SHR USE CASE NOTES

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The purpose of this document is to describe common use case scenarios for the SHR, for both care providers and patients. This document references the shr\_medical\_journey\_map\_v01 diagram. It links the pain points in the journey map to actual use case scenarios using the SHR (for the first 2 use cases).

1. type of use case: which pain points it addresses
   1. steps in the use case (which specific pain point this step addresses)
2. Patient self-assessment using conversational UI (text): addresses patient pain points 1, 3, 5, 6, 10, 12
   1. Patient is at home and notices a symptom
   2. Patient decides to contact care team (1)
   3. Authentication to enter SHR
   4. Contact the care team
   5. Series of protocol questions are given to the patient (what is the patient contacting about? When did symptoms start, etc) (3, 5)
   6. Patient answers the protocol questions
   7. Answer data is pushed back to the care team (6)
   8. Diagnosis is made by the clinician (bot in the future) and the patients SHR is updated with diagnosis and intervention info, allowing the patient to view the updated info (12)
   9. Patient is notified of the intervention
   10. Intervention validated by the patient (this treatment will cost $80 is that ok?) (10)
   11. Medications are ordered by the care team
   12. Drugs are delivered to the patient
3. PCP outpatient medical encounter with the patient using conversational UI (text + voice): addresses clinician pain points 1, 3, 4, 10
   1. On the day of the appointment, the SHR reminds the patient to check-in
   2. A series of protocol questions are asked in order to gain information for the check-in
   3. Nurse views the answers to the protocol questions and the initial nurse assessment is complete. If any information is missing, it is addressed either as an alert or fixed before the appointment
   4. Patient gives PCP agents consent to access SHR data
   5. Patient meets with the PCP and the face to face encounter begins
   6. PCP authenticates to enter HIE
   7. PCP opens the patients SHR
   8. Patient describes reason for the visit
   9. Recent medical history and concerns are displayed on the SHR for the clinician
   10. Patient examination begins
   11. Exam protocol questions via voice UI (echo, cortana, etc) collects patient physical information as the PCP is performing the examination
   12. Initial diagnosis and patient instructions are inputted into the SHR, which the patient can view later on any device
   13. The encounter is documented into the patient’s SHR via voice UI (for greater speed)
   14. Patient returns home and begins treatment by viewing instructions within their SHR, which are updated within 2 hours of the end of the encounter.
4. ER visit using conversational UI:
   1. A conscious patient arrives at the trauma center
   2. Triage nurse opens the patient SHR and the assessment begins
   3. The SHR goes through a protocol to compare and validate patient information on allergies, contraindications, recent medications
   4. If the patient does not know or remember some information, the triage nurse interacts with the EHR or voice UI, requesting to pull up that information
   5. SHR dictates requested information back to the nurse (if it exists)
   6. Nurse begins to perform basic diagnostics
   7. Voice UI asks a series of questions for the nurse to answer as they are examining the patient
   8. The patient is classified as either emergent vs urgent vs non-urgent
   9. Patient classified as urgent and waits until a bed is available
   10. Patient is prepped in the ER once a bed is available
   11. Patient SHR is opened and left open for the duration of the encounter
   12. Additional diagnostic tests performed if needed. Voice UI is used to enter data into the patients SHR
   13. Emergency medical care is applied until the patient is stabilized
   14. Clinician uses voice UI to call on patient notes section
   15. Dictates diagnosis and notes through voice, and the SHR places it in the relevant SHR data element (visit notes)
   16. SHR protocol questions for asking if the clinician would like any final labs ordered, medications prescribed, consults ordered
   17. If yes, any relevant order/prescription information is updated in the SHR and the patient can view/authorize it later
5. Care team member updates basic patient information via SHR
   1. Care team member opens patient SHR
   2. Authenticates user and returns portions of the SHR that the care team member is authorized to view/edit as determined by the patient
   3. Care team member updates address information for the patient
   4. The patient is notified of the change
   5. The change is authorized by the patient
   6. The SHR is updated
6. Patient opens the SHR for the first time and establishes an ID
7. Conversational UI protocol gathers basic patient ID information
8. Patient ID information is stored in an HIE, and medical providers are able to access that information at a later time
9. Conversational UI asks the patient for information on their PCP
10. PCP is notified of their addition to the patients SHR
11. SHR asks the patient for basic information on any care team members they would like to add
12. SHR permission and consent is specified for each care team member
13. Those members are notified via text/phone that they have been added as care team members
14. The members validate their addition to the patients SHR
15. Once contacts have been validated, the patient assigns extent of view or edit options for each care team member (sections such as patient ID are able to be viewed by all, by default)
16. Mobile SHR as a diagnostic device for more specific concerns (ophthalmic appointment)
    1. Patient notices discoloration in eye
    2. Using the SHR, the patient decides to contact an ophthalmologists office near their location
    3. When ophthalmic office is contacted, an SHR protocol specific to that specialty begins
    4. Series of protocol Q is given to the patient (what is the patient contacting about? When did symptoms start, etc)
    5. Patient answers the protocol questions
    6. Additional data is collected using the mobile devices built in sensor and imaging capabilities
    7. Answer data and images are sent to the ophthalmic office
    8. If a diagnosis is not made from the information given, the patient is notified of a future appointment they can attend
17. Health intervention engine using collective SHR data
    1. Patient updates information on new address (no outside validation is needed for this change because it is patient ID information)
    2. Data on the patient’s new address is synced with SYNTHETIC MASS
    3. The SHR compares the collective data in the patients SHR record so far, with SYNTHETIC MASS database of population health data
    4. Information relevant to the patients preexisting conditions are sent to the patient
    5. The patient is notified that their new address is in a region known for high air pollution, and that they should be vigilant about their asthma symptoms
    6. The patient validates that the new information was received
    7. The “environment” section of the patients SHR is updated automatically with the new information
    8. The patient’s PCP is notified of the recent change in the patient’s living situation and how it may affect their health
18. Payment information via the SHR after a common diagnosis of a strep throat at the PCP office
    1. PCP ends the outpatient encounter by entering visit information into the SHR
    2. Semantic search allows the physicians inputs to interact with a database of medical codes (LOINC, CPT, ICD-11)
    3. The medical code is automatically entered into the patients SHR
    4. PCP validates the medical code
    5. CPT code is sent to the patient’s medical insurance and the PCPs claims processing
    6. The insurance company is notified of the recent visit and the updated information in the SHR
    7. Estimated cost that the patient should expect (so far) for the medical encounter is returned to the SHR for immediate viewing

Other possible use cases?

1. SHR in the context of value based care – how will the payment interaction work in this new model? (accountable care organizations, patient-centered medical home, pay for performance, bundled payments)
2. Public health researchers accessing specific SHR data via SYNTHMASS
3. Other specialist use cases: using SHR + mobile device to diagnose neurological disorders (information from voice, track motor movement)
4. A clinician sending specific SHR information to a colleague to look at (how will authorization/permissions work?)
5. Access to specific SHR data in emergency scenarios where the patient cannot communicate?
6. How notification/authorization will work when care team are making multiple edits to the patients shr at once – who does it go to? Who is notified?
7. notifying patients of clinical research study participation
8. neighboring hospital receiving emergency patient case ahead of time via SHR
9. shared medical appointment use case (could easily group patients into cohorts 🡪 call those in the cohorts to visit 🡪 increased efficiency. This would require access to many dif SHRs to function)
10. patient moving health record to another hospital
11. patient moving health record to another primary physician