DHIS2 Essentials
Crash Course
Overview – 1 Week

- What exactly is DHIS2?
- Essential concepts
  - Users, User Roles, User Groups
  - Organization Units
  - Data Sets
  - “What When Where Who Why”
- First steps: Log in and Create User
- Charts exercises
  - Data Elements vs Indicators
  - Relative vs Fixed Periods
  - Org Unit Selection
  - Reporting Rates
  - Exercise
    - Download and share on dashboard
- Data input
  - Creating a simple form
    - Create one data element
    - Add to a new form
    - Assign to period, user role, org unit
    - Enter data and audit data
- Pivot tables Exercises
- Maps Exercises
- Share dashboards with the group
  - Sketch a dashboard for your own data project
- Question/runover time
- Data Validation and Data Quality
- Explore more advanced topics of DHIS2:
  - Steps you need to take to set up your DHIS2 instance
  - Data export and integration
  - Uploading data and meta-data
  - Automated SMS notifications
  - Internal messages
  - HTML reports
  - Event Capture
  - Tracker Capture
  - Mobile capture on smart phone
  - Feature phone app
Overview – 1 Hour

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The Hype over
District Health Information Software 2

• Used in 45 countries and 10 organisations
  *Large community of implementers and developers*

• Backed by HISP project - started in 1996 in South Africa
  *DHIS 2 developed since 2005*

• Supported by major donors and NGOs
  *PEPFAR, Global Fund, EU, NORAD….*
Global Deployments
What does DHIS2 do?

- Collects data
  - Phones
  - Tablets
  - PCs

- Displays data
  - Charts
  - Maps
  - Reports

- Outputs Data
  - Images
  - Documents
  - Exports
The DHIS2 Model

Where

Organisation unit

Province A
Province B
Province C
District A
District B
District C
Ward A
Ward B
Ward C
Village A
Village B
Village C

When

Period
e.g. January 2013
“Last Month”

What

Data Element
e.g. Number of Latrines Constructed
Data Collection

● All data Collected
  ○ What
  ○ When
  ○ Where

● Modes of Data Capture

● Data Types
  ○ **Aggregates:** Data element totals per org unit.
    - Total number of latrines in a village
    - Total malaria infections at a clinic
  ○ **Event Capture:** Individual event data captured against an org unit
    - Cause of each death at a clinic
    - Health outreach events
  ○ **Patient Tracker:** Continuous data captured against a patient assigned to an org unit.
    - Tracking a child through delivery, immunizations, and under 5 growth
    - Tracking a class through monthly exam scores for a year.
Data Visualizer

“A picture is worth a thousand words!”

Charts and graphs allow users to quickly spot trends, examine pronounced data, and see a data picture.
GIS

Creating context with maps.

Maps make our data more tangible - they provide a visual and spatial representation of the information!
Dashboards

Provide a **brief snapshot of critical information** that enables you to readily monitor and share your program data!
Feedback Loops

Provincial Staff

District Staff

Sub-district Staff

Chiefs/Traditional Leaders

Facility Staff

Community Volunteers
Robust data entry – user-friendly form fields capture data on:
- Feature phones (e.g., Nokia 111)
- Smartphones (e.g., Android, iPhone)
- Tablets
- PCs
- Offline data cacheing

Real-Time Data Visualization – DHIS2 automatically aggregates data through the geographic hierarchy
- Facility/Site data → District Data → Provincial → National data
- GIS/Mapping functionality
- Fully-automated, custom reports
- Charts and pivot tables

Key Benefits of DHIS2

Capable of Serving any Sector Requiring:
- Routine Data Collection
- Aggregation
- Data Mapping and Visualization

Broad Regional and Global Support
- DHIS2 currently used in over 30 countries, many in the African region:
  - Zambia, Malawi, Mozambique, Madagascar, Botswana, South Africa, Ethiopia, DRC, Zimbabwe, Namibia, Nigeria and Tanzania
- Lusaka-based end-user training (www.dhis2training.com)
- Development priorities: Developing countries
Logging In
Clts2.dhis2.net
[your district]
ICT4D2016
TECHNICAL ESSENTIALS

WHERE?
Organization Units

WHO?
Users
User Groups

WHAT?
Data Elements
Indicators

WHEN?
Data Sets
Periods (Frequency)

Data Value
Organizational Units (OUs)

• Geographical area or unit, which exists within a hierarchy.
• Specifies “WHERE?” a particular data value occurs.
• Usually relates to administrative units

To add an OU:
• 1. Go to Apps Organization Units Organization Unit.
• 2. Using hierarchy tree on left, click on the ‘Parent’ you want to add the new OU to.
• Select where the facility is going to. (i.e. if OU tree were organized as District/Chiefdom/Facility, you would select the Chiefdom where the new facility is located).
• 3. Click Add New to create the new OU.
• 4. Fill out the required (*) and relevant data for the OU.
• 5. Click Add.
• 6. Repeat steps, to enter more OU’s in the hierarchy as needed.
Users, User Roles, User Groups

Users are created and assigned to roles and Organization Units, for which they are allowed to perform specific tasks. (i.e. Data Entry, Analysis, etc...)

- Permissions: User Roles
- Classification: User Groups

To create a new user:
- 1. Go to Apps > Users > User.
- 2. Click Add New.
- 3. Fill out the required (*) and relevant data for the new user.
- 4. Select /Assign the user to the appropriate role. (Use arrows to move over or double-click).
- 5. Assign the User to the appropriate data capture and organization units.
- 6. Click Add.
Data Elements vs Indicators

**Data Elements**

- Represents the "WHAT?" dimension, and explains the concept being collected/analyzed.
- Often represents a count of something e.g. "BCG doses given" or "Malaria cases."

Reported through DATA SETS  
Analyzed through DATA ELEMENT GROUPS  
Disaggregated by OPTIONS or CATEGORIES

**To create a Data Element:**
1. Go to Apps Data Elements/Indicators Indicator.  
2. Fill out the required (*) and relevant data for the new data element.

**Indicators**

- Core element of data analysis.  
- *Calculated* formula based on a combination of data elements.  
- Coverage indicators (ratios, percentages, etc.) are composed of data element formula  
  - count representing numerator  
  - population representing denominator

**To create a new indicator**
1. Go to Apps Data Elements/Indicators Indicator.  
2. Click Add New  
3. Fill out the required (*) and relevant data for the new indicator.
Let’s Talk About Datasets!

**USER**S are linked to **DATASETS** via **USER ROLES** and Organization Unit

Datasets are collections of **DATA ELEMENTS**
Let’s ENTER DATA!

- Open monthly CC dataset in CLTS
- Exercise on your own
- Regroup to examine your dashboard
Data Analysis - Data Visualizer

A 30 minute exercise
Thanks! Zikomo! Asante!

Visit us!

akros.com & dhis2training.com

Brian O’Donnell
bodonnell@akros.com
Twitter: @1ambodo
EXTRA SLIDES
Surveillance System Design

(when should you use DHIS2?)
Types of Tools Available

Tools are categorized by the type of data they allow enumerators to collect.

Tools that allow less data collection usually are less complex.

“Aggregate Systems” usually fall to the left of the spectrum, and “Individual Encounter Systems” usually fall to the right.
Aggregate Systems

Aggregate systems **predefine** a large number of data elements.

This predefinition restricts the enumerator to reporting on a small subset of data.

DHIS2 is an example of an **Aggregate System**.
Aggregate Systems Illustrated

For example, an aggregate system may ‘lock down’ the locations/names/contact details for each facility, the types of events each facility may report (e.g., malaria case, HIV/AIDS case, etc.) - meaning that the enumerators cannot edit these values - but ‘unlock’ the number of events each enumerator can report.

In this case, an enumerator would select the facility location (but not edit) and edit the number of malaria cases reported for that period.
Aggregate Systems Illustrated

Illustration from DHIS2

Note that the only free-text fields (i.e., fields that enumerators can edit) are found in the ‘Value’ column.

All other values are either completely locked down, or subject to system defined drop-down lists.
Individual Encounter Systems

Individual encounter systems redefine a small number of data elements. This allows the enumerator to report on a large amount of data.

Survey-based tools like Open Data Kit are examples of Individual Encounter Systems.
Individual Encounter Systems

The most extreme type of individual encounter data collection systems are personal diaries - no restrictions on what can or cannot be recorded!

Why would one restrict the type and content of data?

Comparability....Efficiency....?
Imagine trying to assess the HIV/AIDS conditions for an entire country, and the only data source available were personal diaries from 4,000 health workers.

Different interpretations of events, different types of data being recorded at different frequencies, using different languages! *Surveillance rules and linguistic rules both serve a similar purpose: to enable the coherent transmission of ideas.*
Purpose-Driven Data Collection

HOW MUCH DATA DO YOU REALLY NEED?

Define your requirements: **why** are you collecting data in the first place?

Who is using the data? How will the data be used? How much data does your surveillance system need to provide versus end-users collecting their own?
So, when do I use DHIS2?

Two common use-cases for DHIS2:

**Aggregate**: Fixed locations, periods and types of events, ‘unlocked’ event numbers. E.g., health facilities submitting monthly reports on malaria cases (all fixed), *number* of malaria cases is variable.
So, when do I use DHIS2?

Two common use-cases for DHIS2:

**Tracker**: Program-based client tracking. Fixed program intervals, event types and locations, variable program adherence. E.g., ANC visits, measuring vital signs at specific health facilities (all fixed), *attendance* and *vital sign values* variable.