

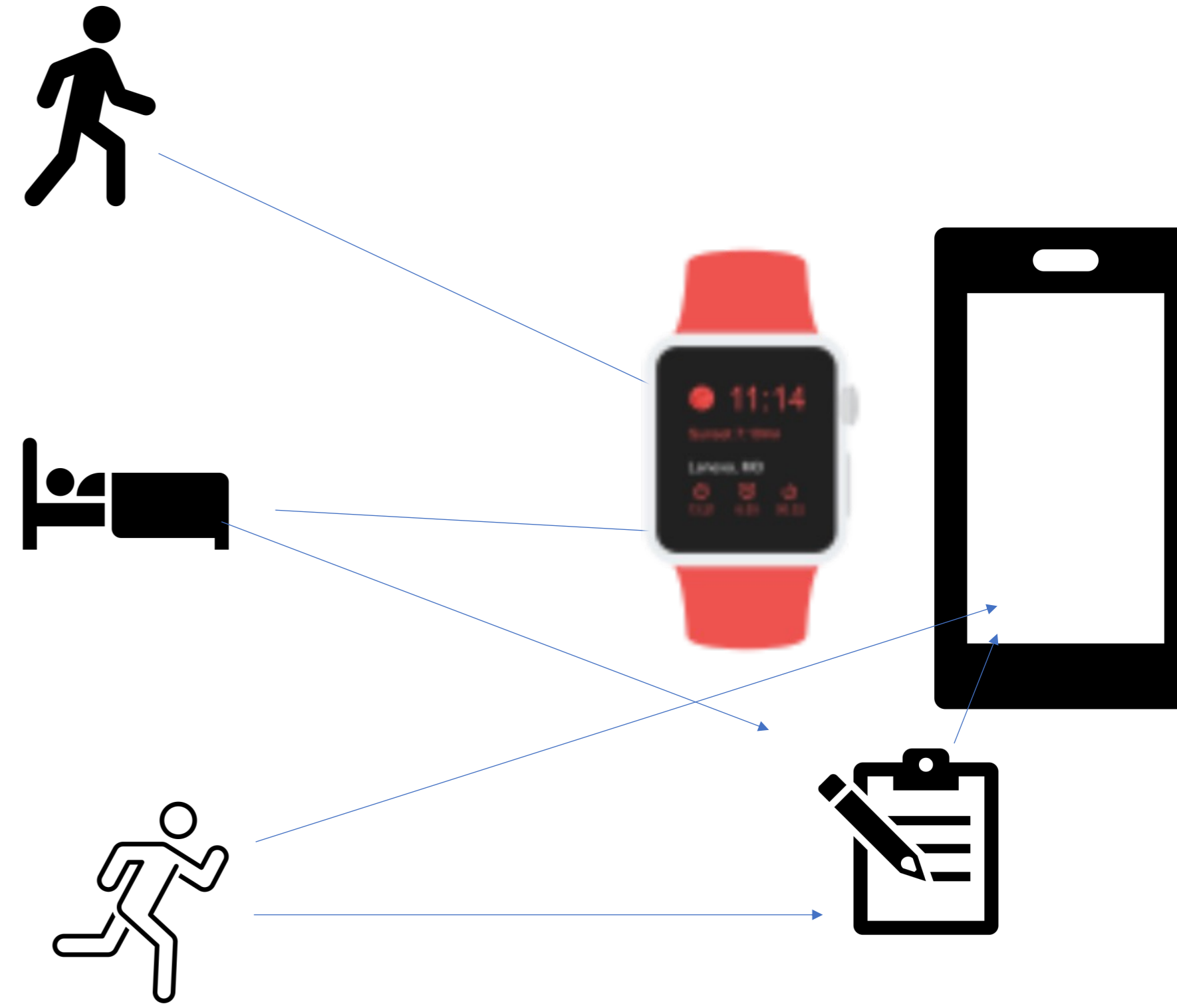
A Framework for Integrating Patient Generated Health Data (PGHD) with Electronic Health Records (EHR) in a Fast Health Care Interoperability Resource (FHIR) supported EHR System.

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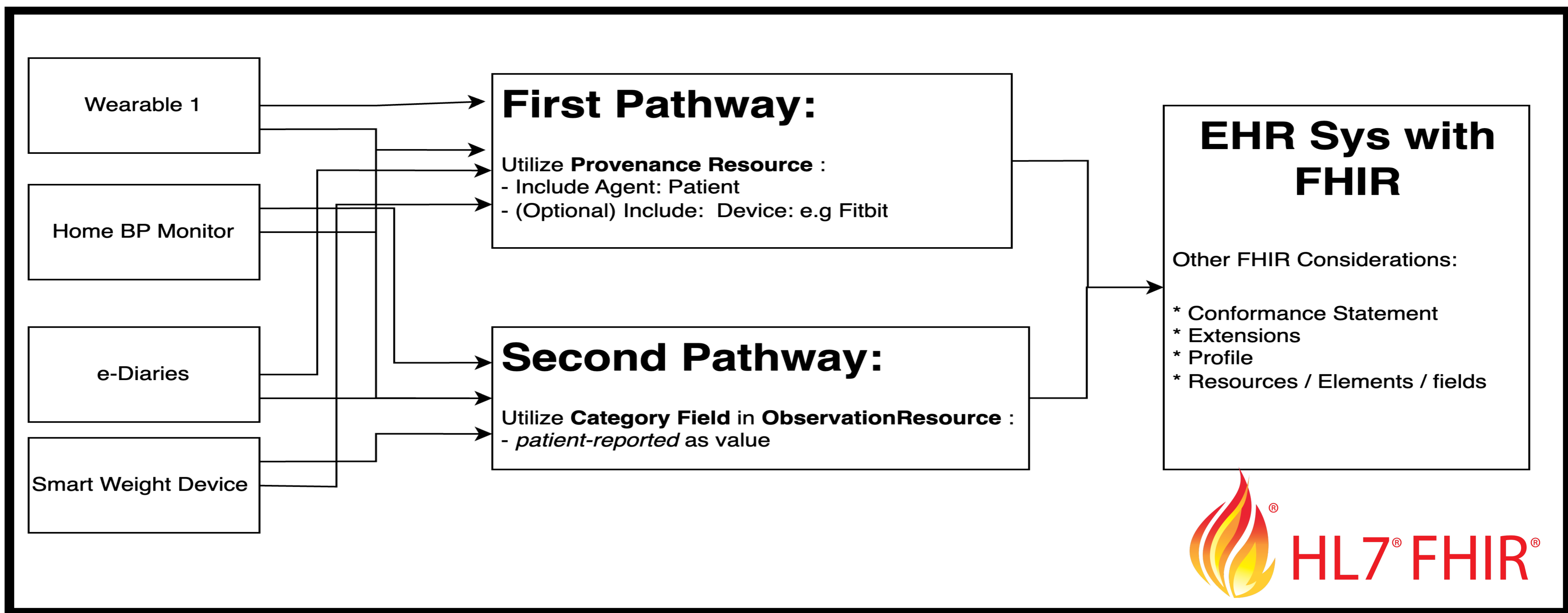
Background:

PGHD refer to health-related information gathered by patients or caregivers **outside of clinical settings** [1].

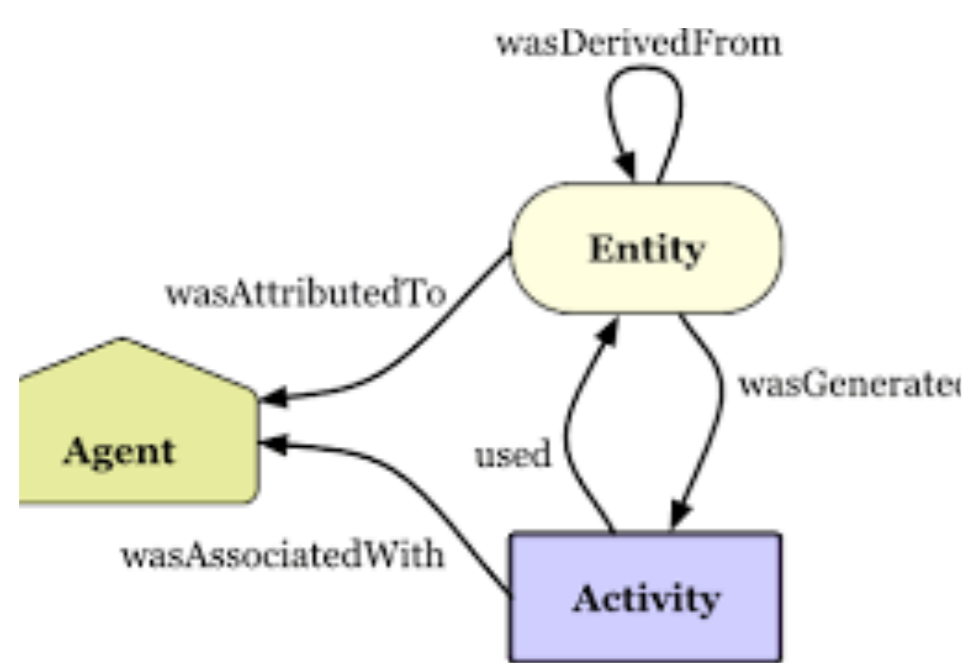
- **Collection Methods:** Diaries, apps, wearables etc.
- **FHIR is** used for exchanging data with EHRs [2]
- Integrating PGHD includes the use of **extensions** – albeit unsupported in some EHRs.
- This framework enhance this through;
 - the **FHIR Resource Provenance**, and a **category** metadata in the **Observation FHIR Resource**.



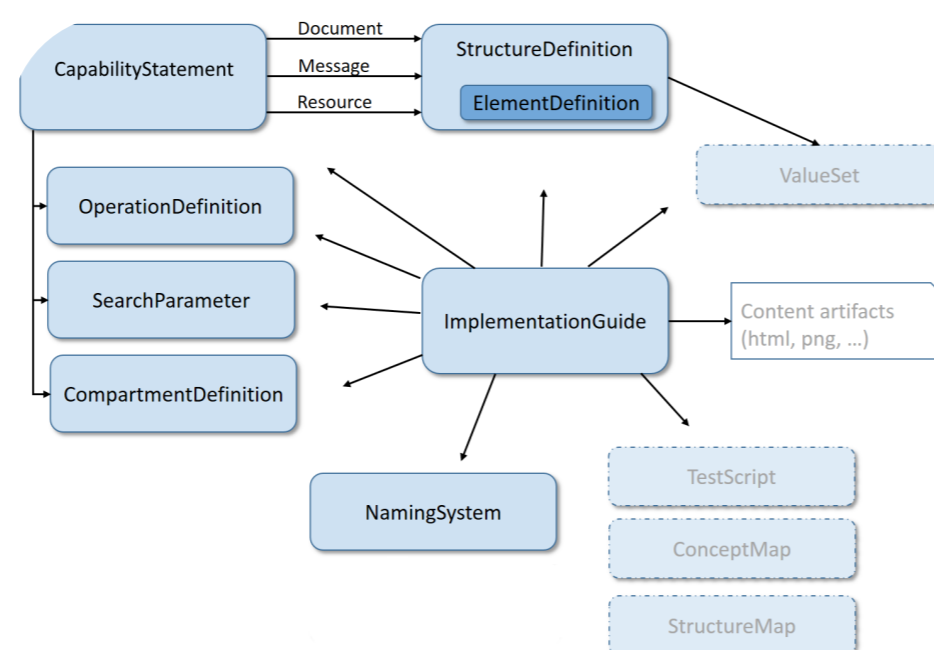
Methodology: The Framework



Key Enables of the Framework



Adoption of the Provenance Resource



Capability & Conformance Statement

```
<Observation xmlns="http://hl7.org/fhir">
  <code>
    <system value="http://loinc.org"/>
    <code value="59408-5"/>
    <display value="PPG Readings 1250 samples"/>
  </code>
  <valueSampledData>
    <period value="125"/>
    <datavalue="10.110.210.310.210.110.310.410.610.710.810.910.810.610.510.310.110.310.510.410.310.210.2"/>
  </valueSampledData>
</Observation>
</resource>
<method value="POST"/>
<url value="obsPPG"/>
</request>
```

Adopt the metadata category: patient-reported.

```
"line": [
  "3333333"
],
"line": [
  "extension": [
    {
      "url": "http://hl7.org/fhir/StructureDefinition/iso21090-ADXP-streetName",
      "valueString": "abc"
    },
    {
      "url": "http://hl7.org/fhir/StructureDefinition/iso21090-ADXP-houseNumber",
      "valueString": "1"
    },
    {
      "url": "http://hl7.org/fhir/StructureDefinition/iso21090-ADXP-additional",
      "valueString": "1"
    }
  ]
},
"state": "WA",
"postalCode": "91532-2132",
"country": "US"
```

Extension