



HIV Case Surveillance Implementation in Botswana

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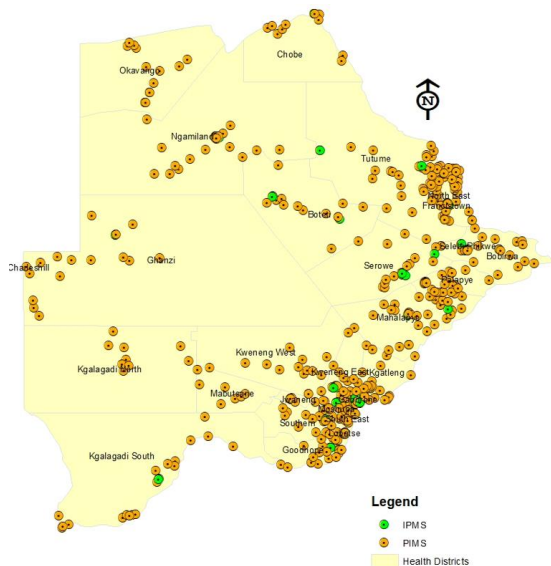
OUTLINE

- ✓ **HI landscape in Botswana**
- ✓ **NDW data flow**
- ✓ **NDW Data Deduplication Process**
- ✓ **Summary of HIV CBS Implementation**
- ✓ **Challenges experienced**
- ✓ **Data use impact**



Botswana HIS Landscape - Main EMRs

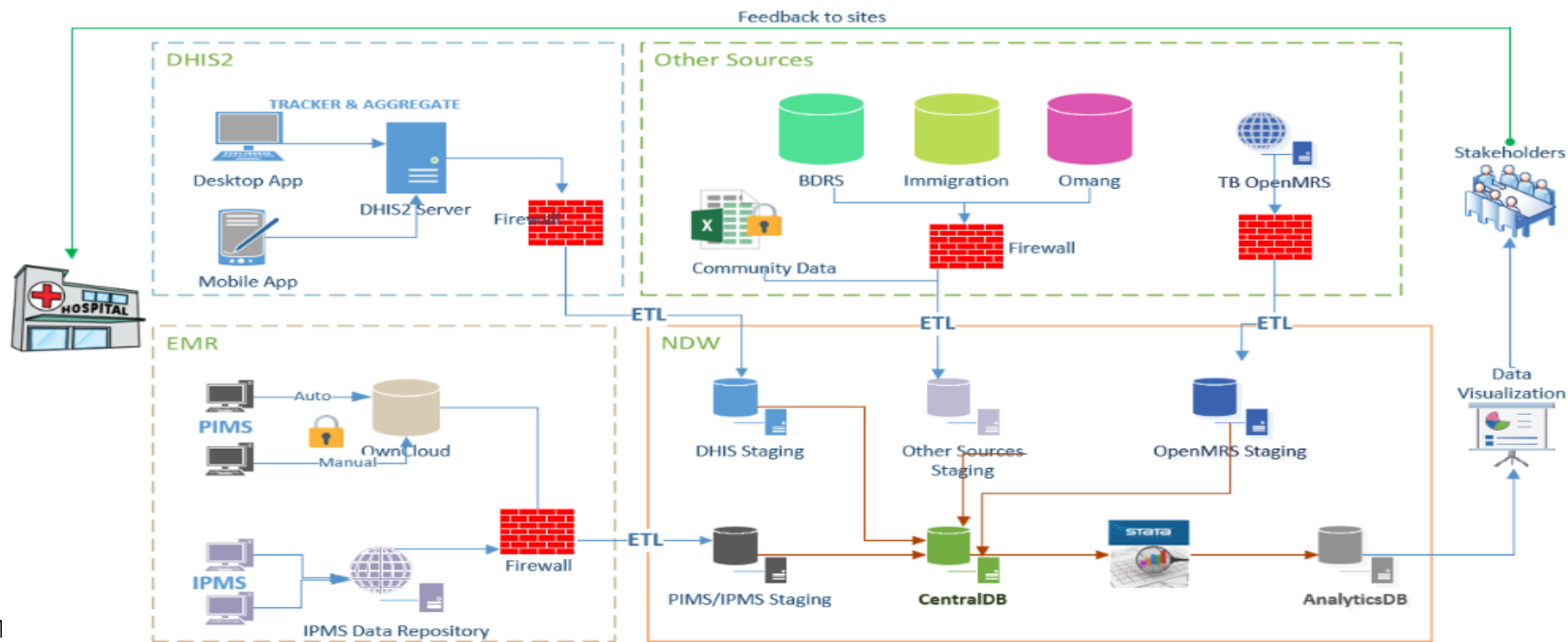
“Botswana has about **750** facilities **countywide**, with 2 main EMRs, (PIMS and IPMS) running in the public health facilities”



IPMS	PIMS	DHIS2
centralized web-based system at 56 sites	Stand alone localized area network system at 497 facilities.	Web based platform for Patient level data.

****Other Sources:** Other systems that collect health related data, BDRS, Omang, Immigration, Open MRS Tb data system, Community testing data.

NDW Data Flow





NDW Data Deduplication Process



PRE- PROCESSING

- Data from various HIS is standardised into the same format
- For patient records without Omang, generate an SUID through concatenation name, surname, date of birth and sex

INDEXING

- Calculate similarity scores for pairs using Python Record Linkage library and SQL Server Integration Services



NDW Data Deduplication Process



Comparison & Similarity

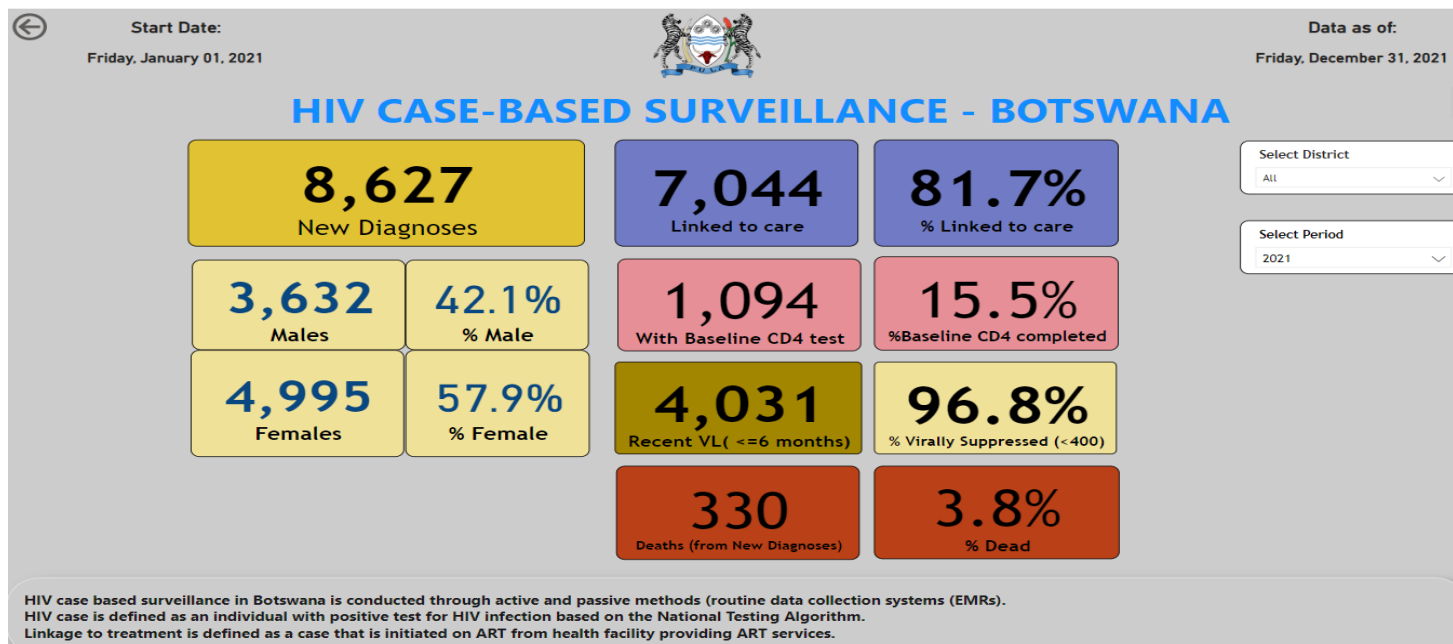
Perform a comparison on the record pairs to create a comparison vector that calculates the similarity score between both pairs using the algorithms: jarowinkler, levenshtein, longest common substring (lcs) and jaccard

Classification

- Records with similarity scores above the 80% threshold are considered duplicates, and those below the threshold are considered unique.



CBS Summary 2021



- *Dashboard produced using Power BI*
- *Data is coming from the data warehouse*



Challenges experienced

- The challenges experienced during establishment of HIV CBS are:
 - ✓ Omang on its own as a unique identifier has limitations (non citizens, unregistered individuals)
 - ✓ Covid-19 delays in rolling out trainings and implementation
 - ✓ Low utilization of EMR



Data use impact

- The HIV CBS dataset has enabled:
 - Building a longitudinal record for each PWHIV to monitor quality of service delivery across facilities
 - Ability to monitor trends on HIV diagnoses
 - Improved monitoring of PWHIV patient outcomes
 - Ability to generate line list for interventions at facility level



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