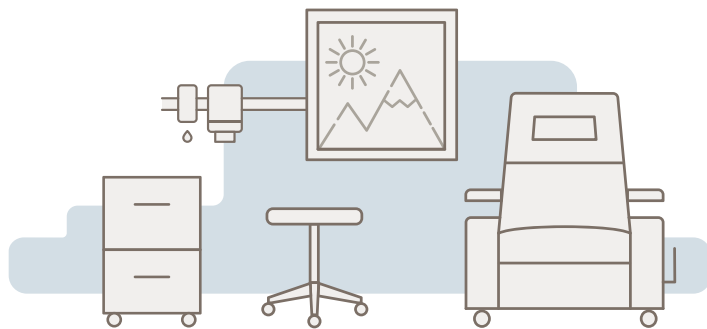
Flooring
- Home-like materials that create a non-institutional ambiance for patients and visitors.
- Provide wayfinding cues in the form of color coding on floors, directional signage, and views to interior and exterior landmarks.
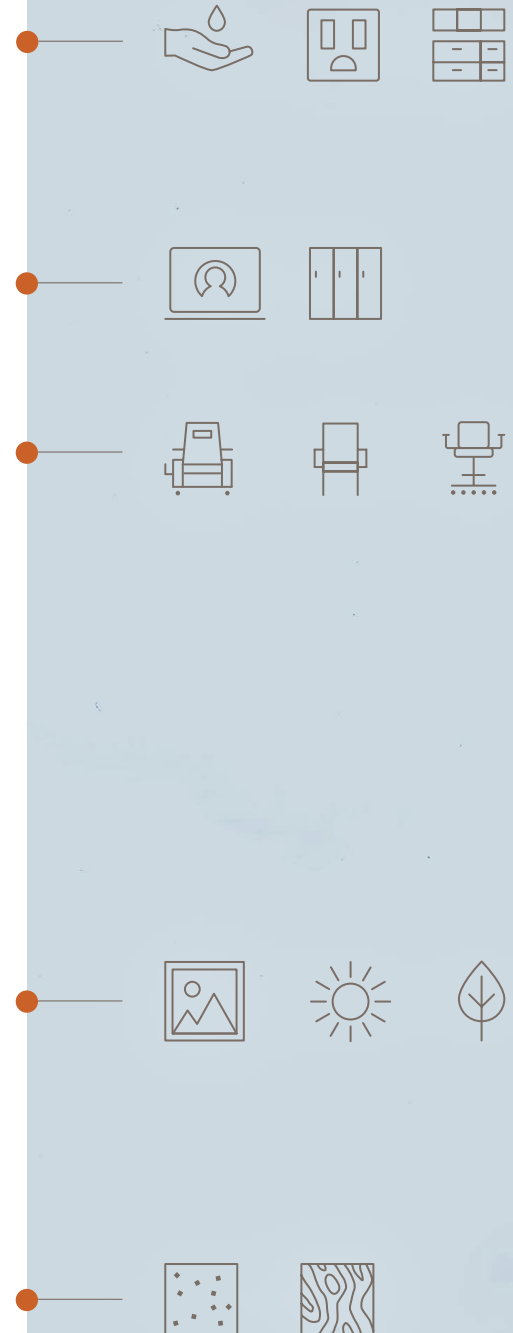
[14] Kildea-Pahl, D., Baltimore, J., & Kosiara, B. (2001). Outpatient surgery care unit work process redesign. Journal of perianesthesia nursing : official journal of the American Society of PeriAnesthesia Nurses, 16(2), 70–81.
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Consult rooms

Treatment and financial discussions that occur in a safe and private environment build trust and encourage patients to openly communicate. Greater treatment acceptance translates into better care and business outcomes.

Patients may feel uncomfortable discussing aspects of treatment at the front desk. A private consult room can offer a more patient-centric, educational experience.

A private consult room can offer a more patient-centric, educational experience.

Design considerations

There are several design considerations for designing a consult room:

• Consult Rooms should be designed to "turn down the emotional temperature" on the patient-provider conversation by emphasizing home-like furnishings, offering lower lighting levels and home-like design cues.[15]

• Offer comfortable ergonomic seating options and display technology that permit an effective sharing of information and dialogue[16] and offers a safe harbor for patients and their families to interact with their doctor. This room lets the physician take sensitive conversations outside the clinical feel of the exam room.

• Space should permit multiple doctors to be present during a patient consultation, either face to face or in a virtual meeting.

You may not be able to describe it, but you know it when you feel it, that feeling of home that soothes and secures. It's restorative, welcoming and comforting. When we design around human-centered factors, stress is reduced and environments feel calmer.

[15] Okken, V., van Rompay, T., & Pruyn, A. (2013). Room to Move: On Spatial Constraints and Self-Disclosure During Intimate Conversations. Environment and Behavior, 45(6), 737–760. **https://doi.org/10.1177/0013916512444780**
[16] Almquist, J. R., Kelly, C., Bromberg, J., Bryant, S. C., Christianson, T. H., & Montori, V. M. (2009). Consultation room design and the clinical encounter: the space and interaction randomized trial. HERD, 3(1), 41–78. **https://doi.org/10.1177/193758670900300106**

Staff rooms

While in the past, staff meeting rooms have been strictly functional areas for staff work-related meetings, consider the opportunity to create a hybrid space in which staff can meet and share information but within a more casual, restorative context.

Making a few of the changes existing staff meeting rooms offers an opportunity to enhance staff resilience while maintaining staff efficiency.

Staff rooms are social areas and meeting spaces. Staff rooms offer an opportunity to enhance staff resilience while maintaining staff efficiency.

Design considerations

There are several design considerations to consider when designing staff rooms:

Bring in elements of nature to reduce staff stress in meeting rooms
• Nature scene artworks can offer a pleasant visual break for staff.
• Incorporating a variety of real or artificial plants, or even using an existing monitor to cycle through still images of nature, also can achieve the goal.
• Sounds of nature (recordings played through speakers) can reduce staff anxiety.
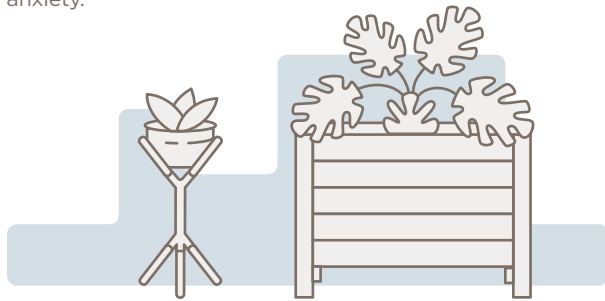
User control: A sense of control is especially important when staff are in high workload conditions with little autonomy or control over the situation.[17]
• Allow staff control over rearranging the furnishings within the meeting space to support a range of interactions from formal meetings to casual interactions.
• Apps or direct controls to manage the type of sound and sound level, can help staff align the ambient environment to the activity at hand.[18]
• Table or floor lamps throughout the space not only allow staff control over their illumination level but also provides a more welcoming, home living room-type of setting.
• A flat-screen monitor can be used to enhance user control over work-life balance: to easily bring in virtual team members during a staff meeting, display yoga sessions for small groups, to streaming a favorite show to guided relaxation/meditation or one-on-one counseling for emotional support.
• Access to power and data connectivity built into the main conference table improve work process and reduce ergonomic risk.
• A credenza stores supplies, supporting work process.
• Scalable, freestanding walls can be designed to offer control over visual and acoustic privacy
• Integrated, movable whiteboards provide caregivers with the chance to share ideas across shifts

Access to social support: The space can be flexible, creating areas that enabling staff to access the family and friends support structure so vital to their health.
• The space can be divided through a few high-backed seating options, free-standing panels, or even positioning the furniture within the room differently. These techniques can turn part of a meeting room into one that supports calls or video chats with family.
• When those types of arrangements are not needed, the space can easily flex back into a typical meeting or social space, promoting collaboration and camaraderie among workers.

Flexible spaces free us from being locked into permanent situations and fosters our ability to adapt to whatever lies around the corner. It's important that we set up spaces to respond to the changes of the world. These solutions can create compelling settings for the organization to be successful and allow their most valuable asset, their people, to thrive.

[17] O'Neill, M. J. (2010). A model of environmental control and effective work. Facilities, 28(34), 118-136. Retrieved from https://doi.org/10.1108/02632771011023104
[18] O'Neill, M. J. (1996). The role of user control in person-environment fit. In O. Brown, & H. Hendrick, Human Factors and Organizational Design and Management V (pp. 220-224). Amsterdam: Elsevier Science.

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Physician office

Patient-centered policies and business models are fundamental to the future healthcare delivery system. Thus, the physician office should be a safe harbor for the patient and for private and lower-stress conversations between caregiver and patient. [19]


The physician office should be a safe harbor for the patient and for private and lower-stress conversations between caregiver and patient.

Design considerations

There are several design considerations for designing a physician room:

- These spaces do not have to be assigned private offices but if unassigned must be easily reservable by physicians.

- Especially if shared (unassigned) an adaptable private office space with ergonomic seating and a height-adjustable worksurface can be easily adjusted to fit all users' physical needs, reducing physical strain and stress, improving the quality of staff experience.
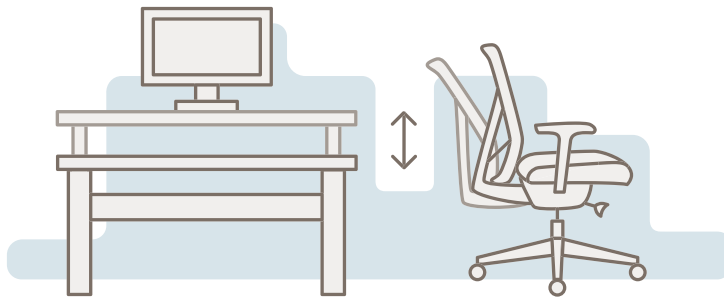
Spending hours at a desk can greatly affect overall well-being, based on how well a space is set up. If a desk or chair is not set up properly, this can have a negative impact on health and productivity.

Ergonomics is the study of people in their work environment. Ergonomics focuses on modifying the work environment to fit the employee, rather than the employee to the work environment.

[19] CME Corp Staff. (2016). Five key elements of patient-centered physician office design. retrieved from
https://blog.cmecorp.com/five-key-elements-of-patient-centered-physician-office-design

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