IMPROVING THE PATIENT EXPERIENCE

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UX Design - Career, Springboard

PROBLEM SPACE

➤Negative emotions associated throughout patient experience (scheduling to check out)

   ➤Long wait times and disorganized information

➤Explore **how might we reduce wait times and organize information to improve overall patient experience**

SECONDARY RESEARCH & COMPETITIVE ANALYSIS

Smart technologies can create timely, convenient, and efficient patient experiences

Real-time monitoring
- **Wearable devices or remote** sensing devices monitor and record health data in real time; trigger alert to consult doctors in case of predicted abnormality

Smart scheduling
- **AI-based system** recommends doctors and makes bookings after online communication
- Latest health data automatically uploaded to **cloud-based electronic health record**

Follow-up consultation
- **Mobile app** sends patients messages about taking medicine on time, latest trends on recovery, or payment information
- Online follow-up consultation through **telemedicine** platform

Cloud-accessible report
- **Cloud platform** automatically collects consultation info, imaging, and lab results to generate a report
- The report is incorporated into personal health record, accessible through **mobile device/app** anytime

Smart triage and pathway
- **Facial recognition or finger-print** to confirm identify and **smart triage** based on retrieved health info and AI analysis
- Guided pathway and patient/location-specific queuing info shown in **mobile device/app**

Real-time tracking
- **Wearable band and RFID** technologies are applied to identity recognition, data input, and real-time location tracking

Self-aided examinations
- **E-diagnosis center/device** allows patients to conduct simple tests, imaging scans, or sample collection
- **E-report** generated and latest results transmitted instantly to doctors

Automatic process
- **Mobile device/app** provides transparency on full-day scheduling, diagnosis, drug, and payment information
- Prescribed drugs delivered to the bedside through **automatic guided vehicles**

Before treatment / During treatment (in hospital) / After treatment

AI, artificial intelligence; RFID, radiofrequency identification.

McKinsey & Company

➤ Healthcare Technology

➤ Digitization/ "Smart Hospitals"

  ➤ 'hospitals embed new technologies into their design and operations to **improve customer experience, as well as outcomes and costs'**

➤ Telemedicine

https://healthcare.mckinsey.com/finding-future-care-provision-role-smart-hospitals
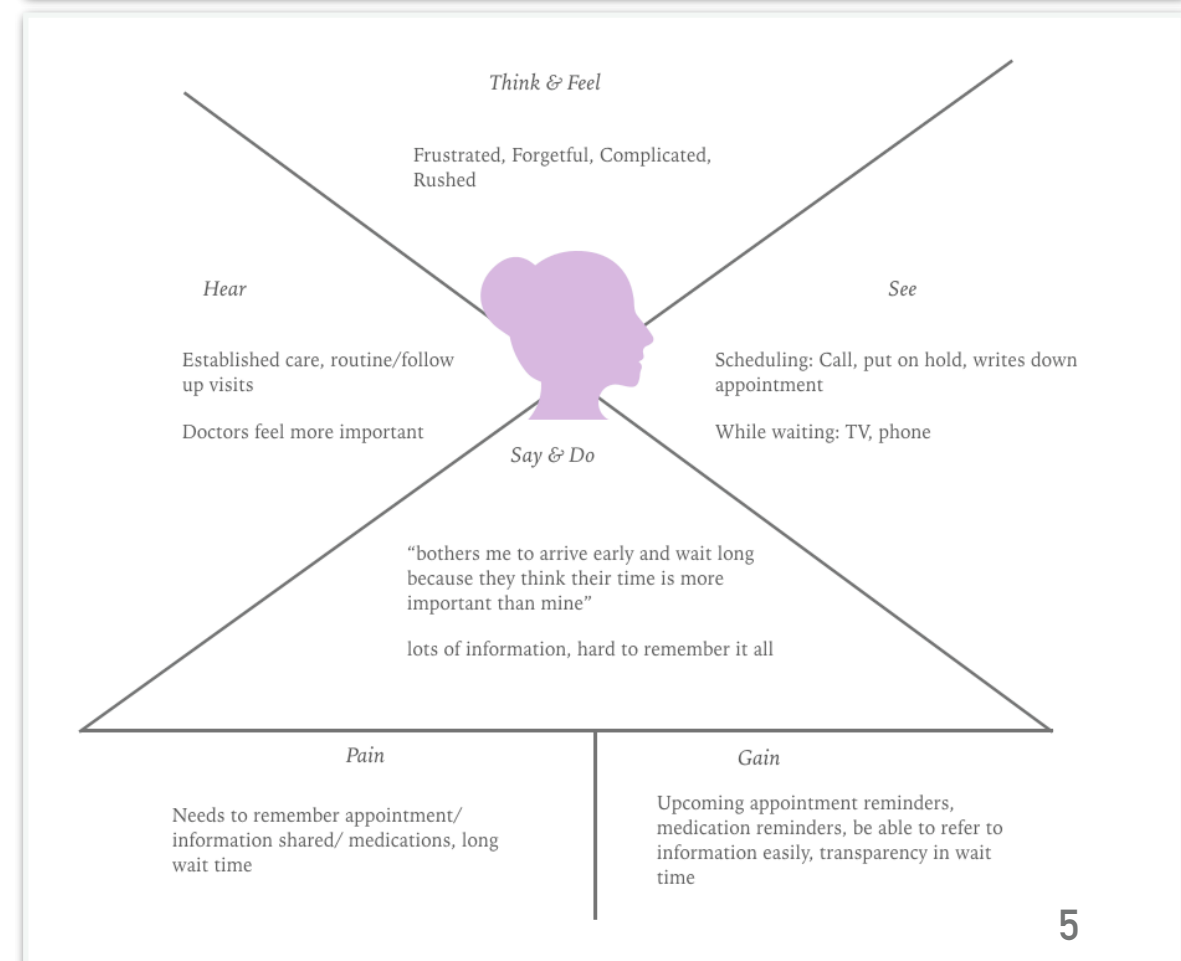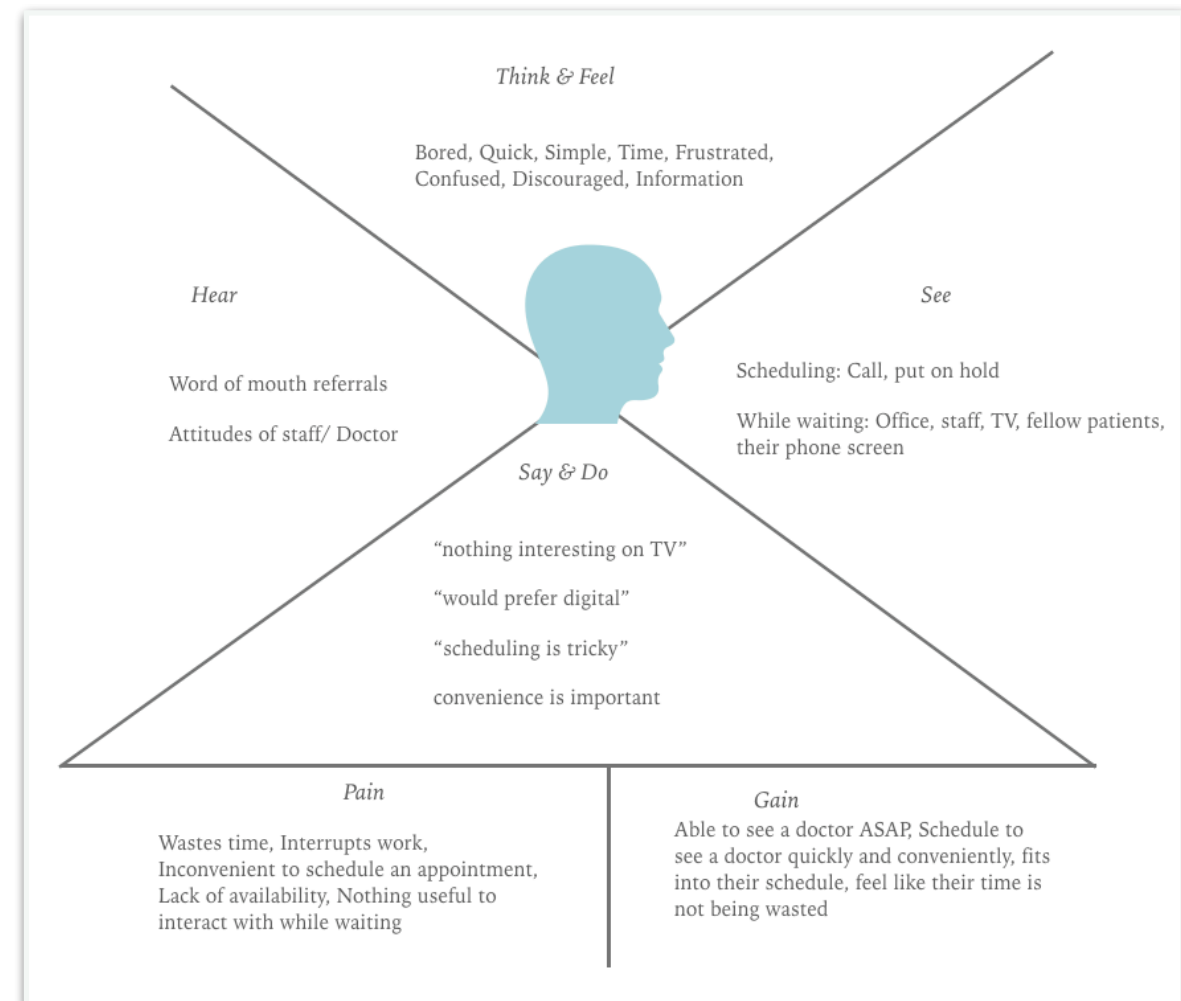
PRIMARY RESEARCH

➤ Conducted 30 surveys and 5 interviews

➤ Observed different healthcare facilities

➤ User Values

   ➤ Time

   ➤ Clear communication

   ➤ Transparency

➤ Pain Points

   ➤ Lack of efficiency in scheduling

   ➤ Unclear wait time estimates

   ➤ Opportunity to better utilize wait times

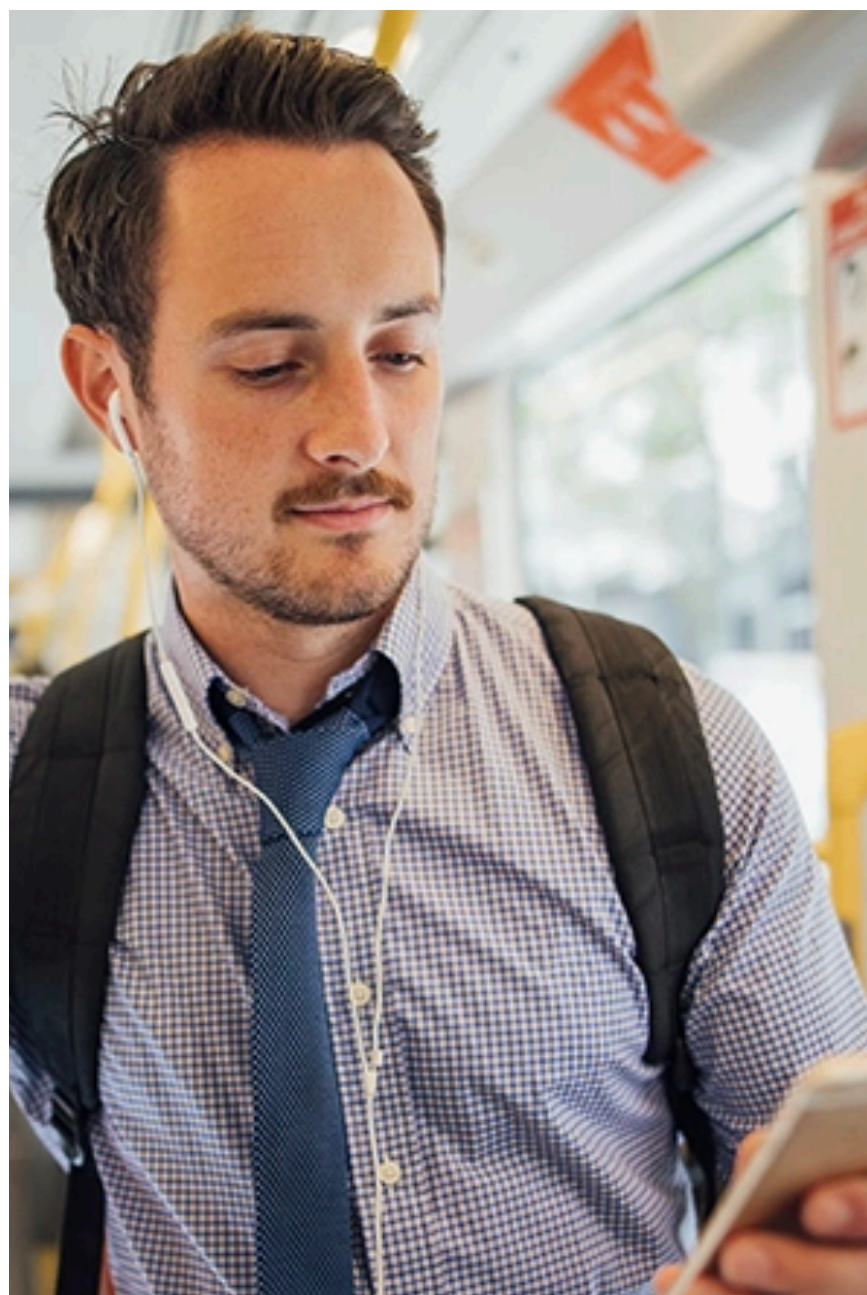   ➤ Disorganized patient and appointment information
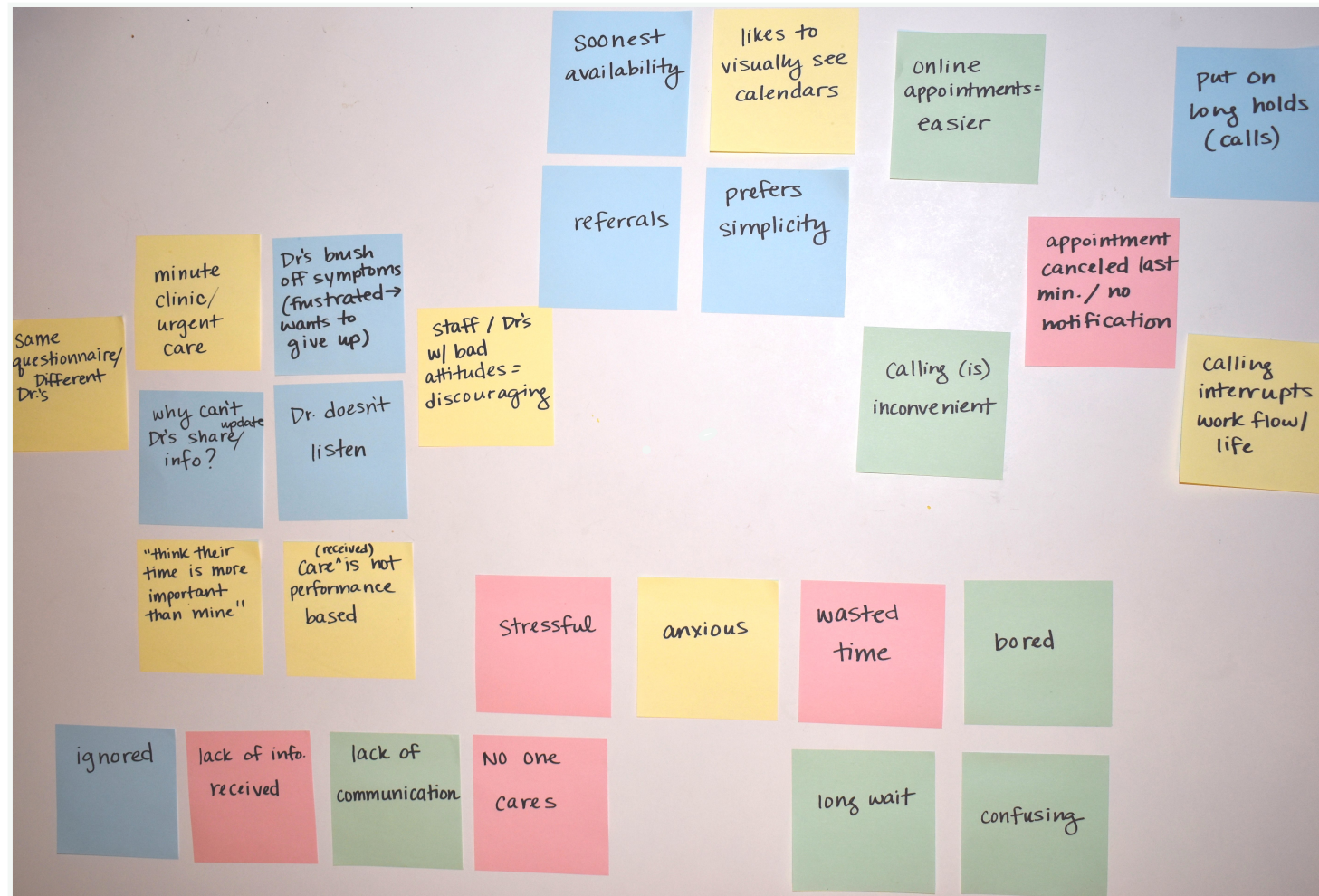
Affinity Map

Top Right: *Empathy Map of Minute Matt*

Bottom Right: *Empathy Map of Straight Shooting Sally*

Think & Feel
Bored, Quick, Simple, Time, Frustrated, Confused, Discouraged, Information

Hear
Word of mouth referrals
Attitudes of staff/ Doctor

See
Scheduling: Call, put on hold
While waiting: Office, staff, TV, fellow patients, their phone screen

Say & Do
"nothing interesting on TV"
"would prefer digital"
"scheduling is tricky"
convenience is important

Pain
Wastes time, Interrupts work, Inconvenient to schedule an appointment, Lack of availability, Nothing useful to interact with while waiting

Gain
Able to see a doctor ASAP, Schedule to see a doctor quickly and conveniently, fits into their schedule, feel like their time is not being wasted

Think & Feel
Frustrated, Forgetful, Complicated, Rushed

Hear
Established care, routine/follow up visits
Doctors feel more important

See
Scheduling: Call, put on hold, writes down appointment
While waiting: TV, phone

Say & Do
"bothers me to arrive early and wait long because they think their time is more important than mine"
lots of information, hard to remember it all

Pain
Needs to remember appointment/ information shared/ medications, long wait time

Gain
Upcoming appointment reminders, medication reminders, be able to refer to information easily, transparency in wait time

MINUTE MATT

➤ **Background:**

  ➤ **Age:** 29

  ➤ **Education:** Graduated university 2012

  ➤ **Occupation:** Software Engineer

  ➤ **Marital Status:** Single

  ➤ **Kids:** None

➤ **Matt's Story:** Matt has been a software engineer for 5 years. He is focused on growing in his career and describes his lifestyle as active and "on the go." Matt sees the doctor when he needs to, and is overall healthy.

➤ **Device:** Spends majority of his time on mobile

➤ **Obstacles Faced:** Calling to schedule an appointment is frustrating because it causes an **interruption to his workflow** and often involves **long hold times**. Needs to **see a doctor as soon as possible.** Has had **appointments canceled on last minute** without any notification. Wait times for appointments are long, experiences **boredom** in the waiting rooms, and does **not** receive **enough info, interaction, or communication.**

➤ **Goals, motivations:**

  ➤ **Information-** find a good doctor with availability that fits into his work schedule, updated on any changes to appointments

  ➤ **Effortless scheduling** - to be seen by a doctor immediately. A quick and more convenient way to set up an appointment.

  ➤ **Transparency-** of wait times and any notifications regarding appointment

  ➤ **Communication-** easy, simple, valuable (fun health facts, updates to any changes or follow up procedure), interactive and more personalized.

STRAIGHT–SHOOTING SALLY

➤ **Background:**

  ➤ **Age:** 68

  ➤ **Education**: High School Degree

  ➤ **Occupation:** Retired (Previously a Homemaker)

  ➤ **Marital Status:** Married

  ➤ **Kids:** Yes, and 3 grandkids

➤ **Sally's Story:** Sally worked as a bank teller for a brief time before becoming a full time homemaker. She is now retired and the proud Nana of three grandchildren. She sees several doctors for routine check ups.

➤ **Device:** Sally has a smart phone and texts / FaceTime's with her grandkids often. She also calls her friends to catch up.

➤ **Obstacles Faced: Long wait time, filling out the same questionnaire each visit, feels like Doctor thinks their time is more important**. Forgets appointment dates/times if not written down. Also **has trouble remembering** all of the content discussed during visit. **Multiple medications** to keep track of.

➤ **Goals, motivations:**

  ➤ **Organization**- a better way of keeping track of appointment, information, medications, etc.

  ➤ **Efficiency**- being able to update questionnaires as necessary

  ➤ **Trust and respect**- in quality of her care and her time

HOW MIGHT WE QUESTIONS

1. Improve scheduling efficiency?

2. Provide patients with updated information re: appointments and healthcare?

3. Organize and personalize patient information?

4. Better utilize and reduce the wait time of patients?

5. Be more transparent and effectively communicate wait times?

STAGES	RESEARCH	BOOK APPOINTMENT	CHECK IN	WAIT	VISIT	CHECK OUT
DOING	10-15min	20min	35min+	35min+	15min	10min
THINKING	-Where does my insurance cover? -What is the nearest doctor? -When is the soonest I can be seen? -Has the doctor been recommended to me?	-How do I make an appointment? -How much time will it take to schedule an appointment? -What is the soonest appointment that fits my availability? -How do I check/make changes to appointments?	-Where do I go? Who do I talk to? -How long will the wait be? -Is there a cost/copay? -Do I need to fill out a questionnaire?	-What should I do while I wait? -When will I be seen? -What is available for my entertainment?	-How is the doctor's bedside manner? -Will the doctor listen to me? -Will I be able to remember everything discussed? -What are the next steps?	-Where do I go? Who do I talk to? -Where can I access information re: my visit? -Do I want to see the same doctor or a different one? -Do I need to schedule an additional appointments?
FEELING	-Apprehensive -Clueless -Sick -Hopeful	-Confused -Frustrated -Annoyed	-Anxious -Surprised	-Bored -Frustrated	-Discouraged -Rushed	-Confused -Discouraged -Disappointed
EXPERIENCE	-Sift through information to find best fit -Research doctor, insurance, and location online -Referral from another doctor or someone they know	-Book an appointment by going to the website and calling -Often put on hold for a long period of time -Write down manually appointment information	-May be unexpectedly cancelled on last minute -First time patient or returning patient fills out questionnaire -Pay for appointment	-Long wait times -No communication about wait time -Nothing interesting on TV -Spends time idly browsing, texting, or otherwise using their smart phone or tablet	-May or may not feel listened to -A lot of information to digest -May think of questions afterward	-Has to remember and digest a lot of information -Satisfied or not with vsii -Wait for available staff member -Go home and repeat (call to schedule an appointment)
OPPORTUNITIES	-Straight forward navigation -Ability to search for and filter doctor's based on criteria **-5min**	-Allow users to quickly make an appointment and visually see availability -Digitize/ ownership of appointment process -Set up notifications and reminders **-5min**	-Streamline check-in —>Prior to appointment, send questionnaire and expected cost based off insurance **-3min**	-Provide accurate wait times -Update health information -Better utilize wait time (ex. time to educate) -Patient concerns readily accessible **- 15min**	-Ability to take notes -Rating system to grade level of care -Simple way to to contact nurse/ Dr. after visit **-30min**	-Patient profile to help organize information -Ability to rate doctor -Simple follow-up instructions -Easily able to schedule another visit **-3min**

NEXT STEPS– OPPORTUNITIES

STAGES	RESEARCH	BOOK APPOINTMENT	CHECK IN	WAIT	VISIT	CHECK OUT
OPPORTUNITIES	• Straight forward navigation • Ability to search for and filter doctor's based on criteria	• Allow users to quickly make appointments and visually see availability • Provide ownership of appointment process • Set up notifications and reminders	• Streamline check-in —>Prior to appointment, send questionnaire and expected cost based off insurance	• Provide accurate wait times • Update health information • Better utilize wait time (ex. time to educate) • Patient concerns readily accessible	• Ability to take notes • Rating system to grade level of care • Simple way to to contact nurse/ Dr. after visit	• Patient profile to help organize information • Ability to rate doctor • Simple follow-up instructions • Easily able to schedule another visit
	5min	5min	3min	15min	30min	3min

APPENDIX

➤ Untapped potential- we don't know what we don't know

➤ What other technological advancements could improve patient experience?

  ➤ RFID

  ➤ Robotics, AI

  ➤ Limitations?

    ➤ Security/ HIPPA

    ➤ Technology disruption- Unable to access patient data

    ➤ Medical device interference

    ➤ Accessibility

➤ Finding the Future of Care Provision: The Role of Smart Hospitals; https://healthcare.mckinsey.com/finding-future-care-provision-role-smart-hospitals

THANK YOU!

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