

Analysing Longitudinal Population-based HIV/AIDS data on Africa:

Applied demographic, health research in Africa

The ALPHA Network

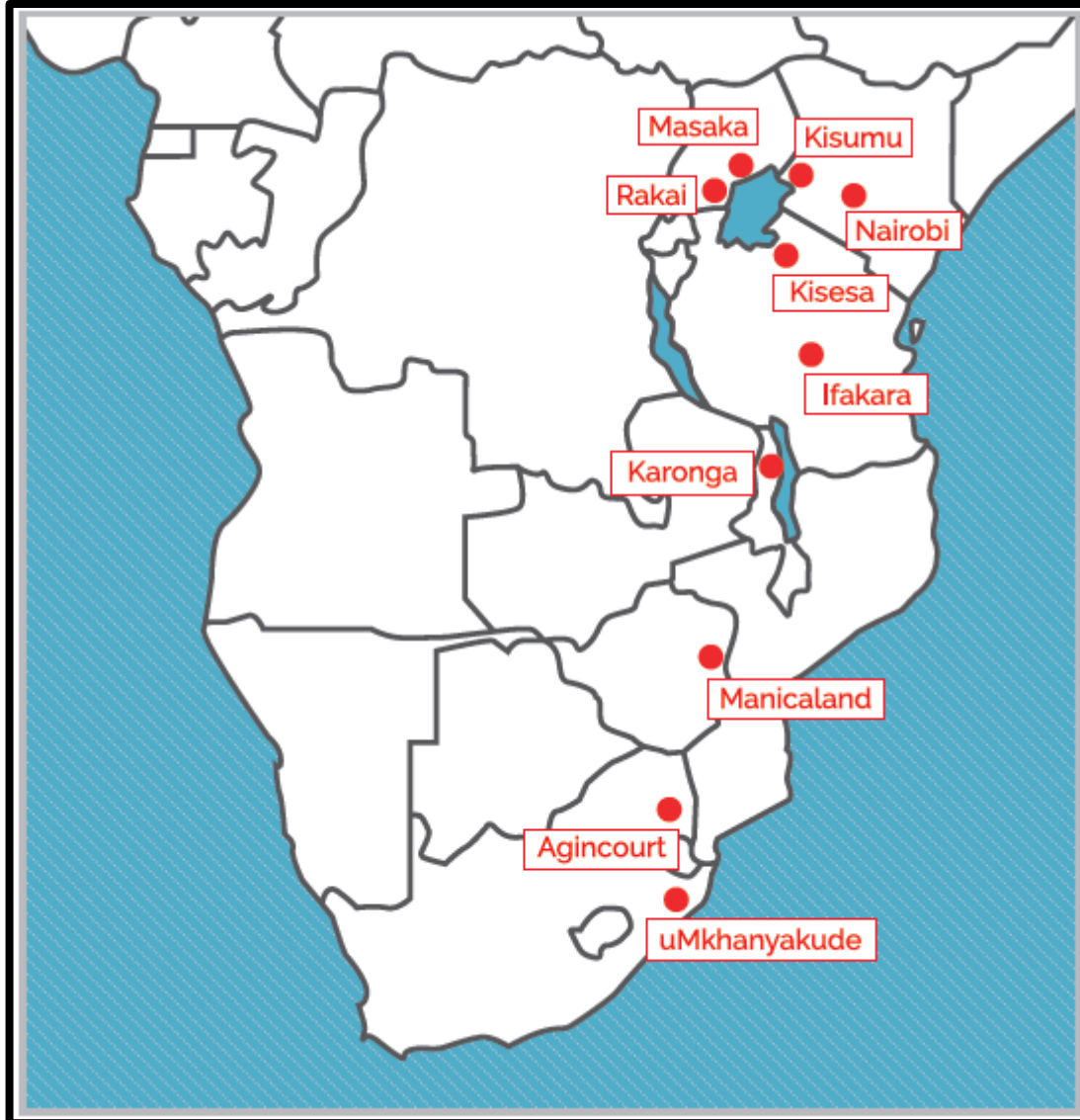
<http://alpha.lshtm.ac.uk/>

ALPHA network aims (2005)

- Perform epidemiological and demographic analyses of population-based HIV surveillance data
- Harmonise longitudinal HIV data from different cohorts to make comparative cross-country analyses
- Disseminate results to policy makers & implementers
- Build data analysis and data management capability in African partner institutions

- All based on data from **existing, African, longitudinal, population-based cohorts** with HIV data.

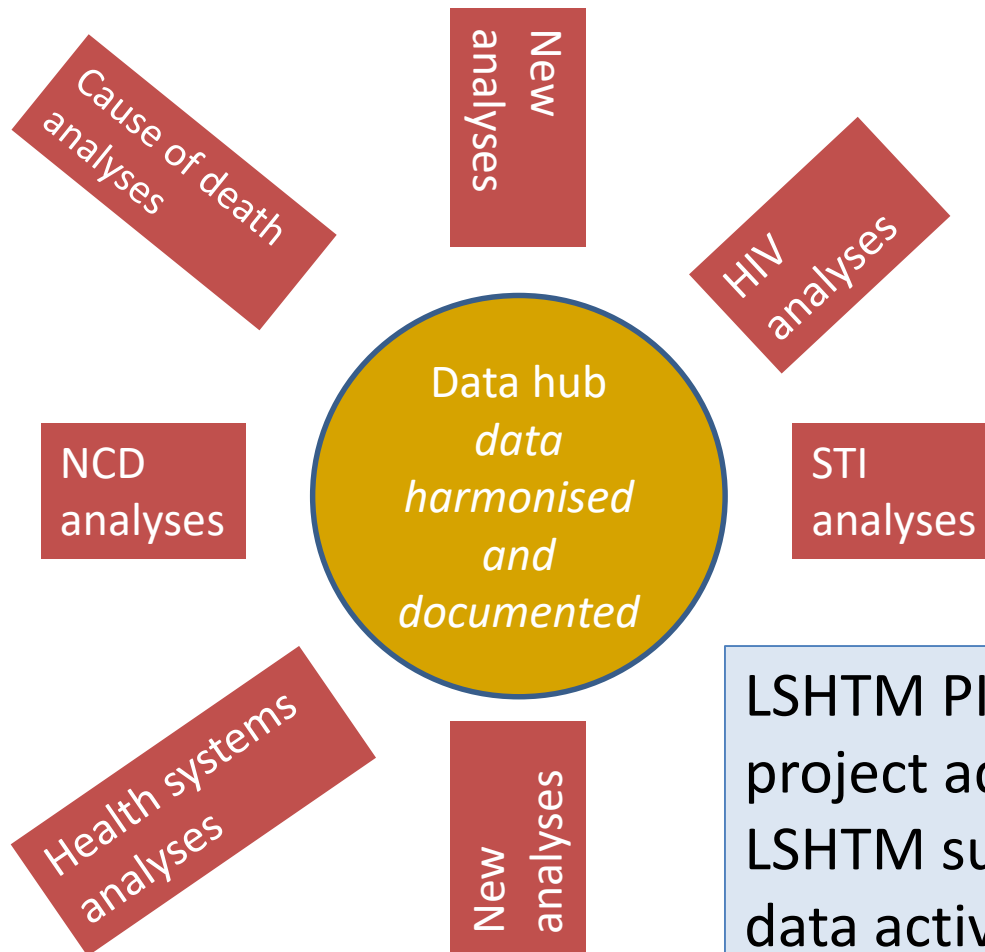
ALPHA partner cohorts



- Located in six high HIV prevalence countries of Eastern and Southern Africa
- Managed by ten independent African research institutions whose community-based surveillance systems pre-date the network formation
- Facilitated by LSHTM secretariat to manage the pooled data resource and plan joint analyses

- Demographic sentinel surveillance (DSS) provides data on households and individuals
 - Fertility, Mortality (including Cause of Death), Migration
 - Population representative over time (observational cohorts)
- HIV data from nested health surveys with DSS
 - Estimates HIV prevalence (size of the problem)
- Longitudinal population cohorts allow
 - Estimation of HIV incidence estimates
 - Assessment of outcomes in treated and untreated patients.
- Platforms for special surveys and qualitative research
 - A complement to CVRS not an alternative

ALPHA Hub with analyses

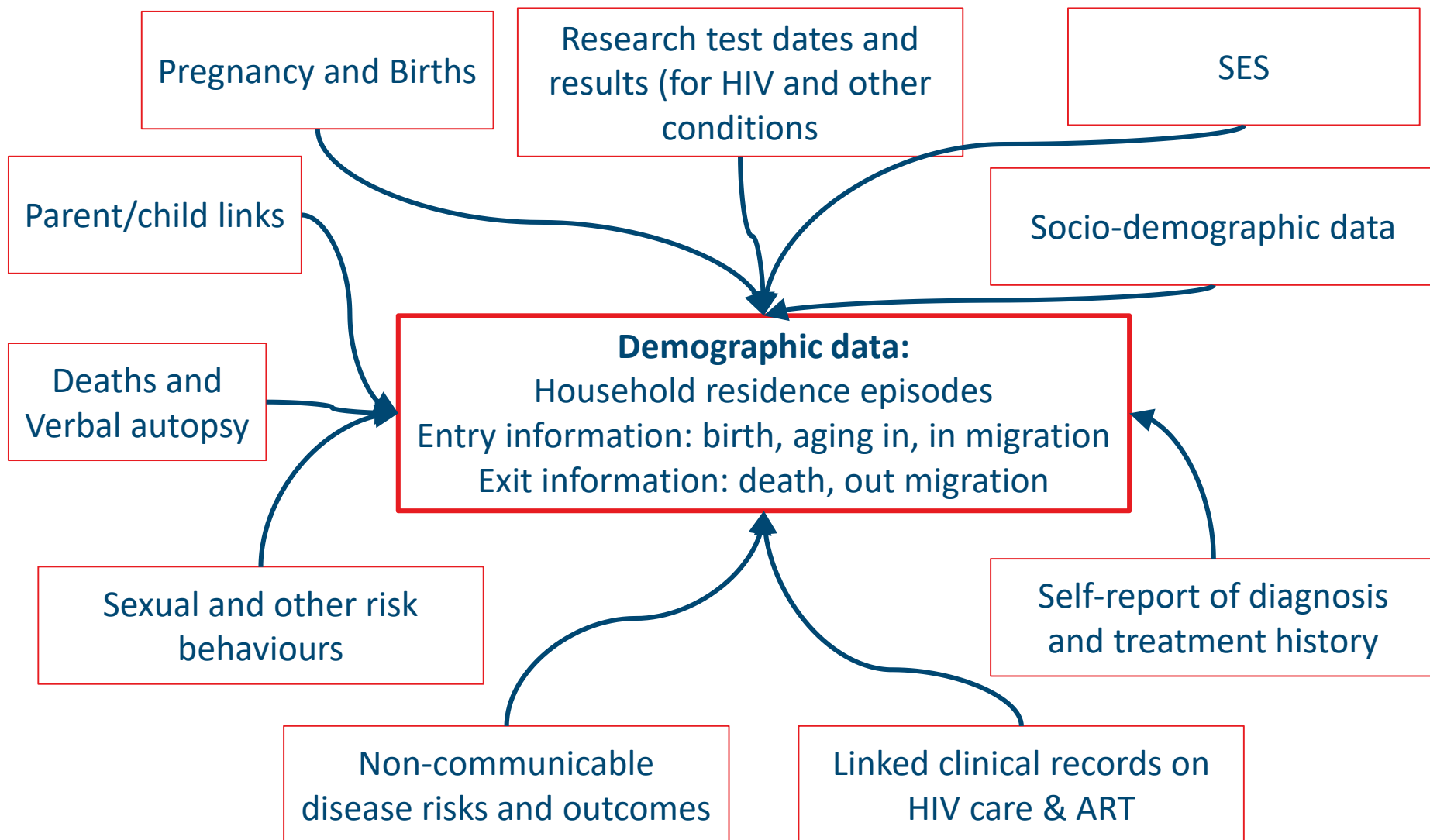


ALPHA data hub receives little dedicated funding
Funding for secondary data analyses used to support Hub.

LSHTM PI leads proposal writing and project administration
LSHTM support for administration, data activities, and analysis

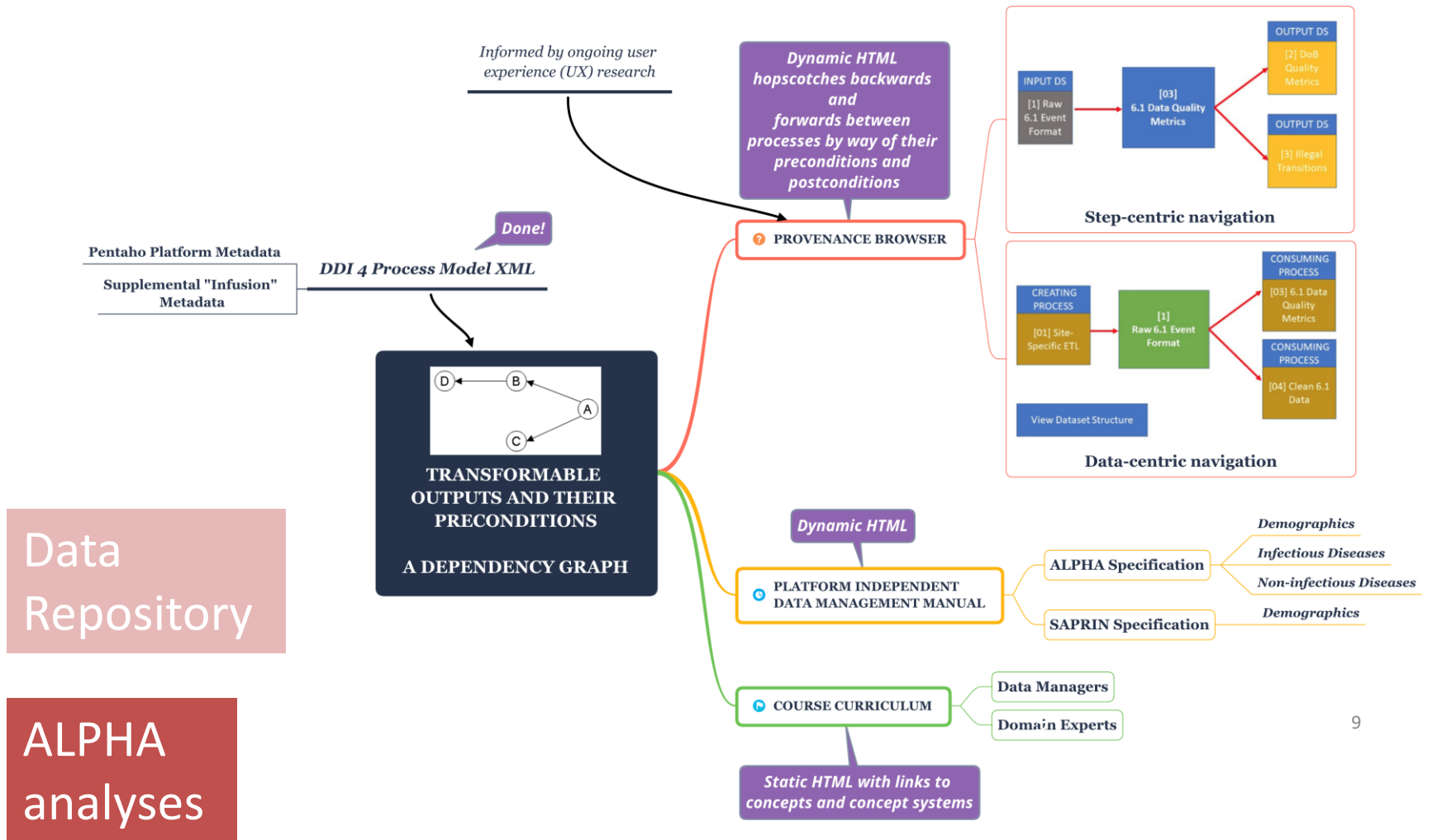
- ALPHA HDSS collect & manage their own data
 - All have different data collection tools
- ALPHA pooled dataset bring together data
 - Currently 13 different demographic and epidemiological pooled databases
- Preserve links between individuals and records in the different pooled datasets
- Standardisation and automation of the process
 - Pooling of the data ETL – through Pentaho.
 - Documentation of the data provenance
 - Communication between analysts and data managers

Data harmonisation



- ALPHA has developed common data specifications
- Standard tools to extract, transform & load data
 - Pentaho data integration with bespoke application
 - Data documentation using NESSTAR (DDI compliant)
- Data to be available in *DataFirst* repository
 - Enable data analysis by other users
- Develop new data specs for HIV & other conditions
- Need for secure funding for the data hub.
 - Another Wellcome biomedical data grant. ?
 - The bigger picture may involve other agencies.

Next steps in data harmonisation



- Build the data harmonisation into a proper Business Process model
 - African Demographic and Epidemiological Surveillance Business Process Model (ADESBPM)
- It is intended to automatically provide
 - provenance metadata in support of *data sharing* and *understanding*,
 - network-specific operations manuals in support of system *reliability*, *maintainability* and *availability*;
 - HDSS-based data management course curriculum to support *recruitment* and *sustainability*

- Funding ideas – current and future
 - HIV research proposals using existing data
 - NCD, cancer and other health conditions with new data specs for the data hub
 - Clinic linkage and services utilisation - UHC
- Funding for the research spokes is used to cover data activities
 - New proposals will need to cover data activities as well as analysis
- One big gap is funding for HDSS data collection.
 - SAPRIN in South Africa provides model

Acknowledgements

- Core staff in LSHTM including colleagues in PSG, DPH & EPH
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