

# Improved molecular laboratory workflow with test consolidation on the Alinity m System



Maree L, Krügel M, Glass AJ

Lancet Laboratories, Johannesburg, South Africa

## Background

The demand for decreasing the turn-around times of molecular tests is increasing worldwide, as earlier diagnosis and treatment of most infectious diseases can improve patient outcome. Abbott Molecular recently released the Alinity m System, a fully automated, continuous and random-access analyser using RadiFlex™ technology.

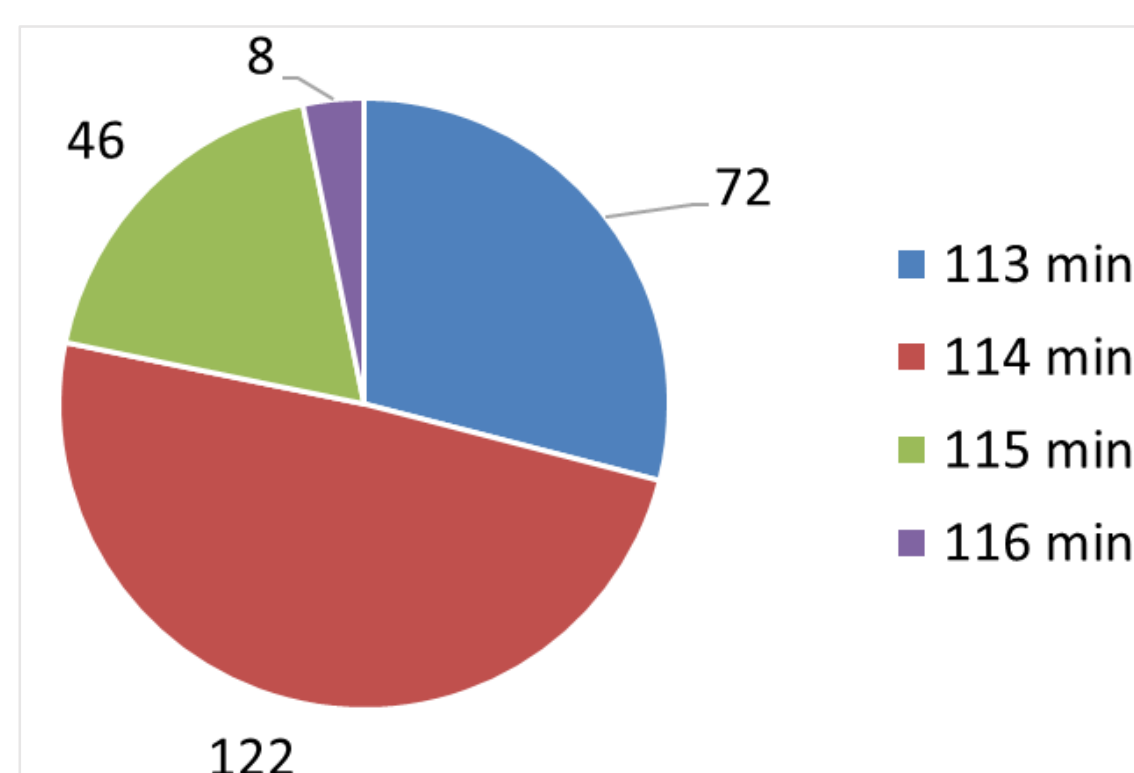
## Materials and methods

Laboratory workflow metrics were assessed for HIV-1, HBV, HCV, HR-HPV and STIs (CT/NG/TV/MG) processed on various routine analysers and the Alinity m System. Three turnaround times (TATs) were measured: total TAT (sample arrival to result), sample onboard TAT (sample loading onto analyser to result), and processing TAT (sample aspiration to result; for Alinity m only).

## Results

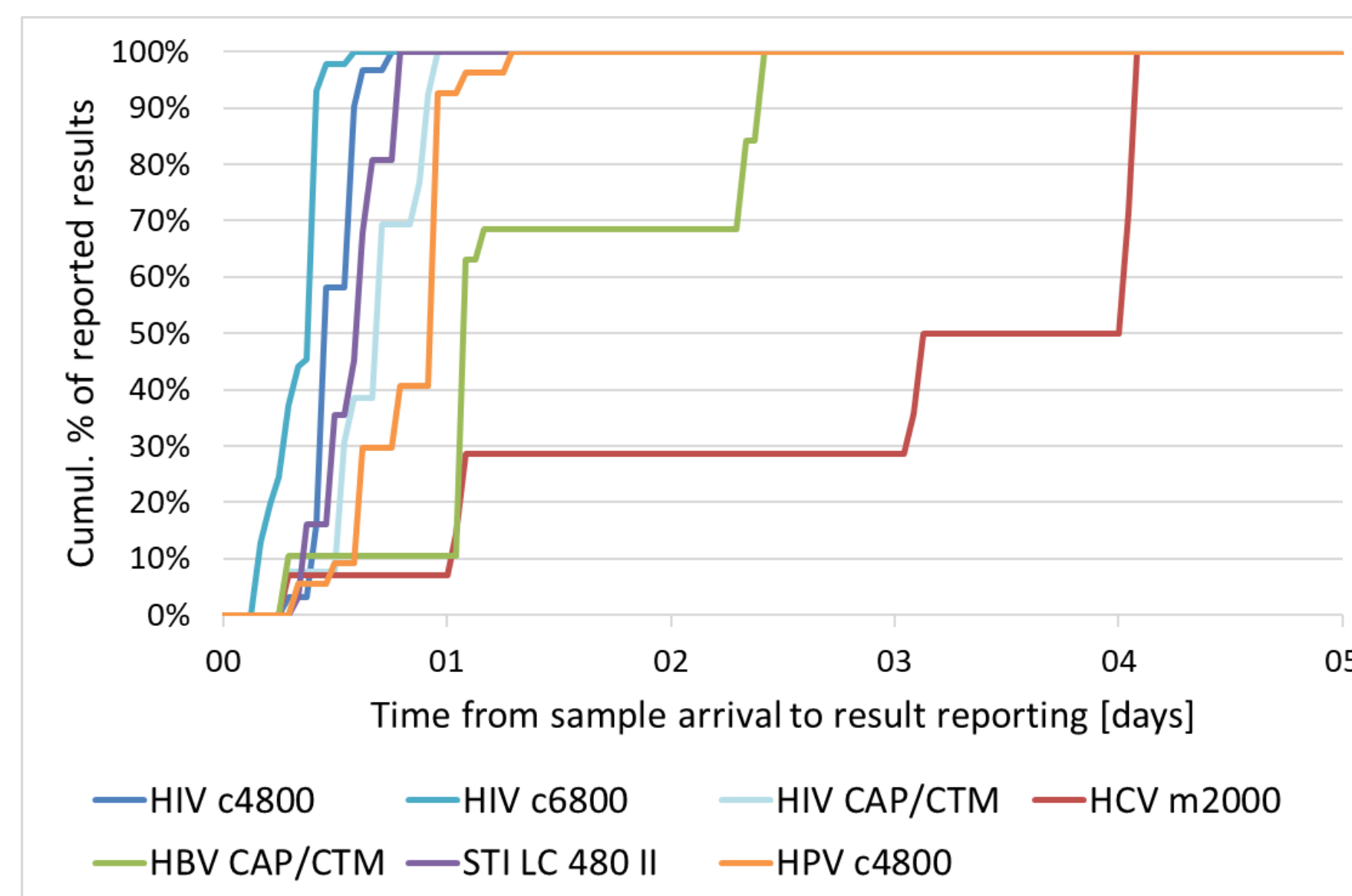
Two-hundred and forty-eight samples were included over 5 days in the workflow assessment (130 HIV-1, 19 HBV, 14 HCV, 54 HR-HPV, 31 STIs).

Processing TAT on the Alinity m System was  $\leq 116$  minutes, independent of the assay.

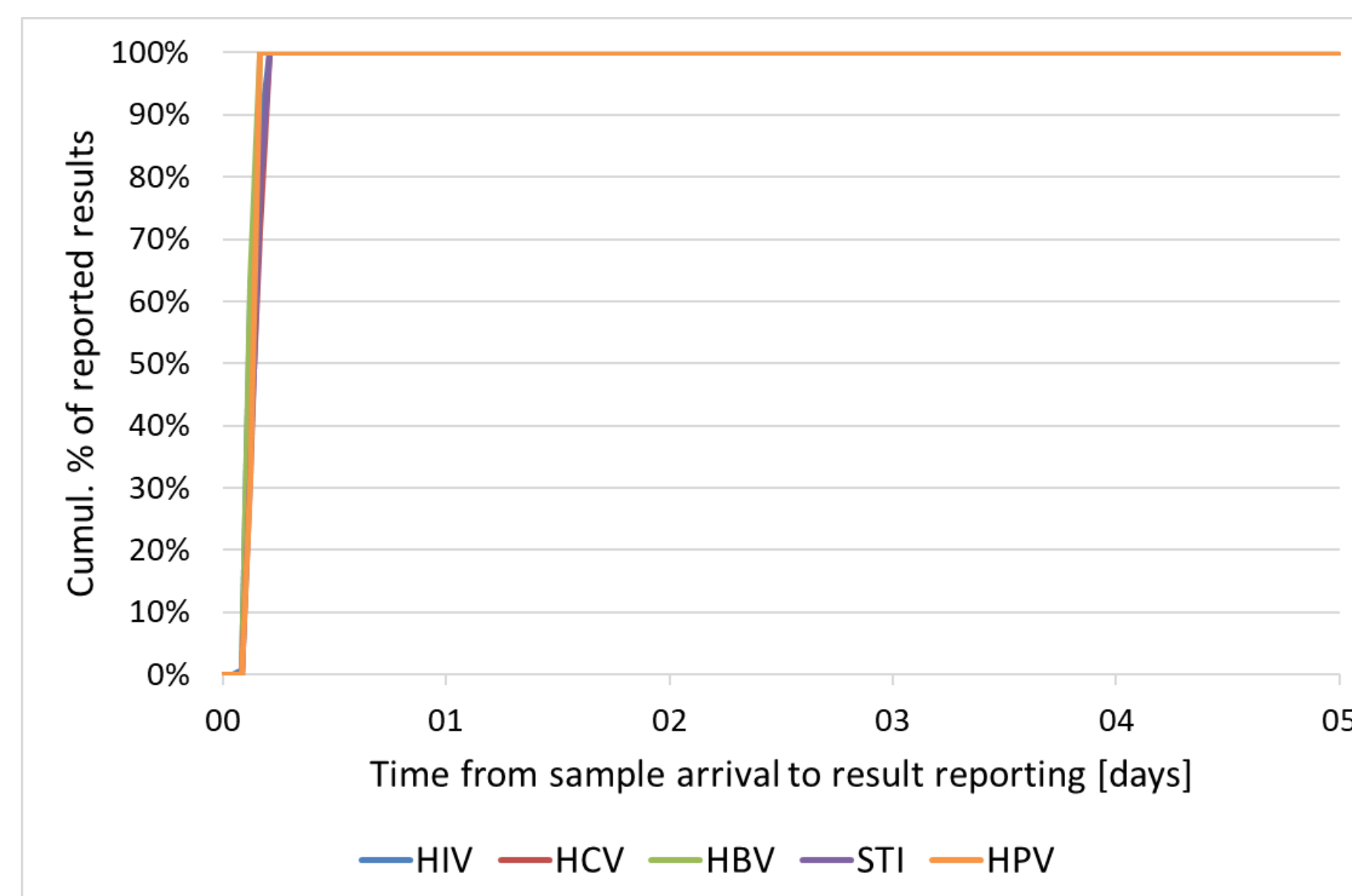


**Figure 1.** Processing TAT on the Alinity m System

Total TAT decreased from 5 days for all routine methods to 5 hours with the Alinity m System.

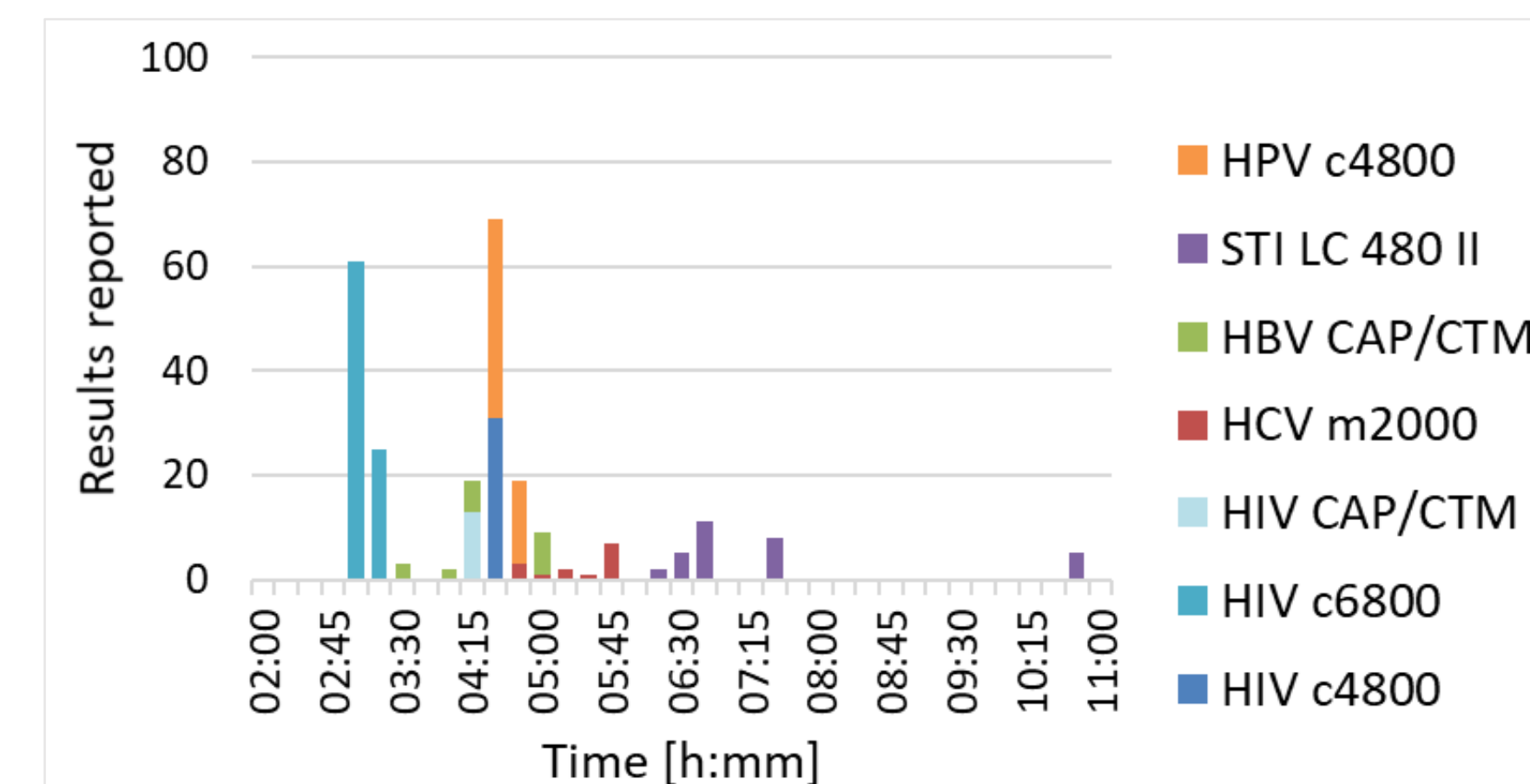


**Figure 2.** Total TAT for routine test methods

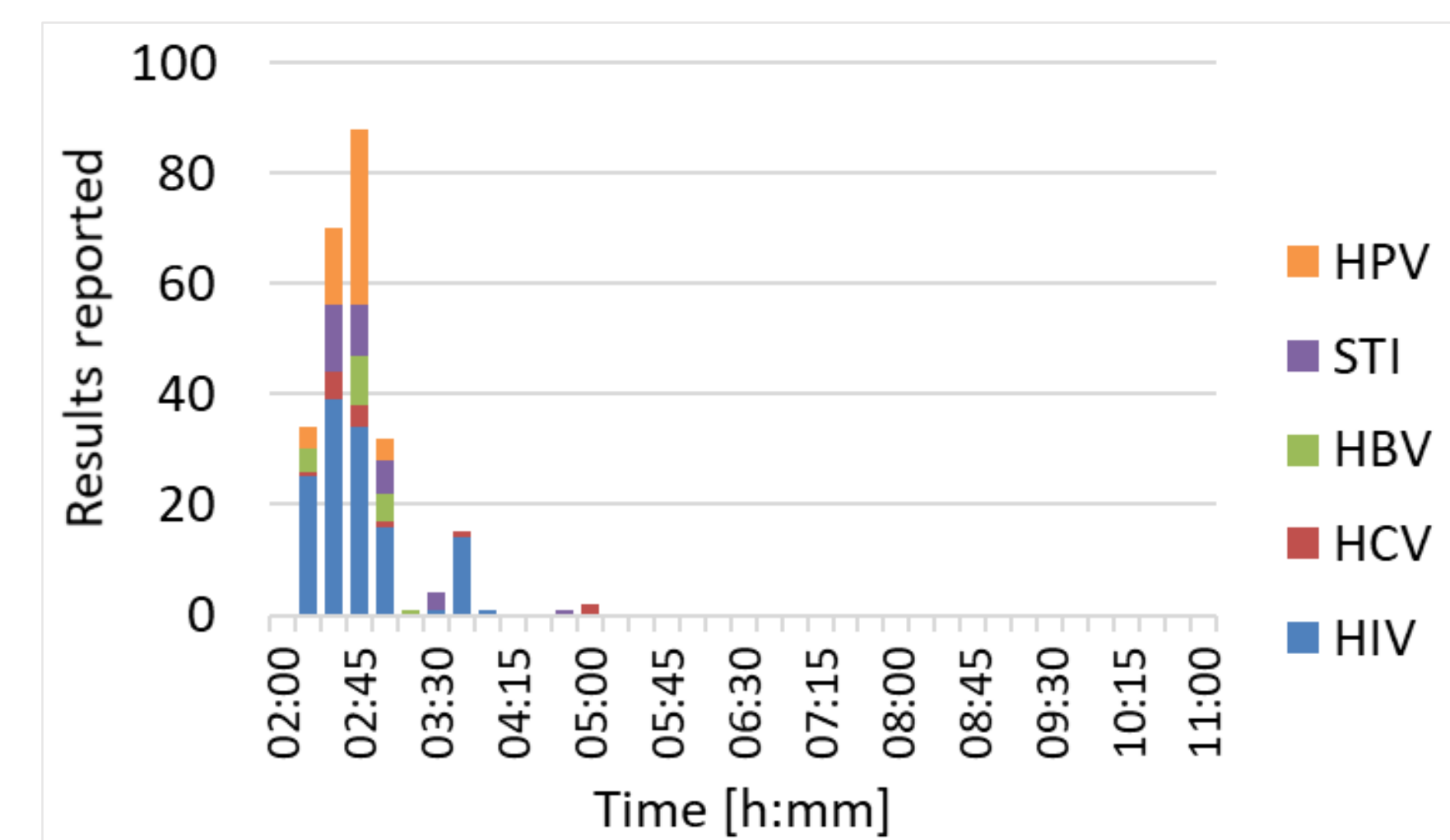


**Figure 3.** Total TAT for the Alinity m System

Sample onboard TAT decreased by more than 50%. With the various routine methods, the onboard TAT was 10 hours 45 minutes, versus 5 hours with the Alinity m System.



**Figure 4.** Onboard TAT for routine test methods



**Figure 5.** Onboard TAT for the Alinity m System

## Conclusions

Its random-access capabilities enable the Alinity m System to provide rapid result reporting (within 5 hours of arrival in the laboratory) for several routinely requested molecular tests, independent of the frequency of test orders. This significant decrease in total turnaround time is expected to improve both laboratory operational efficiency and patient care.

## Acknowledgements

The study was funded by Abbott Molecular.