



DEM 2110

DEMOGRAPHIC SURVEILLANCE SYSTEM

The University of Zambia



Resources

- INDEPTH Resource Kit for Demographic Surveillance Systems
- www.indepth-network.net.
- <http://www.indepth-network.org/Resource%20Kit/INDEPTH%20DSS%20Resource%20Kit/INDEPTH%20DSS%20Resource%20Kit.htm>

DSS – What it is!

- Demographic surveillance is the process of defining risk and corresponding dynamics in rates of birth, deaths, and migration in a population over time.
- Surveillance systems are often set up around specific intervention studies and later convert into standing DSS sites that can form a platform for further studies.
- There are over 30 DSS sites in Africa, Asia, and the Americas. At most sites, core demographic data are supplemented with social and economic correlates of population and health dynamics
- DSS sites have provided platforms for research on pneumococcal vaccines in Basse (Gambia), maternal mortality in Matlab (Bangladesh), noncommunicable disease in Filabavi (Viet Nam), and HIV/STIs (sexually transmitted infections) in Rakai (Uganda), insecticide-treated nets in Navrongo, Farafeni (Gambia), Ifakara (United Republic of Tanzania), Kisimu (Kenya), and Oubritenga (Burkina Faso).

DSS Institutional arrangements

- Legal ownership

- *A new DSS site needs to determine clearly who in the Institutional host constitutes the final authority for all management issues concerning the DSS site. i.e. who is the employer of the site leader, and who is the institutional owner of capital equipment used by the site. This should be a legally constituted body with permission to conduct such work in the country.*

- Legal status

- *The DSS hosting institution must have legal status to operate, i.e. it must be registered. This status determines its ability to solicit and receive funds from both public and private donors/partners/funders, especially from international sources*

Other institutional arrangements

- Site Identity : an identity for the DSS site that distinguishes it from the host institution
- Site leadership: clear lines of authority above the DSS. To whom will the DSS site leader or station manager report?
- Site strategic plan: a strategic plan that sets out the vision, mission and key objectives of the DSS, and maps a sustainable course towards long term funding support
- Management & advisory committees
 - *A Scientific Advisory Committee that is the technical and scientific advisory arm of the site should be comprised of experts in different fields of interest of the site*
 - *A Management Committee comprising of a minimum of four and less than ten people should be responsible for monthly advice on the day to day running of the site*
 - *An Institutional Review Board (IRB) that has representation from the community, site, opinion leaders, and other partners needs to be in place to review ethical aspects on various projects to be carried out at the site.*

Other institutional arrangements

- Funding partners
- Consumers: all potential users of information that will be generated by site
- Networking

- Permits: Depending on the local environment, determine and obtain permits from:
 - *National authorities (e.g. Commission of Science & Technology- Ministry of Health)*
 - *District authorities (District & Local Government authorities)*
 - *Institutional and Ethics Review Boards (IRBs)*
 - *Traditional authorities*

- Administration – Personnel and Financial

Site Design Decisions

- Decisions on definitions - It is important at the earliest stage to be very clear about the working definitions of key parameters
- Site selection
- Update cycle Frequency & timing
- Household, membership and residency:
 - *a household is often defined as that group which eats from the same pot*
 - *Membership (member) defines the state of belonging to a social group irrespective of physical presence.*
 - *Residency (resident) defines the state of being physically present in a given residential unit for a defined threshold of time.*
 - *Residential Units are the places where individuals live. They are defined in physical and geographic terms.*

Site Design Decisions

- Migration definition: Migration is the movement of people across a specified boundary for the purpose of establishing a new or semi-permanent residence
- Local event calendars
 - *A Local Events Calendar is a list of important dates of local political, historical, religious or social significance that is required to assist recall of dates in the distant past and timing of past vital events that will be recorded during data collection*
- Local illness terminology
 - *Staff who conduct verbal autopsy will need to know local illness terminology in the local language(s)*

Data management

- Reference data model: Data systems for a DSS require a reference data model (graphs, tables etc)
- Core variables
- Core variables that must be documented longitudinally in any DSS are:
 - *Pregnancies, Births, Deaths, Migration, Residency, Membership, Social Group, Location, Individual*
- Hardware support; Data document; database software platform; field data flow chart
- Data access, security & confidentiality: Data access rules should be clearly defined to ensure data security and integrity. The main questions are:
 - *Who should have access to the data?*
 - *What data should they have access to?*
 - *What level of access should they have?*

Data management

- Continuing analysis & quality Control:
 - *quality control measures ensure that good and reliable data is collected; using the following approaches:*
- Examination of forms:
 - *Supervisors must check that all forms or instruments are checked for completeness in the field before they are sent to the data unit.*
- Re-interviews
 - *A supervisor should re-interview 3-5% of the households randomly selected from the day's work to check on the accuracy of the response recorded by the enumerator.*
- Supervised interviews
 - *Supervisors should accompany the enumerator and observe the interview without interfering in the process*
- Continuing Analysis
 - *Especially during startup, there should be continuing analysis of data to detect any flaws in the system at an early date.*

Communication and Dissemination

- Community feedback:
 - *Every DSS site should build in a mechanism for feeding back results to their communities and other audiences*
- Using the website
- Publications & reports:
 - *Dissemination to the scientific community, both in-country and internationally should of course be done through normal channels.*
- Internet access:
 - *to foster communication with the scientific community, it is ideal for the DSS site to have Internet connectivity*

Recruitment and training

- Initial recruitment of managers

- Developing procedures and training manuals:
 - *first tasks required as a DSS is being set up is to develop and translate standard operating procedures manuals and training manuals before recruiting further staff*

- Piloting instruments:
 - *All instruments to be used in the DSS have to be translated and back translated into the local or official language of the study area*
 - to ensure the meaning of each and every question is clear.

 - *Pre-testing of instruments in the field during training should follow this process. Further modifications of the instruments may be required after the pretest.*

Field system

- The DSS field system will be run by a Field Manager
- Executed by field supervisors and enumerators who report to the Field Manager
- The field system manages the community entry processes, field teams, logistics and operations, for both the core DSS, and any associated research projects and collects all household level data, including verbal autopsies.
- Field staff training (both pilot and full trainings)
- Community key informants (identified, recruited and trained where need be)

Data systems and administration

- This will involve – data system recruitment, training and testing
- On the part of admin, it will be around – recruitment and training
- Team Management will include:
 - *Field team meetings*
 - *Data team meetings*
 - *Key informant meetings*
 - *Inter-round retraining*

Strategic issues

- Data sharing and collaboration policies

- Sustainability
 - *Continued community engagement (longer period DSS)*
 - *Staff motivation and retention*
 - *Diversification of funding, research and information dissemination approaches*
 - *Collaborative efforts and linkages to various donor fundings*

- Influencing policy & practice: DSS household surveillance data should be seen as an integral part of a comprehensive Health Information System of the district, region and zone of the country in which it is situated
 - *much of the information collected routinely in a DSS site has immediate intrinsic value in terms of health information*

Core Baseline Round

- This assumes that Standard Operating Procedures are developed, design questions are addressed, equipment is purchased, staff are recruited and trained, instruments are piloted, and the data system is working;

- Census & core parameters:
 - *It is important to collect only information on core demographic variables during the baseline census round.*
 - *The purpose for this is to focus on basic information that can be used to produce registers for subsequent follow up rounds. The essential core variables are:*

- Name
- Date of Birth
- Sex
- Relationship to head of household
- Main residence
- Location of household (assigning IDs)

Core Baseline Round

■ Community approach

- *The community needs to know about the impending DSS.*
- *It is therefore important to let the community members, officials, and authorities know that you intend to conduct a DSS in their area.*
- *Meetings with community leaders, followed by the community will be necessary before starting the field activities.*

■ Household mapping:

- *During the first visit to the household in the baseline census round, the enumerators will need paper and pencil to draw the route or order of the households they visit each day.*
- *Drawing boundaries and marking key landmarks or features of their enumeration area will help in maintaining the order of future visits.*
- *A preferred method for household mapping is to use the Global Positioning System (GPS).*

■ Informed consent and initial data collection

Ethics & confidentiality

- **Informed consent:** Consent must be obtained from every household being registered into the DSS, both during the start up round, and any new households arising over time in subsequent update rounds
- **Data access, security & confidentiality**
- Data access rules should be clearly defined to ensure data security and integrity. The main questions are:
 - *Who should have access to the data?*
 - *What data should they have access to?*
 - *What level of access should they have?*