



## **SUPPLEMENTARY MATERIAL FOR ISSUE BRIEF:**

# **Achieving undetectable: what questions remain in scaling-up HIV virologic treatment monitoring?**

**Supplementary material includes prices for CD4 and viral load tests, sourced from the Global Fund's PQR tool, across companies and countries.**

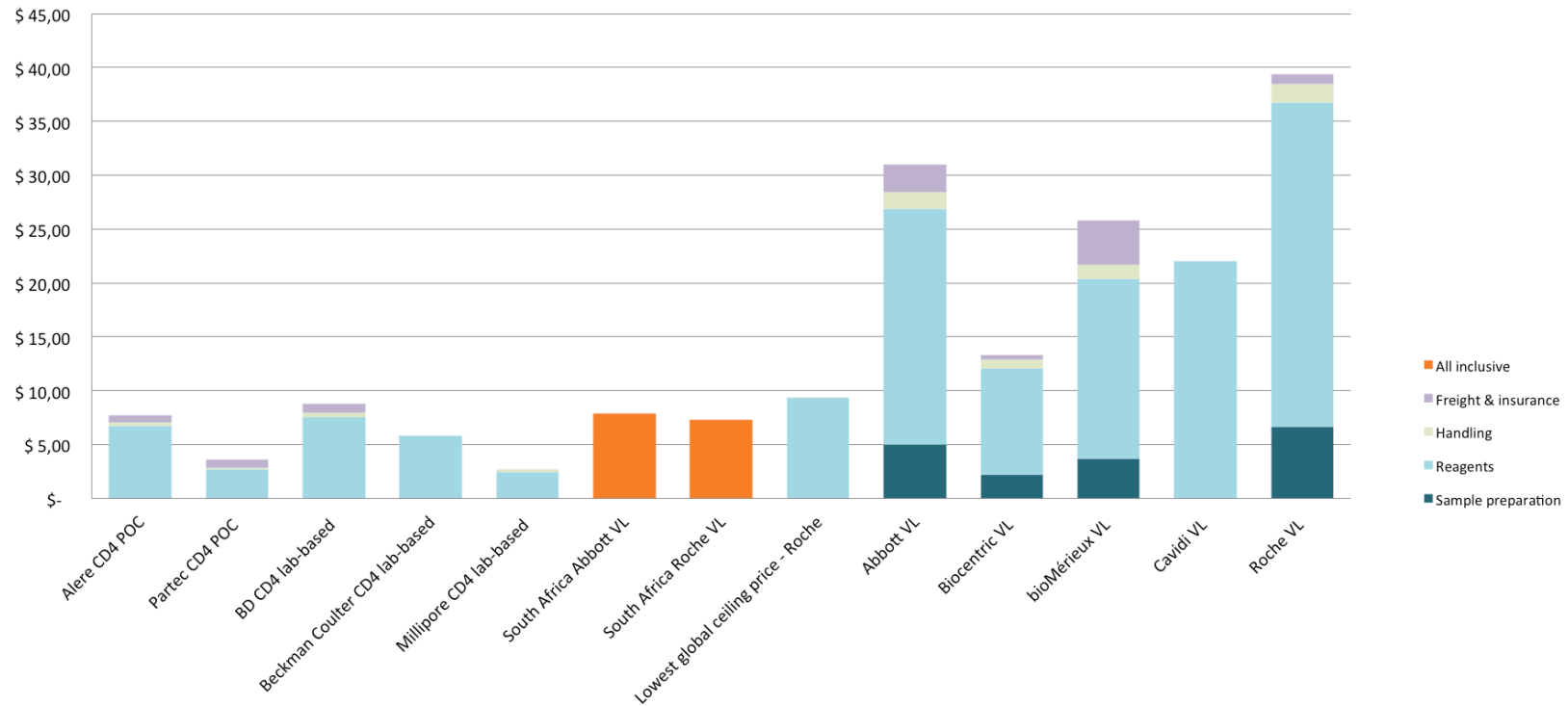
**DECEMBER 2014**

### **Methodology**

Reagent prices were taken from the Global Fund's Price and Quality Reporting (PQR) tool database. They were matched to the reagent catalogue number. Cost per test was calculated by dividing the 'product pack' cost by the number of tests in the pack. When multiple entries for the same catalogue number were provided for a given country, the mean of these prices was taken and reported. Sample preparation costs were also taken from the PQR database. The proportion of sample preparation cost to amplification and detection reagent cost was calculated across the entire dataset. This proportion (0.228) was used to impute sample preparation costs when not provided in the PQR database. Handling costs, freight and insurance, and taxes were manually inputted from the PQR invoice database. Invoices were matched based upon the purchase order number. When invoices did not match, or when reported costs were noted as incomplete on the invoice itself, the entire row of data was highlighted and discarded from the analysis. When multiple items were procured in a purchase order, the cost of the handling, transport and taxes were calculated based upon the proportional cost of the item compared to the entire consignment (i.e. not due to volume, weight or other criteria).

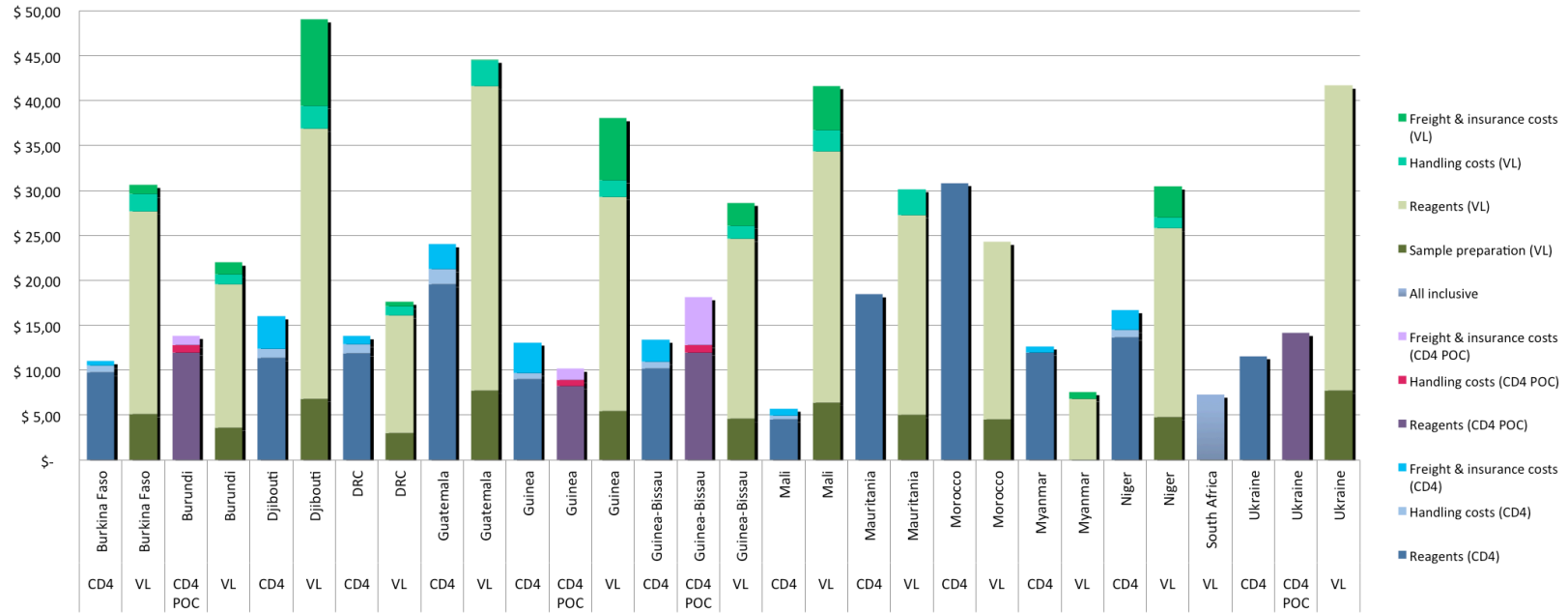


### CD4 and viral load costs by company



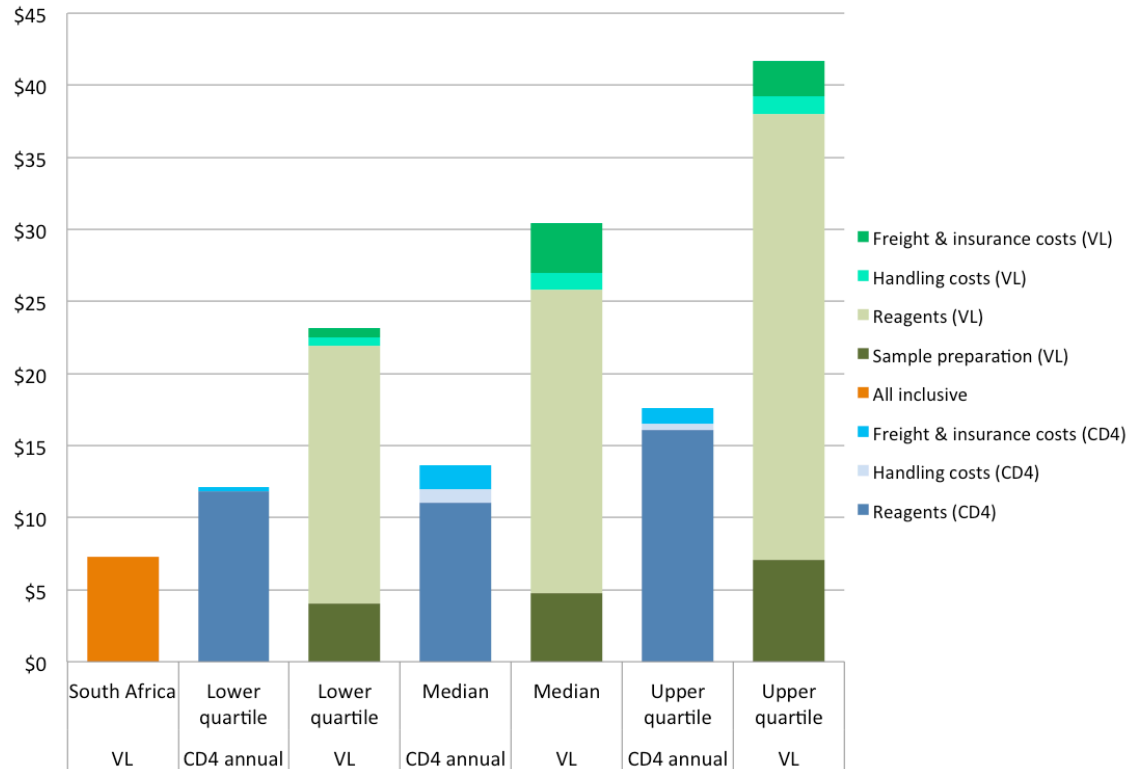
The mean of test costs reported in the Global Fund PQR database were calculated by company and component. Purchase orders ranged from Aug 2011-May 2014. Alere (n=11), Partec (n=9), BD (n=24), Beckman Coulter (n=1), Millipore (n=2), Roche lowest global ceiling price (n=83 offered), Abbott (n=8), Biocentric (n=1), bioMérieux (n=3), Cavidi (n=1), Roche (n=3). The South African viral load price includes reagents, proprietary consumables, instrumentation, and service and maintenance costs, as reflected in the 2014 tender (exchange rate, October 2014). The lowest global ceiling price reflects the September 2014 reagent and proprietary consumable price announcement by Roche for 83 countries, and is likely an exworks price. These are individual test costs, not necessarily annual costs. Sample preparation costs for viral load were imputed when not provided as 22.8% of amplification and detection costs. CD4 costs were simply copied into the full test category as there is only one processing step needed. INCOTERMS varied across products; therefore handling, insurance, and freight costs were included, as provided.

Annual CD4 and viral load costs by country



Costs were calculated based upon the Global Fund PQR database. All Global Fund-supported countries that procured both CD4 and viral load tests were included (to enable comparison). The average cost per test within a country was calculated (regardless of how many companies were represented in each country). CD4 costs were doubled to approximate the annual CD4 costs for reagents, given current algorithms. Purchase orders ranged from Aug 2011 - May 2014. When not provided, sample preparation costs for viral load were imputed as 22.8% of amplification and detection costs. INCOTERMS varied across products; therefore handling, insurance, and freight costs were included, as provided. The South Africa viral load price reflects the annual costs reagent, consumable, instrumentation, and maintenance costs reflected in the 2014 tender.

### Annual CD4 and viral load costs by quartile



The annual quartile costs for CD4 and viral load were calculated by determining the median for each of these categories. Quartiles were calculated based on viral load costs for countries supported by Global Fund (n=13) as well as the South Africa viral load tender. For CD4, the mean of the two values bookending the median was calculated, after which the median of the upper and lower quartiles was calculated by taking the mean of the two values bookending each quartile. These costs reflect WHO guidelines for monitoring, which recommend either one viral load test per year or two CD4 tests per year. Purchase orders range from August 2011 - May 2014. When not provided, sample preparation costs for viral load imputed as 22.8% of amplification and detection costs. INCOTERMS varied across products; therefore handling, insurance, and freight costs were included, as provided. The South Africa viral load price reflects the reagent, consumable, instrumentation, and maintenance costs reflected in the 2014 tender (exchange rate Oct 2014).