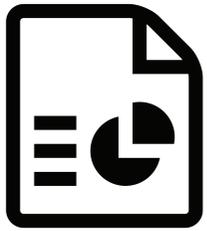# EXPLORING AUTOMATION OF VIRAL LOAD RESULT TRANSMISSION FROM REFERENCE LAB TO ELECTRONIC MEDICAL RECORD SYSTEMS IN CENTRAL KENYA

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BACKGROUND

The transmission of viral load results from the Kenya National Reference Laboratory (NRL) database to Electronic Medical Records (EMR) at health facilities has been suboptimal in Central Kenya. Out of 11,422 available results, only 1,907 (17%) were available on EMR as at July 2017. Of the results available on EMR an estimated 10% had data transcription errors following manual data entry of each record. To mitigate this problem, a Microsoft.net integration software Viral Load Automation Tool (VLAT) version-1.2 (2017) was developed by CHS to automate this process.

As at July 2017 →

Pie chart: Results available on EMR 17%; 83% Results available in the lab
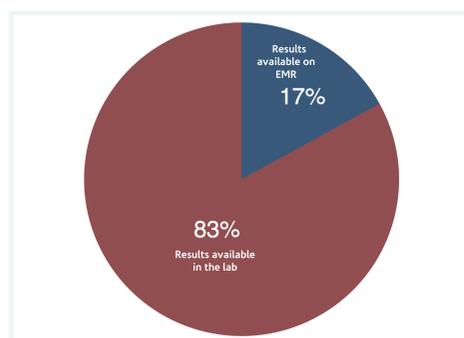
Mitigation → **Viral Load Automation Tool**

METHODS

The VLAT was piloted in 6 county and sub-county health facilities in Central Kenya. The number of viral load results (VL) uploaded into the EMR were compared before (February – July, 2017) and after (August 2017 - January 2018) VLAT implementation. Wilcoxon rank-sum test of medians and Poisson regression analyses were done to compare the VL tests upload incident rate ratios (IRR) and 95% confidence intervals pre and post migration.

RESULTS

The total number of VL results uploaded was 3,059 (31.3%) pre-migration and 10,276 (97.7%) post-migration. There was a significantly higher median number of viral load results uploaded into the electronic medical record (EMR) system post-migration compared to pre-migration: 2130 (Inter Quartile Range: 164 – 2710) vs. 500 (IQR: 418 – 618), p<0.001. The rate of VL results upload into EMR in post-migration was over 3 times that of pre-migration period; IRR = 3.36 (95% CI 3.23 – 3.50), p<0.001. Results adjusted for number of active clients at each site were similar; IRR = 3.14 (95% CI 3.01 – 3.27), p<0.001.

Bar chart: Percentage of VL records transmitted — PRE MIGRATION 31.3%, POST MIGRATION 97.7%
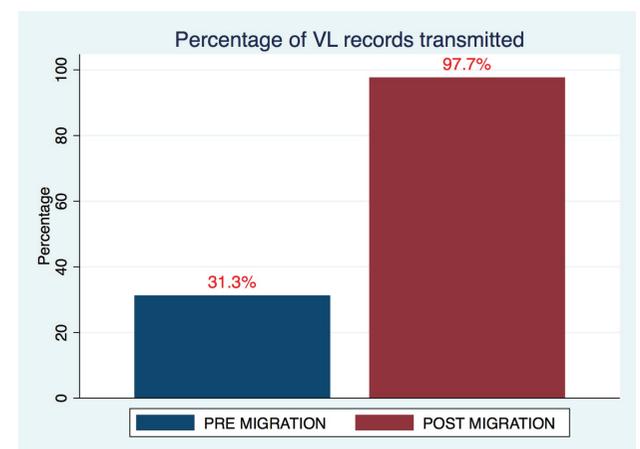
CONCLUSION

The total number of VL results uploaded was 3,059 (31.3%) pre-migration and 10,276 (97.7%) post-migration. There was a significantly higher median number of viral load results uploaded into the electronic medical record (EMR) system post-migration compared to pre-migration: 2130 (Inter Quartile Range: 164 – 2710) vs. 500 (IQR: 418 – 618), p<0.001. The rate of VL results upload into EMR in post-migration was over 3 times that of pre-migration period; IRR = 3.36 (95% CI 3.23 – 3.50), p<0.001. Results adjusted for number of active clients at each site were similar; IRR = 3.14 (95% CI 3.01 – 3.27), p<0.001.

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Centre for Health Solutions – Kenya (CHS) is an indigenous, not-for-profit organisation that has an in-depth understanding of the local context, and utilises the expertise of the local population through their staff, as well as strategic partnerships, to ensure the implementation of evidence-informed solutions and interventions to address existing and emerging public health concerns.