1. Identify potential types of visualizations,e.g. visualizations on morbidity, mortality, types of outcome pyramids, poverty maps, health facility density, etc.
   1. formulate test use cases
2. Formulate battery of established benchmark validation queries need to be formulated
3. experiment/learn Pentaho Dashboard using test use-cases
   1. Test Use Cases
      1. Child Mortality Rate Over Time (subset of (3))
      2. Population Pyramid over Time
      3. ASMR over time
      4. Age Specific TB Infections over time
      5. Age Specific Migration
4. experiment/learn D3.js using test use-cases
5. experiment/learn Bokeh using test use-cases
6. experiment/learn Shiny R using test use-cases

**CANDIDATE VISUALIZATIONS**

* **Outcome pyramid (adherence) (timeseries and heatmap included – Multipanel Graphs)**
* **Outcome pyramid (TB) (timeseries and heatmap included – Multipanel Graphs)**
* **Outcome pyramid (HIV) (timeseries and heatmap included – Multipanel Graphs)**
* **Dynamic Outcome pyramid linked to all possible diseases available in AC databases (timeseries and heatmap included – Multipanel Graphs)**
* **Tree Diagram (Future Option)**
* **Each of the drilled down visualizations should include side bar showing ranking (of divisions based on current outcome of choice)**

**POSSIBLE HIERARCHY OF VISUALIZATIONS**

* **Outcome pyramid (global, 5yr age categories)** 
  + **Outcome pyramid (divisional, division categories)**
    - **Outcome pyramid (divisional, 5 yr age categories)**

Data Linkage project may provide opportunities for visualizations

Clinical DB (Kevi Naidoo??)

**TEST USE CASE:Population Pyramid over Time in D3.js**

* Create dataset to hold variables necessary to render Population Pyramid (ETL process to do the data cleaning)
* Create JSON file/s. Make sure any JSON you use satisfies [http://jsonlint.com](http://jsonlint.com/)
* Set up Python’s SimpleHTTPServer to serve up all the HTML and JSON files to the browser
* Create D3.js visualization
* Create DC.js visualization
  + <http://www.codeproject.com/Articles/693841/Making-Dashboards-with-Dc-js-Part-Using-Crossfil>

**REFINE LITERATURE REVIEW**

* More information on panel graphs for epidemiological data visualization
* Visualizationin Windows 8?
* R Shiny

**DATA EVERYWHERE**

* 3 Visualization Themes

1. Operational
   1. Talk to Nomsa on DSS activities
   2. Web based viz tools – D3.js/Shiny/Bokeh
2. Scientific/Exploratory
   1. Non-Web interactive viz tools - Pentaho BI/Datazen Publisher(?) (have a play with excel based visualizations)
3. Public Interest
   1. Web based Viz tools– D3.js/Shiny/Bokeh
   2. Candidate Visualizations
      1. Outcome bubble charts overlaid with intervention start and end dates (or as a timeline graph?http://www.datavizcatalogue.com/methods/timeline.html#.VNtH3HWUc8o) – facilitates quick appreciation of intervention impacts

**TIER.net (unrelated but interesting)**