

Making HIV viral load accessible is not enough, OPP-ERA Project

Breton G^{1,2}, Karemera F³, Tonguino TK⁴, Lumia E¹, Yapo D¹, Guichet E¹, Dubois-Cauwelaert N¹, Koita Y⁵, Karemangingo S³, Zana D⁶, Temgouya E⁷, Sylla O⁸, Ouvrard S¹, Malato L⁹, Tubiana R^{1,2}, Madec Y¹⁰ and the OPP-ERA study group.

¹Solthis, France; ²Infectious Diseases, Pitié-Salpêtrière, France; ³PNLH/IST Burundi; ⁴Solthis, Guinea; ⁵PNLSH, Guinea; ⁶PNLS Côte d'Ivoire; ⁷CNLS, Cameroon; ⁸Sidaction, France; ⁹Expertise France; ¹⁰Institut Pasteur, France

Abstract

Background: In resource-limited countries, access to HIV viral load (VL) has increased, providing information to the "third 90%". From a clinical point of view, is VL prescribed and are VL results used by prescribers? We took advantage of the OPP-ERA project, which enabled the implementation of VL through open polyvalent platforms in 4 countries in West and Central Africa (Burundi, Cameroon, Ivory Coast, Guinea) to study these issues.

Methods: Access to VL and the implementation of national recommendations for monitoring virological failure were studied from the databases for the 13 OPP-ERA laboratories from 2014 to 2019.

Results: In total, nearly 230,000 VL measurements were performed between 2014 and 2019. The median number of VLs per patient was 1.3 (1.1-1.5 depending on the country) for the period 2016-2019. In the medical facilities benefiting from the project, the proportion of patients who received at least one viral load averaged 32% in 2018 (19-42% depending on the country) with great variability between facilities. Overall 81% (78-89% depending on the country) of patients were in virological success (VL<1000 cp/mL), this rate remained stable over time.

Among the 26268 patients with a first VL≥1000 cp/mL between 2014 and 2018, a control VL was performed in 12% of patients within the recommended timeframe of 3 to 6 months. The rate of switch in the 2nd line ART was estimated at 3%.

Conclusion: Despite the availability of VL for a period of 6 years, the prescription and use of VL appears to remain limited as evidenced by the low number of VL measurements per patient, the virological failure management cascade and the lack of impact on the virological success rate.

The reasons for the low use of VL and its results need to be further explored in order to make access to VL more beneficial to patients.

Context

Since 2013, WHO recommends HIV viral load testing (VLT) as the preferred marker to monitor efficacy of antiretroviral therapy (ART) [1]. In resource-limited settings, access to HIV viral load (VL) has increased, allowing the "third 90%" of the 90-90-90 UNAIDS goal to be reported. From a clinical point of view, does access to VL really have an impact on the management of PLHIV, adherence counseling for patients with VL≥1000 cp/mL and 2nd line regimen in case of confirmed failure? We took advantage of the OPP-ERA project, which has enabled the implementation of VL at large scale in Burundi, Cameroon, Côte d'Ivoire and Guinea, to study these issues.

Funded by UNITAID, the OPP-ERA project aims at increasing access to low-cost VL monitoring through access to Open Polyvalent Platforms (OPPs). The OPP-ERA project, started in 2013, was implemented in 4 countries (Burundi, Cameroon, Guinea and Côte d'Ivoire) by the consortium of actors of the fight against HIV and AIDS: Solthis, Expertise France, Sidaction and ANRS.

Methods

Retrospective analyses of database of 13 laboratories located in Burundi, Cameroon, Côte d'Ivoire and Guinea from 2014 to 2019.

Plasma viral loads were quantified using the Generic HIV-1 RT-PCR assay (Biocentric, Bandol, France).

Each database includes repeated measures of viral load collected among people living with HIV receiving ART followed in OPP-ERA laboratories. Other information collected: date of sampling, age, gender, ART regimen (1st or 2nd line), date of ART initiation.

Virological failure was defined by VL≥1000 cp/mL. National guideline recommend that patients with VL≥1000 cp/mL should be retested after 3-6 months of adherence counselling support, and then either retained in first line regimen if VL<1000 cp/mL or switched to 2nd line regimen if VL≥ 1000 cp/mL. In addition to the analysis of laboratory databases, the clinical management of virological failure was investigated through a retrospective analysis of all available medical charts in patients a repeat VL≥1000 cp/mL in Guinea. For this analysis the duration of VL control was extended from 3 to 9 months, to take into account the often long delay for CV results to be available in health centers.

Results

A total of 230 000 viral load measure were performed on OPP from 2014 to 2019. The proportion of patients who received at least one viral load averaged 32% in 2018 (figure 1), with great variability between facilities (figure 2). The median number of VL test performed by patients was only 1.3 during the 2017-2019 period.

Overall, the proportion of patients with a VL <1000 cp/mL was 81% (78-89%) and has remained stable during the project (figure 3)

Figure 1. Proportion of patients who benefited for VL measure on OPP in the facilities supported by the OPP-ERA projet (2016-2019)

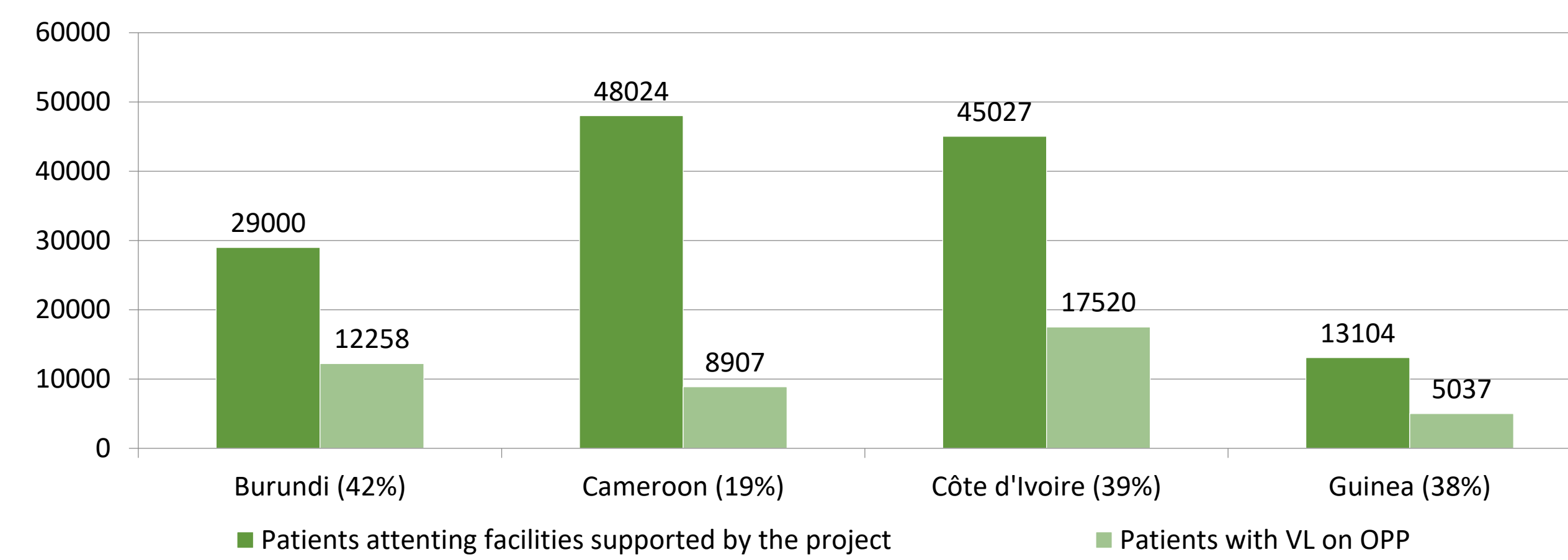
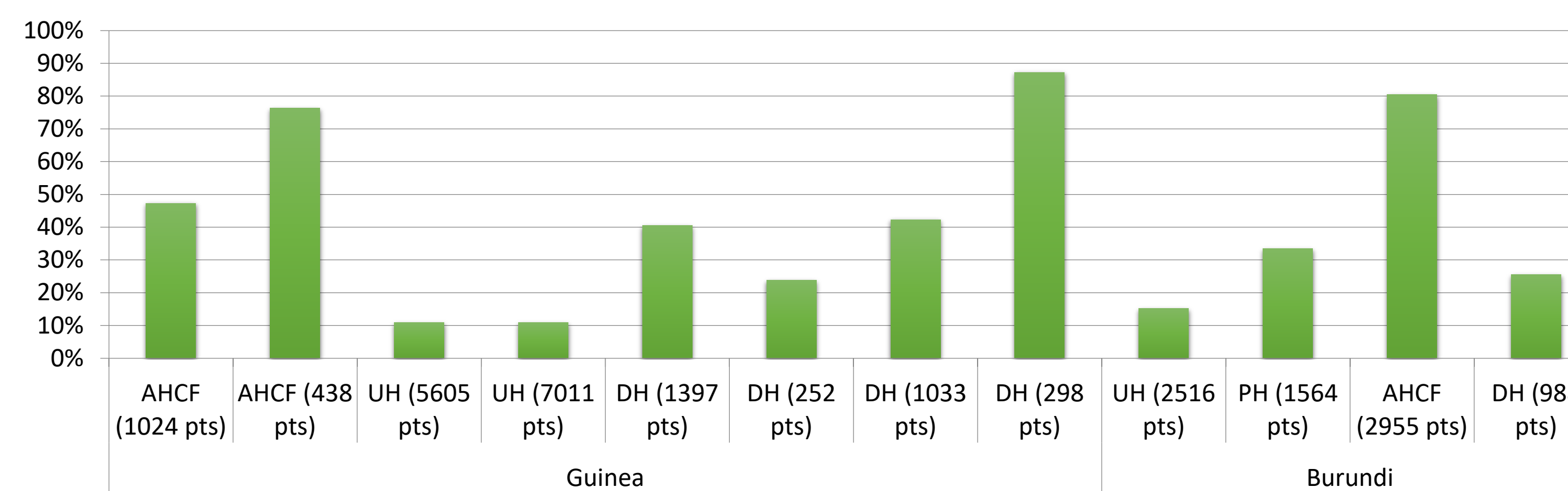
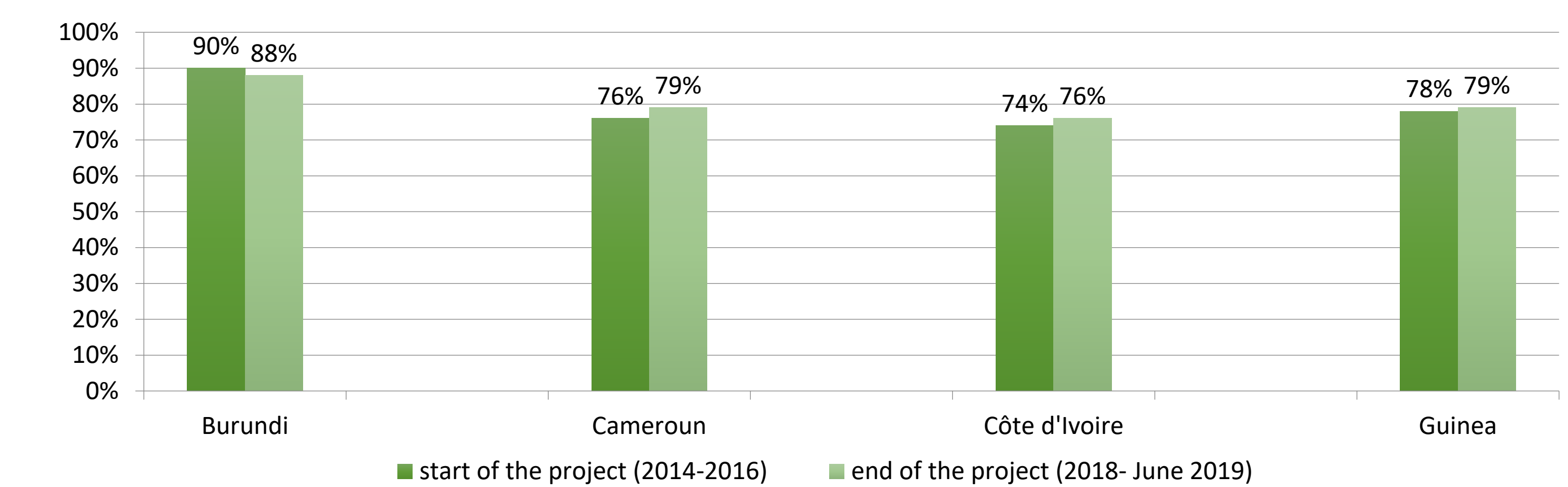


Figure 2. Proportion of patients who access to VL measure in some health facilities supported by the OPP-ERA project in Burundi and Guinea in 2018 (data from Cameroon and Côte d'Ivoire not available)



AHCF: associative health care Facility, UH: University Hospital, DH: district hospital. In bracket: estimated number of patients receiving ART

Figure 1. Proportion of pts with VL<1000 cp/mL at the initiation and the end of the OPP-ERA project.



Cascade of virological management was estimated from laboratory database. Among 26268 patients with a first VL ≥1000 cp/mL, 11.7% have a repeat VL within 3-6 months in accordance to national guideline. We hypothesize that 50% (13134) have a repeat VL ≥1000 cp/mL (Burundi 47% and Guinea 55%, not available in Cameroon and Côte d'Ivoire). Globally we estimate that 2.7 % of patient in virological failure have been switched to 2nd line regimen (figure 4).

Figure 3. HIV viral load cascade, OPP-ERA project 2014-2019, 26268 patients with a first VL>1000 cp/mL (based on laboratory database)

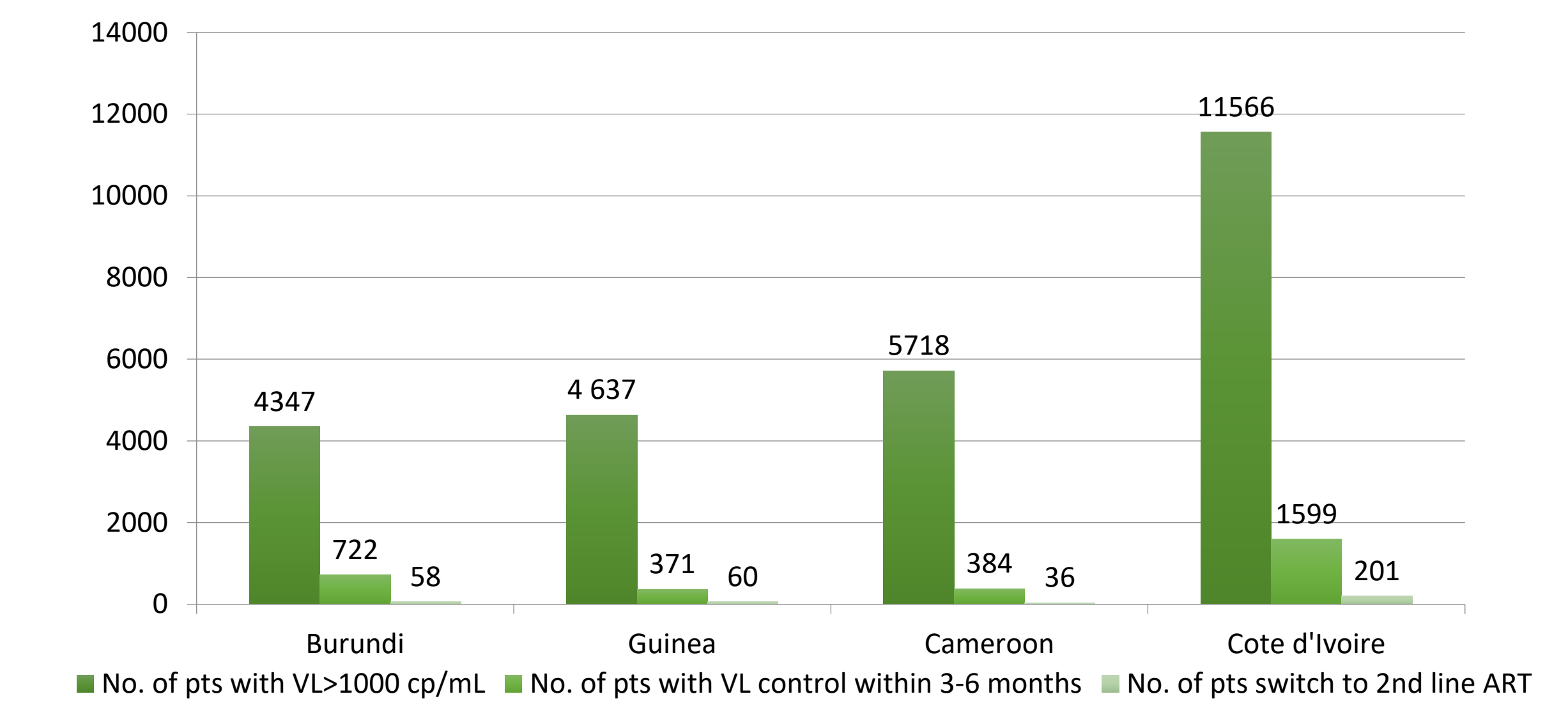
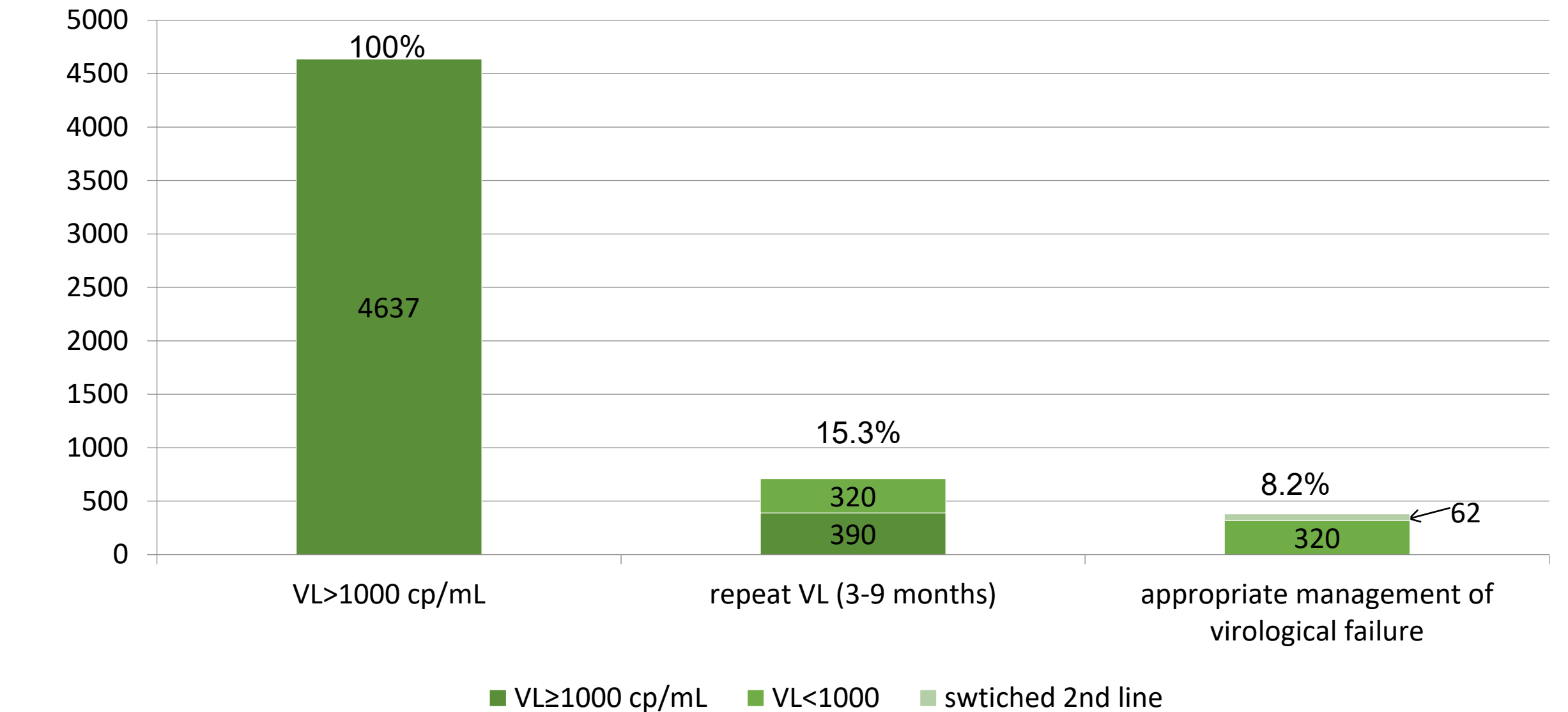


Figure 4. Cascade of virological failure management in Guinea from 2014 to 2019, (estimation based on clinical data)



In Guinea, among 4637 patients with a first VL ≥1000 cp/mL, 709 have a repeat VL within 3-9 months. Repeat VL was <1000 cp/mL in 320 patients (45%) and ≥1000 cp/mL in 390 patients (55%). The management of these 390 patients was retrospectively analyzed. Medical records were available for 119/390 patients, 19 patients (16%) were switched to 2nd line regimen.

Overall, it can be estimated that among patients with a first VL>1000 cp/mL, 8.2% have benefited from appropriate management according to national guidelines: repeat VL within 3-9 months <1000 cp/mL (6.9%) and repeat VL within 3-9 months > 1000 cp/mL followed by switch to 2nd line regimen (1.3%)

Conclusion

Despite the methodological limitations due to the use of the laboratory database, our results, with more than 230,000 VL performed in 4 countries, allow us to share general trends.

The OPP-ERA project has made viral load available on a large scale in health care facilities in Burundi, Cameroon, Côte d'Ivoire and Guinea. Despite the availability of viral load for a period of 6 years, the proportion of people living with HIV, attending health care facilities supported by the OPP-ERA project, who have benefited from viral load measurement still needs to be improved.

From a patient perspective, the benefit of viral load remains limited: one third of patients have had access to viral load testing, and in the event of virological failure, a minority of patients receive appropriate management, as evidenced by the cascade of virological failure management and the relative stability of the virological success rate over time. Comparable results have already been observed in sub-Saharan Africa [2,3]. Barriers that limit viral load prescribing and use of results should be further investigated in order to develop appropriate strategies so that efforts to scale up access to viral load lead to better clinical management of patients.

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OPP-ERA study group

Koussémi ABO, Catherine ADOU, Jean Claude AGAMAN, Mathias AKA, Jean Jacques AKAMA, Adrien ALLORANT, Alexandra ASCORRA, Samuel ASSANDE, Jeanne D'Arc ASSEMEN, Aristide ATEBA OTTO, Lucien AYEMOU, Hamadou BA, Guillaume BADO, Amadou BAH, Houssein BAH, Salou BAH, Zackaria BAH, Gérard BAHAMINYAKAMWE, Hallasane BALDE, Jean-Marie BALLA, Adama BARRY, Alpha Oumar BARRY, Ississar BEL HADJ, Mélanie BERGEON, Elie BIDIERO ZOTI, Anthony BILLAUD, Hadja BINTA, Anne-Cécile BISSEK ZOUNG KANY, Juste BLIDIEU, Aurélie BONFIS, Pascal BONNMY, Leonard BONONO, Joëlle BOUBA HAMAN, Chastelle BOULANGER, Guillaume BRETON, Pascal BURUNJE, Ansumane CAMARA, Robert CAMARA, Sylla CAMARA, Yahlihou CAMARA, Elisabeth CARNIEL, Mutilde CASABONNE-MASONNIE, Juan CEPEDA, Adama Cisse, Mohammed Cisse, Daouda CONTE, Benjamin CORIAT, André COULIBALY, Cristina D'ALMEIDA, Pé DAMEY, Louis DEWEERDT, Mandou DIKITE, Ibrahim DIALLO, Karidiatou DIALLO, Moussilhou DIALLO, Perida DIALLO, Nestor DION, Rina DUJABANG, Rachel DOMENACH, Samuel DOUKOU, Jacques DOUMBE, Natasha DUBOIS CAUWELAERT, Larissa DUSHIME, Jacques EDI, Serge EHOLIE, Eboi EKUI, Jean Bosco ELAT, Alain Georges ETOUNDI MBALLA, Bertrand EYOUN BILLE, Danièle Octavie FAK MOKONG, Eric FLEUTÉLOT, Pierre FOUJA, Divote GAKINA, Jeanne GAPIYA, Ella Fiane GBALLE, Audrey GIRET, David GLOH, Pythagore GUEPEJOP, Emilande GUICHET, Hugues GUIDIGBI, Formo GUILAVOUGUI, Michel HAKIZIMANA, Lisa Peiching HUANG, Angéline INAMAHORO, André INWOLEY, Jasmine IRAKOZE, Aurélie JOUISSET, Samuel KABORE, Caritas KAMIKAZI, Saïdi KAREMANGINGO, Françoise KAREMERA, Emmanuel KEGNE, Ahmed Sékou KEITA, Adama KEITA, Youssouf KOITA, Pascal KOIVOGUI, Romualdi KONAN, Kansara KONDE, Pierre KONDANO, Fatoumata KONE, Kane KONE, Jean-Baptiste KOTTAN, Mathurin KOUADJALE, Charles KOUAFACK, Sinata KOUILLA SHIRO, Djeli Sira KOUYATE, Mariana Gre KOUYATE, Emili LUMBA, Anne LUTUN, Ousmanou LYL, Yoann MADEC, Emmanuel MAINA, Laurent MALATO, André MAMA FOUJA, Malache MANAOUDA, Olivia MARC, Jean Marie MASUMBUKU, Madeline MBANGUE, Emmanuel MBONGKO FAI, Maelle MEGUIE, Martin MEKONGTCHOU, Hervé MIENAN, Eugène MESSOU, Jeanne Maurice M'VONDO, Céline NAMAHOHO, Pontien NDABASHINZE, Jacques NDWINZ, Callixte NDAYIKENGURUKIYE, Claire NDAYIKENGURUKIYE, Aina NDAYIZEYE, Josette NDIKUMANA, Indéphone NDIWAYO, Jacques NDOUMBE, Grégoire NGONDI, Laura NGONO, Huguette Claire NGUELE MEKE, Pélégie NIMBONA, Talia NIKEK, Désire NISUBIRE, Louis Richard NIOCK, Gisèle NKE, Raphaël NONO, Aristide NORRIS, Cécile NOUBOUE, Pascaline NOUMO, David NSHIMIRIMANA, Gisèle NYAMSI YAKA, Joseph NYANDWI, Ansel NYAVAWAIRA, Emille ONG, Kollé OULO OULO, Sophie OUVRRARD, Steve OYIE, Elisabeth PEDOUX, Antoine PEIGNEY, Ida PENDA, Louis PIZARRO, Claire REKACEWICZ, Hélène ROGER, Jeanne ROUSSEL, Christine ROUDOUX, Magali RUIZ, Georges RUKUBO, Noëlle RURIHOSE, Patricia RWIMO, Frédéric SAMBA, Maurice SANDOUNO, Moriba SANE, Moussa SANGARE, Issaka SONDE, Mohammed SOUMA, Hadja Amrta SOUMAOIRO, Mamadou Salou SOW, M'Mah SYLLA, Olivia SYLLA, Paul-Alain TAGNOUKAM, Raphaël TAPONDOU, Florence THUNE, Tamba Kallas TONGUINO, Thomas TONI, Tierno Mamadou TOUNKARA, Malouda TOURE, Abdoulaye TRAORE, Edouard TUAILLON, Roland TUBIANA, Deli VANDI, Marguerite Sylvie WOUATEDEM, Nadia YAKHELEF, Delongl YAPO, Tigui Franck YAZI, Isabelle ZANGRE, Florence ZEH KAKANOU, Edouard ZIBI

Contact:

guillaume.breton@solthis.org

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