Weaving HealthCare Data

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#health20boston

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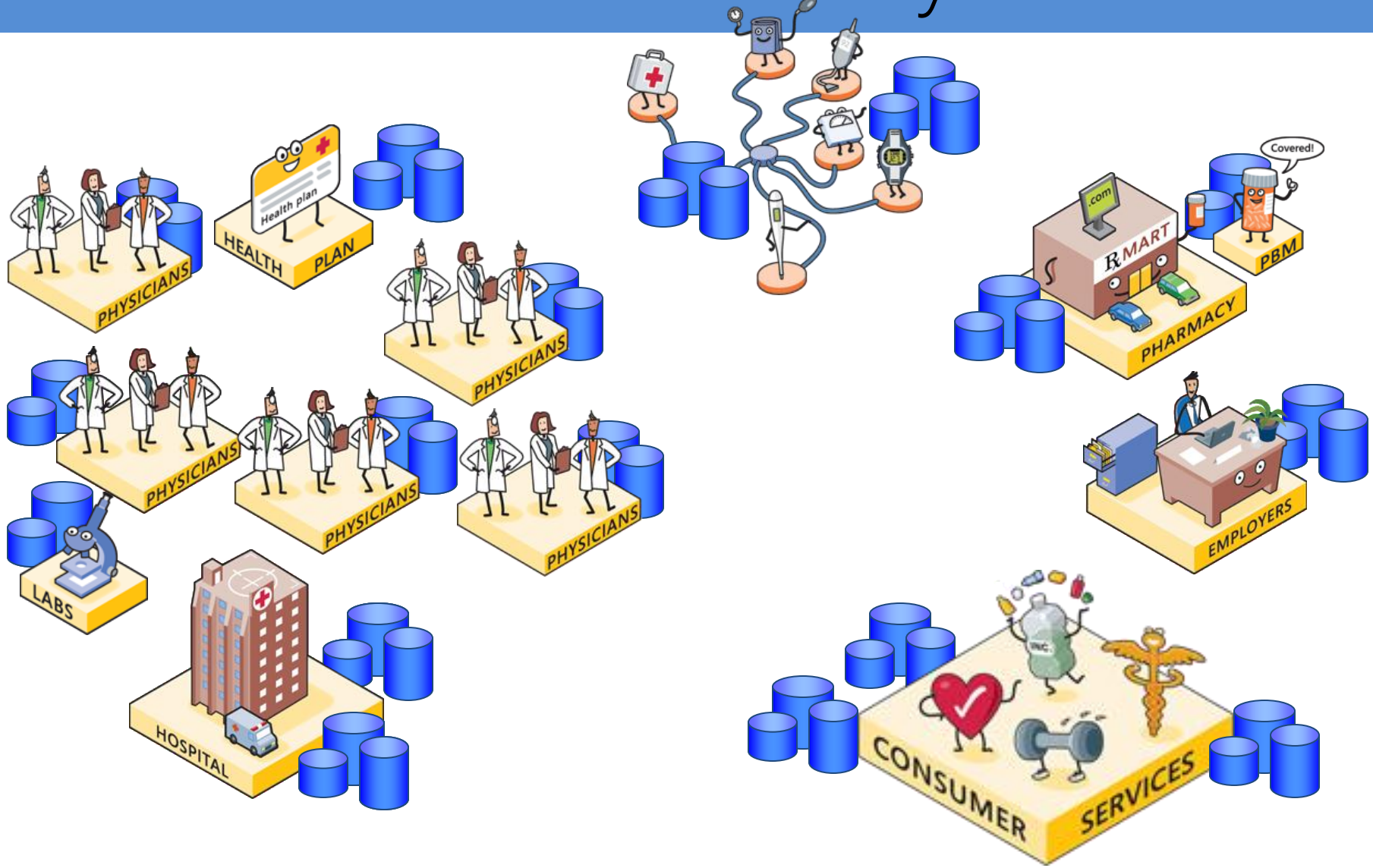
CDC
Terminologies
USDA
Medical
CHDI

Data In Health Ecosystem



Agenda

- Rich Health Data Sources
  - CHDI – Population Health
  - CDC – Content
- Various way to reach consumers
  - Windows Phone 7
  - HealthVault
- Data Analysis Engine
  - Microsoft Amalga
- Announcement

Community Health Data Initiative

CHDI

Understanding CHDI Data Set

- Tables
  - CountyHealthRankings
  - Demographics
  - LeadingCausesOfDeath
  - MeasuresOfBirthAndDeath
  - PreventiveServicesUse
  - RelativeHealthImportance
  - RiskFactorsAndAccessToCare
  - SummaryMeasuresOfHealth
  - VunerablePopsAndEnvHealth

Windows Azure CHDI Service

- To develop your competition entries feel free to use the following service (limited time only) :

  http://chdisourcedataservice.cloudapp.net/Chdi.svc/

Interesting Ideas

- Interleave them on bing or google maps!
- Use interesting visualization tools to showcase the data
  - E.g. Javascript InfoVis - http://thejit.org/
- Pair this information with data from other organizations!

CDC Content Data Source

- Content Syndication Site
  - http://tools.cdc.gov/register/default.aspx
- Example
  - Tobacco Use

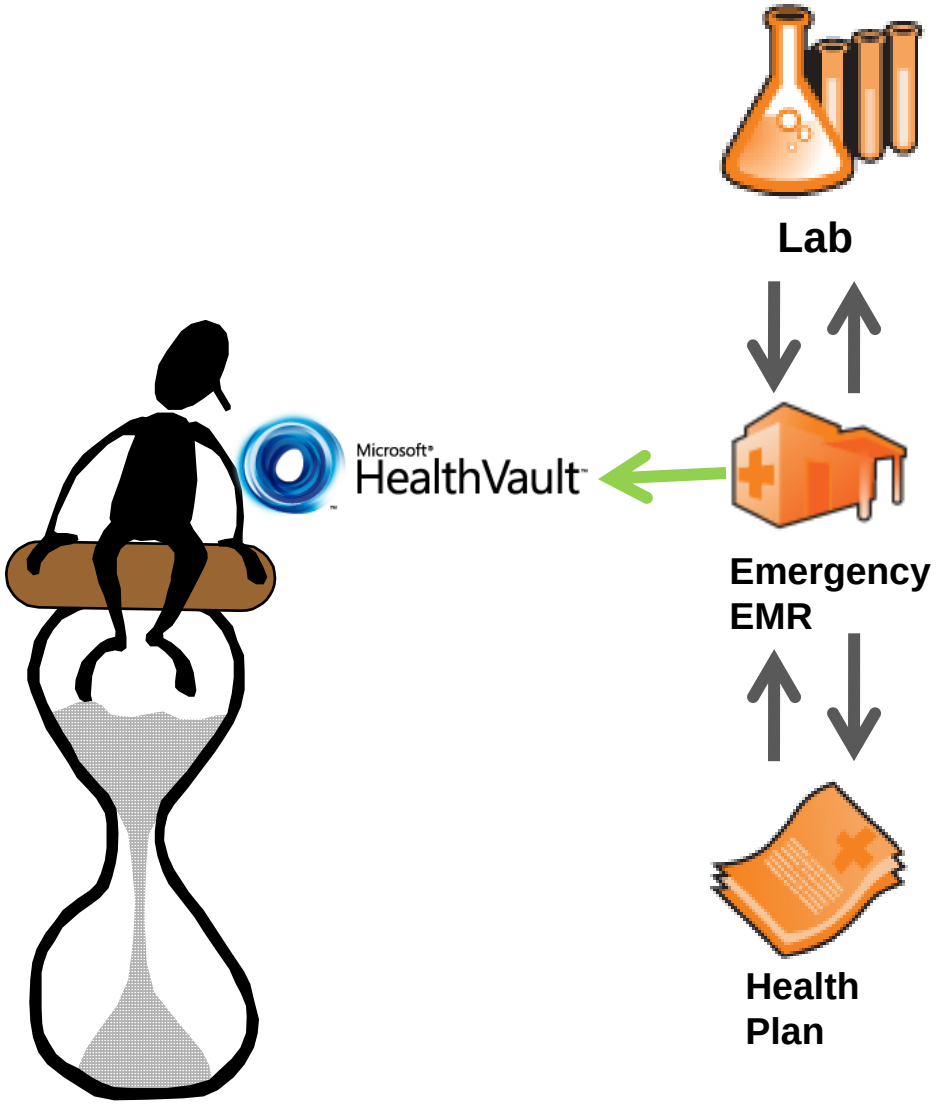
Interesting Resources

- HHS Data Sets
  - http://www.hhs.gov/open/datasets/communityhealthdata.html
- My family health portrait
  - https://familyhistory.hhs.gov/fhh-web/home.action

Interacting with consumer Health Data

HealthVault

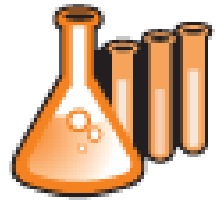
Moving Patient Data



CCR

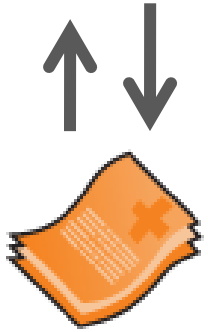
```
<?xml version="1.0" encoding="utf-8"?>
<ContinuityOfCareRecord xmlns='urn:astm-org:CCR'>
  <CCRDocumentObjectID>Doc</CCRDocumentObjectID>
  <Language>
    <Text>English</Text>
  </Language>
  <Version>V1.0</Version>
  <DateTime>
    <ExactDateTime>2008</ExactDateTime>
  </DateTime>
  <Patient>
    <ActorID>Patient</ActorID>
  </Patient>
  <Body>
    <VitalSigns>
      <Result>
        <CCRDataObjectID>0001</CCRDataObjectID>
        <Description>
          <Text>Blood Pressure</Text>
        </Description>
        <Source>
          <Description>
            <Text>Unknown</Text>
          </Description>
        </Source>
        <Test>
          <CCRDataObjectID>0002</CCRDataObjectID>
```

Microsoft® HealthVault



Lab

Emergency EMR



Health Plan

CCD or C32

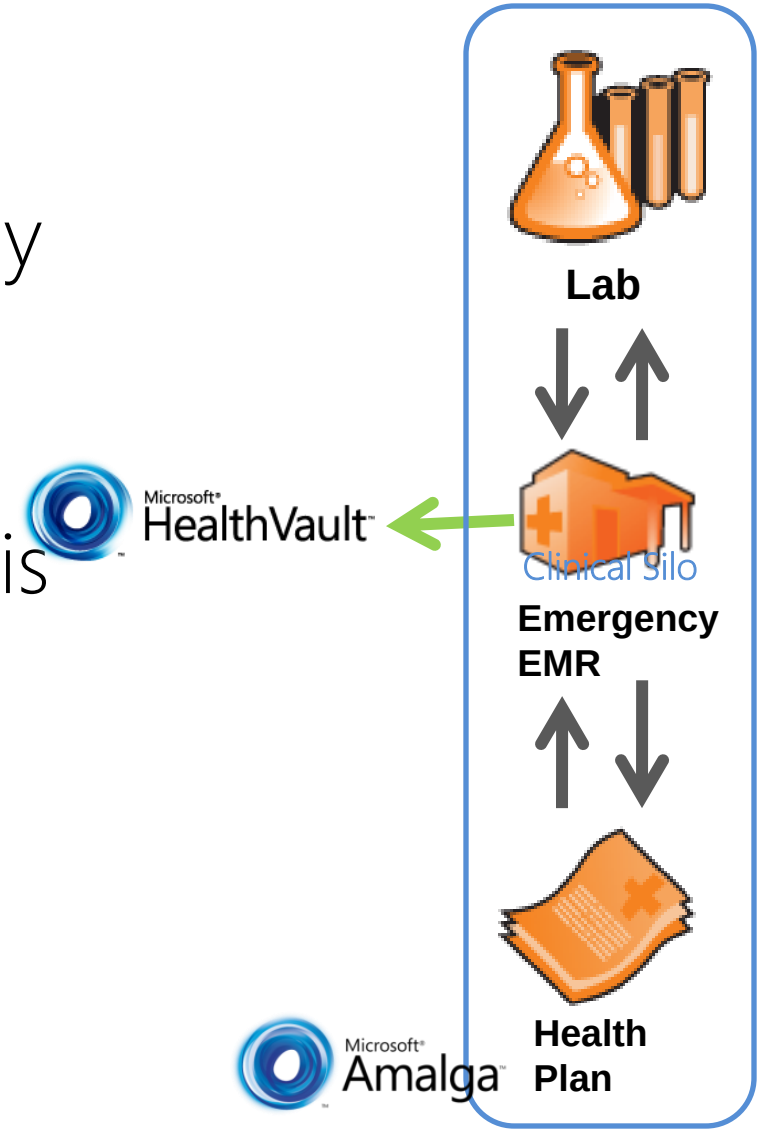
```
<?xml version="1.0" encoding="UTF-8" ?>
<!--  edited with XMLSpy v2010 (http://www.altova.com) by Len Gallagher (NIST)  -->
<!-- Sample XML file generated by XMLSpy v2007 sp2 (http://www.altova.com)  -->
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schem
  http://xreg2.nist.gov:8080/hitspValidation/schema/cdar2c32/infrastructure/cda/C32_CDA.xsd">
  <realmCode code="US" />
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040" />
  <templateId root="2.16.840.1.113883.3.27.1776" assigningAuthorityName="CDA/R2" />
  <templateId root="2.16.840.1.113883.10.20.3" assigningAuthorityName="HL7/CDT Header" />
  <templateId root="1.3.6.1.4.1.19376.1.5.3.1.1.1" assigningAuthorityName="IHE/PCC" />
  <templateId root="2.16.840.1.113883.3.88.11.32.1" assigningAuthorityName="HITSP/C32" />
  <id root="2.16.840.1.113883.3.72" extension="HITSP_C32v2.5_Rev3_11Sections_NoEntries_EntryErrorsOnly
  <code code="34133-9" displayName="Summarization of episode note" codeSystem="2.16.840.1.113883.6.1" co
  <title />
  <effectiveTime value="20091110130945" />
  <confidentialityCode />
  <languageCode code="nn-CC" />
- <recordTarget>
  - <patientRole>
      <id />
    - <addr use="HP">
        Are any of the following specifically required or can the address be just text at this location?
        <streetAddressLine />
        <city />
        <state />
        <country />
      </addr>
      <telecom />
    - <patient>
      - <name>
          <given />
          <given />
          <family />
        </name>
        <administrativeGenderCode code="F" displayName="Female" codeSystem="2.16.840.1.113883.5.1" codeSys
        <birthTime value="19840704" />
        <maritalStatusCode code="S" displayName="Single" codeSystem="2.16.840.1.113883.5.2" codeSystemName
```

HealthVault Interaction

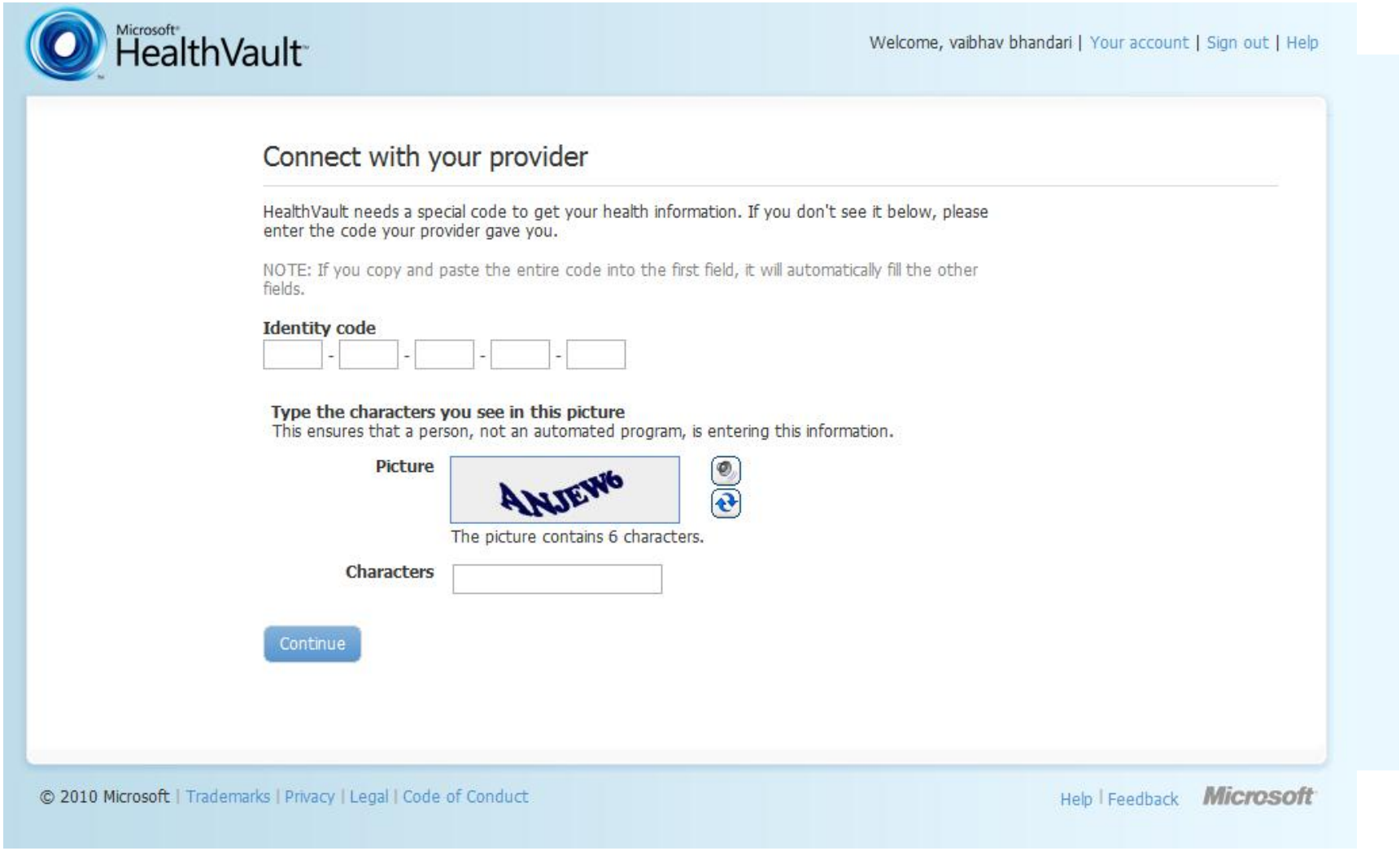
```
/**
 * This RequestTemplate fills in the details to call HealthVault
 * and receive the response.  Online means the user is logged in and
 * we have access to the user token from the session.  Fill in the user
 * token, their record, and make the call.
 */
public class OnlineRequestTemplate extends SimpleRequestTemplate
{

        /** The connection. */
        Connection connection;

        /**
         * Instantiates a new request template.
         *
         * @param connection the connection
         */
        public OnlineRequestTemplate(Connection connection)
        {
                super(connection);
        }

        /**
         * Make request.
         *
         * @param request the request
         */
        // TODO: refine exceptions here...should be HVException
        public Object makeRequest(Object request) throws Exception {
                PersonInfo personInfo = RequestCtx.getPersonInfo();

                setUserAuthToken(personInfo.getUserAuthToken());
                setRecordId(personInfo.getRecordId());

                return super.makeRequest(request);
        }
}
```

Leaving the Clinical Silo

- While in enterprise your application need to comply with HIPAA 5010
- When Jim log's in to HealthVault then the data is flowing in to consumer domain

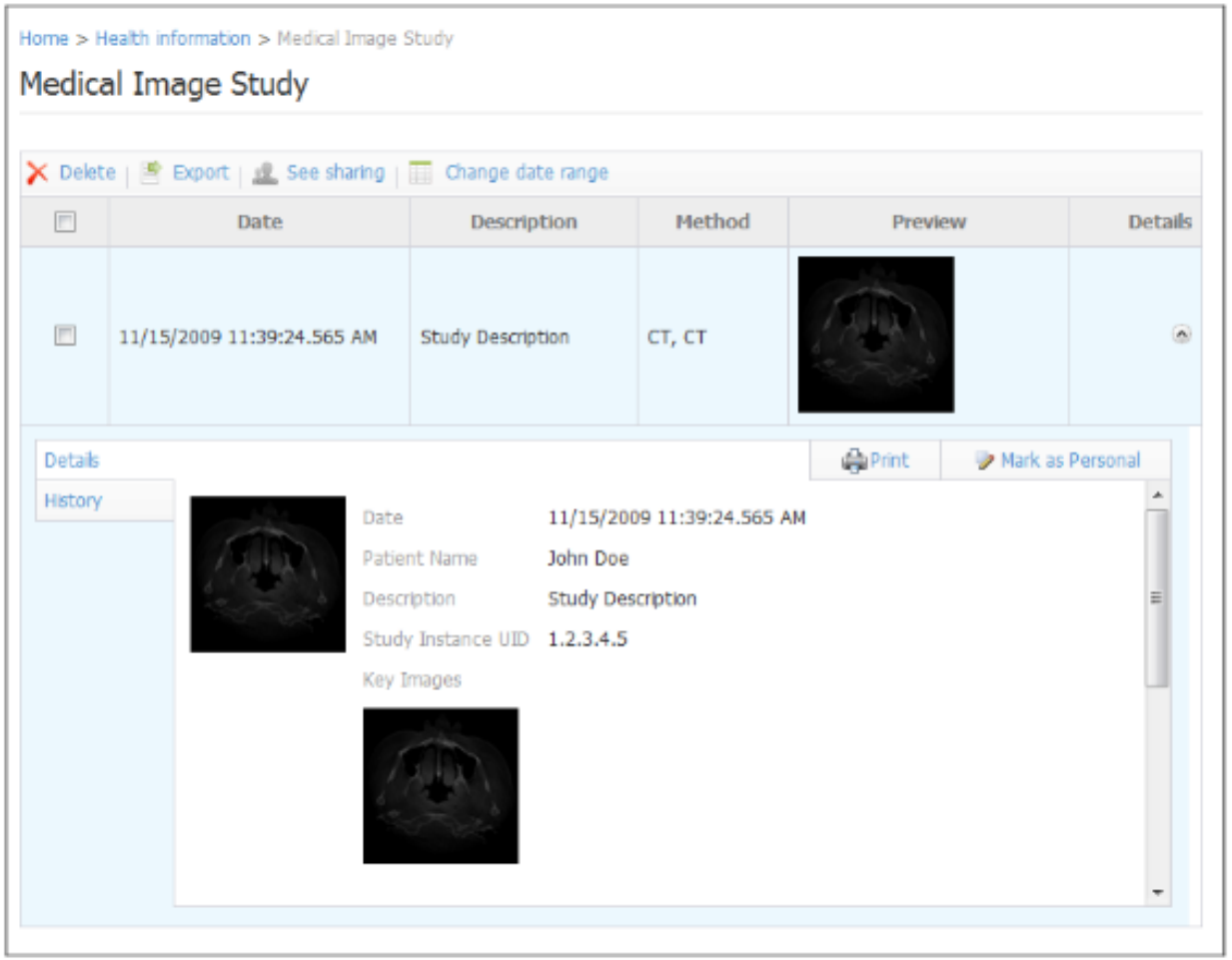


Direct To Clinical

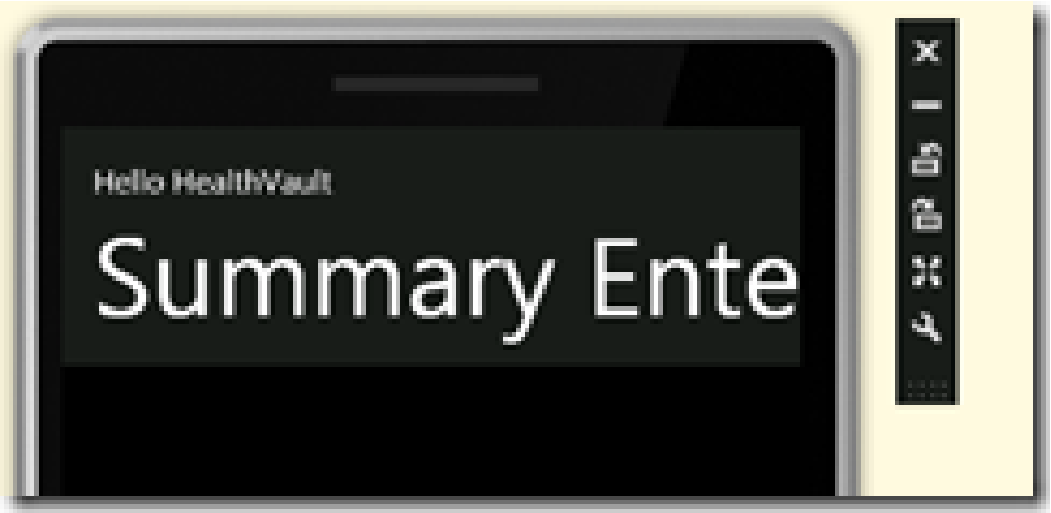


Data In User's Account

HealthVault Medical Imaging



HealthVault Mobile Client Application



HealthVault Resources

- Community Promise
- Open Source SDKs
  - Java : CodePlex
  - Ruby : RubyForge
  - Python : Google Code
  - PHP: SourceForge
- Reference License .NET SDK
  - http://msdn.microsoft.com/healthvault

Microsoft HealthVault

Key Takeaways

- Rich Health datasets in various domains
  - CHDI population data
  - CDC content
- HealthVault offers a complete and easy to use platform to reach consumers in various ways
  - Imaging
  - Mobile

WalkMe – Open Sourced

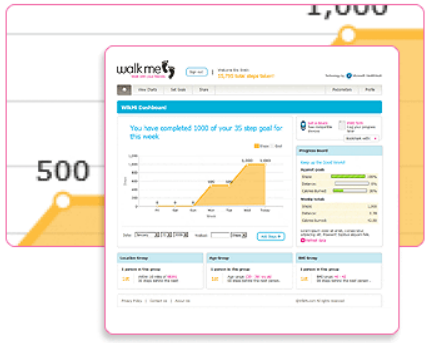
walk me
Walk with your friends

Sign in

SandBox for Microsoft® HealthVault™

Get Walking and Get Fit

Take the next step with WalkMe



With WalkMe, you can:

- Get a clear picture of how active you are—no guessing
- Remember to walk more by using a pedometer
- Set goals and get more exercise by tracking steps

Note: To use WalkMe, you'll need to have a Microsoft HealthVault account.

Sign **up** >

Why track steps?
Because it works. People who start a pedometer-based walking program increase the steps they take by about 2,000 to 4,000 a day, the equivalent of an extra one to two miles. (Source: MSN)

WalkMe member step totals!
344,863,248
steps and counting...

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http://walkme.codeplex.com

Be Well. Be Protected.

THANK YOU

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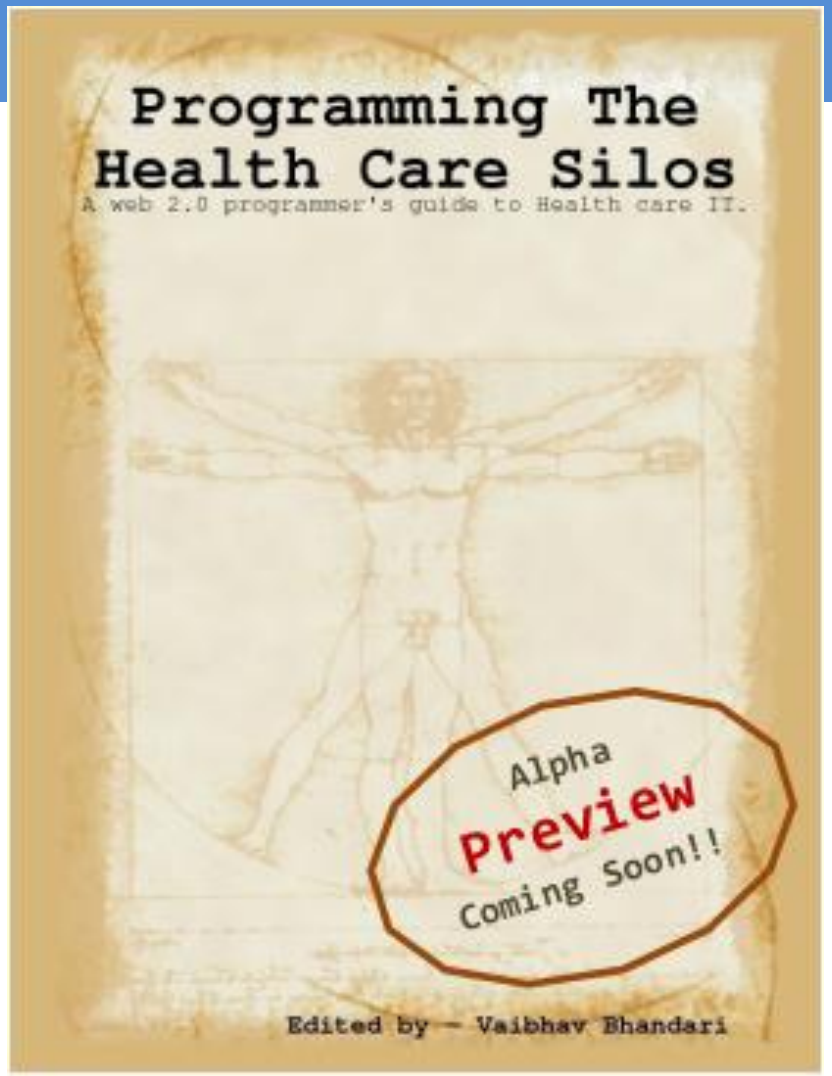

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