Dear Team,

* Some of the integration tools currently in the martket
* For opensource tools
  + Open clinica (community version)
  + Redcap
  + Open MRS
  + ODK
  + Epidata/Epinfo
* Commercial
  + Dfx Discover
    - Medidata's RAVE
* For inhouse customized solution case scenario being KIDMS.
* API development
* Integration module with various modules in research lifecyle.
* Data systems at kwtrp
* ETL process is split in various levels
* Direct connection using IDE for DB's . Execute queries to push the data into csv file. This later consumed by transformation tool (R or stata or spss etc.)
* ODBC connection: this were stata or R packages use this connector to query specific view or predefined queries designed by the data steward.
* ETL (Pentaho/SSIS): this solution allows connection to various database backend (oracle,mysql Mssql etc). This allows to define extraction process and merge patterns. Then transformation process entails mapping the data to how it be used as an end  product. Loading which entails loading it to our reporting warehouse or data warehouse.
* Data management with reference to statistical tools
* Data consumption using R or STATA. methods used
* Data Housing keeping eg. Validation, duplicates review etc
* Reports generation and customization
* Automation and Visualization of processes and reports.
* Reproducibility.
* Versioning of workable items.