
RETHINK
VITAL
SIGNS
Vitals are the beginning of the care interaction and are taken fully or partially on every patient. They provide important information on changes in patient health. The trends of vital signs often serve as the basis for treatment decisions. They are among the first pieces of information the physician will review before starting the care interaction with the patient. Vitals are the beginning of the care interaction and are taken fully or partially on every patient. They provide important information on changes in patient health. The trends of vital signs often serve as the basis for treatment decisions. They are among the first pieces of information the physician will review before starting the care interaction with the patient.
MIDMARK®

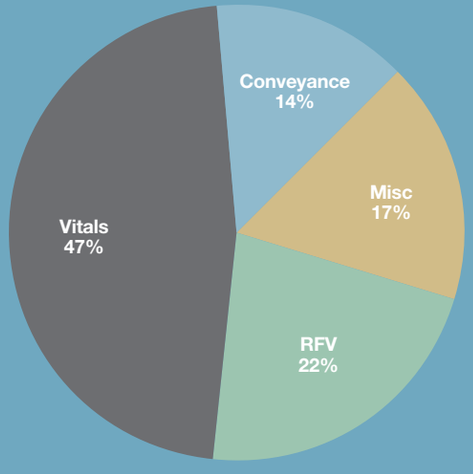
Vitals are the beginning of the patient-caregiver interaction. They provide critical information related to changes in patient health and play an important role in a physician's treatment decisions. While the vitals process has not changed significantly in 30 years, the integration of electronic medical records (EMR), new technologies and automated devices have a significant impact on the overall efficiency of the process. Midmark incorporates these advances into products and processes that enhance patient-caregiver interaction and provide innovative and efficient workflow solutions.

EFFICIENT PATIENT CARE BEGINS WITH ACCURATE VITALS

To build on the understanding of efficient patient care, Midmark partnered with a research firm to examine potential workflow efficiencies during the acquisition of vital signs and the interaction between patients and caregivers. The study was focused on the sequence and timing to acquire vitals in different care facilities, quality and accuracy of data acquisition, and patient safety. Existing workflow models were evaluated to examine near- and long-term implications for efficiency. The study included sites ranging from independent practices to integrated delivery network (IDN) practices, sites with paper-based medical records, and sites transitioning to EMR or fully integrated with EMR. The facilities also included automated and manual acquisition of vital signs.

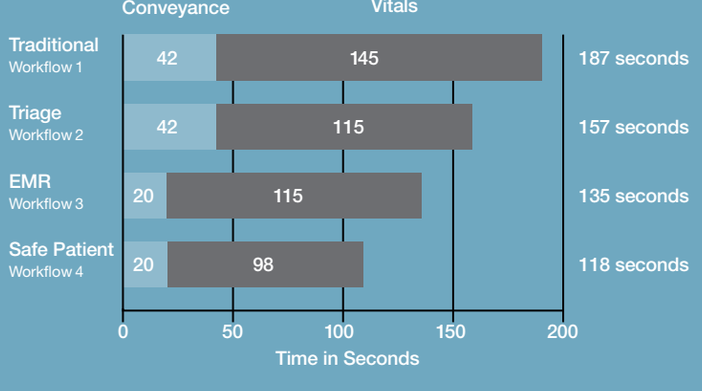
The vitals workflows on the following pages are based on research findings and provide a foundation for the integration of vitals into a modern, efficient workflow.

Care interaction was observed from the time the patient was called from the waiting room, through vitals acquisition, to the time the patient was ready to see the physician. The average time was 5 minutes, 7 seconds.



Conveyance = time from waiting room to hallway scale to exam room
Misc = discussion, additional tests, settling into the room
RFV = reason for the visit, medical checklist
Vitals = height, weight, pulse, temperature, blood pressure

Total Time



Workflow times (in seconds) are compared for conveyance and vitals acquisition. Moving vitals into the exam room and implementing automated vitals may reduce conveyance and vitals time by 36%. Automated vitals equipment standardizes the process and reduces the number of errors in transcribing data to the EMR.


patient satisfaction
time and cost savings
standardized work
RETHINK
THE VITALS WORKFLOW
meaningful use
safe patient handling
reimbursement and regulatory standards
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The traditional vital signs workflow is a common setup for most family practices or physician offices with paper-based patient record systems. Patient weight and height are captured manually while leading the patient to the exam room, which can cause delays with patient flow in the hallway. Pulse, temperature and blood pressure are taken inside the exam room.

TRADITIONAL VITAL SIGNS WORKFLOW 1

Patient Considerations

Accurate patient weight and height are necessary to establish body mass index (BMI), and some personal items must be removed in common areas.

- Shoes, jackets and other items require temporary storage in the hallway.
- Elderly or disabled patients may need a chair and additional time for these tasks.
- A queue at the scale may result in loss of patient privacy and comfort.

Caregiver Considerations

The traditional workflow is more likely to be altered as caregivers improvise workflow sequences, leading to inefficiencies.

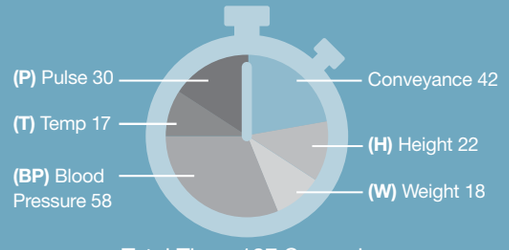
- Weight, height and BMI calculation are recorded manually on a paper patient chart, increasing the chance for errors.
- Time may be lost while caregivers wait for patients to collect and transfer personal belongings.
- A queue at the scale may result in HIPPA concerns and lost time.

Overall Observations

With a central weight and height station, the traditional workflow requires fewer scales but may lead to improvised work areas.

- The hallway lacks convenient space for patient belongings and may become congested with family members.
- More time and care are required at the scale for elderly, disabled and overweight patients who may need handrails or a specialty scale.
- Queuing at the scale with high patient throughput may cause delays, loss of privacy and inefficiencies.

In Hallway or Triage	In Exam Room
H W P T BP	H W **P T BP**

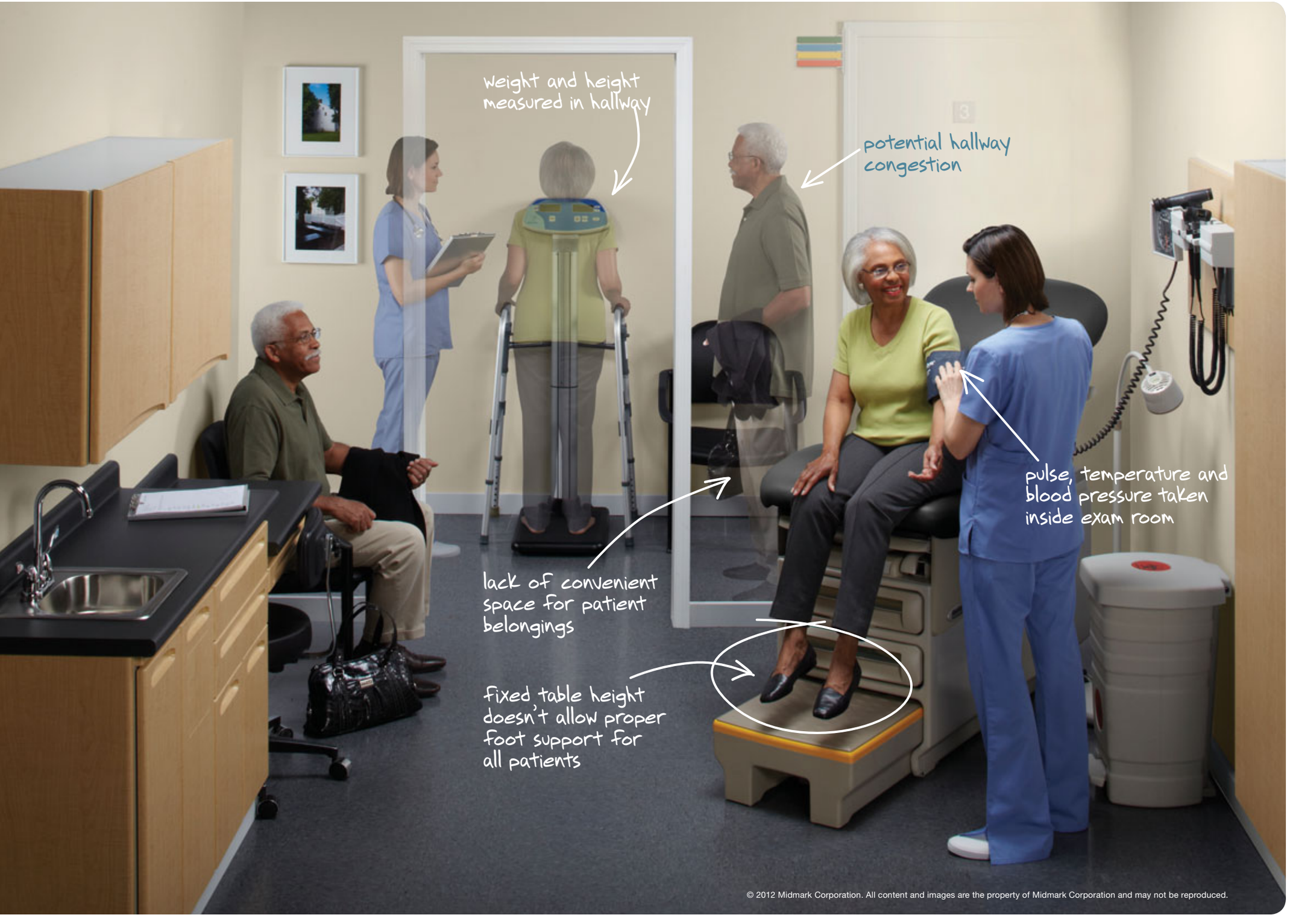


Total Time: 187 Seconds

The traditional workflow requires an average of 187 seconds from the time the patient is called through vitals acquisition.

Traditional Vital Signs

After weight and height are measured in the hallway, the patient is escorted to the exam room and directed to a side chair or the exam table. If the blood pressure cuff is manual and not attached to the wall, the patient is typically seated in a chair next to the work surface for paper-based patient records.



The triage nook is a semi-private space designed to assess and capture all vital signs. A curtain provides visual privacy, however patient health is not discussed in this space. The nook may include a scale, stadiometer and automated blood pressure and pulse device. Optional equipment can include a wheelchair scale, a sink for proper hygiene and storage for supplies.

TRIAGE NOOK WORKFLOW 2

Patient Considerations

As a designated vitals area, the triage nook provides limited space and privacy to patients.

- Space for patient belongings such as shoes, jackets and bags is minimal.
- Patients must completely redress before moving to the exam room.
- There may be added difficulty for elderly and overweight patients with more steps required during the visit.
- For additional patient safety, wall or side rails are provided.

Caregiver Considerations

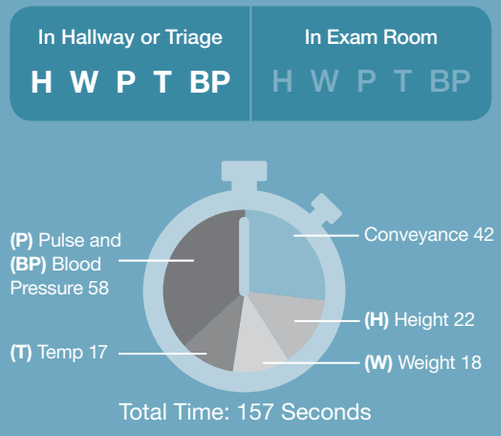
With additional steps and shared spaces, caregivers must watch for potential errors and inefficiencies.

- Weight and height are often recorded manually and transcribed once in the exam room, increasing the chance for errors.
- Caregivers may need to allow extra time and precaution in order to avoid congestion in the shared spaces.
- Time may be lost while waiting for patients to collect and transfer personal belongings.
- The hallway may become congested with family members.

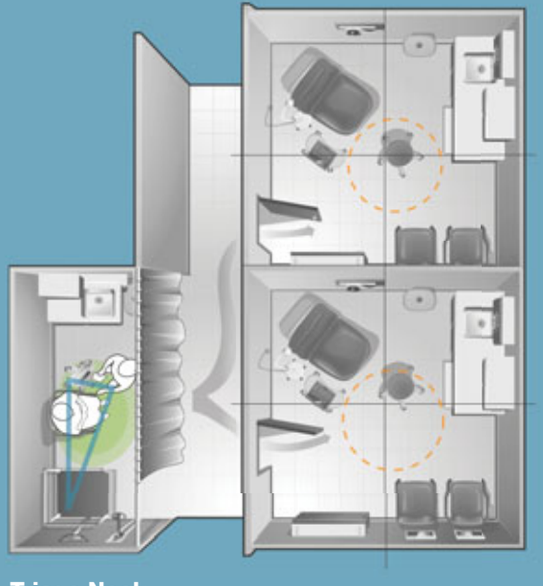
Overall Observations

The triage nook workflow requires coordination among caregivers for a successful patient flow.

- Space is limited for patient belongings and family members.
- The hallway may become congested with family members.
- At times, there is inadequate rest time for the patient before taking a BP reading.
- There is flexibility to set up a dedicated scale for obese and wheelchair patients.



The triage nook workflow, when compared with the traditional, saves 30 seconds by implementing automated vitals.



Triage Nook

All vitals are taken in the triage nook. Patients are then escorted to the exam room and directed to a side chair or exam table for capturing additional health data. Increased patient flow can lead to queuing in the hallway, and family members accompanying patients may also create congestion. There may be a single station or multiple triage nook stations supporting multiple exam rooms.

The EMR linear workflow is set up to assess and capture all vital signs in the exam room, and can include a scale, stadiometer and automated blood pressure and pulse device in the exam room. The patient is directed to a side chair to support proper posture. Depending on the design of the exam room, the patient is seated next to a work surface or workstation that has a computer with EMR and/or an automated vital signs device.

EMR LINEAR WORKFLOW 3

Patient Considerations

Capturing all vital signs in the exam room reduces conveyance time and provides convenient storage for patient belongings.

- For additional patient safety, rails adjacent to the scale are provided.
- After vital signs are taken, the patient moves to the exam table and may need additional time for assistance by a caregiver.
- Space is designated for the comfort of family members.

Caregiver Considerations

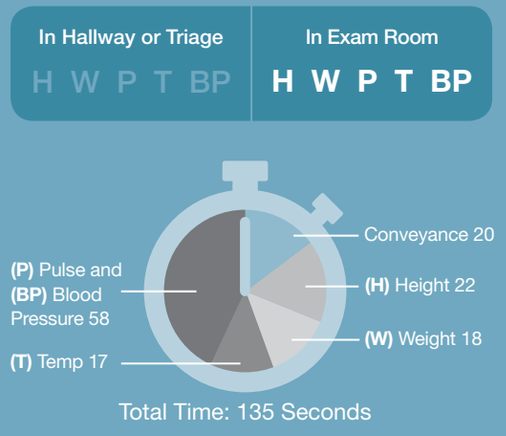
The EMR linear workflow provides better patient positioning, with vitals often transcribed directly into the EMR, reducing the chance for errors.

- The work area can be set up for the caregiver to stand or be seated.
- The process is task-focused for the caregiver, allowing more open communication with the patient.
- Time may be lost assisting patients with mobility issues onto the exam table.

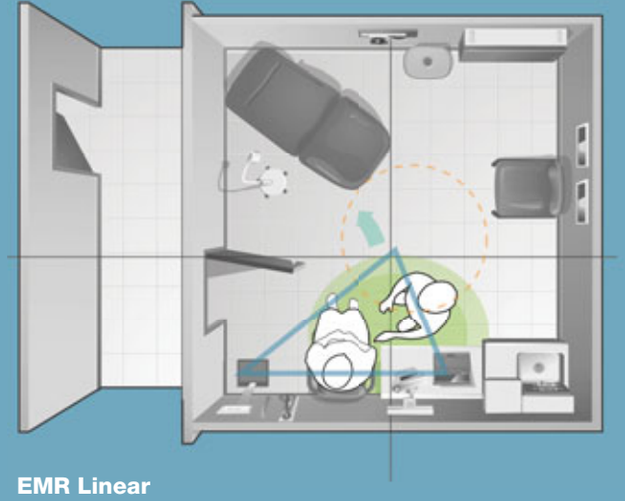
Overall Observations

The EMR linear workflow may require more equipment overall, but creates a more efficient workflow with greater ease for the patient.

- There is better patient positioning and less movement overall.
- The patient has more time to rest before taking a BP reading.
- The interaction between patient and caregiver has better ongoing eye contact throughout the exam.
- Patient and health data are integrated for increased efficiency.
- A special room setup may be required for obese patients.



The EMR linear workflow, when compared with the triage nook, saves 22 seconds in conveyance time by moving all vitals to the exam room.



EMR Linear

Upon entering the exam room, weight and height are captured. The patient is then seated in a side chair to support proper posture next to a work surface or workstation to gather patient vitals and health information. All patient-related health information can be discussed during this process.

With about one in five U.S. residents reporting some level of disability,[1] safe patient handling and the integration of vitals in the exam room can be central to a safe patient workflow. The EMR safe patient handling workflow is set up to assess and capture all vital signs in the exam room, and includes a scale, stadiometer and automated blood pressure and pulse device in the exam room. The exam table has an integrated scale, while an automated vital signs device mounted to the wall and a mobile EMR workstation provide flexibility and maximize access to the patient.

EMR SAFE PATIENT HANDLING WORKFLOW 4

Patient Considerations

For additional patient safety and convenience, the scale is integrated into the exam table, eliminating additional movement by the patient. The patient remains on the exam table throughout the visit.

- Storage for patient belongings is easily accommodated within the exam room.
- Family members are comfortably situated in their own designated zone.

Caregiver Considerations

Time is saved by reducing patient conveyance and eliminating the need for multiple vitals capture. The results most often are transcribed directly into the EMR.

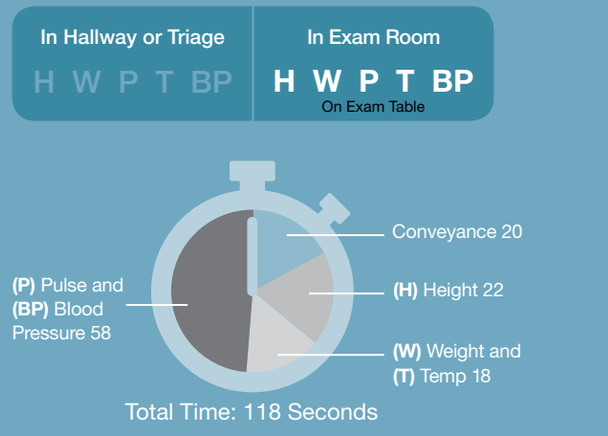
- The work area can be set up for the caregiver to stand or be seated.
- The process is task-focused for the caregiver, allowing more open communication with the patient.
- Once the patient is seated, the caregiver is completely focused on patient care without waiting for the patient.

Overall Observations

This workflow shortens the vital signs cycle time and includes unique equipment for a streamlined workflow.

- There is better patient positioning and less movement overall.
- The interaction between the patient and caregiver has better ongoing eye contact throughout the exam.
- Patient and health data are integrated for increased efficiency.
- Patients with mobility concerns can be accommodated.

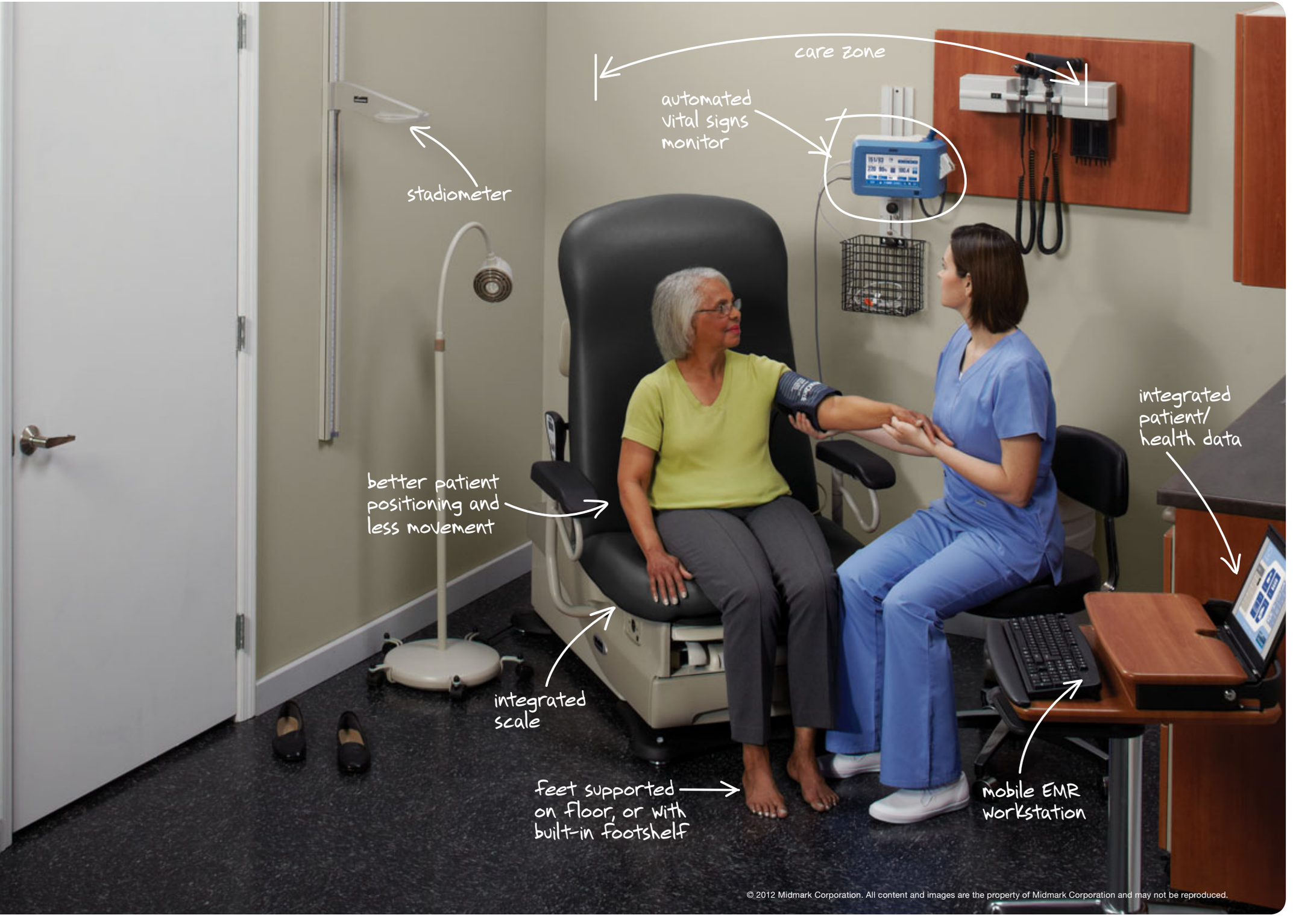
1 "Americans with Disabilities: 2005" (2008) available at: http://www.census.gov/prod/2008pubs/p70-117.pdf.



The EMR safe patient handling workflow, when compared with the EMR linear, saves 17 seconds by taking the weight, temperature, pulse and blood pressure on the exam table.

EMR Safe Patient Handling

Before the patient is seated on the low entry exam table, height is captured with a wall-mounted stadiometer. The patient is directed to the exam table to support proper posture. Weight, temperature, pulse and blood pressure are captured via the integrated scale and automated vital signs device. All patient-related health information can be discussed during the process while the patient sits on the exam table.



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