**Use Case:** Alice has chosen a cloud based PHR that already has an established trust to her new PCP.

**Scope:** This is intended to be a simple use case describing the “basic new patient enrollment” at a primary care practice with a web based patient portal and FHIR API access. The two goals of this use case is:

* To create focused discussion of the privacy and security processes.
  + Define the roles of the major components; OpenID Connect, oAuth2 and UMA.
  + Define the interactions between these components.
  + Define the interaction between different profiles of the HEART profiles (UMA, oAuth, etc).
* To use as a base to build on more complex use cases such as:
  + Online new patient registration.
  + Personal health devices (FitBit, blood pressure monitors, etc.)
  + Internal provider access.
  + External provider access.

**Assumptions:** Alice has previously enrolled with a Cloud based PHR system.

Alice has an established PHR account.

* Alice has provided the PHR with basic demographics, insurance information, active medications and chronic problem list.
* The PHR offers one level of credentialing using simple e-mail address verification.
  + Standard authentication is user name/password.
  + Offers optional two factor authentication using SMS.

PCP provides patient’s access to a web browser based portal which supports FHIR API access.

* The web based portal authentication is user name/password.
* The FHIR API access requires the patient to opt-in and Alice can chose the portal to act as a FHIR client and/or server (Protected Resource).

The PHR and the practice’s patient portal use OpenID Connect, oAuth2 and UMA. HEART profiles are implemented on both systems.

Both systems have registered with each other and have established a shared secret and/or keys. (I don’t see a BA relationship). This step will need some discussion as to how this process would work including how each system will handle the resource identifier mapping of Alice and her PCP:

* Practice resource identifiers.
* Patient resource identifiers.
  1. This will become more complex when dynamic relationships are added and patient matching is introduced.
* Provider resource identifiers.
  1. This will be important topic later when this provider also practices at a different practice in a different role.

**Workflow:**

* + - 1. Alice calls the practice and schedules her initial appointment.
         1. The Scheduler does not find an existing account for Alice and creates a new account.
         2. The Scheduler creates an appointment with the PCP Alice has selected.
      2. Alice arrives at the practice and registers with the front desk.
         1. Alice provides the Registrar with her driver’s license and insure card(s).
         2. The Registrar scan the cards and updates Alice’s account.
         3. Alice is given and acknowledges receipt the Practice’s HIPAA privacy statement.
         4. Alice is given the initial patient web portal information to activate her account.
      3. While in the waiting room, Alice (using her smart phone) completes the patient portal account activation.
         1. Alice is able to review the limited information the practice currently has.
         2. Alice opt-in to use the FHIR API for bi-directional access.
         3. Alice selects/edits the allowed uses of her PHI.

What is the relationship to the HEART profile(s)?

oAuth2 profile (?)

UMA profile (?)

* + - * 1. Alice search’s from a list of known FHIR Services (trust established) and selects her PHR.

Question: What is the process to map the patient resource identifier between the two systems? (See Assumptions)

* + - * 1. Alice is presented with the onetime option to either:

Update the patient portal from her PHR.

Update her PHR from the patient portal.

Sync the patient portal with her PHR.

* + - * 1. Upon completion, she is offered the option to:

Update the patient portal from her PHR.

Update her PHR from the patient portal.

Sync the patient portal with her PHR.

* + - 1. Alice is taken to the exam room.
         1. The provider reviews Alice’s chart in the CEHRT.

Accepts Alice’s updates (assuming she selected E.i or E.ii above)

* + - * 1. The provider conducts a physical exam and records data in the CEHRT.
        2. The provider orders lab tests for a CMP, CBC, Lipid Panel and liver Panel via the CEHRT.

For this use case, assume the lab order and results are processed electronically via existing HL7 interface. (No FHIR context)

The provider tells Alice that the Patient Education materials and the pre-lab fasting instructions available on the Portal to read.

* + - 1. At the completion of the exam, Alice checks-out.
      2. Later that evening, Alice receives two notifications, one for her PHR and another form the PCP patient portal informing her that her data has been updated. ☺

**Simple System Diagram:** This is showing the PHR system and the PCP practice system for discussion. One topic would be that the Alice’s PHR is her centralized medical record and to her, it is the single point of truth which she wants to manage access to. Even though she has only one provider in this use case, she may still have information in the PHR she does not want to share with them.

