* **<HomeCare>**
  + **<What is HomeCare?>**
    - An app that allows patients to receive an initial assessment of an ankle or knee injury before engaging a health care provider.
    - Simply indicate where you are experiencing pain.  
      Answer a few questions and complete relevant movement tasks to explore your condition.  
      Quickly receive an assessment indicating what you may be at risk for.   
      If you wish to be directly connected to a healthcare provider, the app connects you to orthopedic specialists within your area.
      * **<More Detail: Drop-Down>**
        + User identifies whether they are experiencing knee or ankle pain.
        + By selecting a knee or ankle, the individual is prompted to move through a branch of fixed questions that assess the severity of and nature of the body part’s injury.
        + Visual aids help the user in accurately replicating the specific movement tasks.
        + Based on the movement tasks and pain assessment questions, certain conditions are emphasized over others based on the statistical correlation between symptoms and confirmed diagnoses.

Swelling may have a more direct correspondence to joint damage; muscle strain may have a more direct correspondence to pressure sensitivity. (Idk just assuming)

* + - * + User is presented with the condition that their symptoms most closely correlate to.
        + User can access a list of healthcare providers with relative specialties (orthopedic) within 10 miles of their zip code.
  + **<Technology Used>**
    - Languages: Swift, JavaScript, JQuery, node.js
    - “Server”: AWS Lambda
    - API: Better Doctor
    - Styling: Final Cut Pro, Adobe Illustrator, CSS, Bootstrap
* **<Personal Tech is Changing the Way We Access Healthcare>**
  + The personal tech device centers the patient experience because of its immediate proximity to the user and the intimacy of the interface.
    - 1. More quickly address an urgent patient need because of its proximity to the user.
    - 2. Break down access barriers by providing information through a familiar interface.
      * **<More Detail: Drop-Down>**
        + There is an overall ease of access and function as the user may use this personal tech on a daily basis.
        + Information can be accessed anywhere, and can be done from the comfort of the user’s home rather than a medical facility.
    - 3. Give agency to the user as they go through a health and healthcare experience that can make them feel destabilized and vulnerable.
* **<Why an Initial Assessment?>**
  + In a non-emergency situation, the patient has the time and ability to evaluate how they feel in their body. This is a critical period where the patient considers their options
    - **<Drop-Down>**
      * What condition could I have?
      * Should I get treated?
      * Where would I go for care?
  + Between identifying being injured and receiving a formal diagnostic exam lies the moment where a patient moves to act and engage the healthcare system. This initial assessment does not to replace the diagnostic exam, but rather serves as a primer before the patient engages a healthcare provider directly.
* **<Why a Personal Device?>**
  + The personal tech device centers the patient experience because of its immediate proximity to the user and the intimacy of the interface.
  + We want to give users a sense of agency when engaging healthcare providers.
    - Individuals are engaging health care providers without formal or even cursory knowledge of possible diagnoses, treatment options, referral options, etc. Our app seeks to provide information that the user can bring to their healthcare provider, guiding more informed conversations and courses of action.
    - **<Drop-Down>**
      * Have you ever influenced a healthcare provider’s approach to your care through conversation?
      * Have you ever diagnosed yourself or had to challenge a healthcare provider’s care solution?
      * Have you ever Google Fu’d your way to better health?
      * We believe that it’s important to be an educated consumer of the service being provided.
  + We want to fight against ‘provider bias.’
    - “**In health care, unconscious bias might affect a provider’s line of questioning and lead to misdiagnosis.** Or, it can affect body language and other subtle cues that cause patients to lose trust, withhold information or fail to follow medical advice.”
      * *Make this an <a> tag and link to* <https://newsnetwork.mayoclinic.org/discussion/targeting-unconscious-bias-in-health-care/>
    - **<Drop-Down>**
      * Having an initial assessment that is an objective exchange, removed of personal and institutional bias, can create a more standardized healthcare experience for the patient before they move to engage a healthcare provider. As the user self-reports their experience and it is recorded verbatim and compared against aggregated data, the process removes the risk of one’s bodily experience being undermined and devalued *because* of personal and institutional bias.
      * “The presence of implicit bias among clinicians further suggests that **[implicit bias] could play a role in health care disparities just as it plays a role in differential outcomes elsewhere in society.**”
        + *Make this an <a> tag and link to* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3140753/>
        + **<Drop Down>**

Have you ever had an experience where a healthcare provider discounted the information you provided?

Have you ever felt that your health and/or healthcare experience was compromised because of provider bias?

Have experiences with provider bias affected your trust in healthcare providers?

* **<Nice To Haves>**
  + Connect user input to email.
    - **<Drop-Down>**
      * Save user input so that results can be emailed or texted to them (have on-hand to discuss with healthcare provider)
  + A financially-conscious approach.
    - **<Drop-Down>**
      * Connect users to urgent cares, clinics, hospitals, and similar low-cost resources in their area
      * Connect users to healthcare providers within their insurance plan to better ensure coverage.
  + More accurately value each answer to best match diagnoses individuals may be at risk for. Incorporate a machine-learning decision tree based on these values.
    - **<Drop-Down>**
      * Does swelling truly have a greater correspondence to diagnosis x than to diagnosis y?
      * Does being unable to rotate the ankle have a greater correspondence to diagnosis x than to diagnosis y?
* **<Implications for Future Use>**
  + Modify the app to target college students as these are individuals who are often engaging health care providers 1-on-1 for the first time and operate on fixed, if not limited, incomes.
    - Often receiving coverage under university insurance plans which are limiting in care and geographical scope.
    - Use our app to gain leverage during patient-provider exchanges and advocate for themselves.
    - Use our app to connect students to free and/or cheaper healthcare resources.
* **Personal tech device center the patient experience because of its immediate proximity to the user and the intimacy of the interface.**
* **Personal tech can:**
  + 1. More quickly address an urgent patient need because of its proximity to the user.
    - The patient is not traveling, not booking an appointment.
  + 2. Break down access barriers by providing information through a familiar interface.
    - There is an overall ease of access and function as the user may use this personal tech on a daily basis.
    - Information can be access anywhere, meaning this can be done in the user’s preferred environment rather than in a medical facility.
  + 3. (Because of the two prior points) give agency to the user as they go through a health and healthcare experience that can make them feel destabilized and vulnerable.
* **Why were we interested in an initial assessment?:**
  + In a non-emergency situation, the patient has the ability to check in with themselves and evaluate how they feel in their body. This is the period of time where the patient considers their options: What could this even be? Do I get treated? Where should I go for care.
  + Between identifying being ill/injured and the diagnostic exam lies the moment where a patient moves to act and engages the healthcare system. This initial assessment does not to replace the diagnostic exam, but rather serves as a primer before the patient engages a healthcare provider directly.
* **Why an initial assessment on a personal device rather than in a medical device?**
  + Agency:
    - Individuals are engaging health care providers without formal or even cursory knowledge of possible diagnoses, treatment options, referral options (specialties), etc. Our app seeks to provide information that the user can bring to their healthcare provider, guiding more informed conversations and courses of action.
      * Have you ever influenced a healthcare provider’s approach to your care through conversation?
      * Have you ever diagnosed yourself or had to challenge a healthcare provider’s care solution?
      * Have you ever Google Fu’d your way to better health?
    - At the end of the day, health care is a profession and like any profession has individuals who are at the top of their game and others who have somehow not had their license revoked. We believe that it’s important to be an educated consumer of the service being provided and hope that this app helps patients in this way.
  + “Provider Bias”:
    - For many, the legacy of modern medicine as an apparatus of social control in its heavy regulation of disenfranchised bodies makes engaging the healthcare system fraught with anxiety. Having an initial assessment that is an objective exchange, removed of personal and institutional bias, can create a more standardized healthcare experience for the patient before they move to engage a healthcare provider. As the user self-reports their experience and it is recorded verbatim and compared against aggregated data, the process removes the risk of one’s bodily experience being undermined and devalued *because* of personal and institutional bias.
      * “The presence of implicit bias among clinicians further suggests that it could play a role in health care disparities just as it plays a role in differential outcomes elsewhere in society.” - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3140753/>
      * “**In health care, unconscious bias might affect a provider’s line of questioning and lead to misdiagnosis.** Or, it can affect body language and other subtle cues that cause patients to lose trust, withhold information or fail to follow medical advice.” - <https://newsnetwork.mayoclinic.org/discussion/targeting-unconscious-bias-in-health-care/>
    - New patients have to answer an exhaustive and personal questionnaire before receiving care - many of these questions dive into ‘protected identities.’ As of recently, doctors are now required to ask individuals their sexual orientation during the new patient on boarding process.
      * Have you ever had an experience where a healthcare provider discounted the information you provided?
      * Have you ever felt that your health and/or healthcare experience was compromised because of provider bias?
      * Have experiences with provider bias affected your trust in healthcare providers?
* **Function of the app:**
  + User identifies whether they are experiencing knee or ankle pain.
  + By selecting a body part, the individual is prompted to move through a series of fixed questions that assess the severity of and nature of the injury. Visual aids help the patient more accurately replicate the specific movement tasks.
  + Depending on their response to different movement tasks and pain assessment questions, certain diagnoses are emphasized over others.
    - Swelling may have a more direct correspondence to joint damage; muscle strain may have a more direct correspondence to pressure sensitivity. (Idk just assuming)
  + When the user has responded to all the questions, they are presented with diagnoses that they may be at risk for. If the user wishes to contact a healthcare provider after the initial assessment, they can click a button to access a list of healthcare providers with relative specialties (orthopedic) within 10 miles of their zip code.
* **Technology Used:**
  + Languages: Swift, JavaScript, JQuery, node.js
  + “Server”: AWS Lambda
  + API: Better Doctor
  + Styling: Final Cut Pro, Adobe Illustrator, CSS, Bootstrap
* **Nice to Haves:**
  + Save user input so that results can be emailed or texted to them (have on-hand to discuss with healthcare provider)
  + Connect users to urgent cares, clinics, hospitals, free services, etc. in their area
  + Connect users to healthcare providers within their insurance plan; direct them to relative site and search engines
  + More accurately value each answer to best match diagnoses individuals may be at risk for. Does swelling truly have a greater correspondence to diagnosis x than to diagnosis y? Does being unable to rotate the ankle have a greater correspondence to diagnosis x than to diagnosis y?
  + Machine-learning decision tree
* **Further Use Implications:**
  + College students engaging health care providers 1-on-1, often away from family, apart from community, and under university insurance plans. Use our app to gain leverage during patient-provider exchanges and advocate for themselves. Use our app to connect students to free and/or cheaper healthcare resources.