AMIA 2013 SHARP Program Panel

SHARP-C Presentation

8:30-10:00

November 18, 2013

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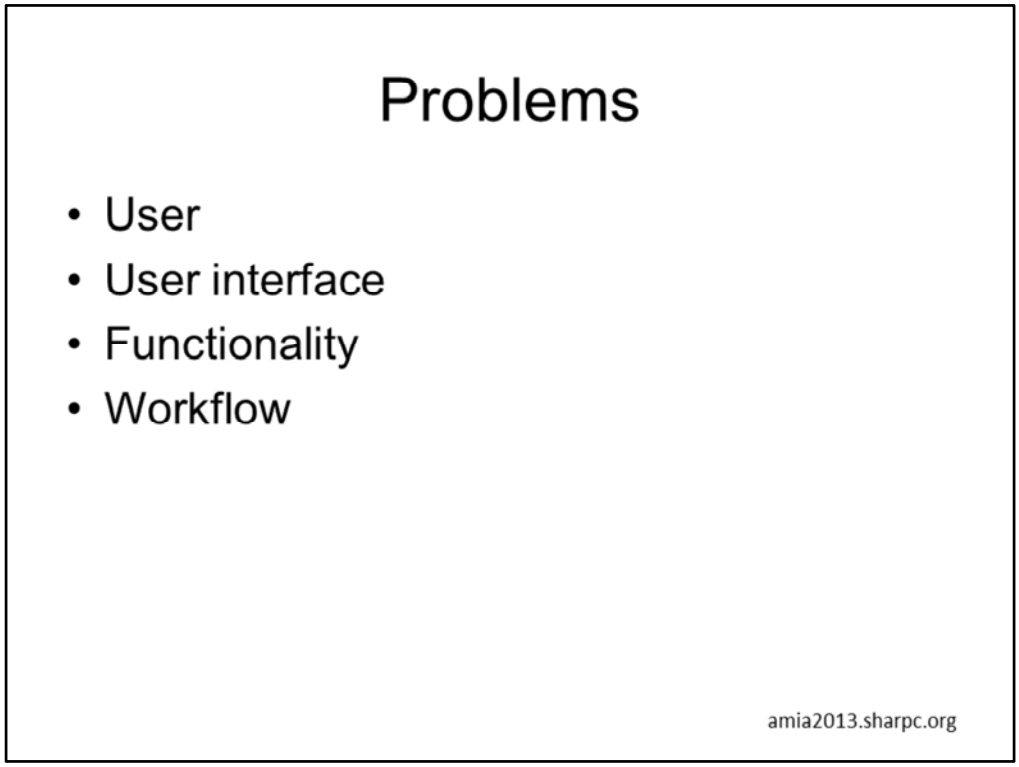
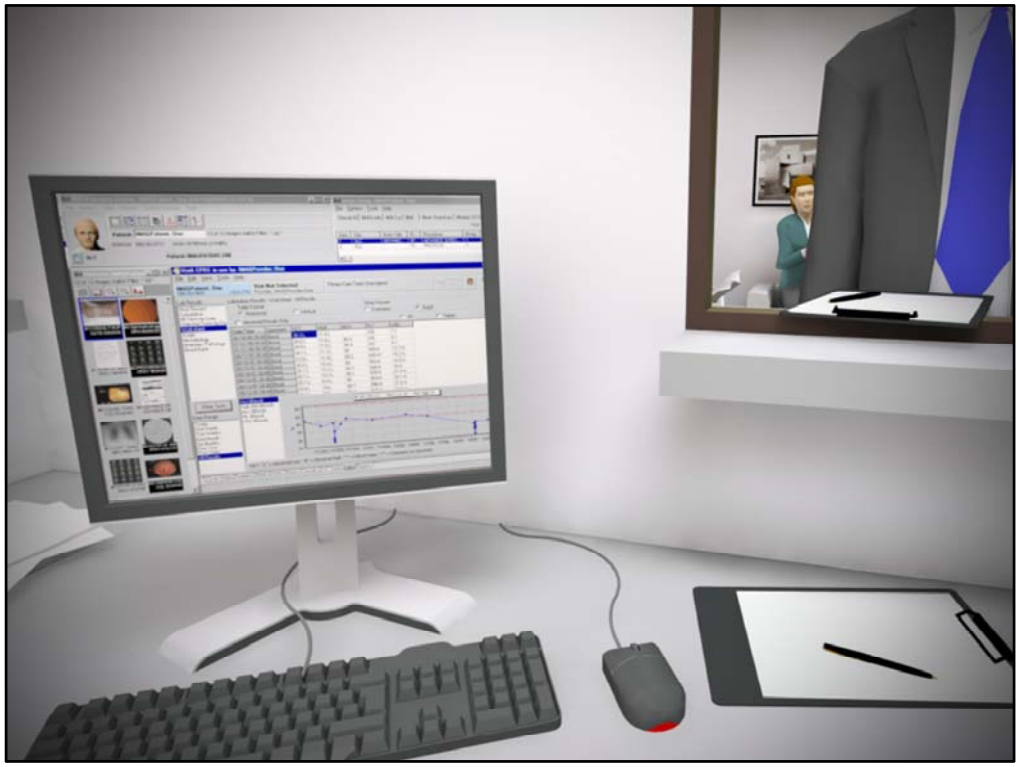
Problems with today's EHR systems can be reduced to four areas …



Knowledge about the User, Complex and confusing User interfaces, inadequate EHR functionality and inflexible workflow. Let me show what I mean …

Imaging a patient arriving at his physician's office …

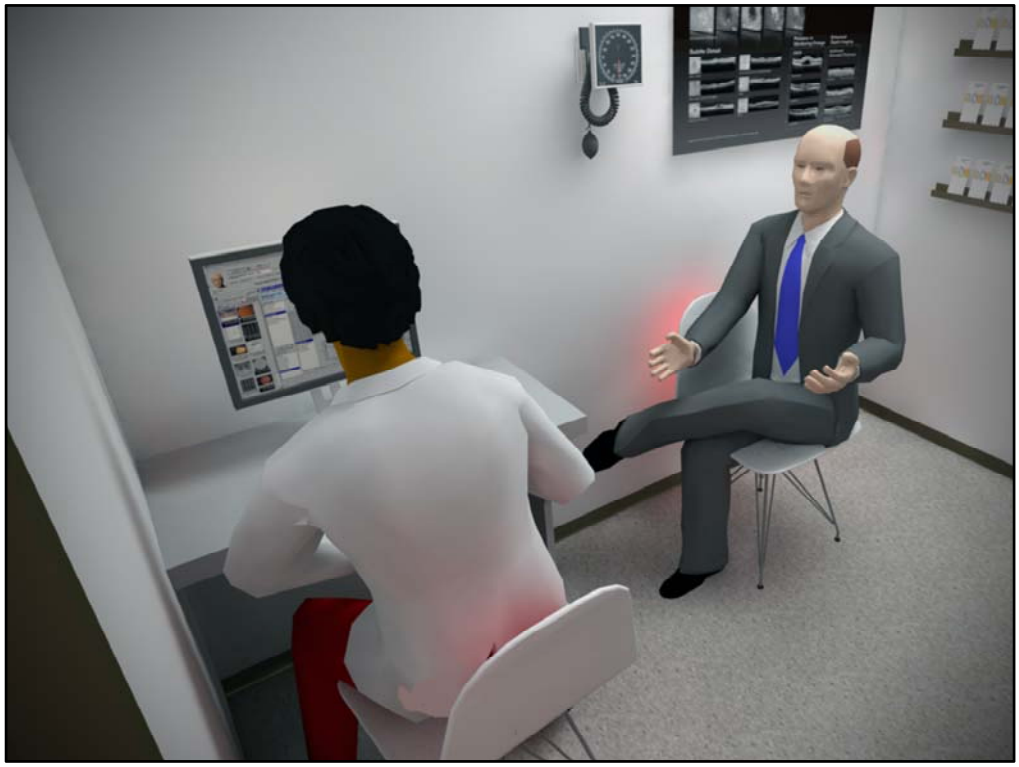
He checks in and is repeatedly asked his name, date of birth, and other identifying information while the receptionist tries to identify the correct record.



The patient is handed a clipboard and asked to complete forms that he has already completed and submitted via fax. He still has to complete the forms because they are not in his record.

Upon being moved to the exam room, he stops to have his height and weight checked in an area with other patients. This information is announced aloud as an assistant is entering it into the EHR. However, the system logs her out due inactivity. When she logs in again, she has forgotten the measurements and has to ask the patient to return and remeasure.

In the exam room, another assistant checks his temperature, pulse, and blood pressure.



She struggles putting the information into the practice's EHR, repeatedly asking the patient for drug allergies and the medications he takes regularly. The patient gets frustrated because these questions were included on the forms he has already completed—now twice.

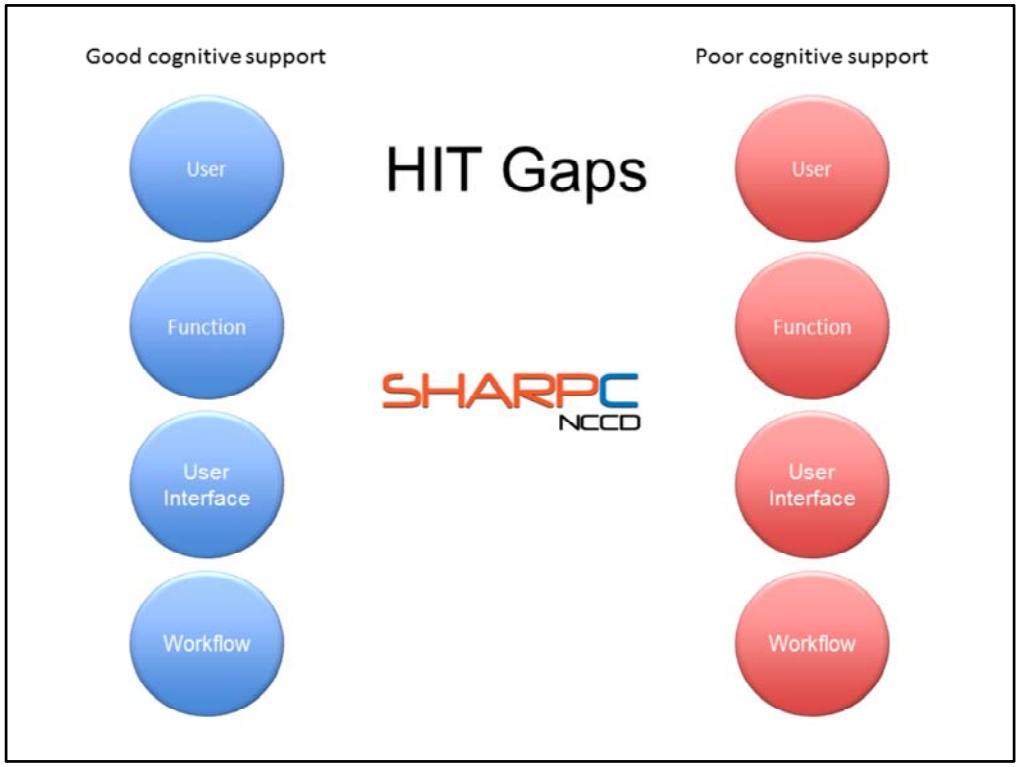
Once the physician enters the room, he has difficulty logging into the EHR. Then, he struggles finding the correct patient record. Because the EHR's workflow does not match the clinic's, the physician has difficulty finding the reason for the patient's visit. Throughout the encounter, the physician looks at a computer screen, not the patient.

After the examination, the patient is given a general brochure and folder of blurry education materials (photocopied many times).

As the physician talks to the patient, he is automatically logged out the EHR system for inactivity.

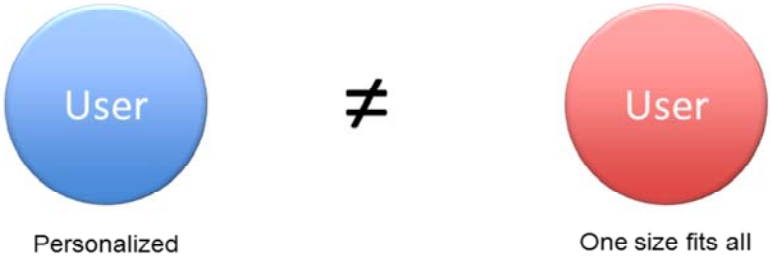
The physician logs back on to write a prescription for the patient, acknowledging multiple inconsequential drug-drug interactions and drug-allergy interactions. Unfortunately, he misses the one important interaction. The prescription is electronically sent to the pharmacy …

… with unfortunate results.



There are major gaps between EHR systems with good and poor cognitive support. SHARPC was funded to address these gaps.

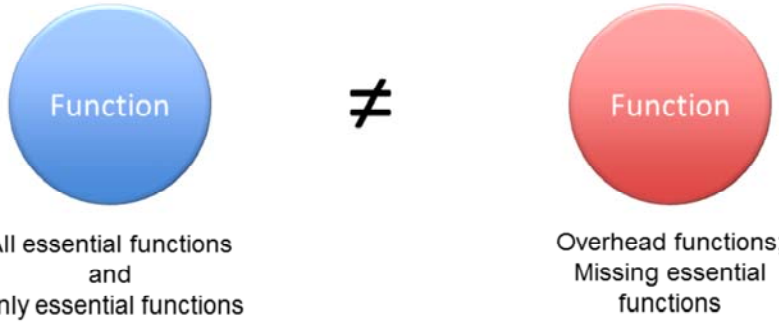
HIT Gaps



Personalized

One size fits all

HIT Gaps



All essential functions
and
Only essential functions

Overhead functions;
Missing essential
functions

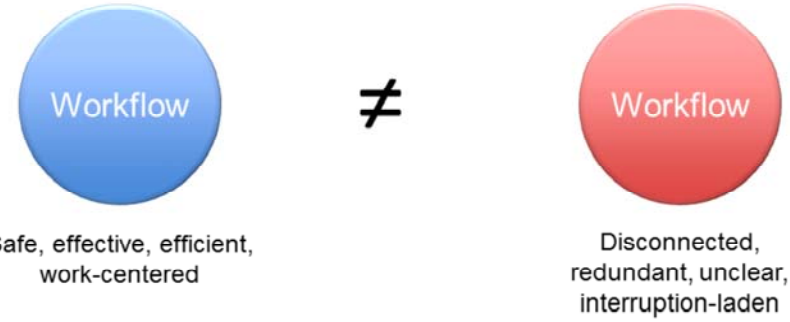
HIT Gaps

Intuitive, direct,
transparent, structured

≠

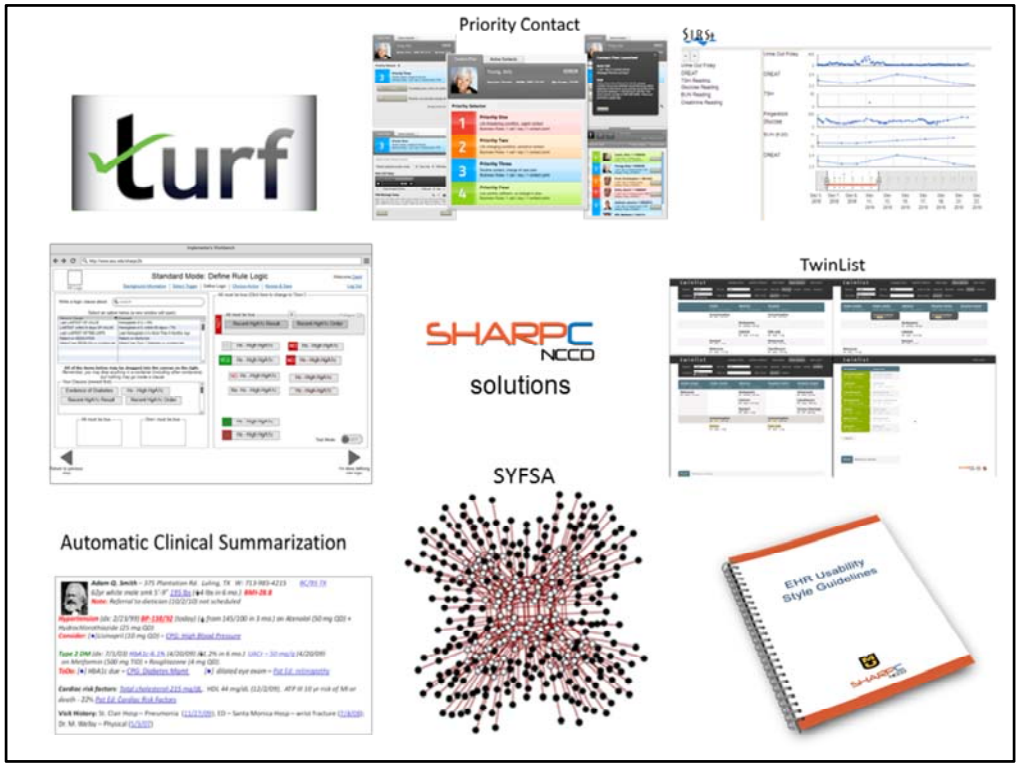
Confusing, indirect,
memory-based, scattered

HIT Gaps



Safe, effective, efficient, work-centered

Disconnected, redundant, unclear, interruption-laden



These are some of the solutions SHARPC has developed.

EHR Usability:

The Emotional Stages

Some time in the past…

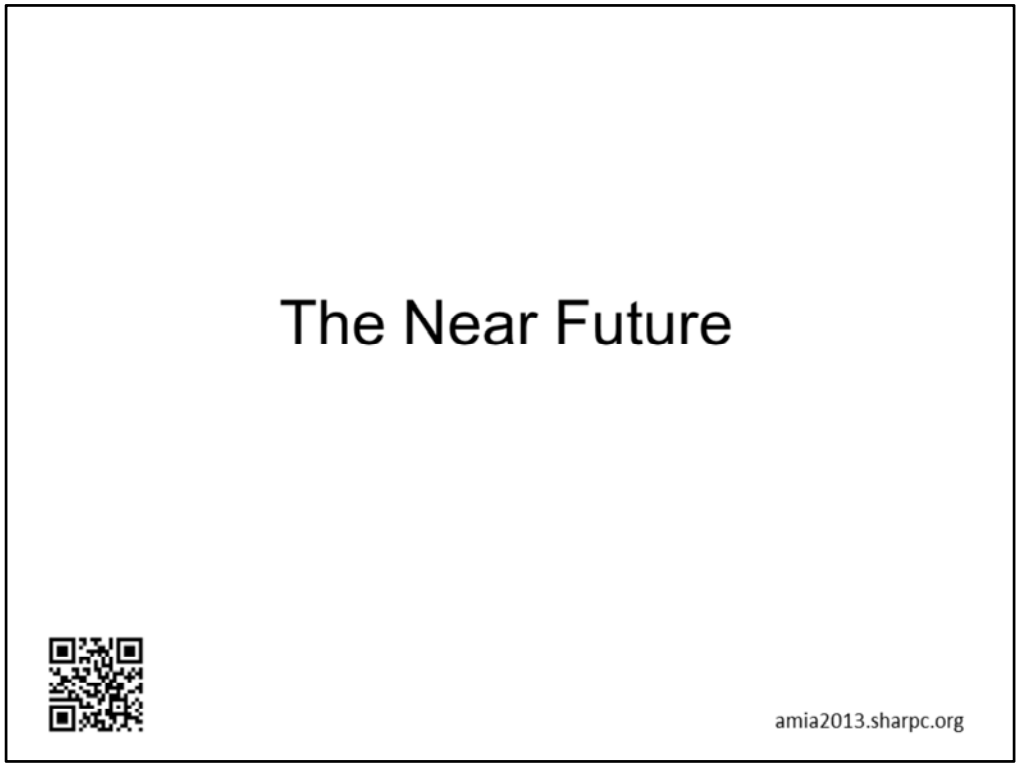
http://smallbiztrends.com/2012/11/4-quick-usability-wins-for-your-website.html

We are here…

http://cabarettheatreblog.files.wordpress.com/2012/02/emotionless_spock_by_elfqueen1969-d2yx7rp.png

Some time in the future…

http://searchengineland.com/does-this-website-usability-fairy-tale-have-a-happy-ending-86440



… a future that isn't too far away.

A patient arrives at his physician's office for a visit …

Where a camera in the waiting room …

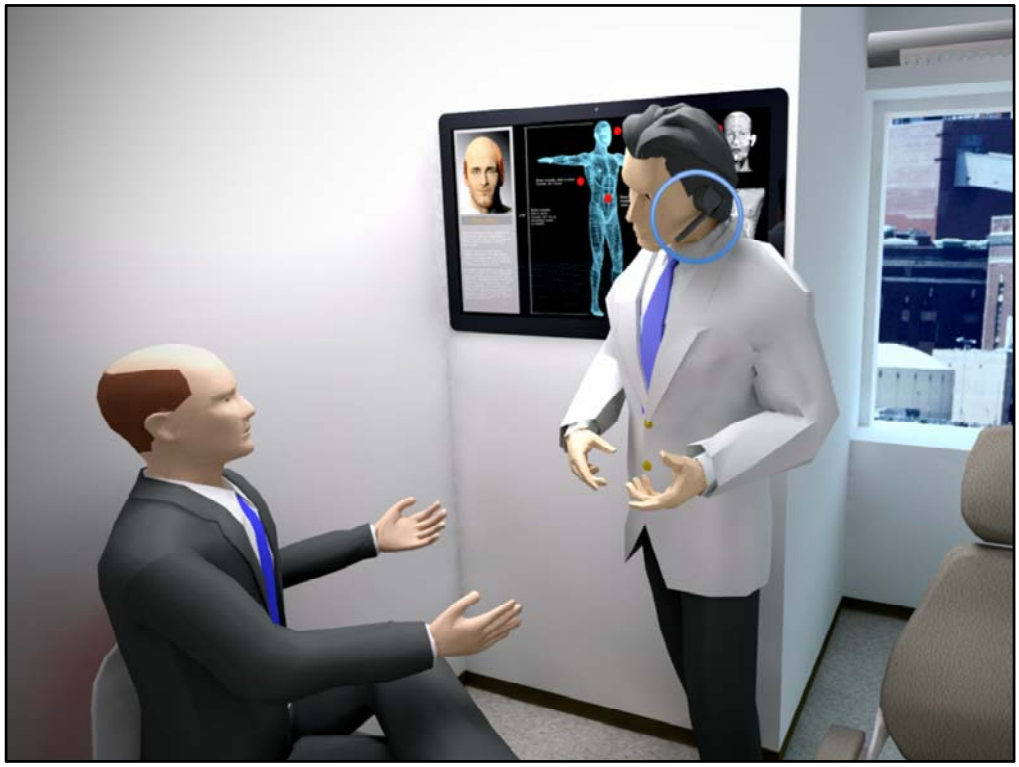
Uses facial recognition to identify the patient …

And instantly checks him in. His records are automatically retrieved.

Updated information can be directly entered by the patient using a tablet.

As the patient walks into an exam room, sensors embedded in the floor measure his weight. Cameras mounted on the wall measure the patient's height and body temperature. All of this information is automatically transmitted to his EHR.

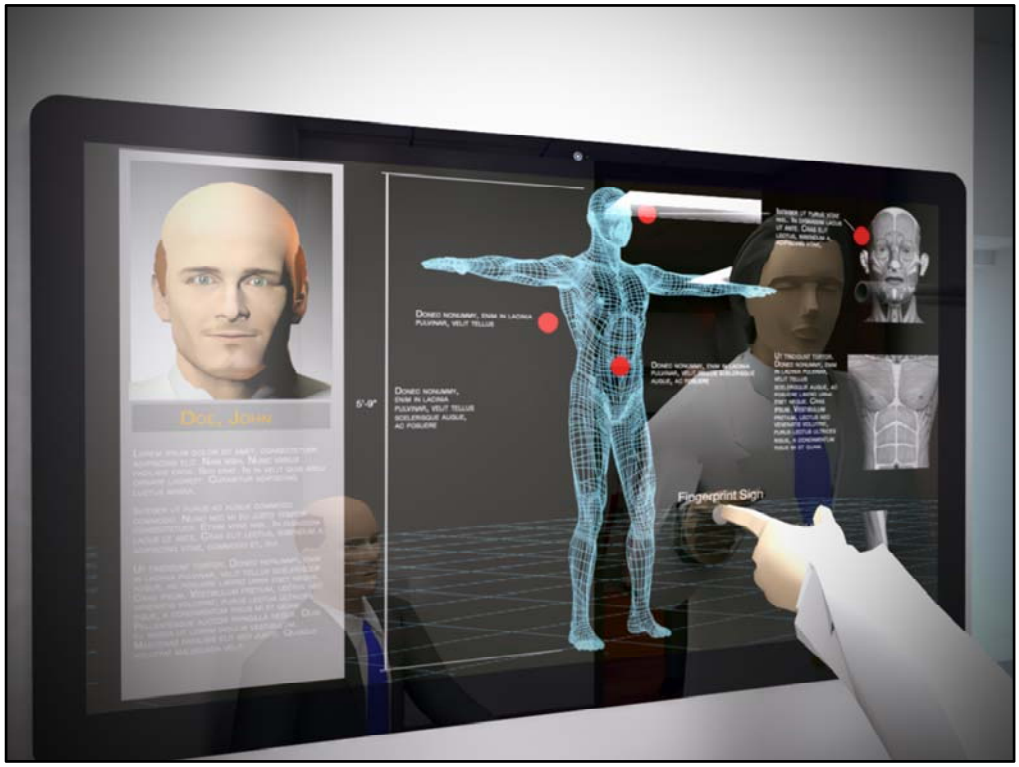
Upon entering the exam room, sensors embedded in the door handle take the patient's heart rate and blood pressure, then update his medical record.



The physician enters the exam room where the patient's EHR has been automatically called up on a large touch screen. The physician uses speech recognition to capture his exam notes, orders directly into the practice's EHR system.

The physician discusses treatment options with the patient and reconciles his medications. The system automatically checks for drug interactions. The physician then ePrescribes an order to the patient's pharmacy.

Patient education information is then automatically displayed. After a discussion between the physician and patient, the information is transmitted to the patient through encrypted email.



The encounter ends with the physician reviewing the chart and using fingerprint sensor to sign off.

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