SUPPLEMENTARY APPENDIX

Supplement to Marzinke, et al., Characterization of HIV infection in cisgender men and transgender women who have sex with men receiving injectable cabotegravir for HIV prevention: HPTN 083. J Infectious Diseases (2021).

CONTENTS

Supplementary File 1. HIV testing.

HIV testing performed at study sites

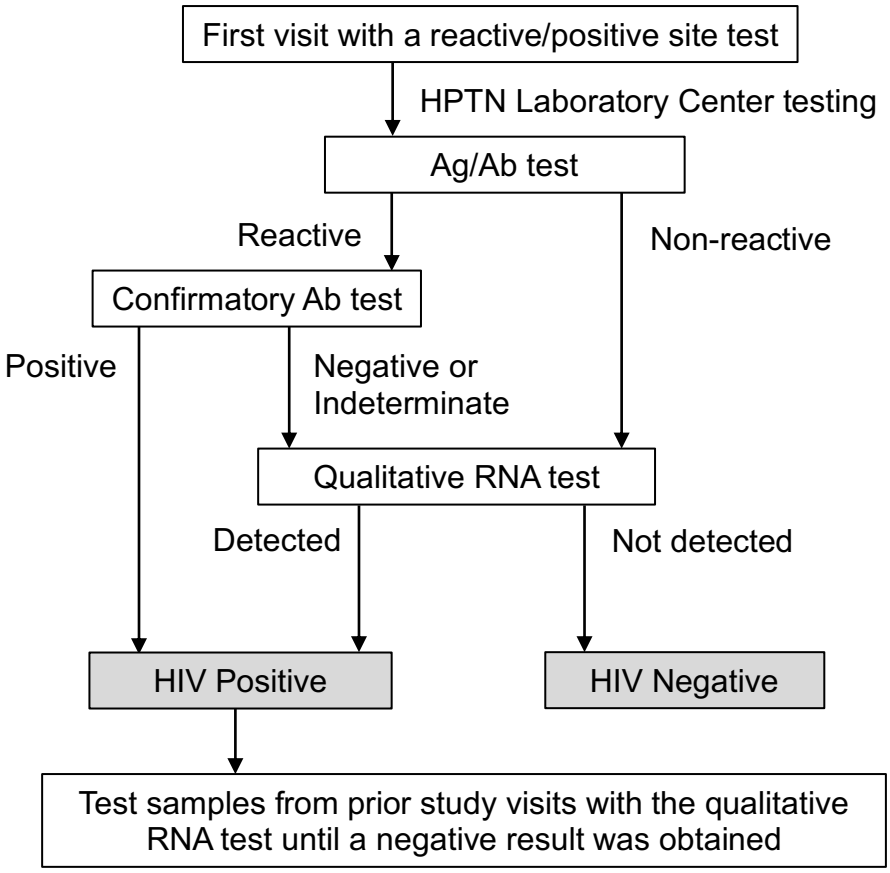
HIV testing was performed at study sites using locally-available assays. At each study visit, testing was performed using a rapid HIV test that was cleared by the United States (US) Food and Drug Administration (FDA) and a laboratory-implemented antigen/antibody (Ag/Ab) test. Some sites performed a second rapid HIV test, based on local testing guidelines. An HIV viral load test was performed within 14 days prior to study enrollment. The participant was not eligible for study enrollment if any of the HIV tests from the Screening visit, the HIV RNA test performed prior to the Enrollment visit, or the rapid HIV test from the Enrollment visit was reactive or positive. In these cases, HIV status was determined based on local testing guidelines.

After enrollment, if the rapid HIV test or the Ag/Ab test was reactive, an HIV RNA test was performed. Additional tests were performed at some sites based on local testing algorithms. HIV test results were reviewed in real-time by a centralized committee for all cases where a reactive or positive test was obtained. This committee provided guidance to study sites about administration/discontinuation of study drug and antiretroviral treatment (ART) initiation. In some cases, an ultra-sensitive HIV DNA assay was performed to help determine HIV status; this testing was performed in real-time at the HPTN Laboratory Center (Johns Hopkins Univ. School of Medicine, Baltimore, MD) with results returned to study sites.

Testing performed at the HPTN Laboratory Center

Samples from all cases where a reactive or positive HIV test result was obtained at study sites were analyzed retrospectively at the HPTN Laboratory Center to determine HIV status. Results from this testing were not returned to study sites or participants. Assays used for this testing are described in Supplementary File 2. A pre-planned algorithm was used to confirm HIV infection (Figure 1). This testing was performed at the first visit where a reactive or positive test result was obtained at the study site. If a reactive qualitative RNA test result was obtained, “back testing” was performed with the same assay at prior study visits until a non-reactive result was obtained. The HPTN Laboratory Center classified participants as HIV Positive if they had a positive qualitative RNA test or a positive confirmatory Ab test. Whenever possible, HIV infection was confirmed using samples collected on two different dates.

Figure 1. Pre-planned HPTN Laboratory Center testing algorithm.



Legend for Figure 1.
The figure shows the algorithm used for pre-planned HIV testing at the HPTN Laboratory Center. This testing was performed prior to unblinding of study arm.
Tests included: Ag/Ab test: Architect HIV Ag/Ab Combo assay; confirmatory Ab test: Geenius HIV 1/2 Supplemental Assay; qualitative RNA test: Aptima HIV-1 RNA Qualitative Assay (see Supplementary File 2).

Primary adjudication of study endpoints

HIV test results from study sites and the HPTN Laboratory Center were reviewed by an independent Endpoint Adjudication Committee for all cases where at least one reactive or positive HIV test was obtained at the study site. The adjudication committee made a final determination of HIV status and identified the first HIV positive visit based on the available data. Confirmation of HIV infection by the adjudication committee required a positive RNA test, a positive confirmatory Ab test, or a positive HIV DNA test with a result above the lower limit of quantification.

Post-hoc HIV testing

For HIV infections that were confirmed by the Endpoint Adjudication Committee, the HPTN Laboratory Center performed additional testing to determine the timing of HIV infection and to

evaluate the impact of study drugs on viral replication and HIV antibody production. Different algorithms were used for this testing in the two study arms, based on test results obtained from pre-planned testing. The testing schema for each study arm is shown in Table 1.

Table 1. Post-hoc HIV testing algorithm*.

Assay	CAB arm	TDF/FTC arm
Qualitative RNA test	• Enrollment • All subsequent visits until the second visit where the confirmatory Ab test is positive	• Enrollment • Weeks 2, 4, and 5 • First site positive visit; continue testing prior visits until a non-reactive result is obtained • All subsequent visits until the second visit where the confirmatory Ab test is positive
Ag/Ab test	• Enrollment • Three visits prior to the first visit where a reactive qualitative RNA result was obtained • First visit where a reactive qualitative RNA result was obtained • All subsequent visits until the second visit where the confirmatory Ab test is positive	Same as for the CAB arm, except only one visit prior to the first visit where a reactive qualitative RNA result is obtained
Confirmatory Ab test	• All visits where the Ag/Ab test was reactive	Same as for the CAB arm
Single-copy RNA test	• Enrollment, for all cases where the qualitative RNA test is reactive at or before the week 5 visit, but is non-reactive at enrollment • First HIV positive visit, if the qualitative RNA test is reactive, and there are no results from other tests performed at the HPTN Laboratory Center that were reactive or positive	Same as for the CAB arm

*Testing was not required after initiation of antiretroviral therapy.
Tests used: qualitative RNA test: Aptima HIV-1 RNA Qualitative Assay; Ag/Ab test: Architect HIV Ag/Ab Combo assay; confirmatory Ab test: Geenius HIV 1/2 Supplemental Assay; single copy RNA test (laboratory-developed test) (see Supplementary File 1).
Abbreviations: CAB: cabotegravir; TDF/FTC: tenofovir disoproxil fumarate; Ab: antibody; Ag; antigen; HPTN: HIV Prevention Trials Network.

Secondary adjudication of study endpoints

HIV test results from study sites and the HPTN Laboratory Center were re-reviewed by the Endpoint Adjudication Committee after post-hoc testing was complete. The adjudication committee revised the date of the first HIV positive visit if post-hoc testing determined that

infection occurred on a date that was earlier than the date identified in the primary adjudication review.

Classification of study visits

The first site positive visit is defined as the first visit near the time of confirmed HIV infection where the site obtained a reactive or positive HIV test result. In some cases, a reactive HIV test was obtained earlier in the study with no other reactive/positive tests near the time of that visit; those results are not used to determine the first site HIV positive test.

The first HIV positive visit is defined as the first visit with evidence of HIV infection, as determined by the HPTN 083 Endpoint Adjudication Committee. This determination was based on review of results from testing performed at study sites and the HPTN Laboratory Center. In some cases, data from the HPTN Laboratory Center was not available for the primary review by the adjudication committee. Results from the single-copy RNA test were used to confirm infection at the first HIV positive visit if the qualitative RNA result was the only other reactive/positive HIV test; however, this test was not used alone to determine the date of the first HIV positive visit.

Supplementary File 2: Assays used for retrospective testing.

Table 1. Assays performed at the HPTN Laboratory Center.

Laboratory Name	Assays performed	Test method	Test name used in this report	Manufacturer
HIV Clinical Research Laboratory	Architect HIV Ag/Ab Combo assay	Chemiluminescent microparticle assay (CMIA)	Ag/Ab test	Abbott Diagnostics, Wiesbaden, Germany
	Geenius HIV 1/2 Supplemental Assay	Immunochromatographic assay for confirmation and differentiation of antibodies to HIV-1 and HIV-2	Confirmatory Ab test	Bio-Rad Laboratories, Inc., Redmond, WA
HPTN Core Laboratory	Aptima HIV-1 RNA Qualitative Assay[a]	HIV-1 RNA amplification by transcription-mediated amplification (TMA) and detection of amplification products by a hybridization protection assay	Qualitative RNA test	Hologic, Inc., San Diego, CA
	Abbott RealTime HIV-1 Viral Load Assay[b]	Polymerase chain reaction (PCR) with homogenous real-time fluorescent detection (m2000 platform)	Viral load test	Abbott Molecular, Des Plaines, IL
Persaud Laboratory	Ultrasensitive HIV DNA testing[c]	Quantitative HIV-1 DNA droplet digital PCR assay	DNA assay	Laboratory developed test
Clinical Pharmacology Analytical Laboratory	Quantitative TFV and CAB testing (plasma)[d]	Liquid chromatography-tandem mass spectrometry (LC-MS/MS)	TFV, CAB test	Laboratory developed test
Colorado Antiviral Pharmacology Laboratory	Quantitative TFV-DP drug testing (dried blood spots)[e]	Liquid chromatography-tandem mass spectrometry (LC-MS/MS)	TFV-DP test	Laboratory developed test

Legend for Table 1.

[a] The qualitative RNA test was performed for research purposes only; reactive results were not repeated on all samples. This assay has a limit of detection of 30 copies/mL.

[b] The viral load test was initially performed using a validated dilution method (1:10 dilution, limit of quantification 400 copies/mL); if HIV RNA was not detected, or was detected below the limit of quantification, testing was repeated with the standard, undiluted assay (limit of quantification 40 copies/mL).

[c] The DNA assay has a limit of quantification of 4.09 copies/million cells. The assay was performed using methods described previously.[1]

[d] These assays have lower limits of quantification of 0.31 ng/mL for TFV and 25 ng/mL for CAB. These assays were performed using methods described previously.[2,3]

[e] This assay has a lower limit of quantification of 31.3 fmol/punch for TFV-DP.[4,5]

Abbreviations: TFV: tenofovir; CAB: cabotegravir; TFV-DP: tenofovir diphosphate.

Table 2. Laboratory-developed tests performed at other laboratories.

Laboratory Name	Laboratory Location	Assay Performed	Test method	Test name used in this report
Monogram Biosciences, Inc.	South San Francisco, CA	GenoSure PRIme	HIV genotyping (for NRTIs, NNRTIs, PIs, INSTIs)	Genotyping assay
		PhenoSense INSTI with cabotegravir	HIV phenotyping (INSTIs, cabotegravir)	Phenotyping assay
Mellors Laboratory	Univ. of Pittsburgh, Pittsburgh, PA	Single copy HIV RNA testing[a]	Plasma HIV-1 RNA single-copy assay	Single-copy RNA assay

[a] Results were reported as average HIV RNA copies/mL or as NEG/not detected (ND) if the total number of copies detected was zero.[7]

Abbreviations: NRTI: nucleoside/nucleotide reverse transcriptase inhibitor; NNRTI: non-nucleoside reverse transcriptase inhibitor PI: INSTI: integrase strand transfer inhibitor.

References:

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Supplementary File 3. Antiretroviral drug testing.

Samples from participants with confirmed HIV infection were analyzed using liquid chromatography-tandem mass spectrometry (LC-MS/MS) to determine the concentration of study drugs. Cabotegravir (CAB) was quantified in plasma using an assay with a lower limit of quantification (LOQ) of 0.025 mcg/mL (CAB test).[1] Tenofovir (TFV) was quantified in plasma using an assay with an LOQ of 0.31 ng/mL (TFV test).[2] Tenofovir diphosphate (TFV-DP) was quantified in dried blood spots using an assay with a LOQ of 31.3 fmol/punch (TFV-DP test).[3,4] Different algorithms were used for this testing in the two study arms (see Table 1).

Table 1. Algorithm for antiretroviral drug testing.

Assay	CAB arm	TDF/FTC arm
CAB test (plasma)	• Enrollment • All subsequent visits through 5/14/20.	Not performed
TFV test (plasma)	This testing was performed for the following participants using the testing plan for the TDF/FTC arm: • Participants infected during the Step 3 when open label TDF/FTC was offered to participants • Participants who had HIV infection at enrollment	• First site positive visit • First HIV positive visit • Three visits prior to the first site positive visit or first HIV positive visit, whichever came first (1-5 samples per participant*) • All visits from enrollment to the first site positive visit for participants with evidence of consistent good adherence to daily oral TDF/FTC (E16 and E34 only)
TFV-DP test (dried blood spots	This testing was performed for the following participants using the testing plan for the TDF/FTC arm: • Participants who acquired HIV infection during Step 3 when open label TDF/FTC was offered to participants, when available	• First site positive visit • First HIV positive visit • One visit prior to the first site positive visit or first HIV positive visit, whichever came first (1-3 samples per participant*)

*In some cases, the first site positive visit and first HIV positive visit were on the same date; in some cases, fewer visits may have occurred prior to the first site HIV positive visit.

CAB concentration thresholds used in this manuscript were based on the *in vitro* protein-adjusted CAB concentration required for 90% viral inhibition (PA-IC_{90}).[5] Rectal and vaginal challenge studies conducted in macaques showed that concentrations >3x PA-IC_{90} (rectal) and >4x PA-IC_{90} (vaginal) conferred 100% and 87% protection, respectively.[6,7] Geometric mean concentrations of 1.35 mcg/mL (approximately the 8x PA-IC_{90}) were achieved in a previous treatment study evaluating 10 mg oral CAB dosing (LATTE-2).[8] These benchmarks were used to aid in the interpretation of drug concentrations in this study; the dosing schedule used in HPTN 083 (600 mg CAB-LA 4 weeks apart for the first two injections, and then every 8 weeks thereafter) was designed to achieve steady state concentrations of >8x PA-IC_{90}, which were predicted to confer protection based on earlier macaque challenge studies.

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Supplementary File 4. HIV drug resistance

HIV genotyping

This testing was performed at Monogram Biosciences, Inc. using the GenoSure PRIme assay. This assay provides comprehensive resistance data for four classes of HIV drugs, including protease inhibitors (PIs), nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and integrase strand transfer inhibitors (INSTIs). Drug susceptibility is determined using Monogram's proprietary HIV-1 genotype algorithm, which is based on a database of more than 100,000 matched HIV-1 genotype-phenotype results. The 2019 IAS Drug Resistance Mutations Update[1] was used to identify major drug resistance mutations and drug resistance mutations for cabotegravir (CAB), since information on CAB resistance is not provided in the GenoSure PRIme test report. This testing was performed using a sample from the first study visit that had a viral load >500 copies/mL (first viremic visit); 0.5 mL of plasma was used for testing. For the CAB arm, this testing was also performed using samples from all subsequent study visits prior to initiation of antiretroviral therapy where the viral load was >500 copies/mL.

HIV phenotyping was performed at Monogram Biosciences, Inc. using the PhenoSense INSTI assay. This assay provides a quantitative assessment of phenotypic drug susceptibility to all licensed INSTIs. Cabotegravir provided by the manufacturer and was included in the assay. This testing was performed in the cabotegravir study arm; 1 mL of plasma was used for testing.

Reference:

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Cases with INSTI resistance

Resistance to INSTIs was detected in five cases, all in the CAB arm.

Case A2 (HIV subtype C): This participant had acute HIV infection at enrollment with a viral load of 50,080 copies/mL. HIV infection was first detected by site testing 60 days after the first HIV positive visit (infection was not detected at four study visits). The participant received oral CAB and one CAB injection after HIV acquisition. There was no evidence of resistance at enrollment, week 2, or week 4. The viral load was suppressed to 204 copies/mL by week 5 on oral CAB. The viral load rebounded to 1,660 copies/mL at the week 6 visit (60 days after enrollment). The CAB concentration at that visit was 3.84 mcg/mL. The participant had INSTI resistance with E138K and Q148K at that visit. This participant was later virally suppressed on an antiretroviral treatment (ART) regimen of tenofovir disoproxil fumarate (TDF), lamivudine (3TC) and ritonavir-boosted darunavir (DRVr).

Case C1 (HIV subtype B): This participant was infected in the oral lead-in period. HIV infection was first detected by site testing 47 days after the first HIV positive visit (infection was not detected at four study visits). The participant received two CAB injections after HIV acquisition. The maximum viral load prior to the first viremic visit was 161 copies/mL. The participant had INSTI resistance with L74I and Q148R at the first viremic visit (week 9; 37 days after first HIV positive visit; 28 days after the first CAB injection; viral load 2,174 copies/mL). The participant had INSTI resistance with L74I, E138E/K, G140G/S and Q148R at the following visit (week 10; first site positive visit; 10 days later; 47 days after the first HIV positive visit; 10 days after the second CAB injection; viral load 1,373 copies/mL). The CAB concentration at that visit was 3.47 mcg/mL. The

participant did not start ART before May 14, 2020. The same INSTI drug resistance mutations were detected 4 days later (viral load 2,549 copies/mL). Information on subsequent ART was not available for this participant.

Case C3 (HIV subtype B): This participant was infected during the oral lead-in period. HIV infection was first detected by site testing 35 days after the first HIV positive visit (infection was not detected at four study visits). The participant received one CAB injection after HIV acquisition. The maximum viral load prior to the first viremic visit was 99 copies/mL. The participant had INSTI resistance with E138A and Q148R at the first viremic visit, which was also the first site positive visit (week 9; 20 days after first CAB injection; viral load 102,329 copies/mL). The CAB concentration at this visit was 1.11 mcg/mL. Phenotypic resistance testing documented resistance to CAB (fold change [FC]: 5.92), elvitegravir (FC: > maximum), and raltegravir (FC: 17), with susceptibility to bictegravir (FC: 1.20) and dolutegravir (FC: 1.69). The participant started ART 9 days later with TDF/emtricitabine (FTC)/efavirenz (EFV); the viral load was <40 copies/mL 160 days after ART initiation.

Case D3 (HIV subtype B/F): This participant was infected despite on-time CAB-LA injections. HIV infection was first detected by site testing 117 days after the first HIV positive visit (infection was not detected at five study visits). The participant received two CAB injections after HIV acquisition. This participant had NNRTI resistance with K103N only at the first viremic visit, which was also the first HIV positive visit and the date of the third CAB injection (week 17; viral load 860 copies/mL). This participant also had INSTI resistance with R263K at a subsequent visit (week 33; 112 days later; 5 days before first site positive visit; 50 days after fourth CAB injection; viral load 7,160 copies/mL). The maximum viral load between the week 17 visit and this visit was 112 copies/mL. The CAB concentration at the week 33 visit was 1.33 mcg/mL. Phenotypic resistance testing documented resistance to elvitegravir (FC: 4.14) and partial susceptibility to bictegravir (FC: 2.89), with susceptibility to dolutegravir (FC: 2.29), CAB (FC: 2.32), and raltegravir (FC: 1.38). The participant started ART 5 days later with TDF/3TC/DRVr and was virally suppressed one month after ART initiation.

Case D4 (HIV subtype C): This participant was infected despite on-time CAB-LA injections. HIV infection was first detected by site testing 45 days after the first HIV positive visit (infection was not detected at one study visit). The participant received one CAB injection after HIV acquisition. The maximum viral load prior to the first viremic visit was 263 copies/mL. The participant had INSTI resistance with G140A and Q148R at the first viremic visit ("step 3" week 12; 141 days after first HIV positive visit; 96 days after the fourth CAB-LA injection; viral load 152,730 copies/mL). The CAB concentration at that visit was 2.26 mcg/mL. Phenotypic resistance testing documented resistance to CAB (fold change [FC]: 13), elvitegravir (FC: 107), and raltegravir (FC: 43), with susceptibility to dolutegravir (FC: 2.09) and partial susceptibility to bictegravir (FC: 2.77). The participant started ART at that visit with a regimen of TDF/FTC/EFV. The viral load was <40 copies/mL 84 days after ART initiation.

Cases with TDF/FTC resistance

Resistance to TDF/FTC (with K65R and/or M184I/V) was detected at the first viremic visit in five cases (one in the CAB arm; four in the TDF/FTC arm). Two other participants had no resistance at the first viremic visit, but had resistance to study drugs at a subsequent visit.

Case A1 (HIV subtype B): This participant was in the CAB arm and had acute HIV infection at enrollment with a viral load of 4,010 copies/mL. HIV infection was first detected by site testing 28 days after the first HIV positive visit (infection was not detected at two study visits). The

participant received oral CAB after HIV acquisition. K65R and M184V were detected, along with major NNRTI mutations (L100I, K103N, P225H). TFV was not detected at the enrollment visit or at the week 2, week 4, or week 5 visits. This indicates that the participant was not likely using TDF/FTC for pre-exposure prophylaxis near the time of infection, and that the presence of the K65R and M184V mutations (along with the NNRTI mutations) most likely reflects infection with a multi-class resistant HIV strain. Information on subsequent ART was not available for this participant.

Case E3 (HIV subtype B):
This participant was in the TDF/FTC arm and had a positive confirmatory Ab test at the first HIV positive visit with a viral load of 211,570 copies/mL. The site detected the infection at that visit. M184I was detected at that visit. ARV drug testing indicated that the participant had inconsistent adherence to daily TDF/FTC in the months preceding infection. In this case, the participant may have acquired the M184I mutation as a result of study drug exposure. No other major drug resistance mutations were detected.

Case E13 (HIV subtype B): This participant was in the TDF/FTC arm and had early HIV infection at the first viremic visit (with an indeterminate confirmatory Ab test; week 65; 470 days after enrollment). The site detected the infection at that visit. M184V was detected, along with K103N. ARV drug testing detected a low concentration of TFV-DP in dried blood spots (41 fmol/punch); TFV was not detected in plasma. This indicates that the participant was likely not taking TDF/FTC in the prior two months, and that detection of the M184V mutation (along with K103N) most likely reflects infection with a multi-class resistant HIV strain.

Case E16 (HIV subtype B): This participant was in the TDF/FTC arm and had a positive confirmatory Ab test at the first HIV positive visit with a viral load of 2,720 copies/mL (week 57: 403 days after enrollment). The site detected the infection at that visit. The K65R mutation was detected at that visit, along with Y181C, G190A, H221Y and other NNRTI mutations. ARV drug testing indicated that the participant was adherent to daily TDF/FTC in the months preceding infection. In this case, the participant was most likely infected with a multi-class resistance strain. Presence of K65R mutation in the infecting strain may have played a role in failure of TDF/FTC PrEP.

Case E25 (HIV subtype B/F): This participant was in the TDF/FTC arm and had acute HIV infection at the first viremic visit with a viral load of 36,976,550 copies/mL (week 43; 306 days after enrollment). The site detected the infection at that visit. M184V was detected, along with major NNRTI resistance mutations (K103N, P225H). ARV drug testing detected very low concentrations of TFV-DP in dried blood spots; TFV was not detected in plasma. This indicates that the participant was likely not taking TDF/FTC in the prior two months, and that detection of the M184V mutation (along with the NNRTI resistance mutations) most likely reflects infection with a multi-class resistant HIV strain.

Case E41 (HIV subtype B): This participant was in the TDF/FTC arm and had acute infection at enrollment with a viral load of 1,930 copies/mL. HIV infection was first detected by site testing 34 days after enrollment (infection was not detected at two study visits). No resistance was detected at enrollment and M184I was detected at week 4. ARV drug testing indicated that the participant was adherent to daily TDF/FTC. In this case, the participant may have acquired the M184I mutation as a result of study drug exposure.

Case E42 (HIV subtype B): This participant was in the TDF/FTC arm and had acute infection at enrollment with a viral load of 10,000 copies/mL. HIV infection was first detected by site testing

14 days after enrollment (infection was not detected at one study visit). No resistance was detected at enrollment and M184I/V was detected at week 2. ARV drug testing indicated that the participant was adherent to daily TDF/FTC. In this case, the participant may have acquired the M184I/V mutation as a result of study drug exposure.

Supplementary File 5. Case Summaries, CAB arm (groups A-D)

This file shows a summary of laboratory results and key events for participants in the cabotegravir (CAB) study arm (participant groups A-D). Each panel shows the results for one participant.

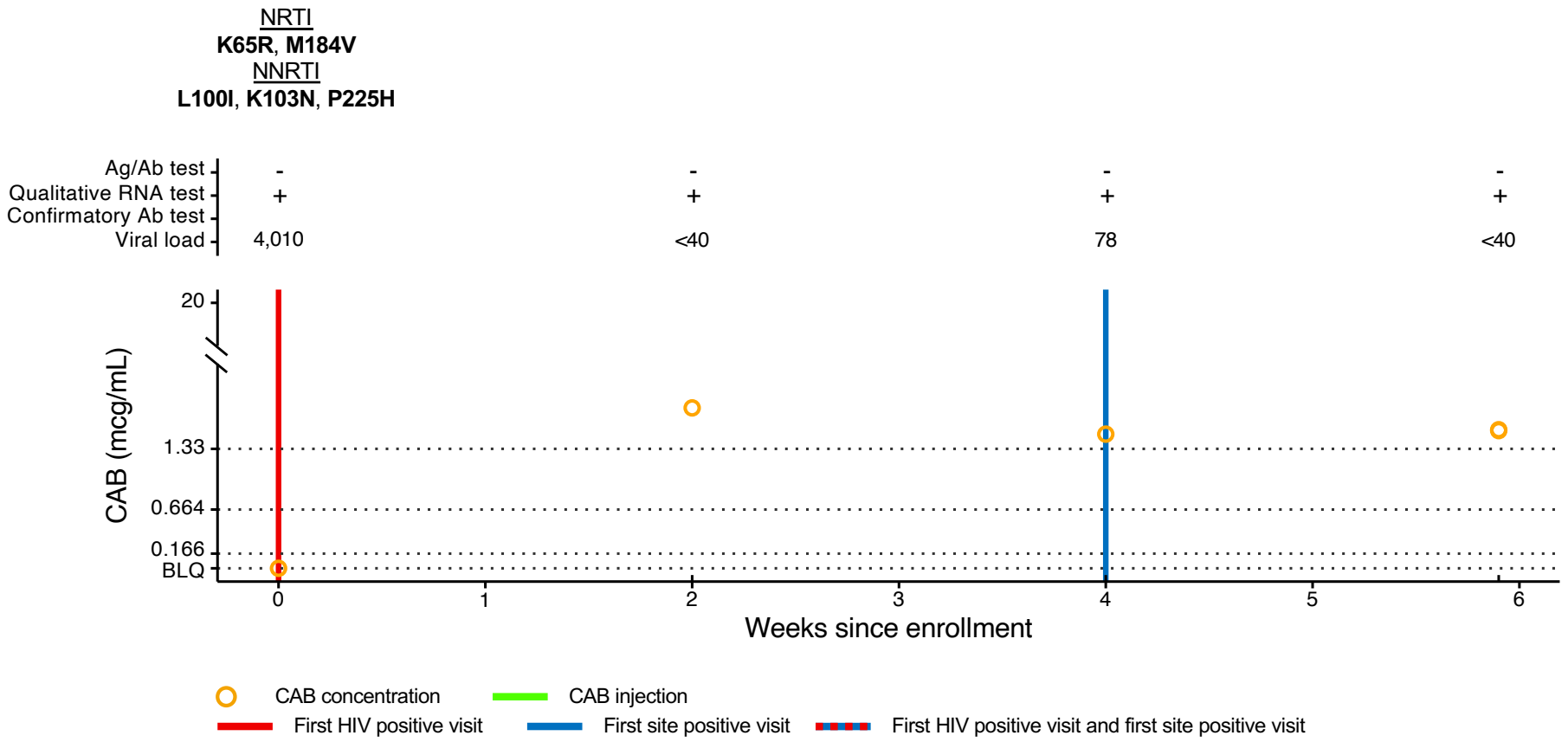
Tables: The table at the top of each panel shows results from testing performed at study sites (Site Testing) and testing performed at the HPTN Laboratory Center (LC) or at laboratories that performed specialized testing for the HPTN LC (HPTN LC Testing). Additional information about these tests is provided in Supplemental File 1. A bracket on the left shows the number of days between the first HIV positive visit (1st HIV pos) and the first site positive visit (1st SITE pos). An asterisk in the column for visit type indicates that the participant received an injection at that visit. Blue text indicates a reactive or positive site test result. Red text indicates a reactive or positive HPTN LC test result. Viral load values indicate the number of HIV RNA copies/mL; SCA indicates that the viral load result was obtained using a single copy RNA assay. Viral load results noted as <40 indicate that HIV RNA was detected below the limit of quantification. Resistance indicates data from HIV genotyping; all drug resistance mutations are shown for INSTIs (italics); major drug resistance mutations are shown for NNRTIs, NRTIs, PIs. Data from HIV phenotyping is presented in Table 3. Shaded rows indicate data obtained from samples collected after ART initiation. Information on ART is shown below each table.

Figures: Annotations above each graph show results obtained from testing performed at the HPTN LC as a function of time. A plus sign (+) indicates a reactive or positive test result. A minus sign (-) indicates a non-reactive or negative test result. IND indicates an indeterminate test result. Viral load values indicate the number of HIV RNA copies/mL. Drug resistance mutations are noted (see above); major drug resistance mutations are shown in bold text. Brackets show the number of days between the last injection and the first HIV positive visit. Graphs show plasma cabotegravir concentrations and key events as a function of time (weeks since enrollment). A red vertical line indicates the first HIV positive visit; a blue vertical line indicates the first site positive visit; a red/blue dashed line indicates that the first HIV positive visit and first site positive visit occurred on the same date. Open orange circles indicate CAB concentrations. Horizontal lines show the following concentration cut-offs: 1.33 mcg/mL = 8x PA-IC_{90}; 0.664 mcg/mL = 4x PA-IC_{90}; 0.166 mcg/mL = 1x PA-IC_{90}; BLQ: below the limit of quantification (<0.025 mcg/mL). Shaded areas indicate that the participant was on ART.

Abbreviations: Ag/Ab: antigen/antibody test; SCA: single copy RNA assay; 1st HIV pos: first HIV positive visit; 1st SITE pos: first site positive visit; NR: non-reactive; R: reactive; POS: positive; NEG: negative; Detect: HIV DNA detected; INDET or ID: indeterminate; ND: not detected; CAB: cabotegravir; mcg: microgram; mL: milliliter; WT: wild type (no resistance mutations detected); BLQ: below the limit of quantification; LLOD: lower limit of detection; F/U: follow-up; ART: antiretroviral therapy; PEP: post-exposure prophylaxis.
Antiretroviral drugs: TDF: tenofovir disoproxil fumarate: FTC: emtricitabine; DRV: darunavir; r: ritonavir; c: cobicistat; TAF: tenofovir alafenamide; EFV: efavirenz; RPV: rilpivarine; BIC: bictegravir; 3TC: lamivudine.

Case A1

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
28 days	Enrollment	1st HIV pos	NR	NR				NR	R		4,010	K65R+M184V; L100I+K103N+ P225H
	Week 2		NR	NR				NR	R		<40	
	Week 4	1st SITE pos	NR	R		50	NEG	NR	R		78	
	Interim		NR	R	Detect, 4.2	54	NEG	NR	R		<40	
ART status not known												HIV subtype B

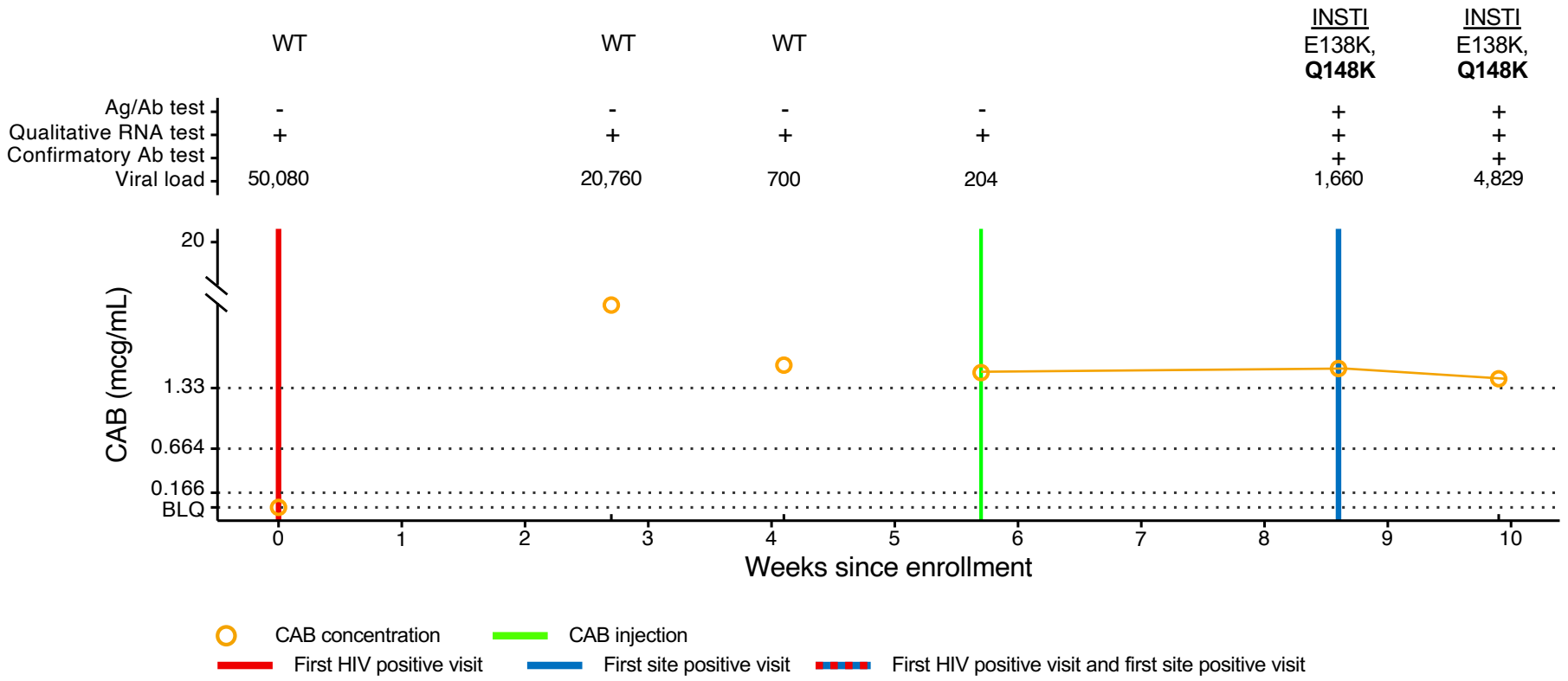


Case A2

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
60 days	Enrollment	1st HIV pos	NR	NR				NR	R		50,080	WT
	Week 2		NR	NR				NR	R		20,760	WT
	Week 4		NR	NR				NR	R		700	WT
	Week 5*		NR	NR				NR	R		204	
	Week 6	1st SITE pos	NR	R				R	R	POS	1,660	*E138K+Q148K*
	Week 6**		NR	R	Detect, >100	10,000	POS	R	R	POS	4,829	*E138K+Q148K*

**ART started 44 days later; virally suppressed on TDF/3TC/DRVr

HIV subtype C

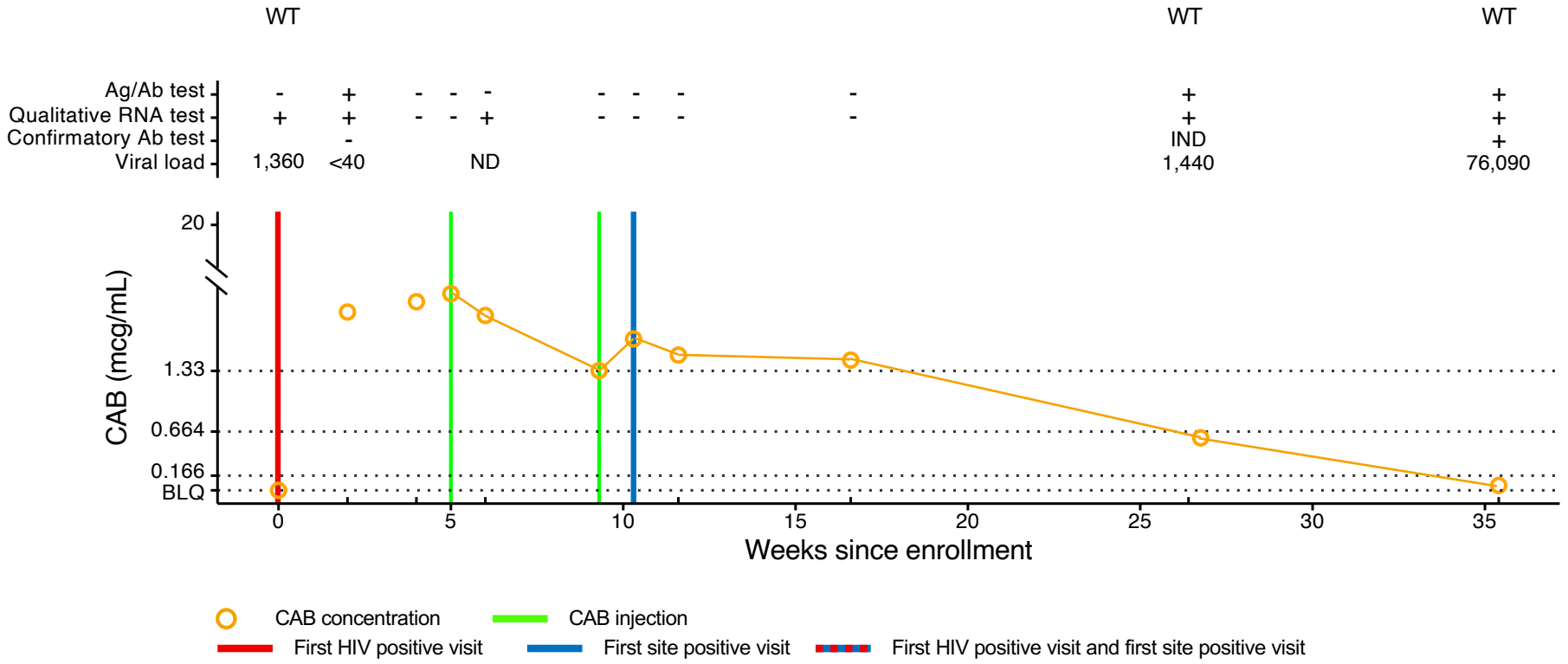


Case A3

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
72 days	Enrollment	1st HIV pos	NR	NR				NR	R		1,360	WT
	Week 2		NR	NR				R	R	NEG	<40	
	Week 4		NR	NR				NR	NR			
	Week 5*		NR	NR				NR	NR			
	Week 6		NR	NR				NR	R		ND	
	Week 9*		NR	NR				NR	NR			
	Week 10	1st SITE pos	NR	R		ND	NEG	NR	NR			
	Week 10		NR	R	Detect, <LLOD	ND	NEG	NR	NR			
	Week 10		NR	NR	Detect, 5.3	ND		NR	NR			
	F/U Week 12							R	R	INDET	1,440	WT
	F/U Week 24**					87,171		R	R	POS	76,090	WT

**Started ART 6 months later with TDF/FTC/EFV; viral load 142 after 1 month on ART

HIV subtype B

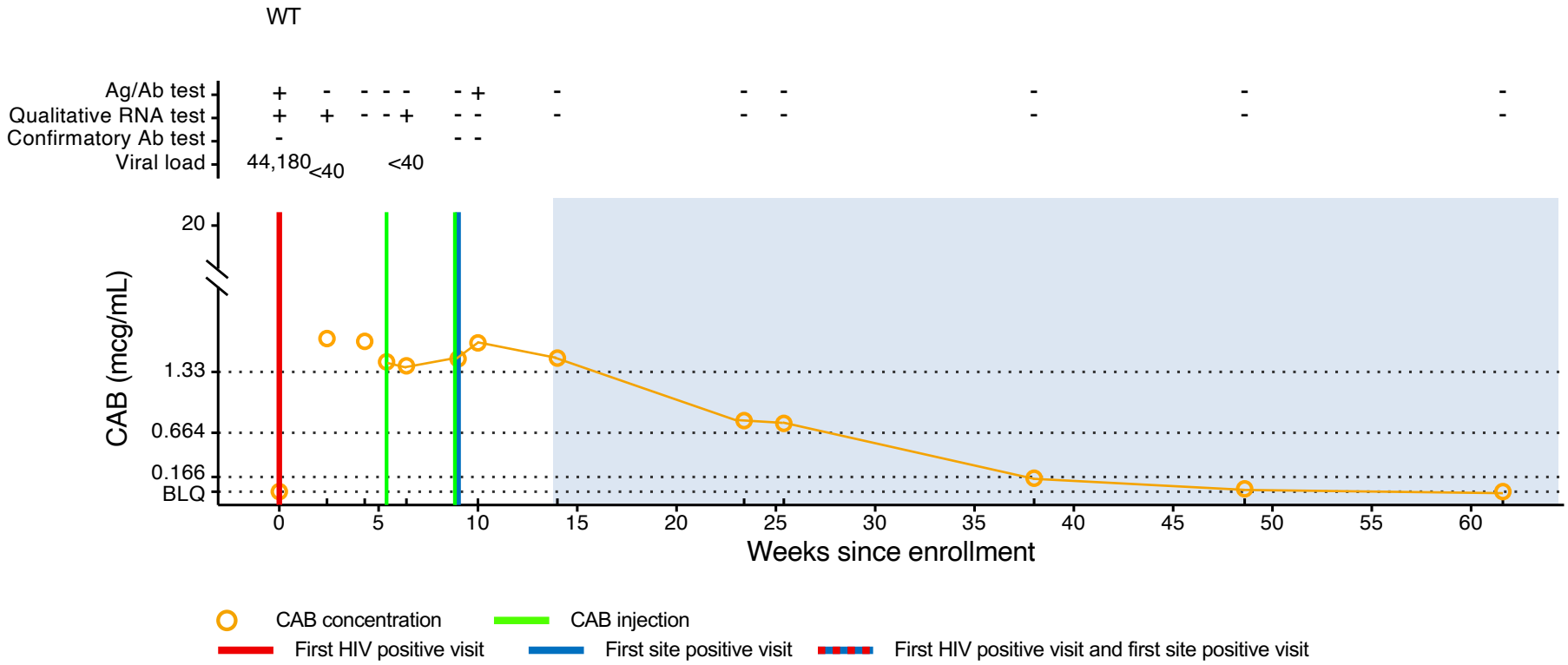


Case A4

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: Viral load	Site Testing: DNA test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
63 days	Enrollment	1st HIV pos	NR	NR			R	R	NEG	44,180	WT
	Week 2		NR	NR			NR	R		<40	
	Week 4		NR	NR			NR	NR			
	Week 5*		NR	NR			NR	NR			
	Week 6		NR	NR			NR	R		<40	
	Week 9*	1st SITE pos	NR	R	ND		NR	NR			
	Week 10		NR	R	ND	Detect, 97.8	R	NR	NEG		
	Interim**		NR	NR	ND	Detect, 8.6	NR	NR	NEG		
	F/U Week 12						NR	NR			
	Interim		NR				NR	NR			
	F/U Week 24						NR	NR			
	F/U Week 36						NR	NR			
	F/U Week 48						NR	NR			

**Started ART with TDF/FTC/DRVr

HIV subtype B

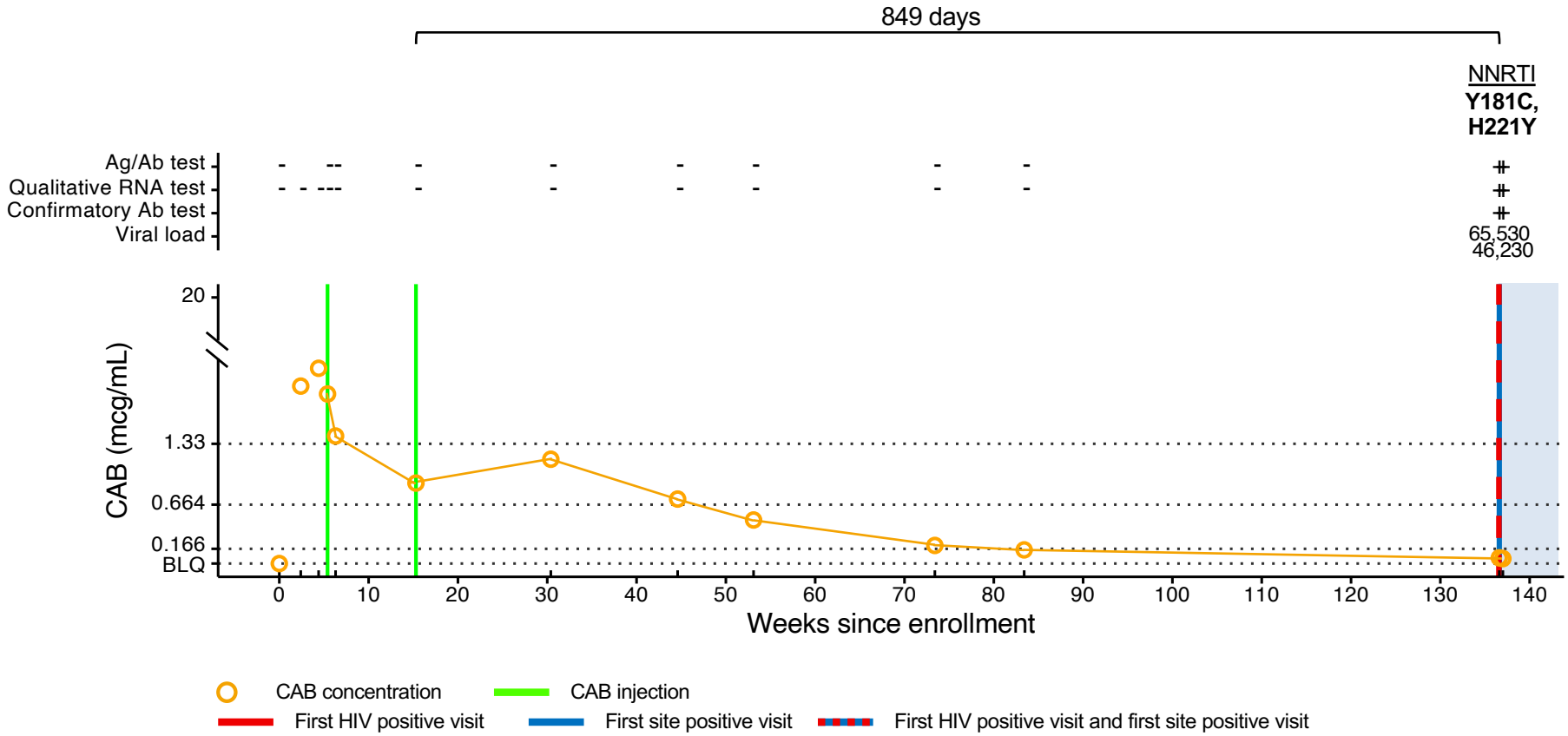


Case B1

Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
Enrollment		NR	NR			NR	NR			
Week 2		NR	NR				NR			
Week 4		NR	NR				NR			
Week 5*		NR	NR			NR	NR			
Week 6		NR	NR			NR	NR			
Week 17*		NR	NR			NR	NR			
F/U Day 0		NR	NR			NR	NR			
F/U Week 12		NR	NR			NR	NR			
F/U Week 24		NR	NR			NR	NR			
F/U Week 36						NR	NR			
F/U Week 48		NR	NR			NR	NR			
Yearly visit 1**	1st HIV/SITE pos	R	R	103,000		R	R	POS	65,530	Y181C+H221Y
Yearly visit 1		R	R	80,600	POS	R	R	POS	46,230	

**Started ART with TAF/FTC/DRVc; viral load 608 after 3 months on ART

HIV subtype B

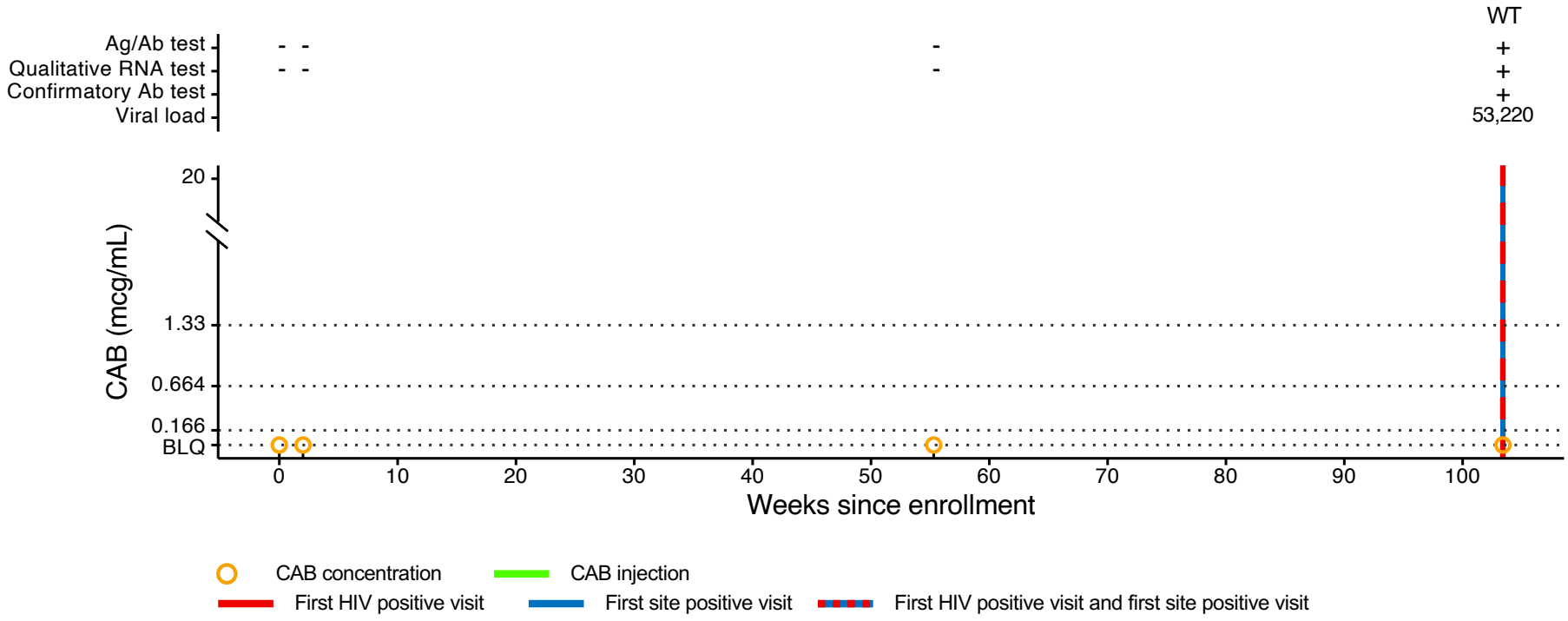


Case B2

Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Rapid 2 test	Site Testing: Ag/Ab test	Site Testing: Viral load	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
Enrollment		NR		NR		NR	NR			
Week 2		NR		NR		NR	NR			
Yearly visit 1		NR		NR		NR	NR			
Yearly visit 2**	1st HIV/SITE pos	R	R	R	47,742	R	R	POS	53220	WT

**Started ART 1 day later (TDF/FTC/EFV→TDF/FTC/RPV); viral load <20 after 5 months on ART

HIV subtype A/B

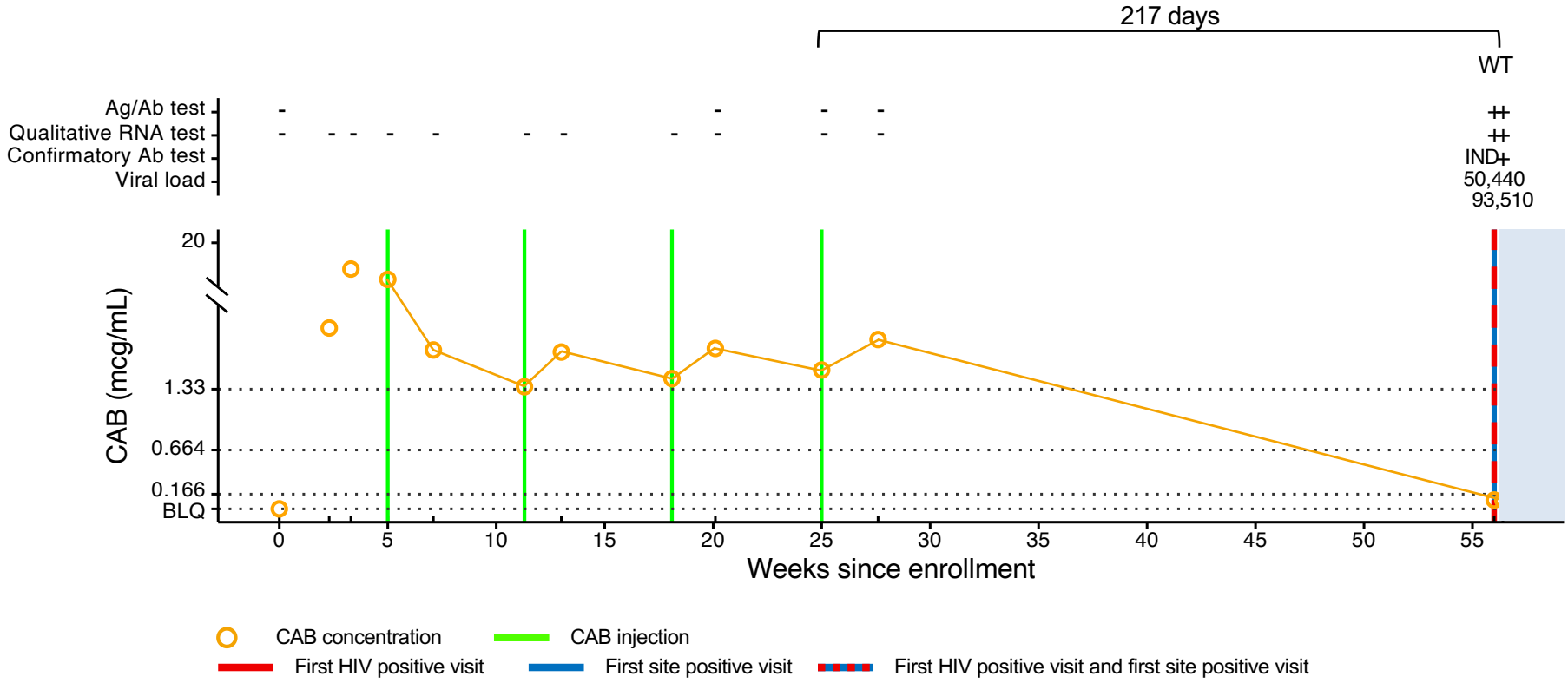


Case B3

		Site Testing			HPTN LC Testing				
Visit type	Diagnosis visit type	Rapid 1 test	Ag/Ab test	Viral load	Ag/Ab test	Qualitative RNA test	Confirmatory Ab test	Viral load	Resistance
Enrollment		NR	NR		NR	NR			
Week 2		NR	NR			NR			
Week 4		NR	NR			NR			
Week 5*		NR	NR			NR			
Week 6		NR	NR			NR			
Week 9*		NR	NR			NR			
Week 10		NR	NR			NR			
Week 17*		NR	NR			NR			
Week 19		NR	NR		NR	NR			
Week 25*		NR	NR		NR	NR			
Week 27		NR	NR		NR	NR			
Interim	1st HIV/SITE pos	R	R	48500	R	R	INDET	50,440	WT
Interim**		R	R	69200	R	R	POS	93,510	

**Started ART with TDF/3TC/EFV

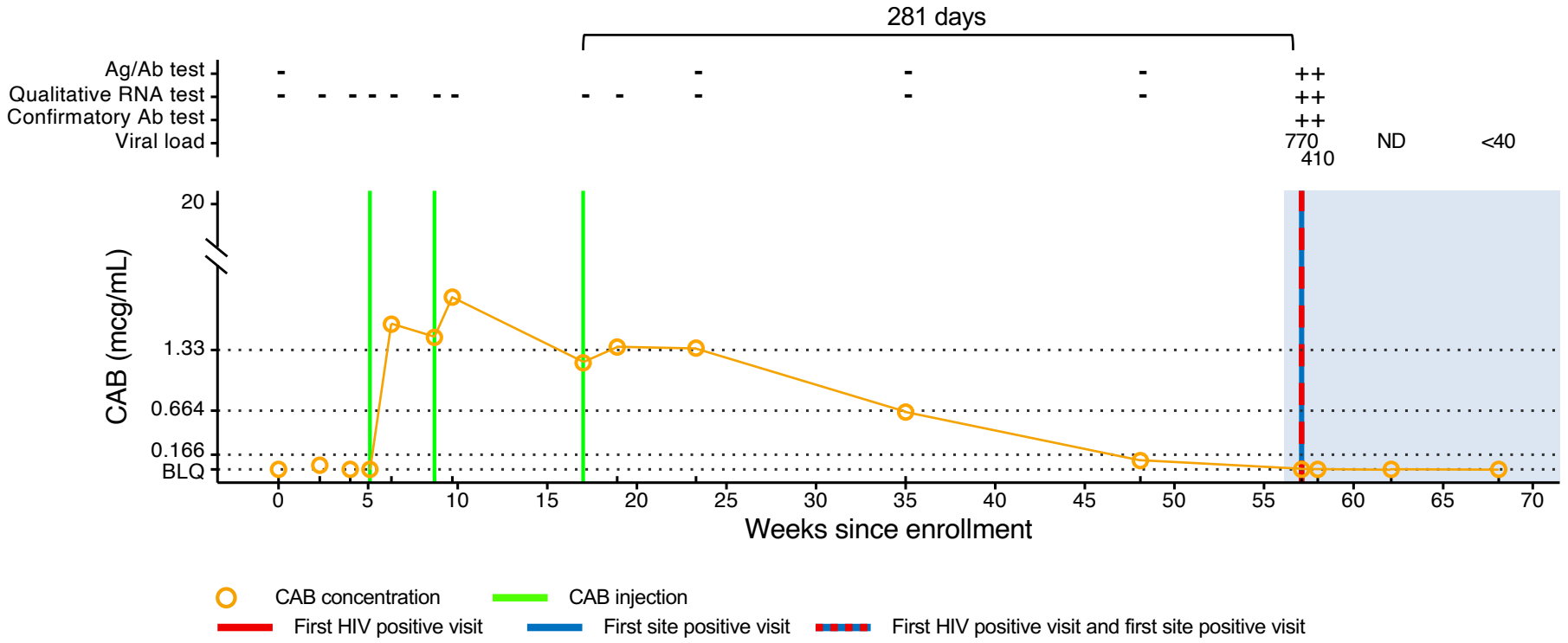
HIV subtype A/E



Case B4

		Site Testing					HPTN LC Testing				
Visit type	Diagnosis visit type	Rapid 1 test	Ag/Ab test	RNA test	DNA test	Viral load	Ag/Ab test	Qualitative RNA test	Confirmatory Ab test	Viral load	Resistance
Enrollment		NR	NR				NR	NR			
Week 2		NR	NR					NR			
Week 4		NR	NR					NR			
Week 5*		NR	NR					NR			
Week 6		NR	NR					NR			
Week 9*		NR	NR					NR			
Week 10		NR	NR					NR			
Week 17*		NR	NR					NR			
Week 19		NR	NR					NR			
F/U Day 0		NR	NR				NR	NR			
F/U Week 12		NR	NR				NR	NR			
F/U Week 24		NR	NR				NR	NR			
Interim**	1st HIV/SITE pos	R	R			828	R	R	POS	770	Failed testing
Interim		R	R		Detect, >100	244	R	R	POS	410	
F/U Week 36										ND	
F/U Week 48			R	R		26				<40	

**Started ART 10 days earlier with TAF/FTC/BIC; viral load 26 after 5 months on ART

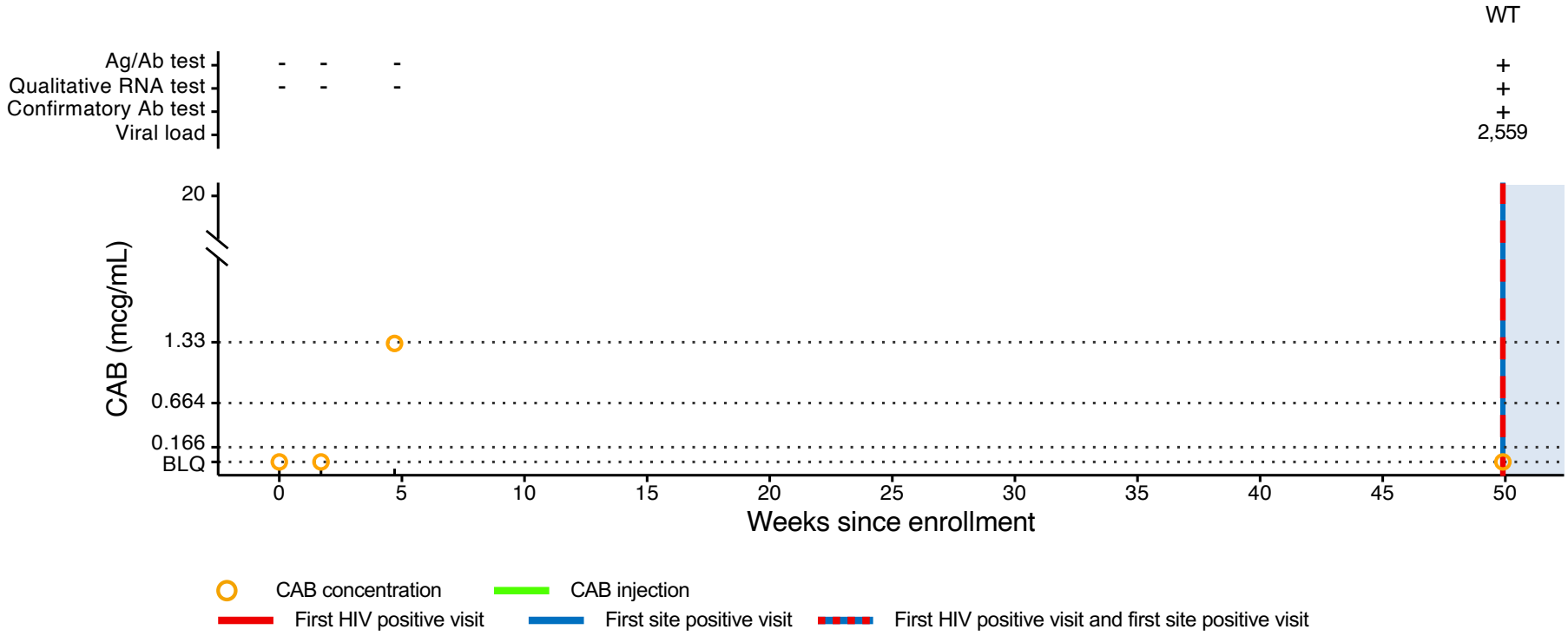


Case B5

		Site Testing				HPTN LC Testing				
Visit type	Diagnosis visit type	Rapid 1 test	Ag/Ab test	Viral load	Confirmatory Ab test	Ag/Ab test	Qualitative RNA test	Confirmatory Ab test	Viral load	Resistance
Enrollment		NR	NR			NR	NR			
Week 2		NR	NR			NR	NR			
Week 4		NR	NR			NR	NR			
Interim**	1st HIV/SITE pos		R	3,300	POS	R	R	POS	2,559	WT

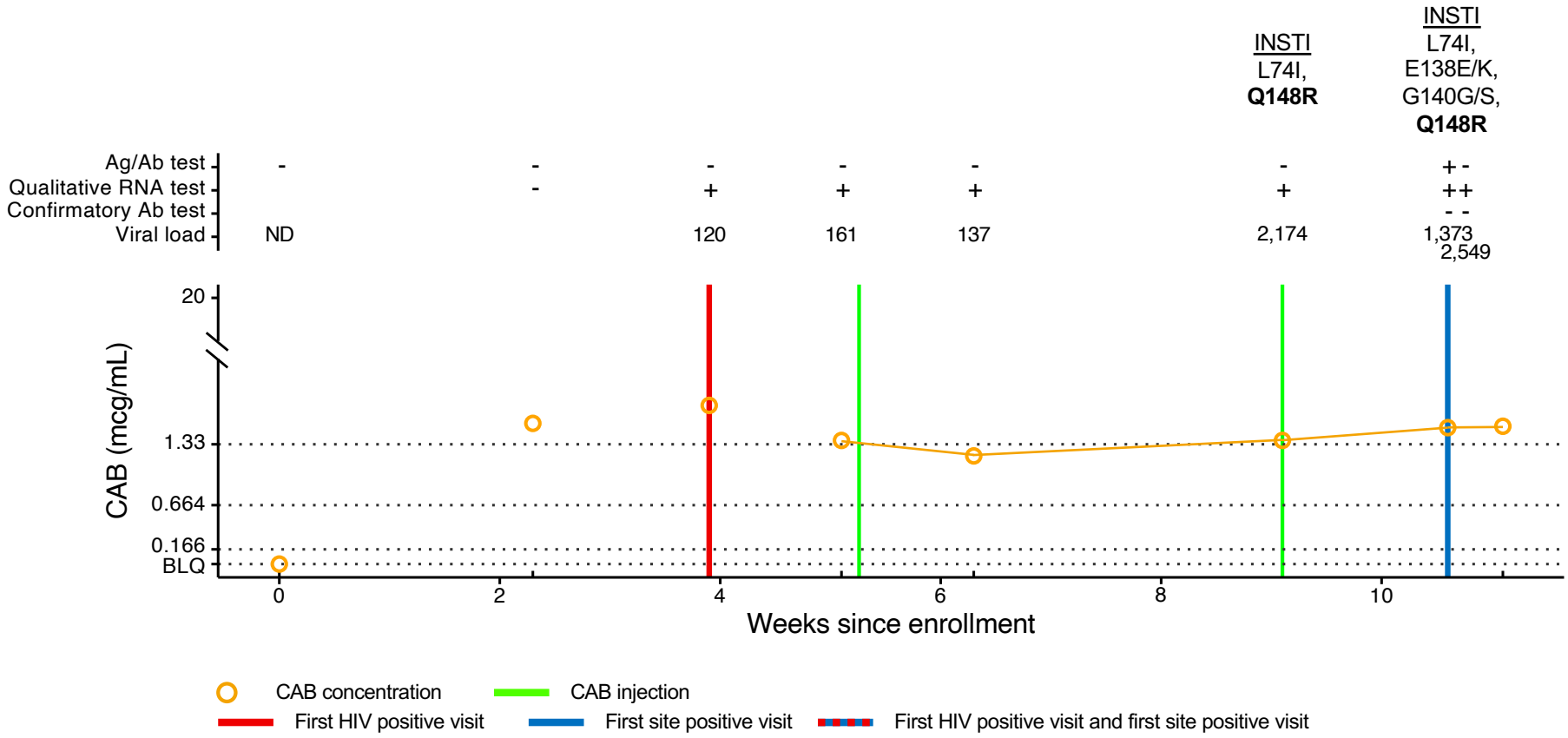
**Started ART with TAF/FTC/BIC; viral load <20 after 1 month on ART

HIV subtype B



Case C1

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
	Enrollment		NR	NR				NR	Inconclusive		SCA NEG	
	Week 2		NR	NR				NR	NR			
47 days	Week 4	1st HIV POS	NR	NR				NR	R		120	
47 days	Week 5*		NR	NR				NR	R		161	
47 days	Week 6		NR	NR				NR	R		137	
47 days	Week 9*		NR	NR				NR	R		2,174	L74I+Q148R
47 days	Week 10	1st SITE POS	NR	R		1,139		R	R	NEG	1,373	L74I+E138E/K+ G140G/S+ Q148R
	Week 10		NR	R	Detect, 81.5	1,911	NEG	NR	R	NEG	2,549	
	ART status not known											HIV subtype B

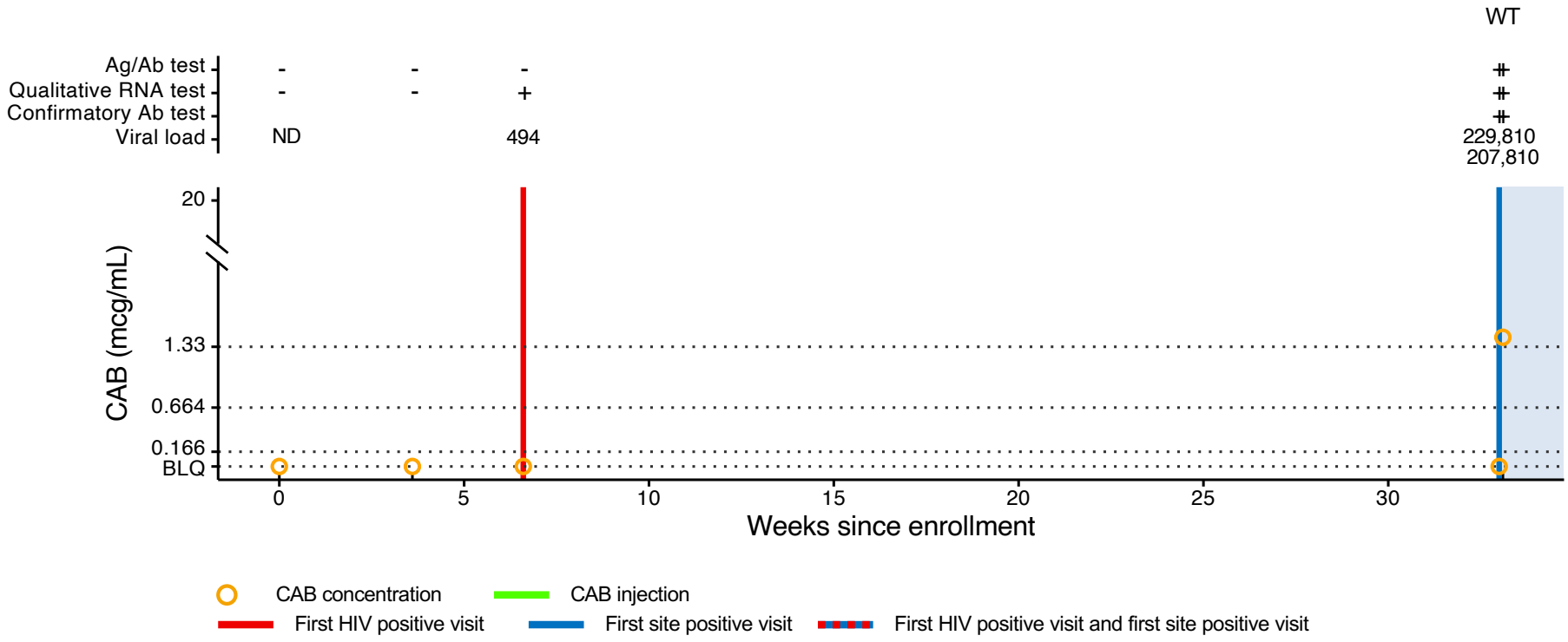


Case C2

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
	Enrollment		NR	NR			NR	NR		SCA NEG	
	Week 2		NR	NR			NR	NR			
185 days	Week 4	1st HIV pos	NR	NR			NR	R		494	
185 days	Interim	1st SITE pos	R	R	574,646	POS	R	R	POS	229,810	WT
	Interim**		R	R	326,823		R	R	POS	207,810	

**Started ART 1 day later with TDF/FTC/EFV; viral load 78 after 7 months on ART

HIV subtype B/F

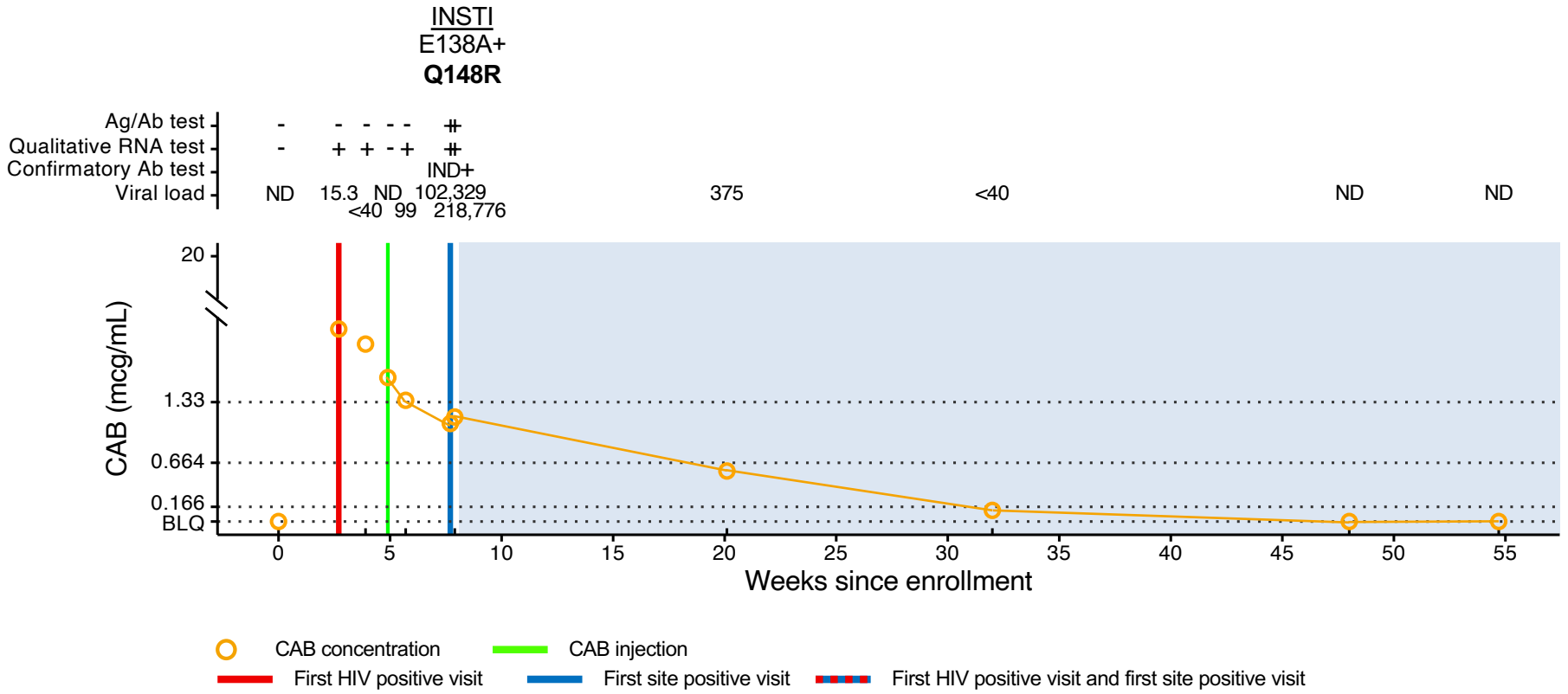


Case C3

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Rapid 2 test	Site Testing: Ag/Ab test	Site Testing: Viral load	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
	Enrollment		NR	NR	NR		NR	NR		SCA NEG	
35 days	Interim	1st HIV pos	NR	NR	NR		NR	R		SCA 15.3	
35 days	Week 4		NR	NR	NR		NR	R		<40	
35 days	Week 5*		NR	NR	NR		NR	NR		ND	
35 days	Week 6		NR	NR	NR		NR	R		99	
35 days	Week 9	1st SITE pos	R	R	R		R	R	INDET	102,329	*E138A+Q148R*
	Interim**		R	R	R	379,978	R	R	POS	218,776	
	F/U Week 12									375	
	F/U Week 24					ND				<40	
	Interim									ND	
	F/U Week 48					ND				ND	

**Started ART start 9 days later with TDF/FTC/EFV

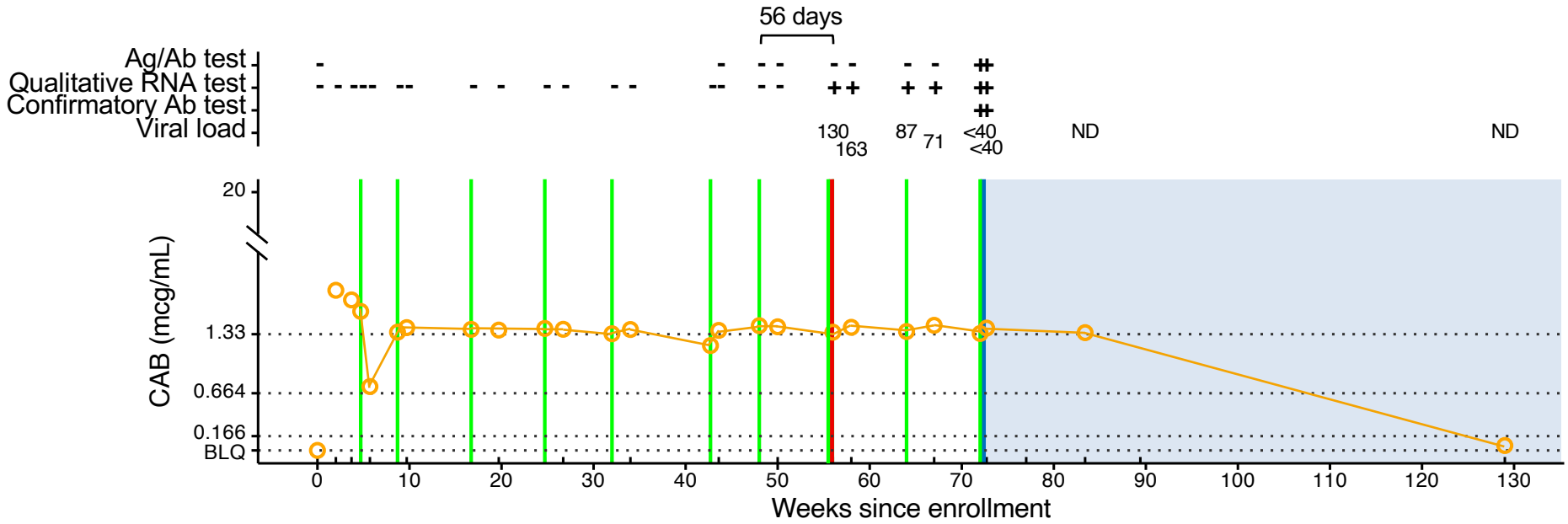
HIV subtype B



Case D1

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: Viral load	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load
	Enrollment		NR	NR		NR	NR		
	Week 2		NR	NR			NR		
	Week 4		NR	NR			NR		
	Week 5*		NR	NR			NR		
	Week 6		NR	NR			NR		
	Week 9*		NR	NR			NR		
	Week 10		NR	NR			NR		
	Week 17*		NR	NR			NR		
	Week 19		NR	NR			NR		
	Week 25*		NR	NR			NR		
	Week 27		NR	NR			NR		
	Week 33*		NR	NR			NR		
	Week 35		NR	NR			NR		
	Week 41*		NR	NR			NR		
	Week 43		NR	NR		NR	NR		
	Week 49*		NR	NR		NR	NR		
	Week 51		NR	NR		NR	NR		
112 days	Week 57*	1st HIV pos	NR	NR		NR	R		130
	Week 59		NR	NR		NR	R		163
	Week 65*		NR	NR		NR	R		87
	Week 67		NR	NR		NR	R		71
	Week 73*.**	1st SITE pos	NR	R		R	R	POS	<40
	F/U Day 0**			R	48	R	R	POS	<40
	F/U Week 12								ND
	F/U Week 48				ND				ND

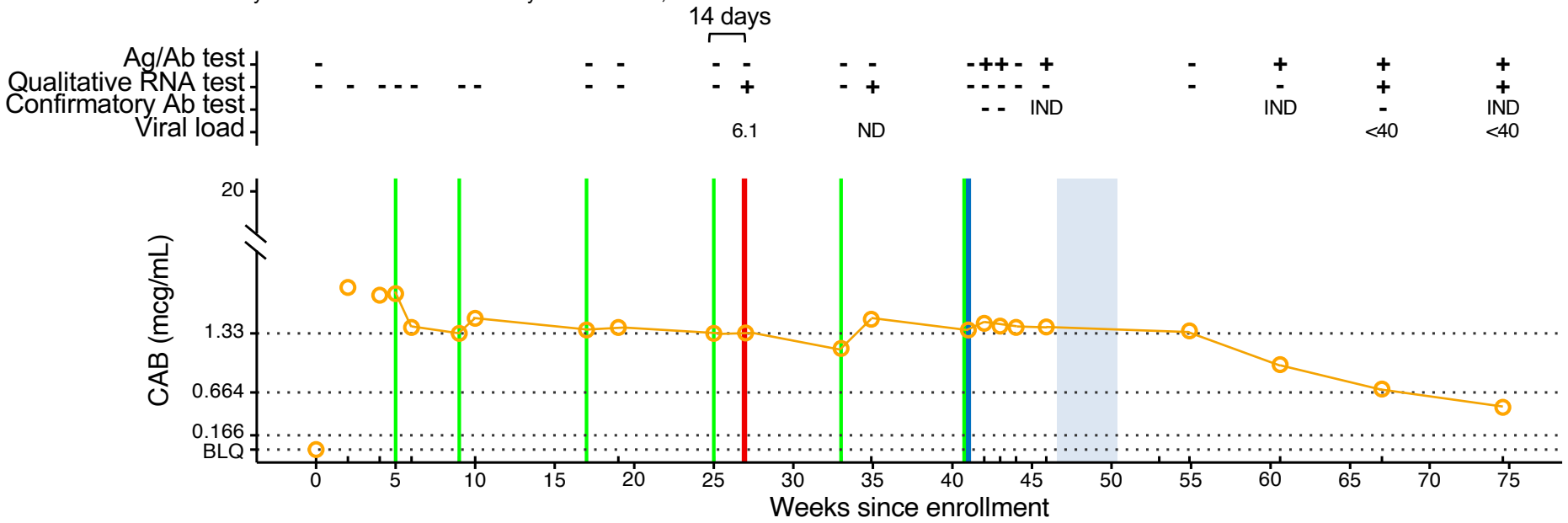
**Started ART 4 days later with TAF/FTC/DRVc



Case D2

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load
	Enrollment		NR	NR				NR	NR		
	Week 2		NR	NR					NR		
	Week 4		NR	NR					NR		
	Week 5*		NR	NR					NR		
	Week 6		NR	NR					NR		
	Week 9*		NR	NR					NR		
	Week 10		NR	NR					NR		
	Week 17*		NR	NR				NR	NR		
	Week 19		NR	NR				NR	NR		
	Week 25*		NR	NR				NR	NR		
98 days	Week 27	1st HIV POS	NR	NR				NR	R		SCA 6.1
98 days	Week 33*		NR	NR				NR	NR		
98 days	Week 35		NR	NR				NR	R		ND
98 days	Week 41*	1st SITE POS	NR	R		ND		NR	NR		
	Interim visit		R	R	Detect, <LLOD	ND		R	NR	NEG	
	Interim visit		NR	R				R	NR	NEG	
	Week 43		NR	R				NR	NR		
	Interim		NR	R	ND	ND		R	NR	INDET	
	Interim**		R	R	Detect, <LLOD	ND		NR	NR		
	Interim		NR	R				R	NR	INDET	
	Interim		NR	R	Detect, 5.8	23	POS	R	R	NEG	<40
	Interim		R	R		23		R	R	INDET	<40

**Started a 30-day course of TDF/3TC/DRVr 7 days later for PEP; later started ART with TDF/3TC/DRVr with a viral load of 1700

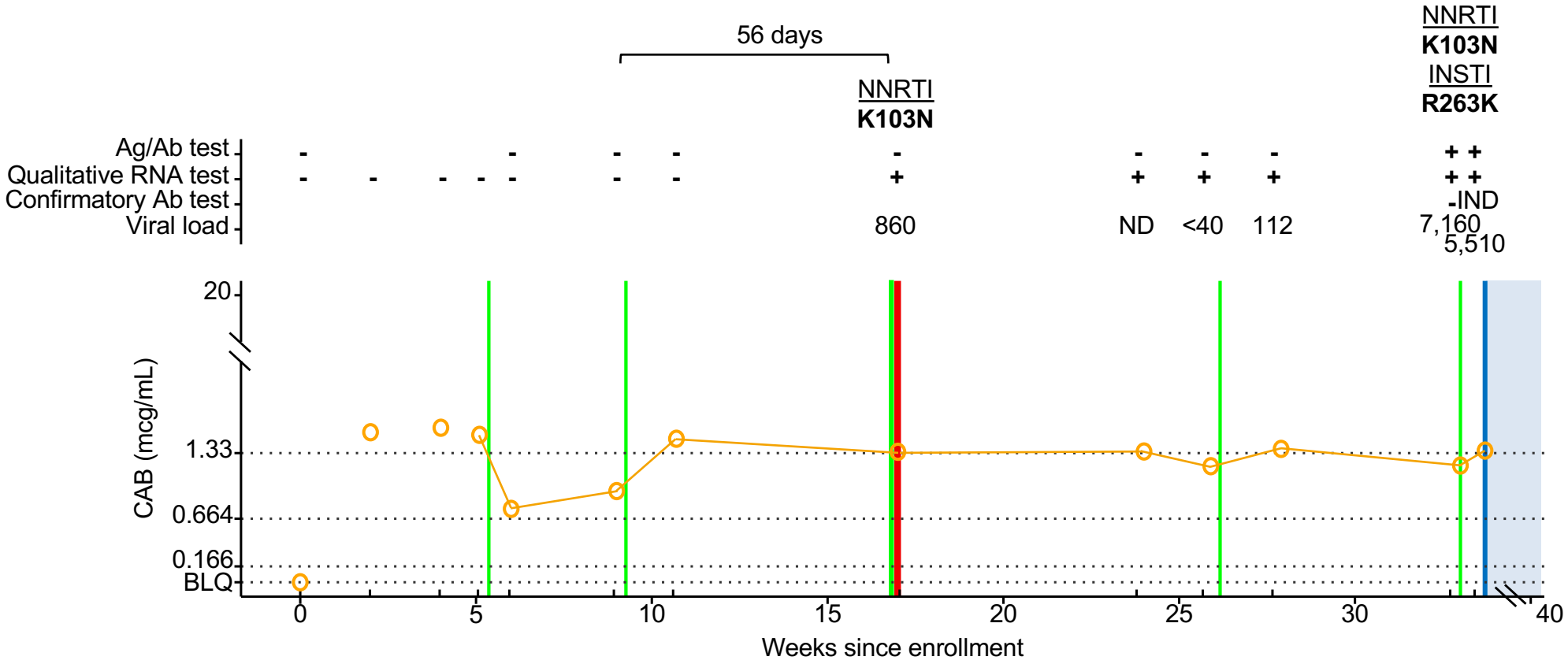


Case D3

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: Viral load	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
	Enrollment		NR	NR		NR	NR			
	Week 2		NR	NR			NR			
	Week 4		NR	NR			NR			
	Week 5*		NR	NR			NR			
	Week 6		NR	NR		NR	NR			
	Week 9*		NR	NR		NR	NR			
	Week 10		NR	NR		NR	NR			
117 days	Week 17*	1St HIV pos	NR	NR		NR	R		860	K103N
	Week 19		NR	NR		NR	R		ND	
	Week 25*		NR	NR		NR	R		<40	
	Week 27		NR	NR		NR	R		112	
	Week 33*		NR	INDET		R	R	NEG	7160	K103N, *R263K*
	Week 33**	1st SITE pos	R	INDET	4,628	R	R	INDET	5,510	
	Interim				ND					

**Started ART with TDF/3TC/DRVr; virally suppressed after 1 month on ART

HIV subtype B/F

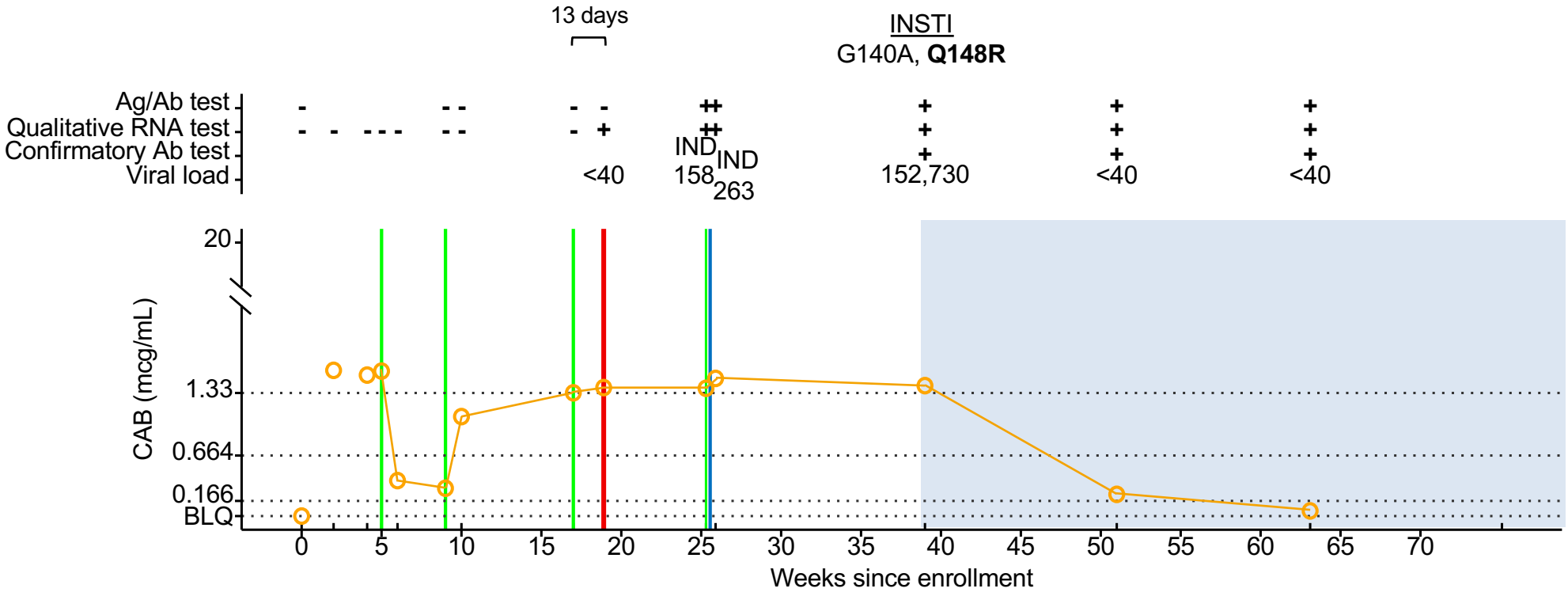


Case D4

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: RNA test	Site Testing: Viral load	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load	Resistance
	Enrollment		NR	NR			NR	NR			
	Week 2		NR	NR				NR			
	Week 4		NR	NR				NR			
	Week 5*		NR	NR				NR			
	Week 6		NR	NR				NR			
	Week 9*		NR	NR			NR	NR			
	Week 10		NR	NR			NR	NR			
	Week 17*		NR	NR			NR	NR			
45 days	Week 19	1st HIV pos	NR	NR			NR	R		<40	
45 days	Week 25*	1st SITE pos	NR	R	R	174	R	R	INDET	158	
45 days	Interim		NR	R	NR	298	R	R	INDET	263	
	F/U Week 12**						R	R	POS	152,730	*G140A,* ***Q148R***
	F/U Week 24					40	R	R	POS	<40	
	F/U Week 36						R	R	POS	<40	
	F/U Week 48					ND					

**Started ART with TDF/FTC/EFV

HIV subtype C



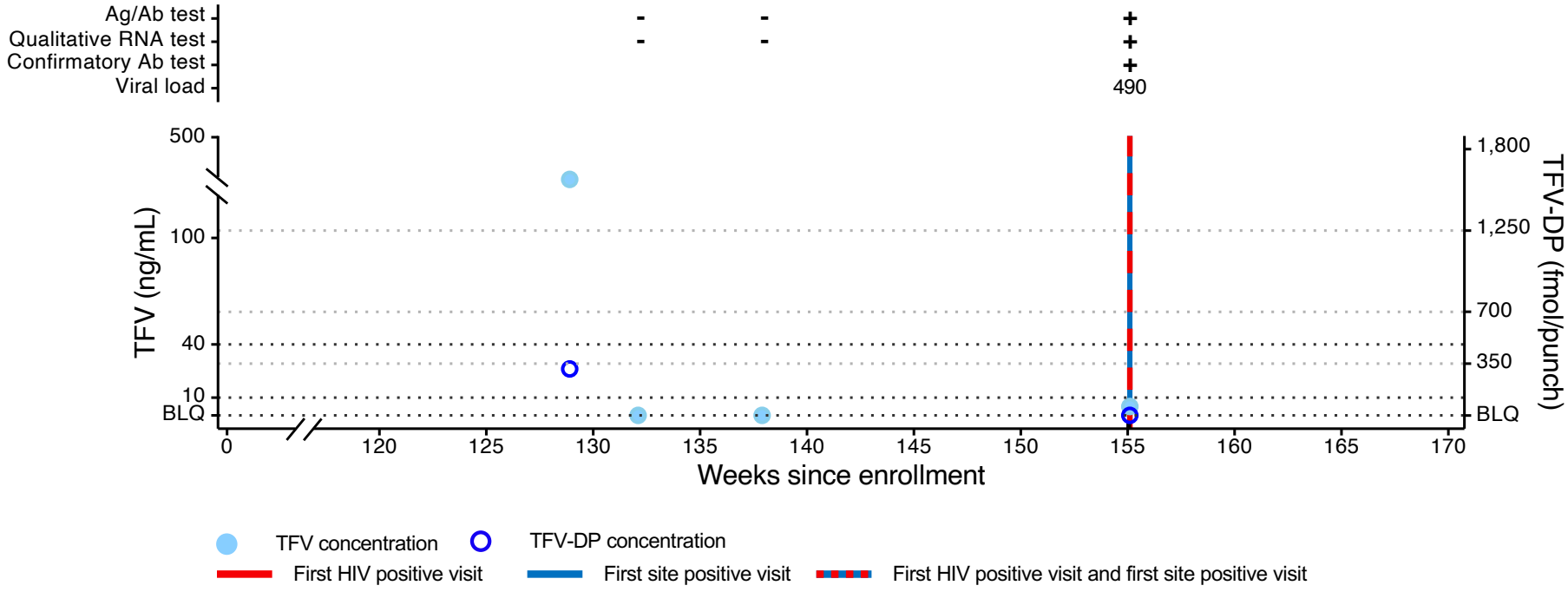
Supplementary File 6. Case Summaries, TDF/FTC arm (group E)

This file shows a summary of laboratory results and key events for participants in the tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) study arm at visits near the time of HIV infection. Each panel shows the results for one participant. Additional information for case E16 is provided in Figure 3.

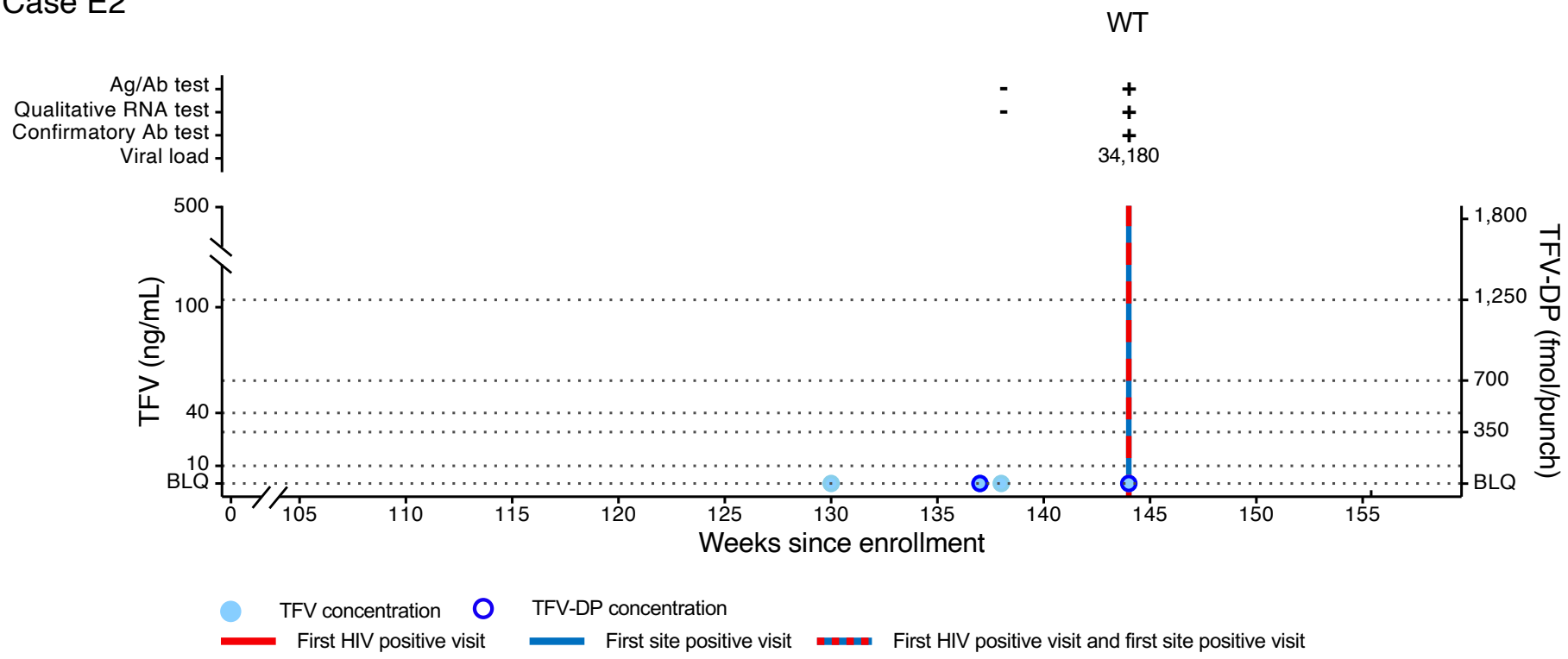
Annotations above each graph show results obtained from testing performed at the HPTN Laboratory Center. A plus sign (+) indicates a reactive or positive test result. A minus sign (-) indicates a non-reactive or negative test result. IND indicates an indeterminate test result. Viral load values indicate the number of HIV RNA copies/mL. Major drug resistance mutations are shown. Graphs show tenofovir (TFV) and tenofovir diphosphate (TFV-DP) concentrations and key events as a function of time (weeks since enrollment, based on calendar dates). A red vertical line indicates the first HIV positive visit; a blue vertical line indicates the first site positive visit; a red/blue dashed line indicates that the first HIV positive visit and first site positive visit occurred on the same date. Light blue filled circles indicate TFV plasma concentrations. Dark blue open circles indicate TFV-DP concentrations in dried blood spots. Black dashed horizontal lines indicate TFV concentrations of 10 and 40 ng/mL; these concentrations correspond to 4 and 7 doses/week, respectively. Gray dashed lines indicate TFV-DP concentrations of 350, 700, and 1,250 fmol/punch; these concentrations correspond to 2, 4, and 7 doses/week, respectively. BLQ indicates that the drug concentration was below the limit of quantification (TFV: 0.31 ng/mL; TFV-DP: 31.3 fmol/punch).

Abbreviations: Ag/Ab: antigen/antibody; ND: not detected; ng: nanograms; mL: milliliter; fmol: femtomole; BLQ: below the limit of quantification; WT: wild type (no major resistance mutations detected).

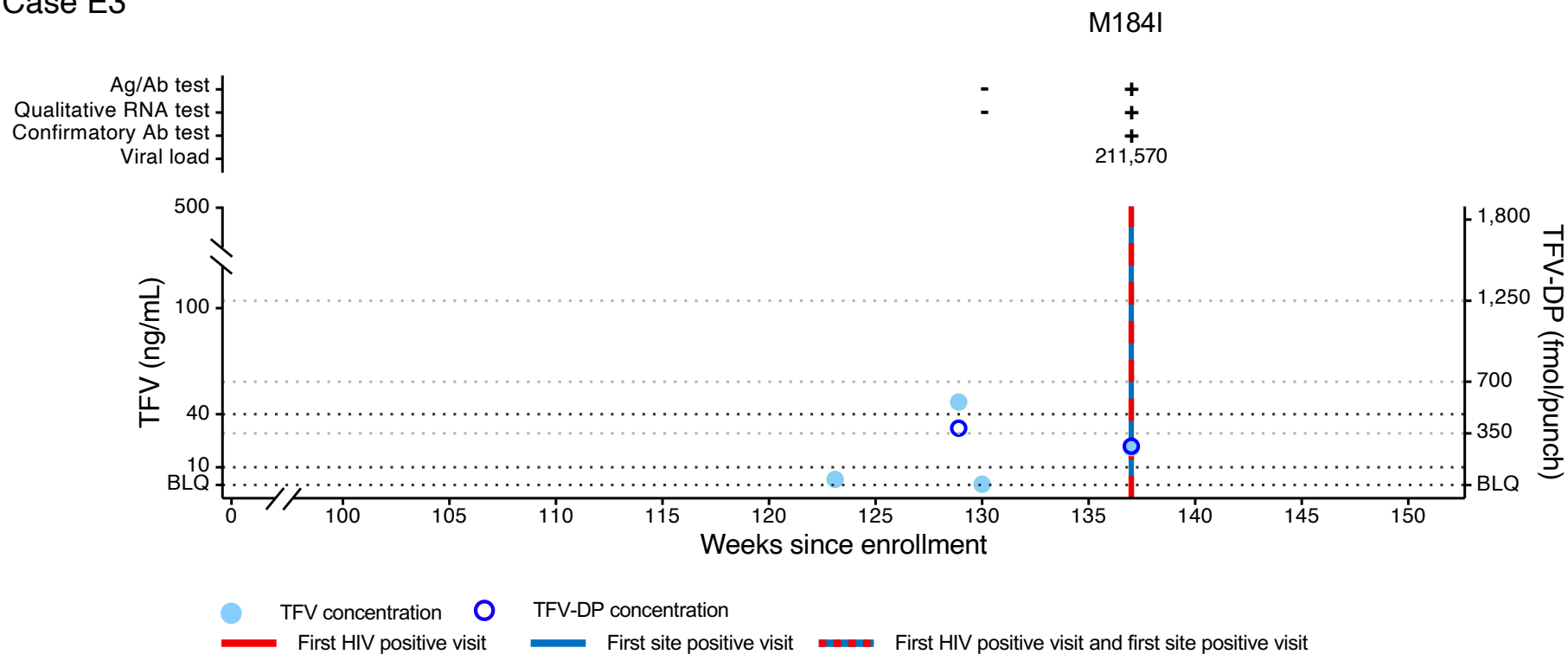
Case E1


Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- - +
- - +
+
490
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
120
125
130
135
140
145
150
155
160
165
170
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

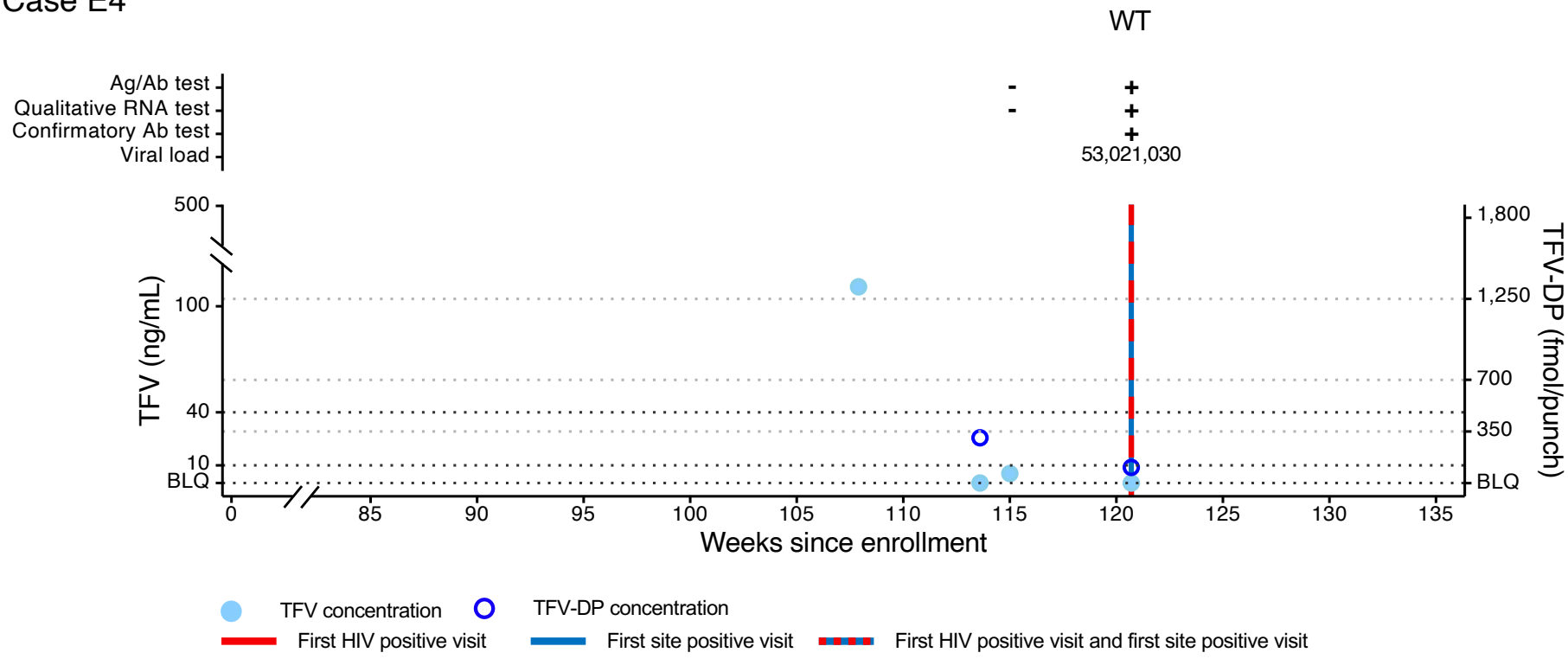
Case E2


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
34,180
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
105
110
115
120
125
130
135
140
145
150
155
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

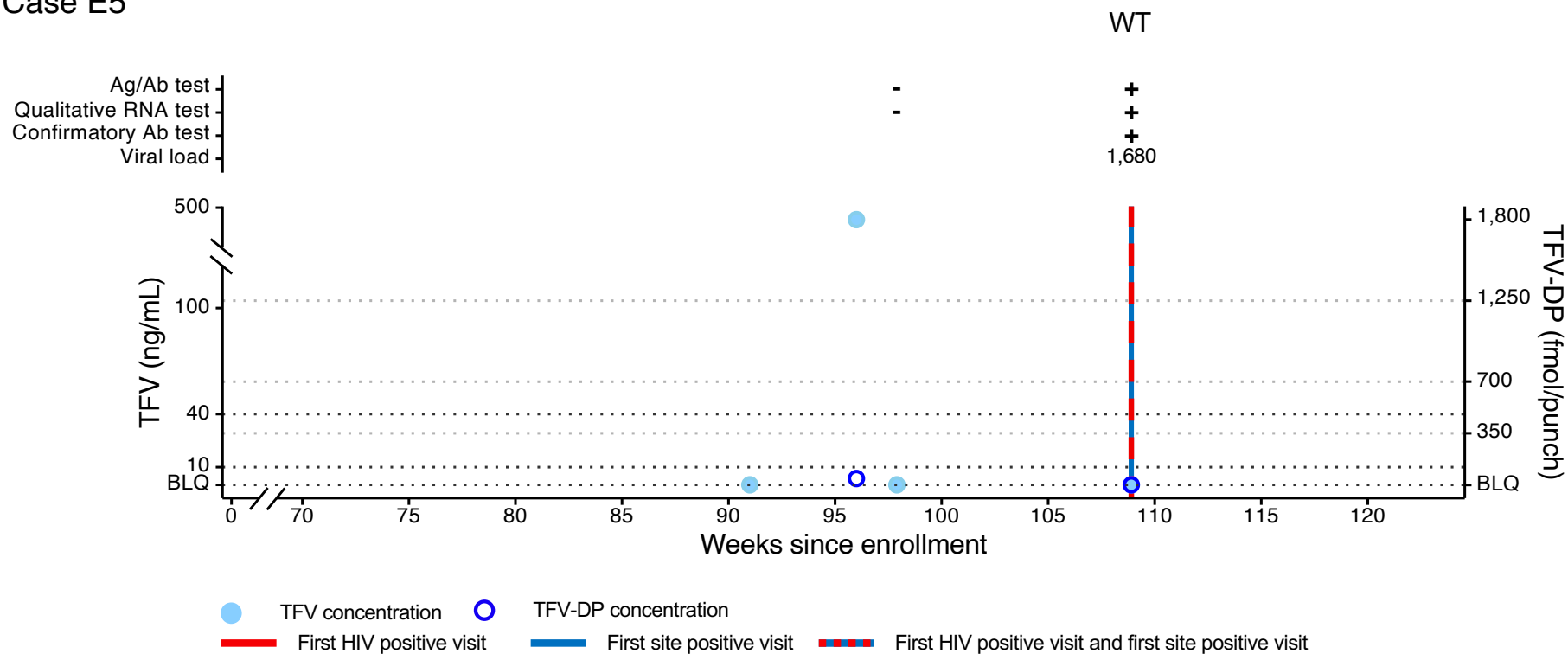
Case E3


M184I
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
211,570
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
100
105
110
115
120
125
130
135
140
145
150
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

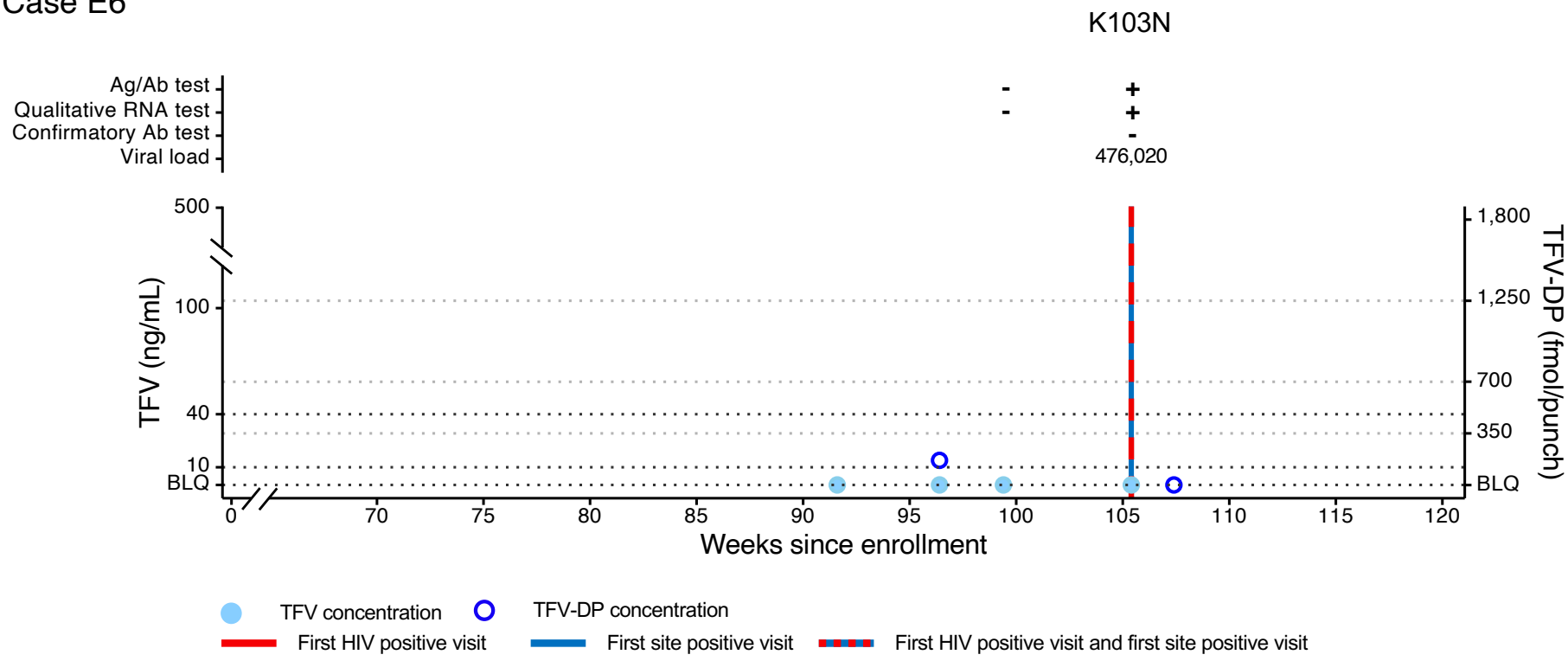
Case E4


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
53,021,030
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
85
90
95
100
105
110
115
120
125
130
135
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

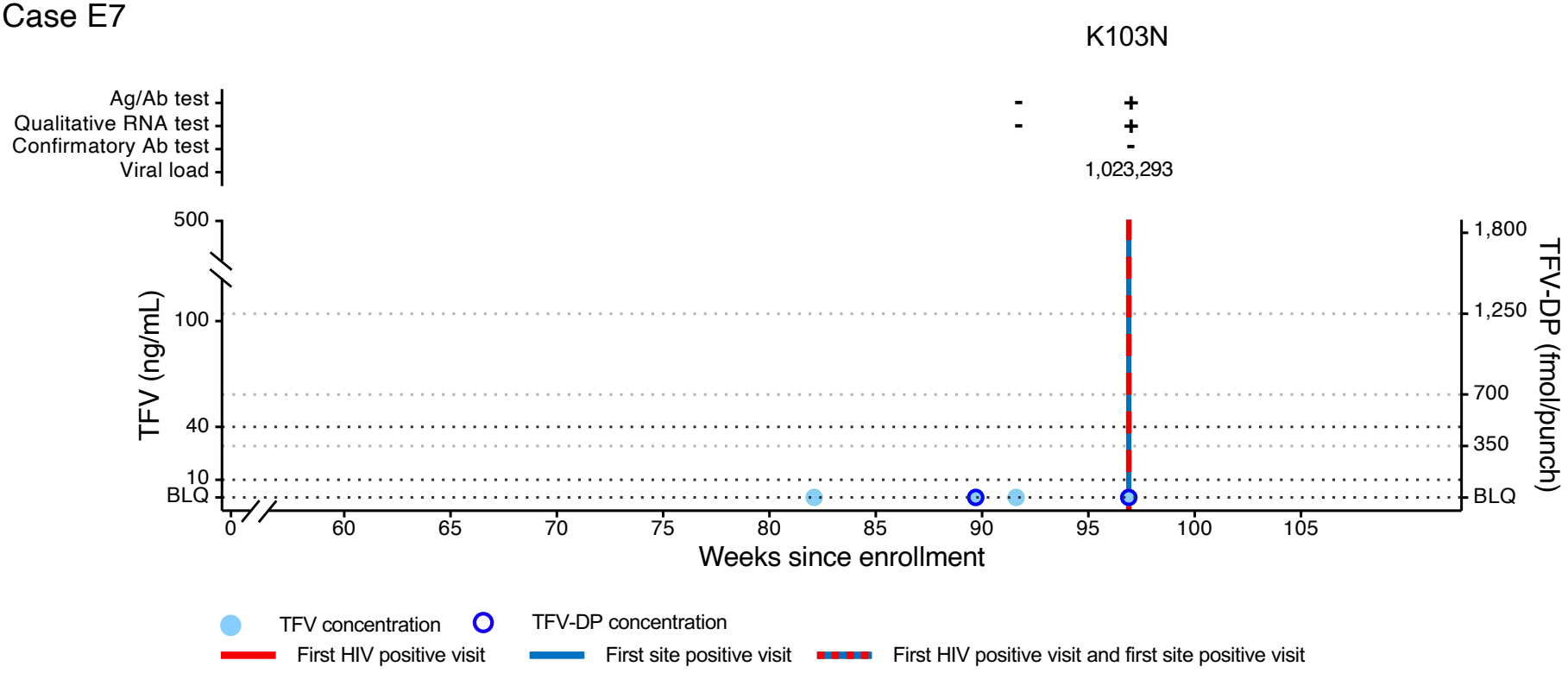
Case E5


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
1,680
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
70
75
80
85
90
95
100
105
110
115
120
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

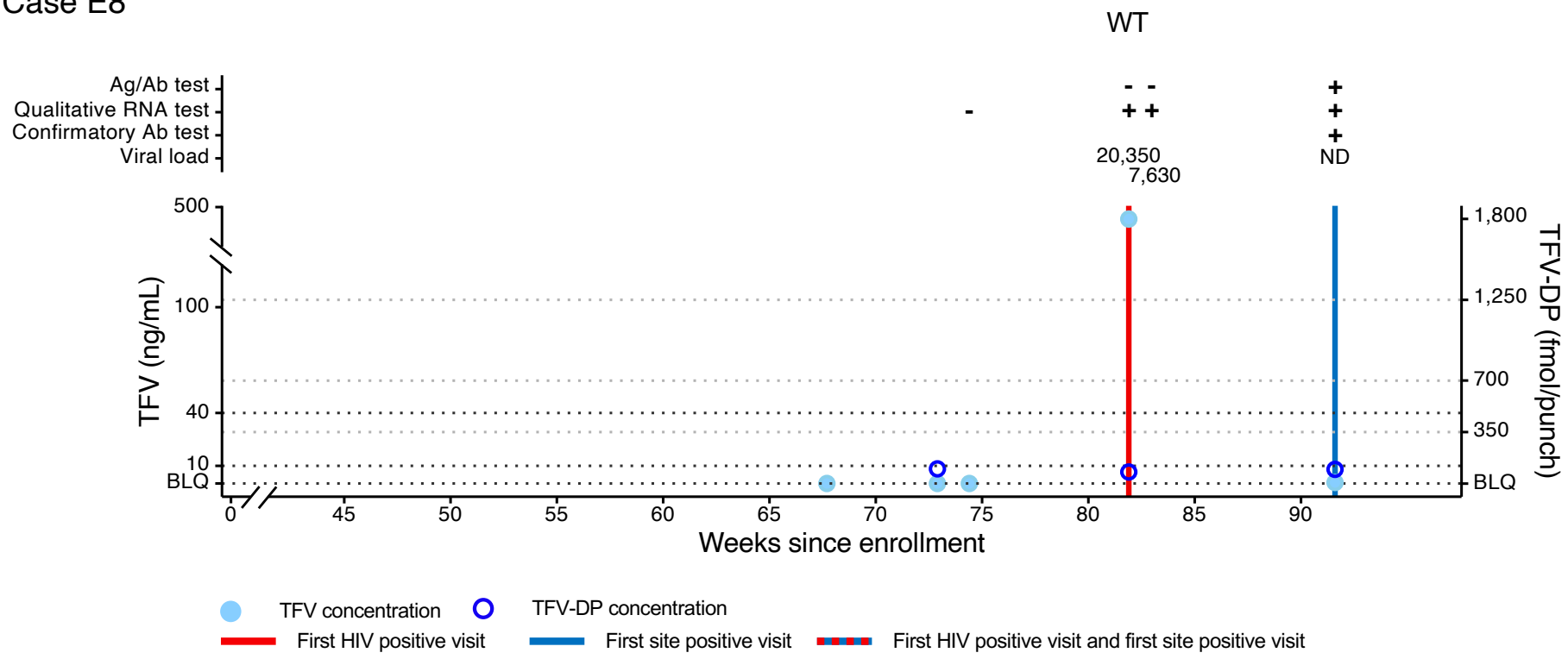
Case E6


K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- + - + - 476,020
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 70 75 80 85 90 95 100 105 110 115 120
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

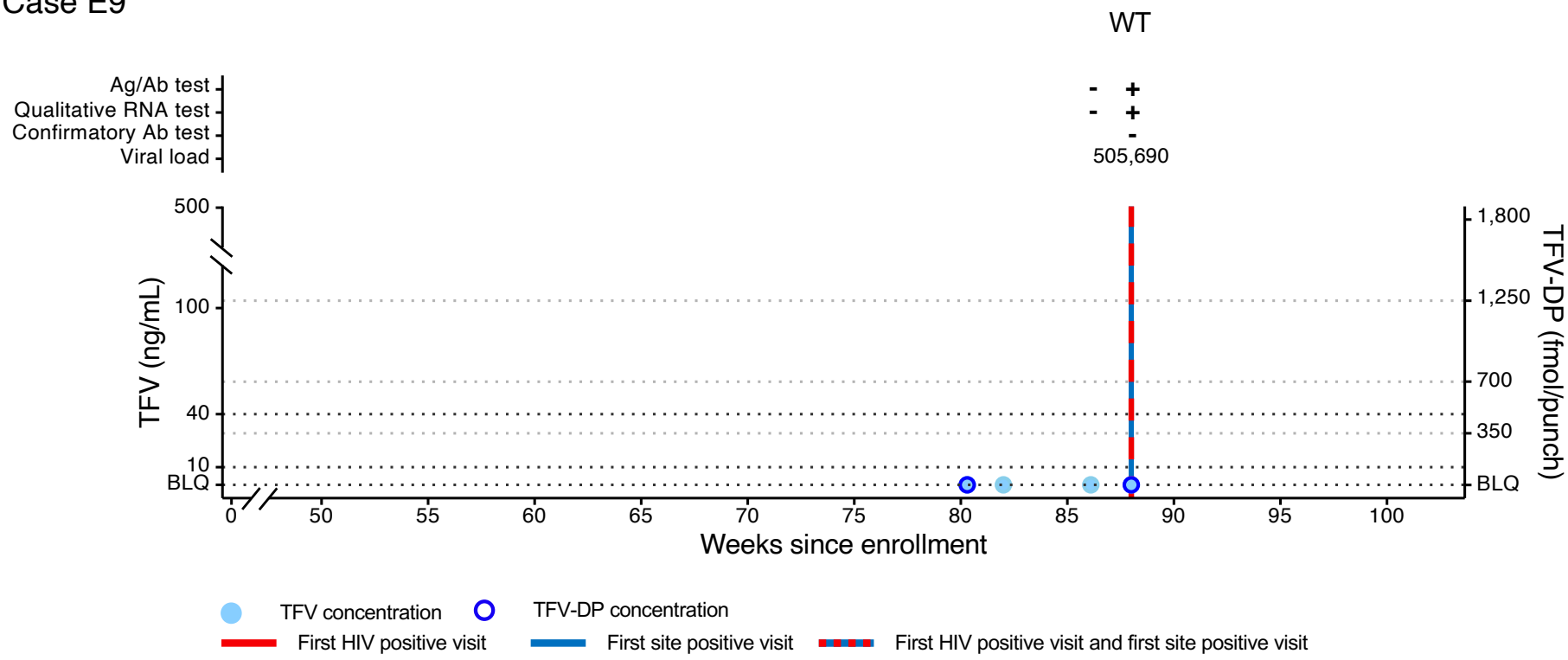
Case E7


K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- + - + - 1,023,293
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 60 65 70 75 80 85 90 95 100 105
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

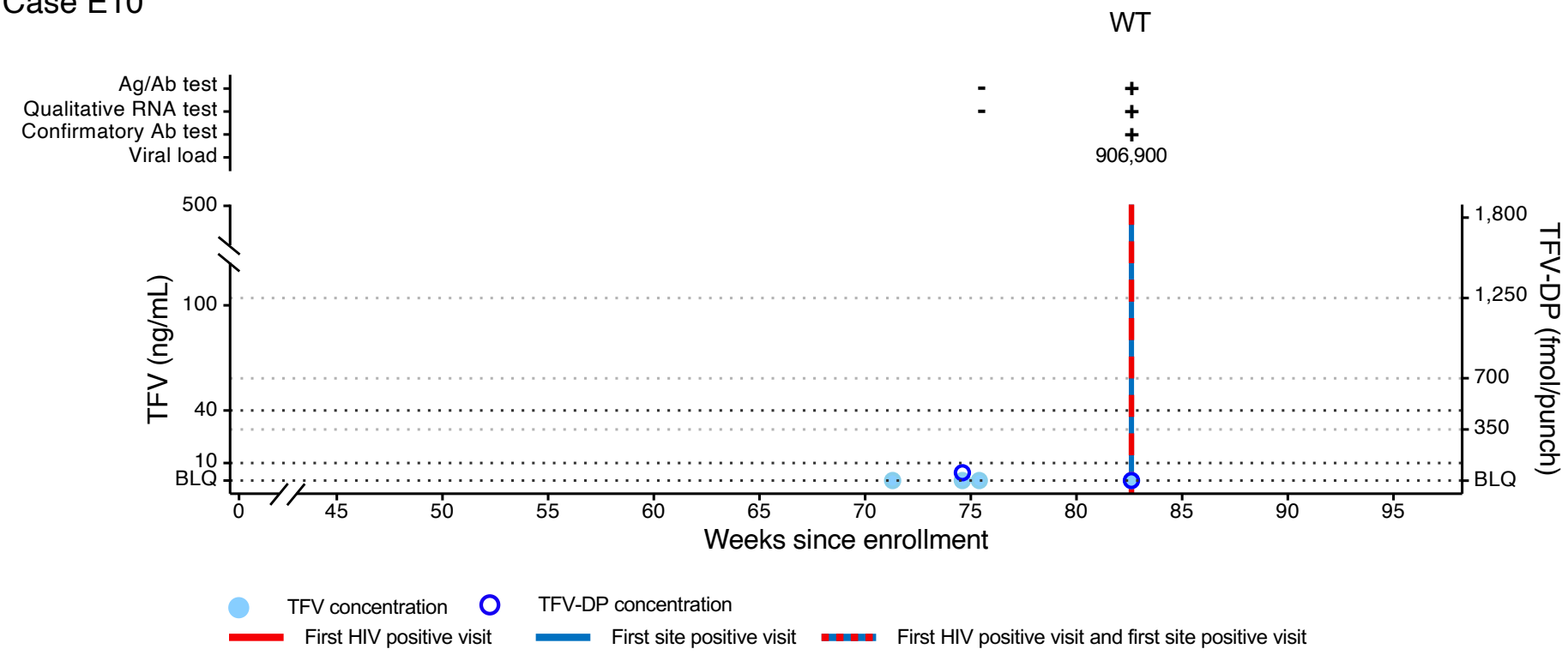
Case E8


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
- -
+ +
+
+
+
20,350
7,630
ND
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
45
50
55
60
65
70
75
80
85
90
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

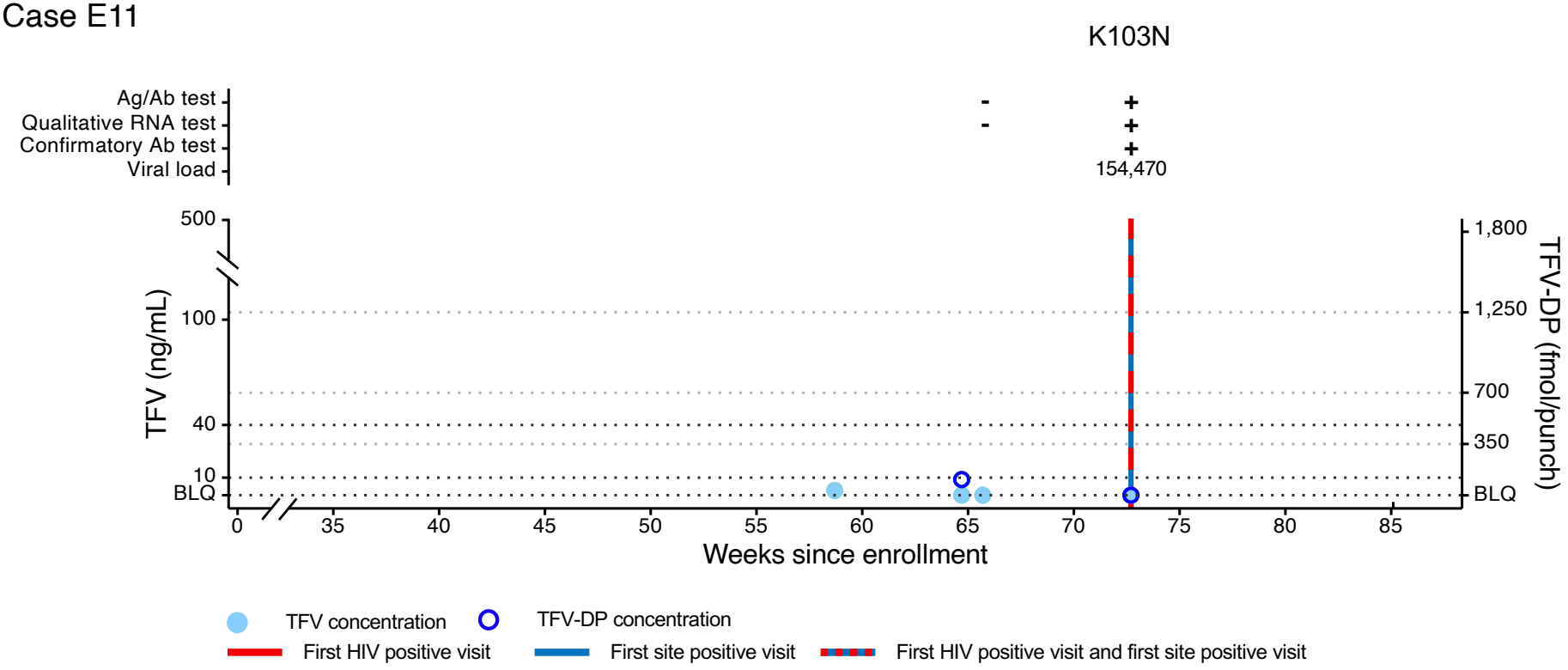
Case E9


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- +
- +
-
505,690
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
50
55
60
65
70
75
80
85
90
95
100
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

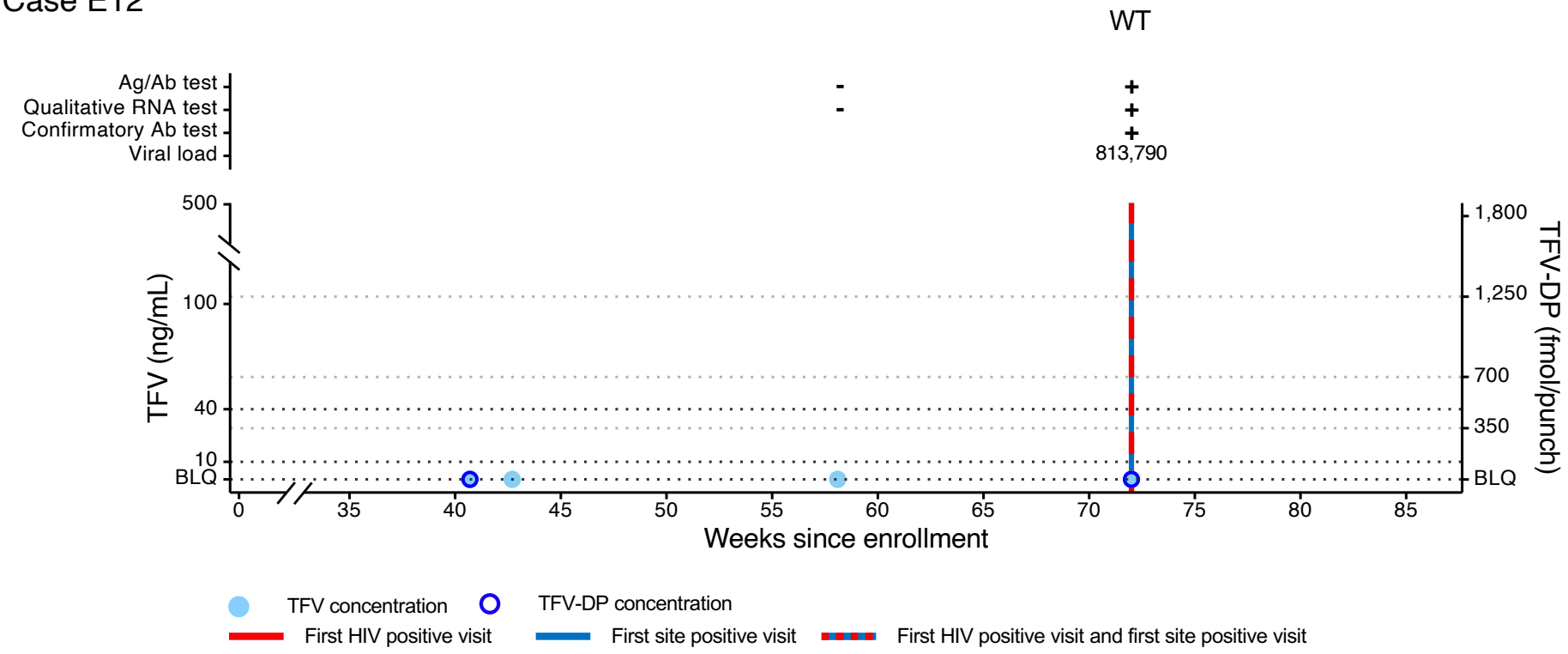
Case E10


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
906,900
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
45
50
55
60
65
70
75
80
85
90
95
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

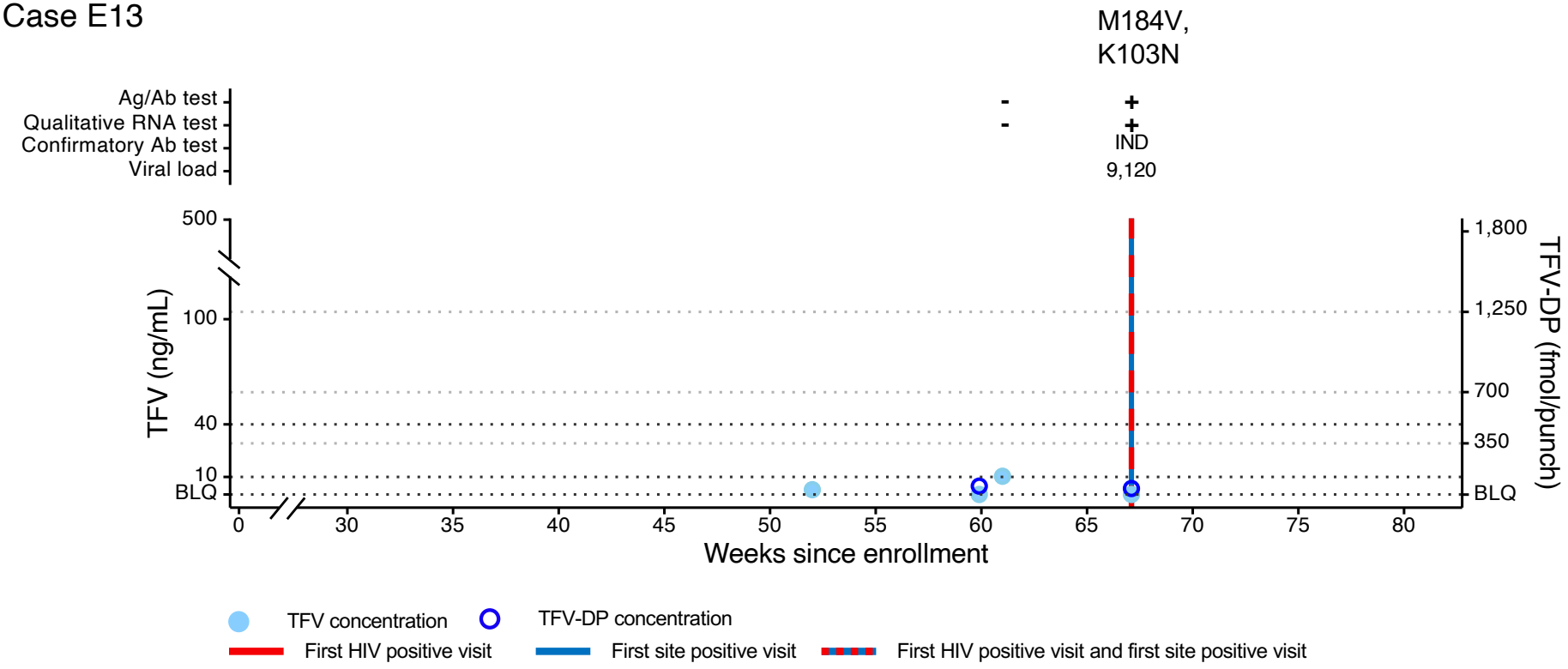
Case E11


K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
154,470
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
35
40
45
50
55
60
65
70
75
80
85
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

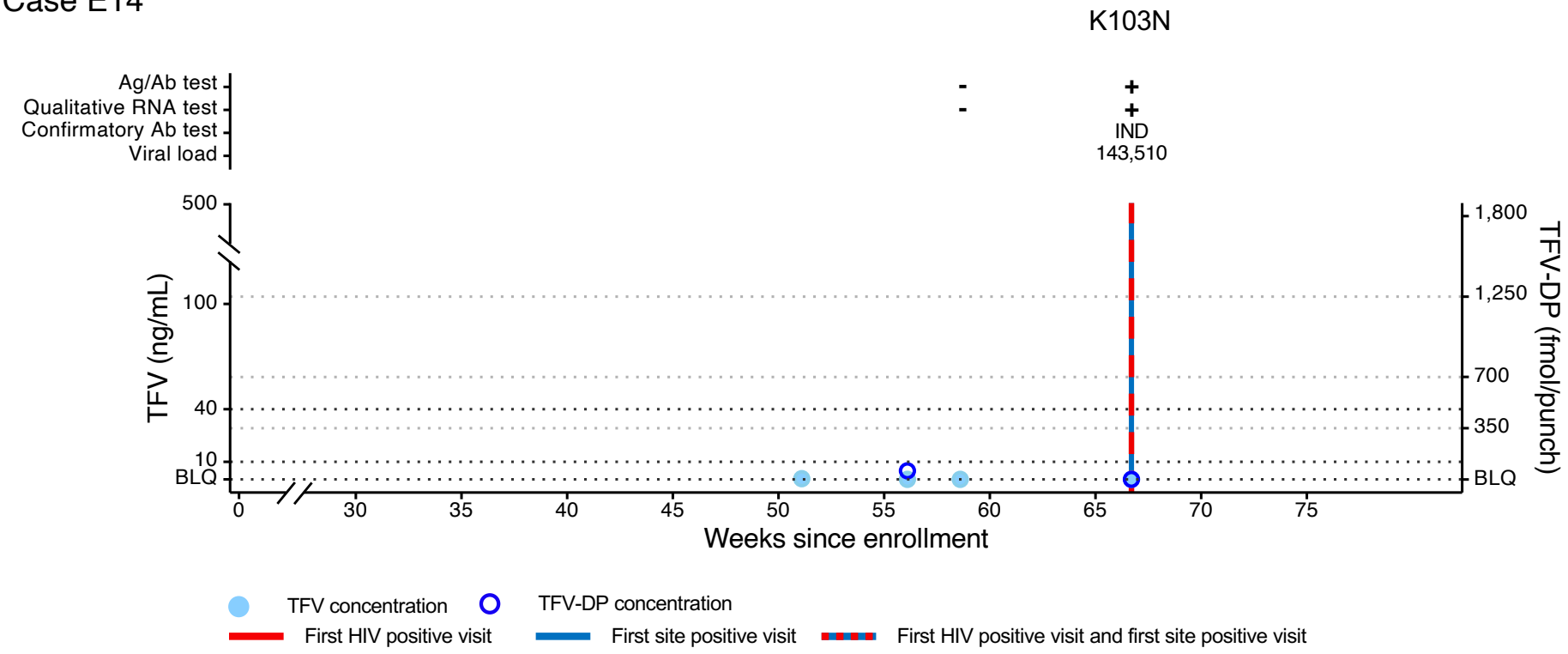
Case E12


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
813,790
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
35
40
45
50
55
60
65
70
75
80
85
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

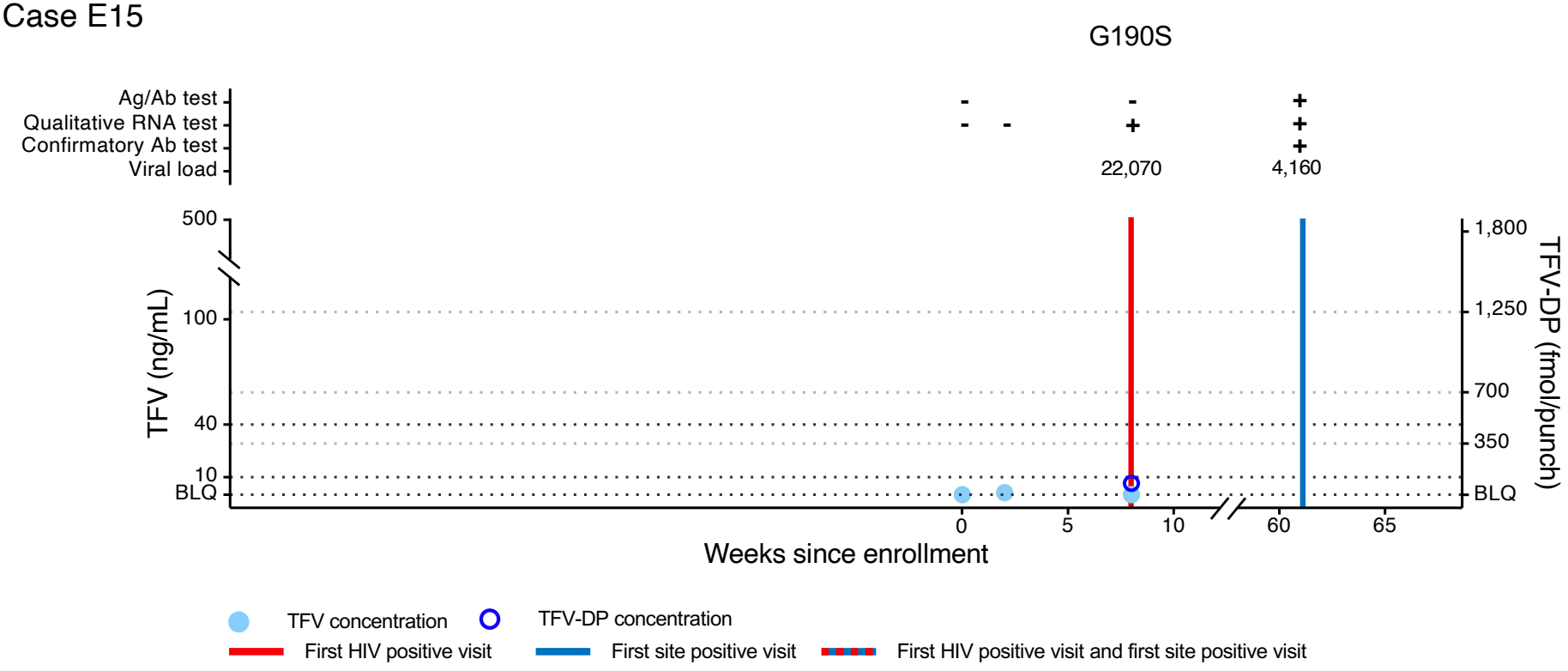
Case E13


M184V,
K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
IND
9,120
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
30
35
40
45
50
55
60
65
70
75
80
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

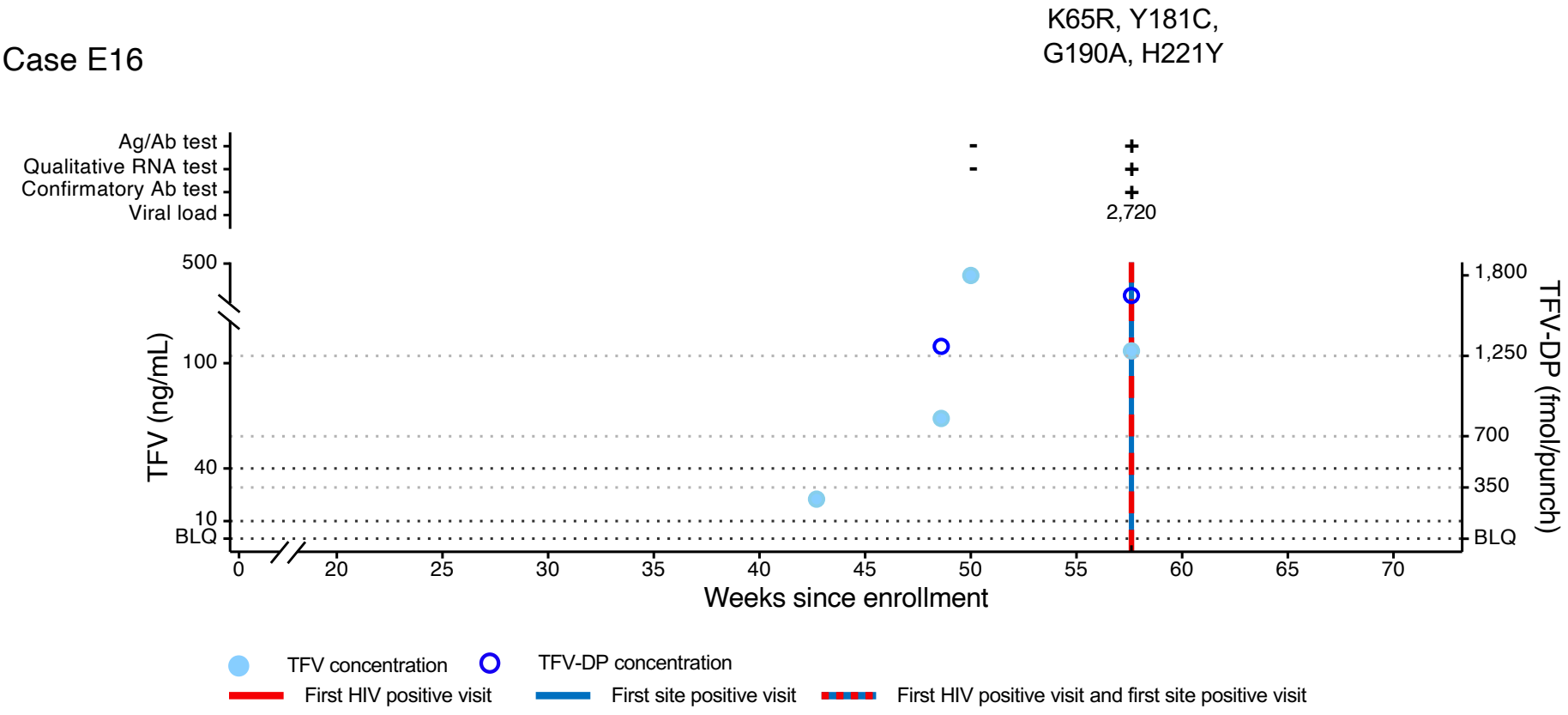
Case E14


K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
IND
143,510
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
30
35
40
45
50
55
60
65
70
75
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

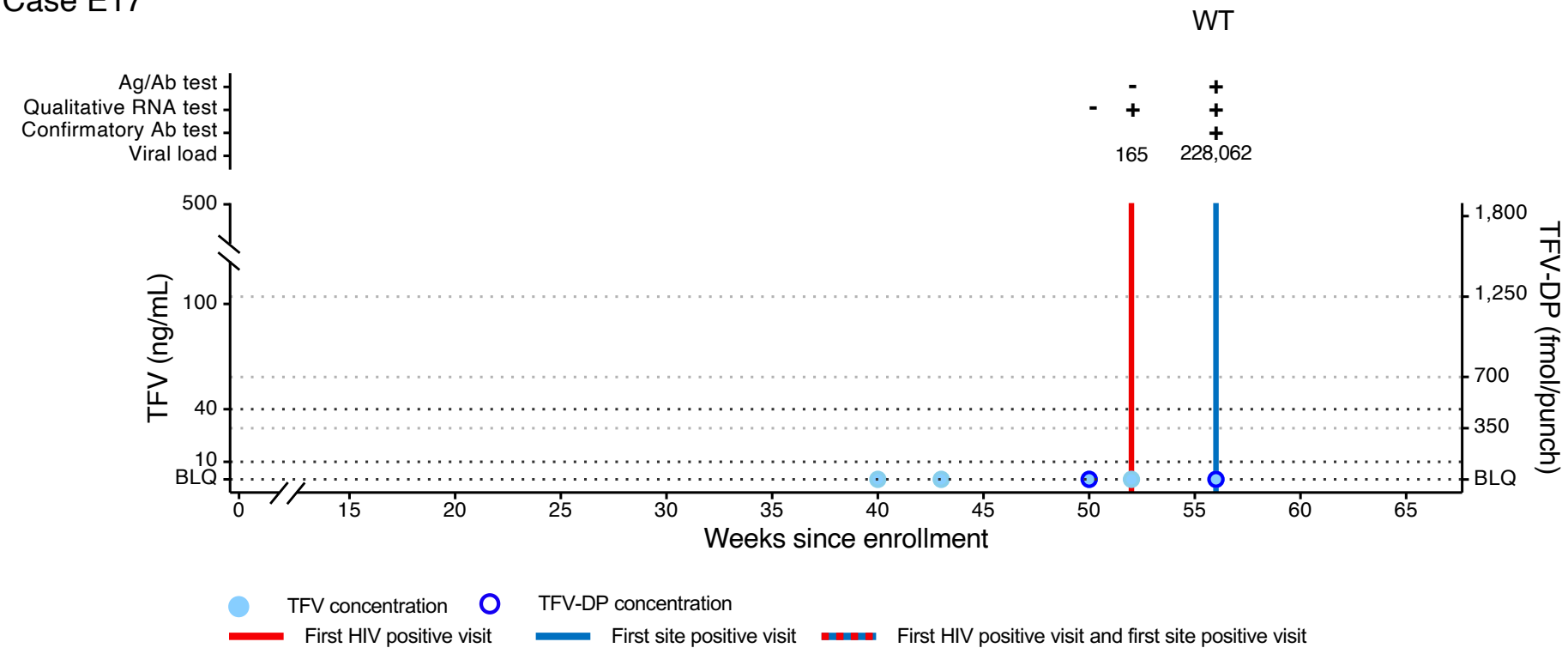
Case E15


G190S
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- - - + + + + +
22,070
4,160
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
60
65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

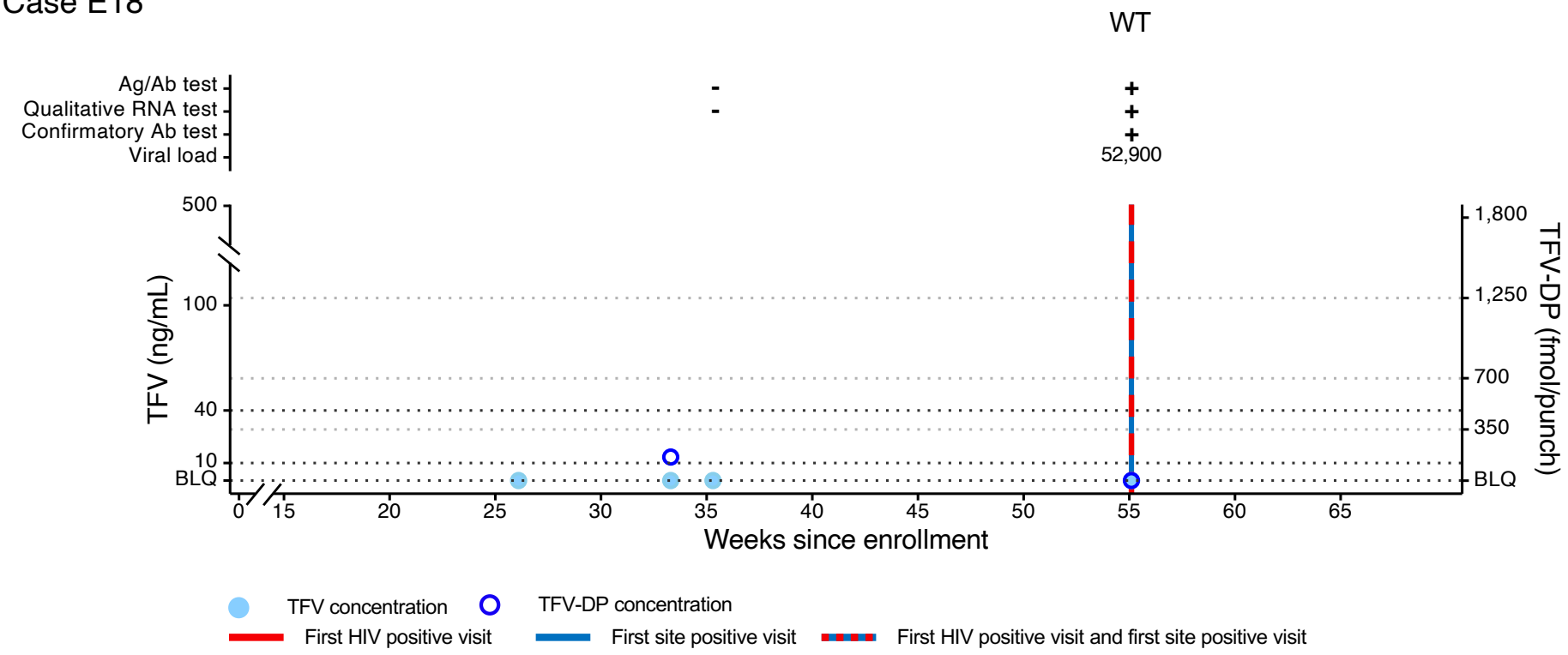
Case E16


K65R, Y181C,
G190A, H221Y
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
2,720
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
20
25
30
35
40
45
50
55
60
65
70
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

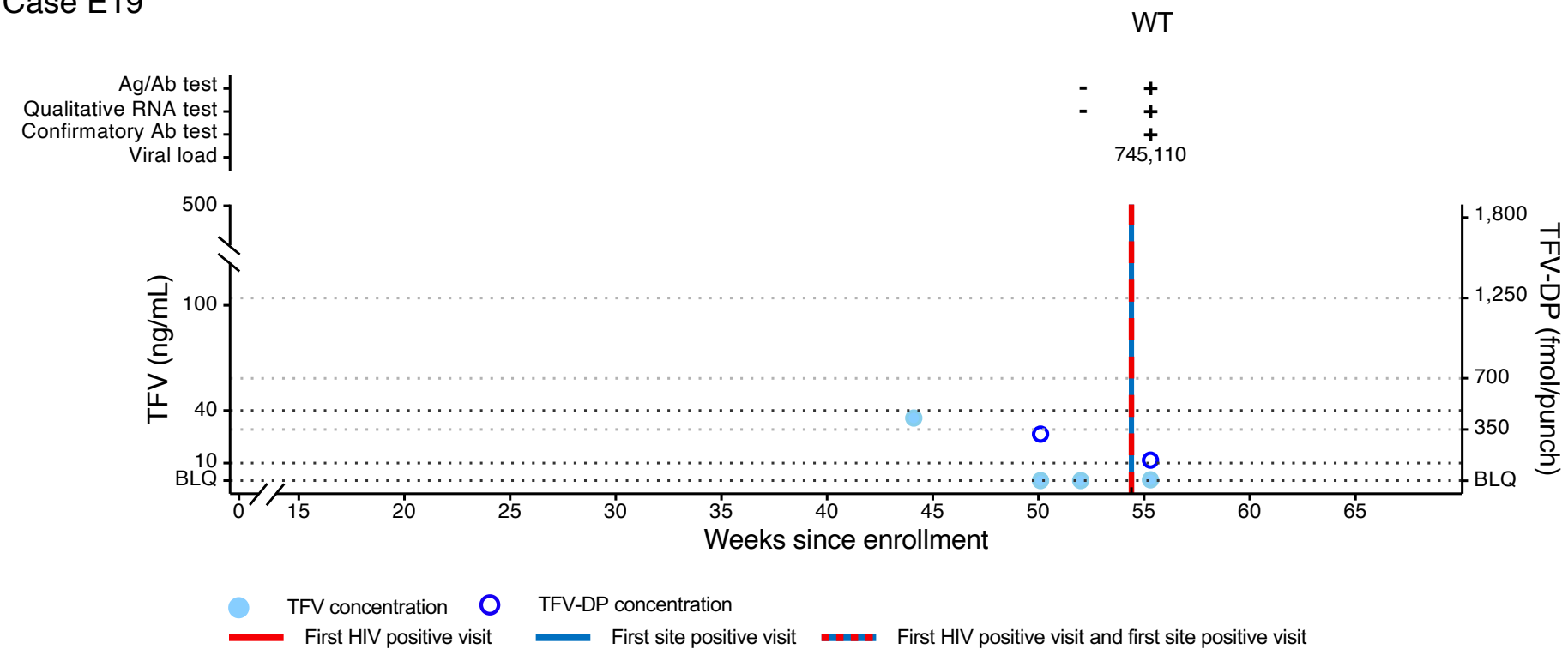
Case E17


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
+
165
228,062
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
15
20
25
30
35
40
45
50
55
60
65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

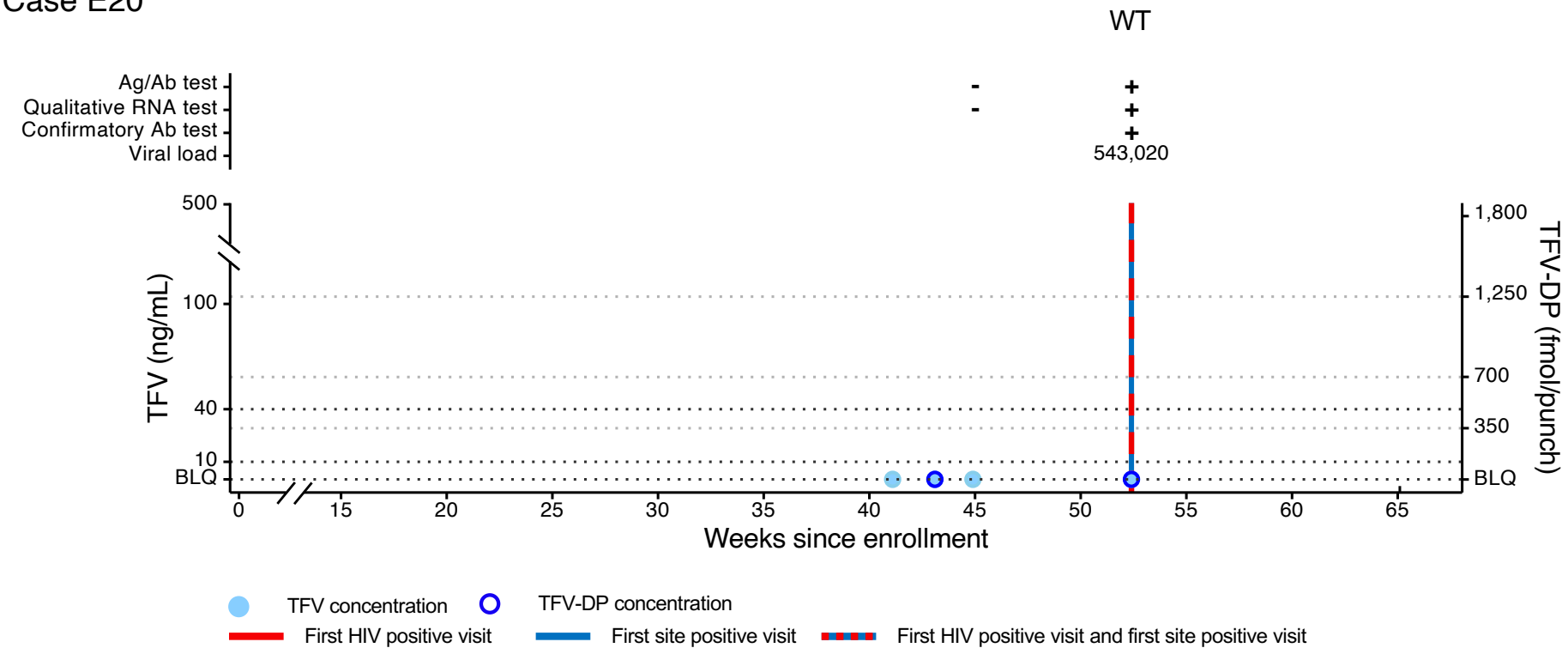
Case E18


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
52,900
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
15
20
25
30
35
40
45
50
55
60
65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

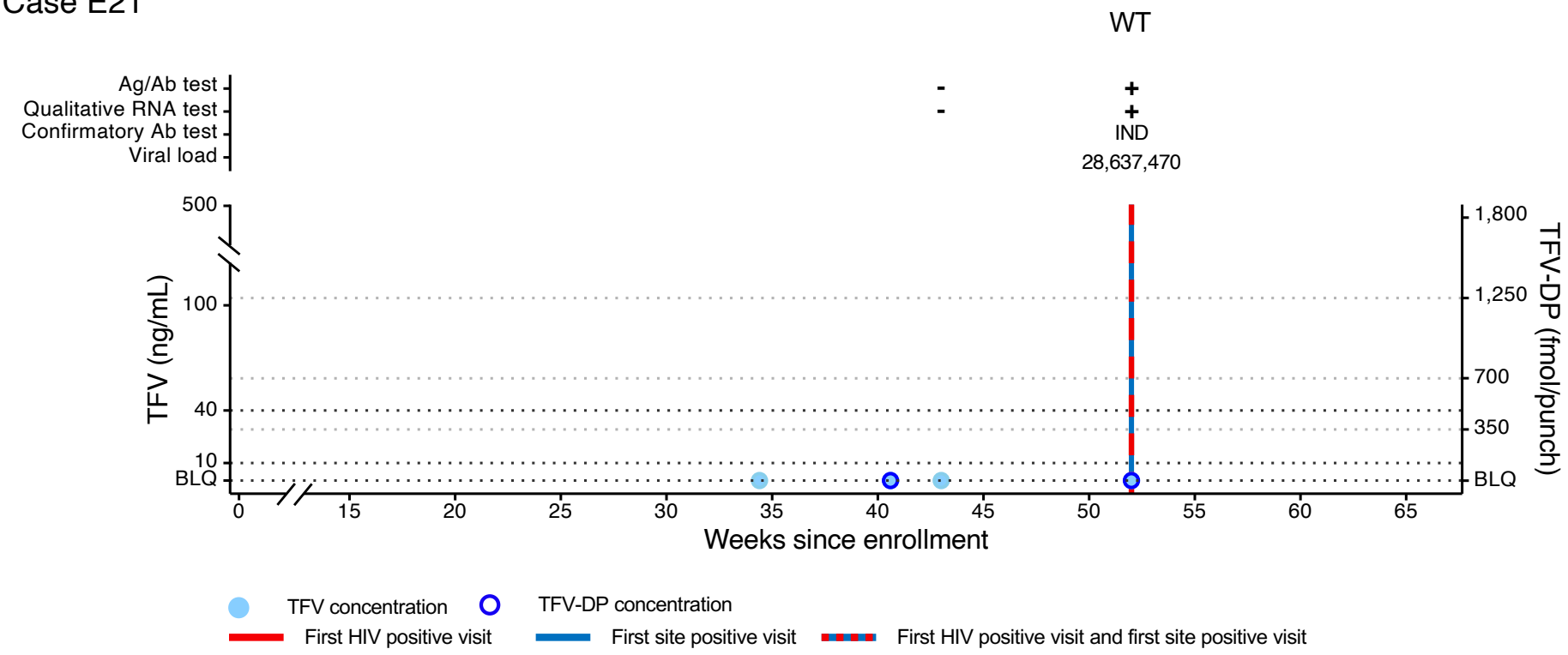
Case E19


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- + - + + 745,110
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 15 20 25 30 35 40 45 50 55 60 65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

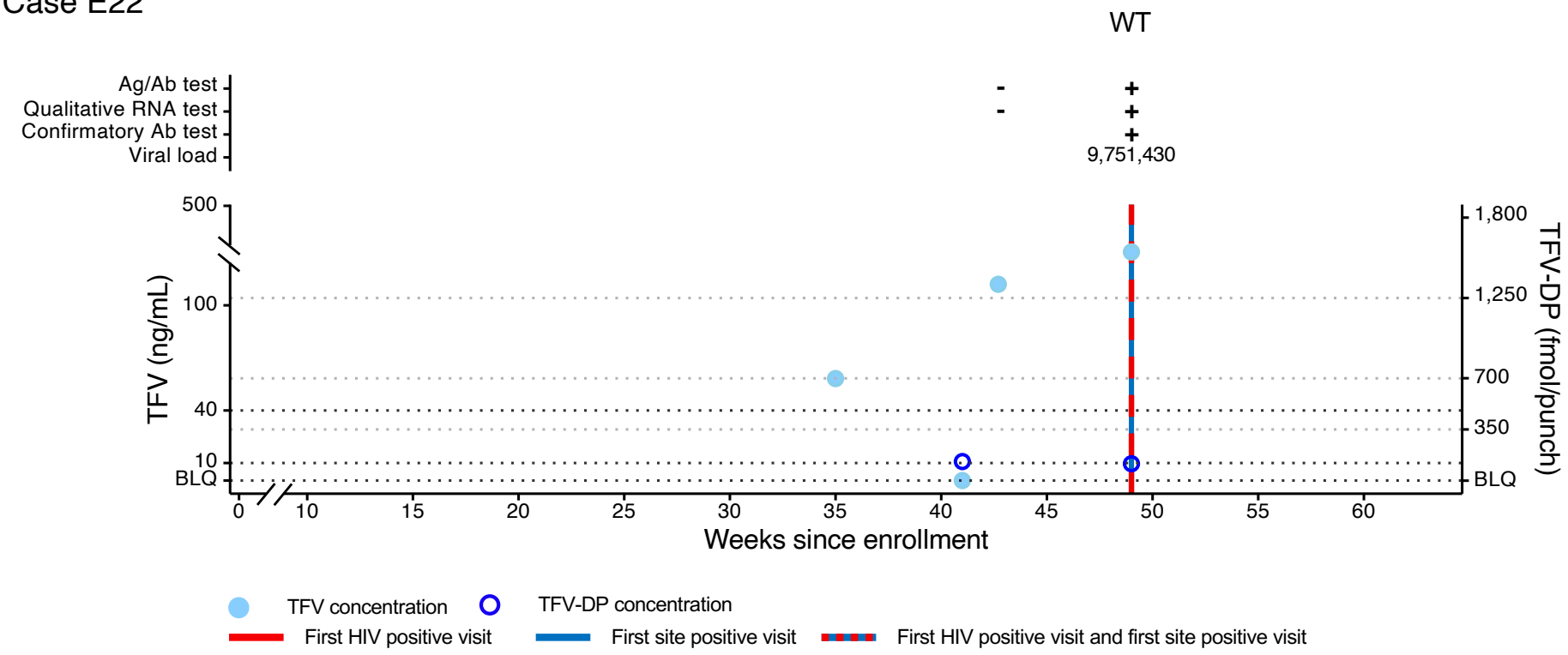
Case E20


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
543,020
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
15
20
25
30
35
40
45
50
55
60
65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

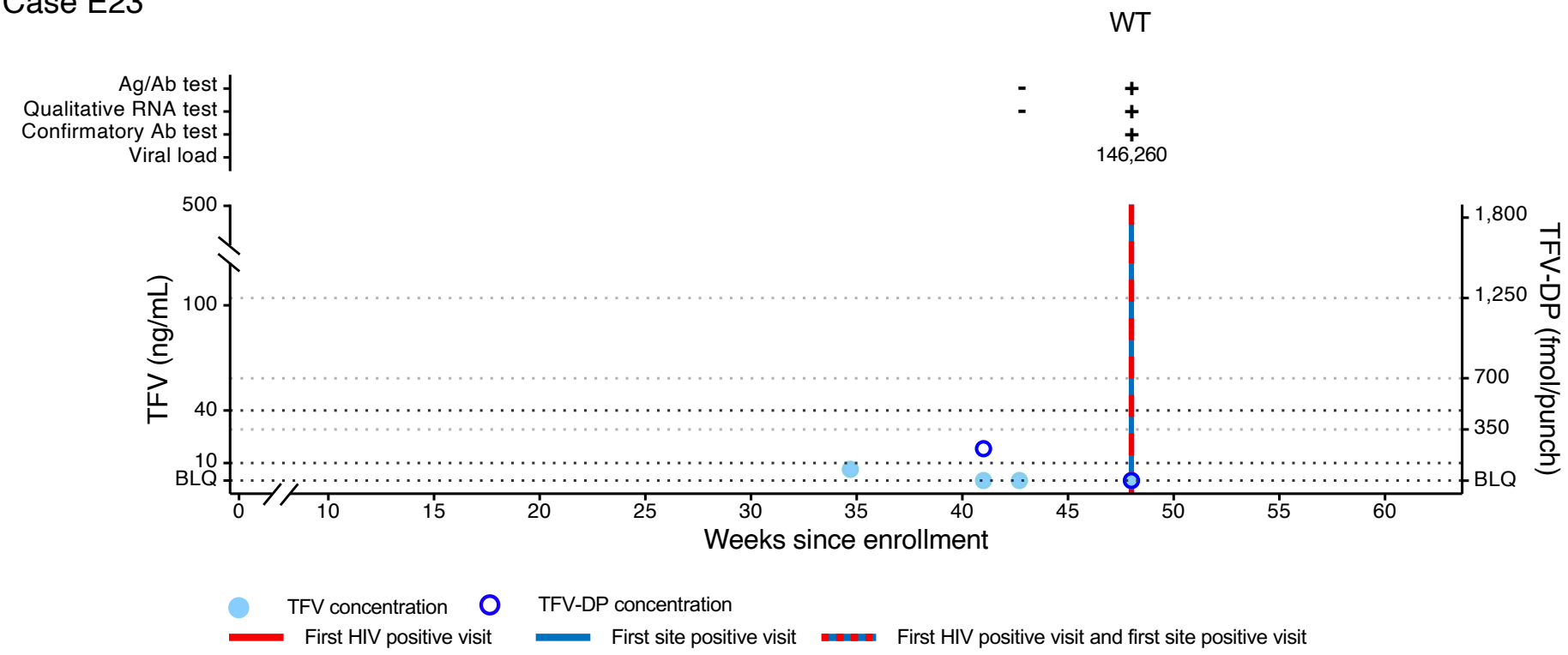
Case E21


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
IND
28,637,470
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
15
20
25
30
35
40
45
50
55
60
65
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

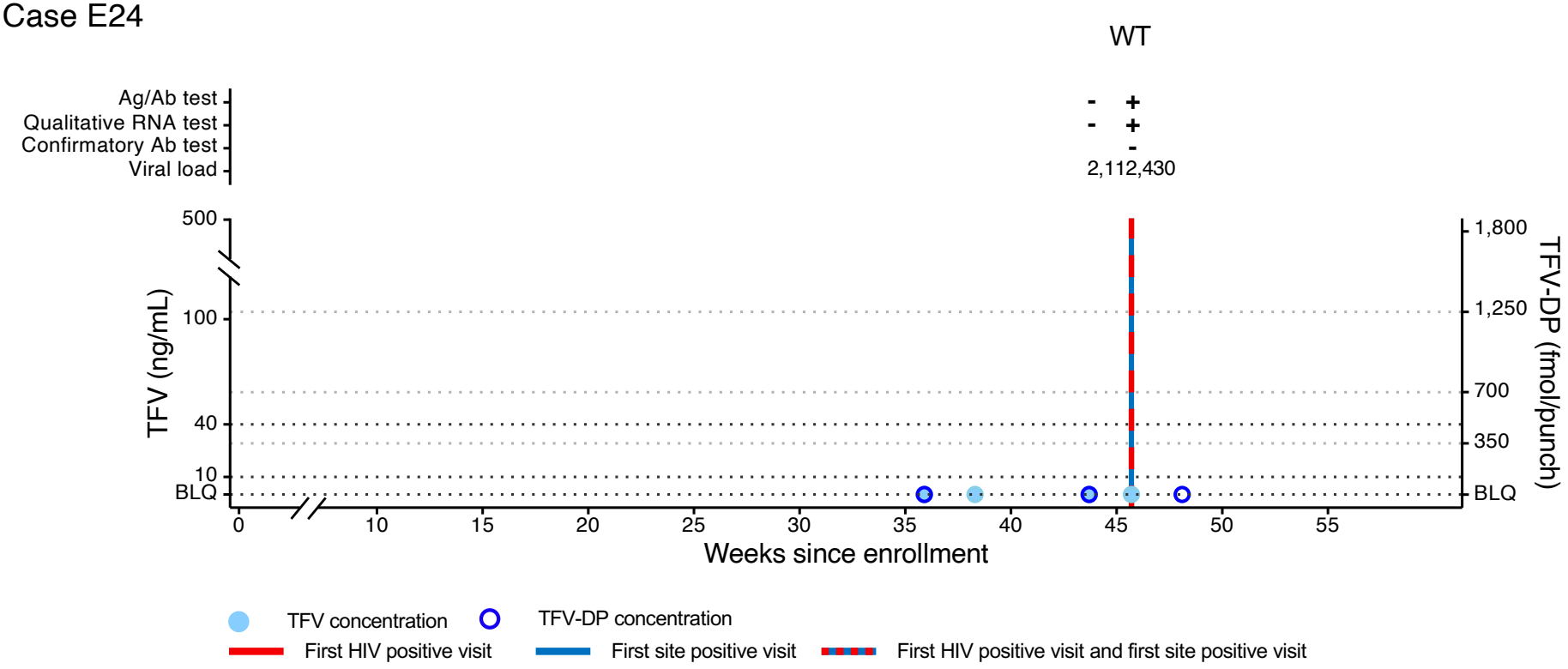
Case E22


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
9,751,430
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
10
15
20
25
30
35
40
45
50
55
60
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

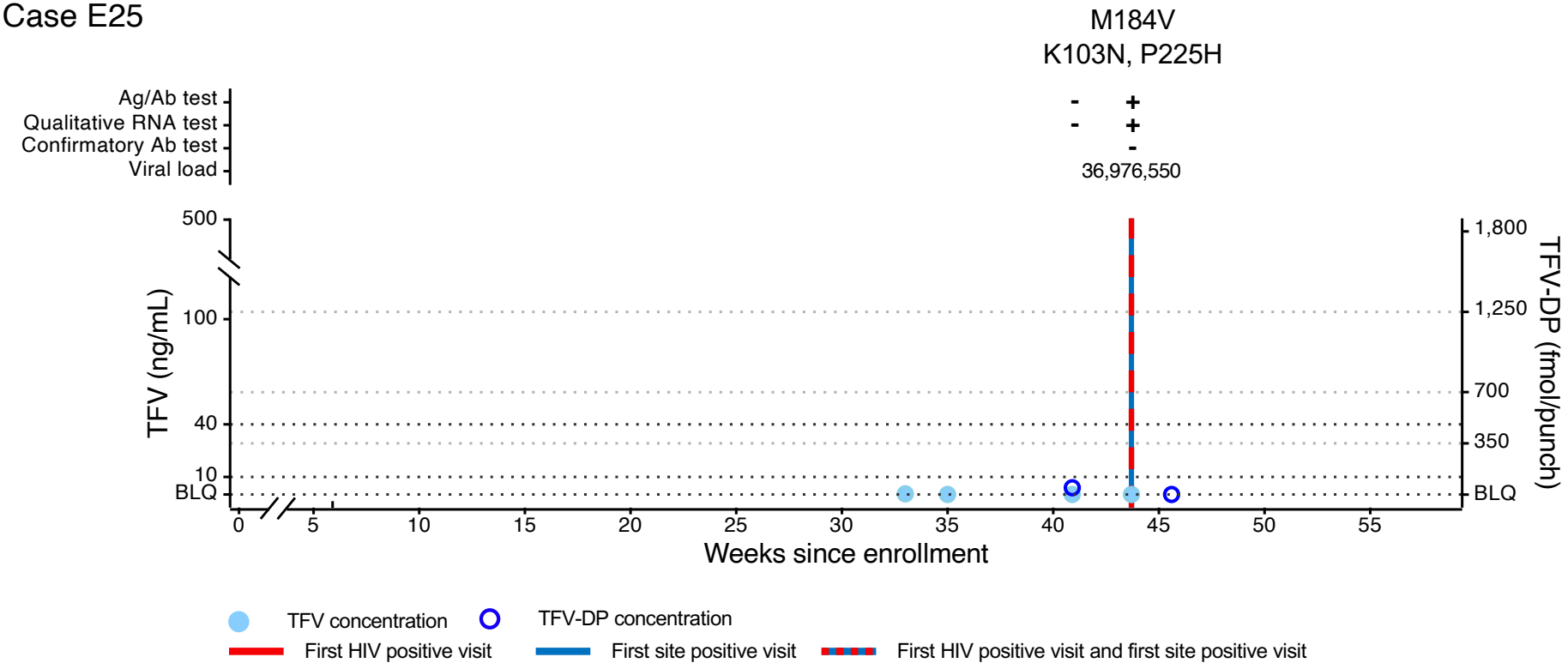
Case E23


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
146,260
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
10
15
20
25
30
35
40
45
50
55
60
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

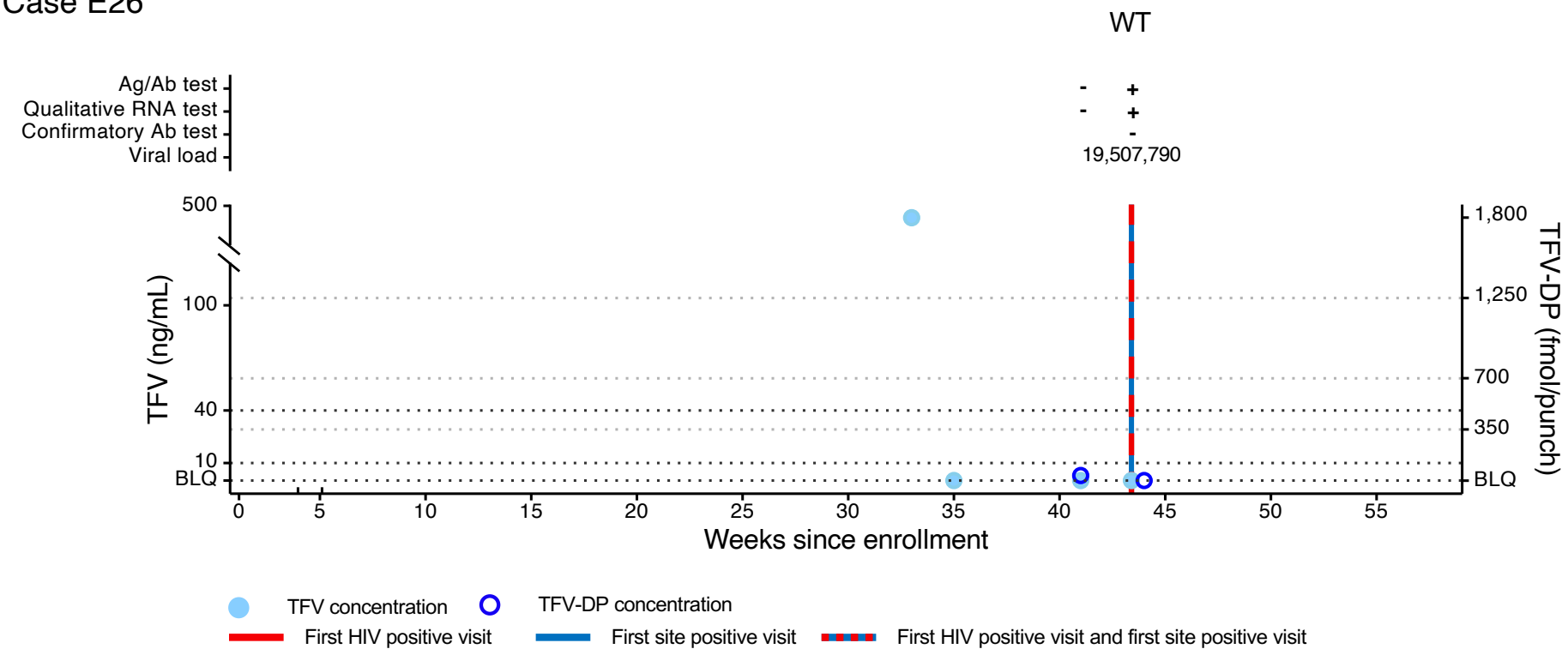
Case E24


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- +
- +
-
2,112,430
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
10
15
20
25
30
35
40
45
50
55
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

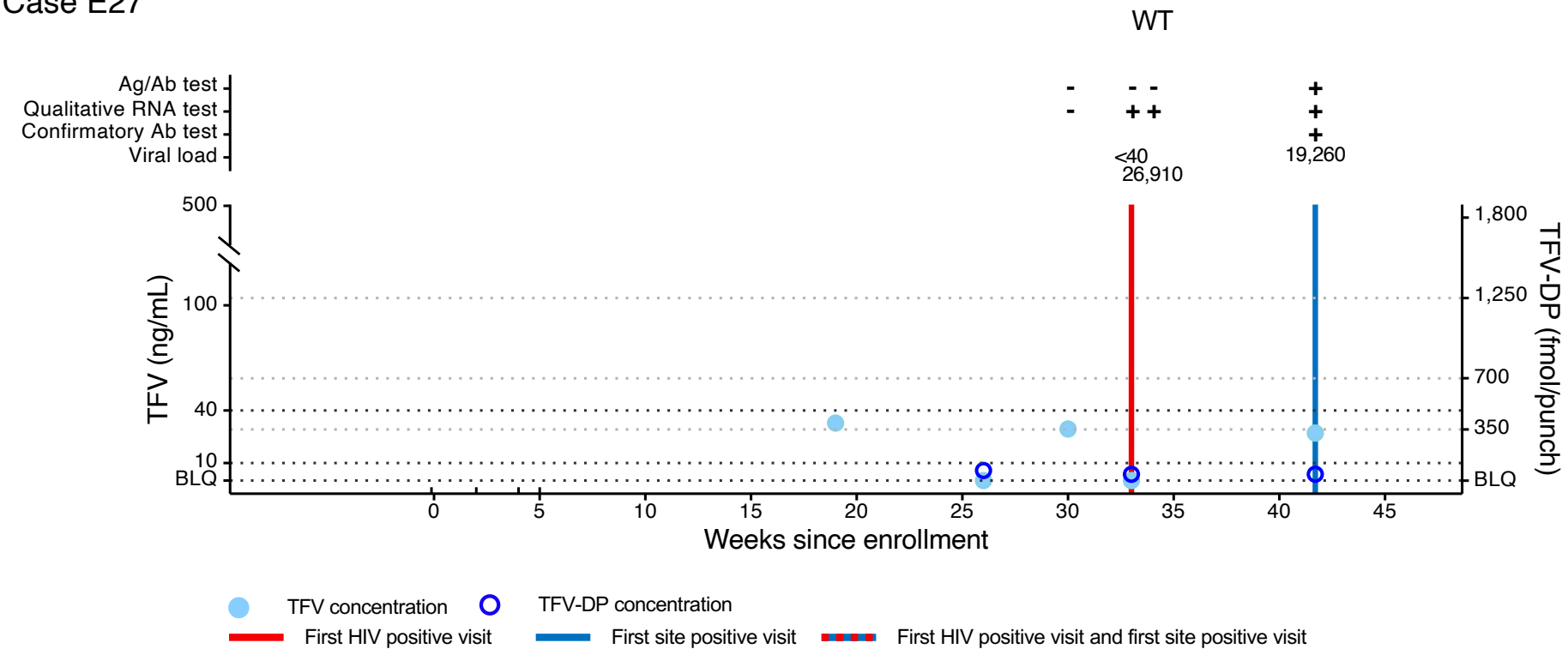
Case E25


M184V
K103N, P225H
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- +
- +
- -
36,976,550
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 5 10 15 20 25 30 35 40 45 50 55
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

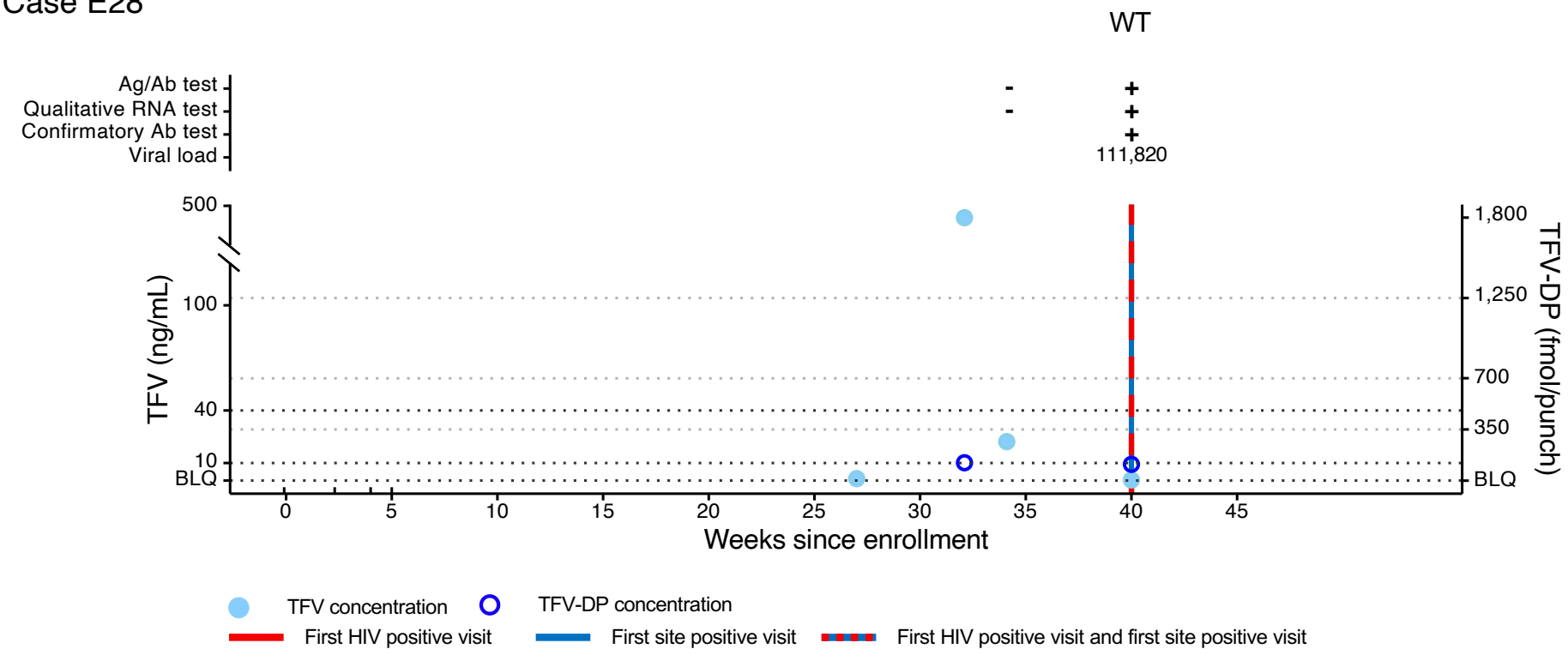
Case E26


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- +
- +
- -
19,507,790
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 5 10 15 20 25 30 35 40 45 50 55
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

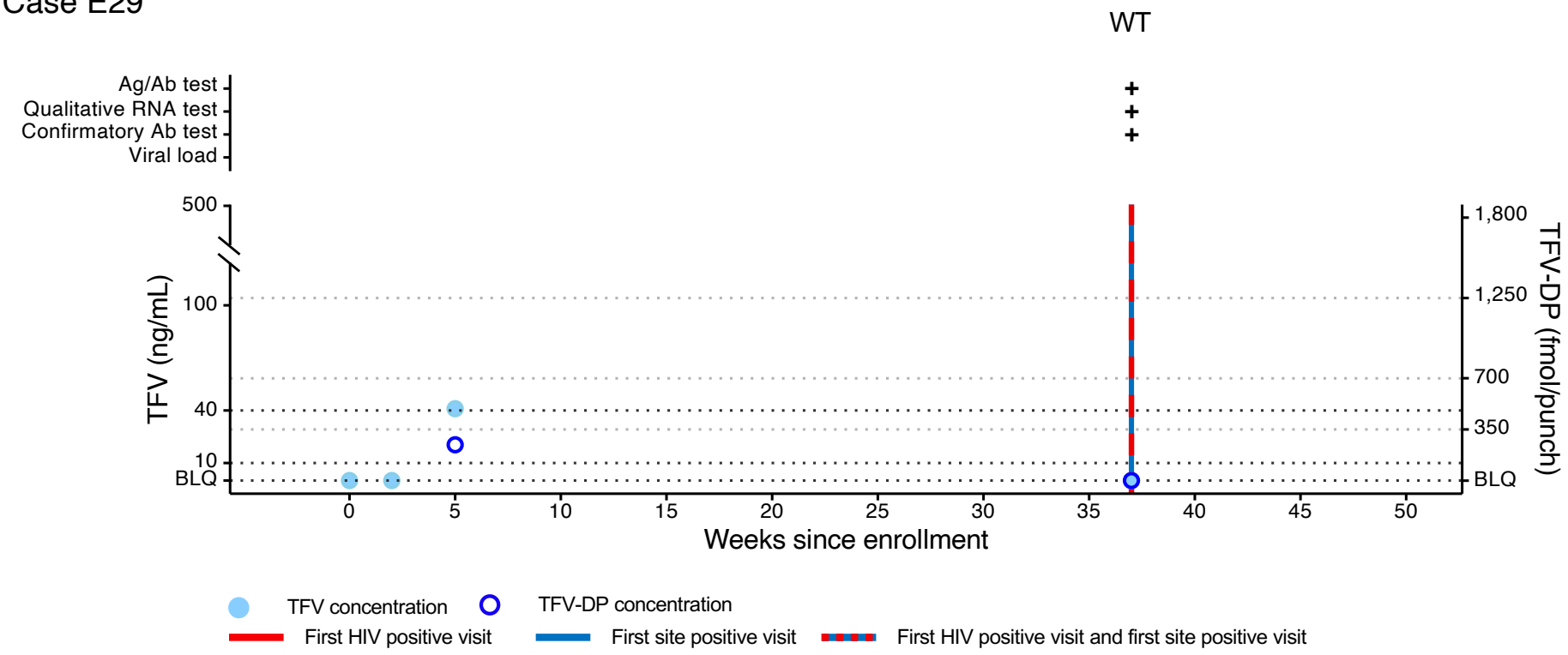
Case E27


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- - -
- + +
+
+
+
<40
26,910
19,260
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
45
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

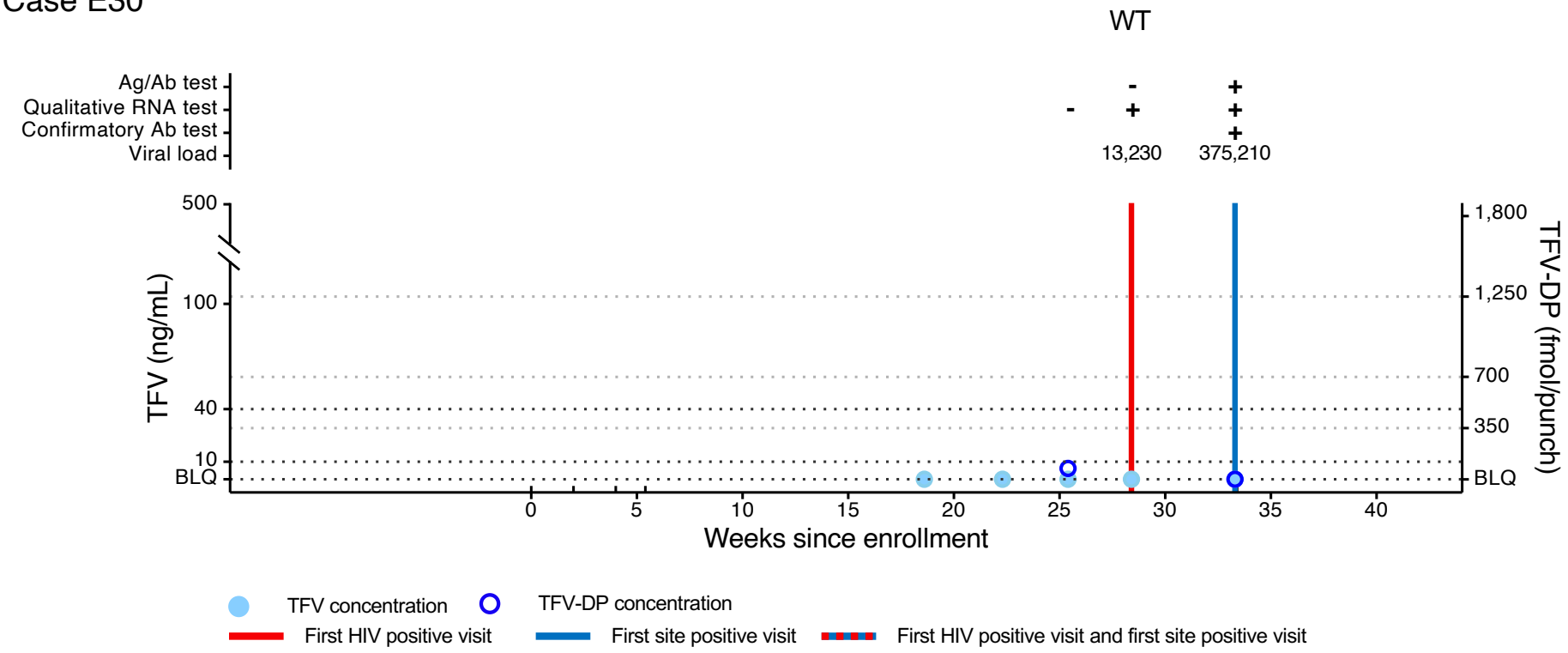
Case E28


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
111,820
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
45
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

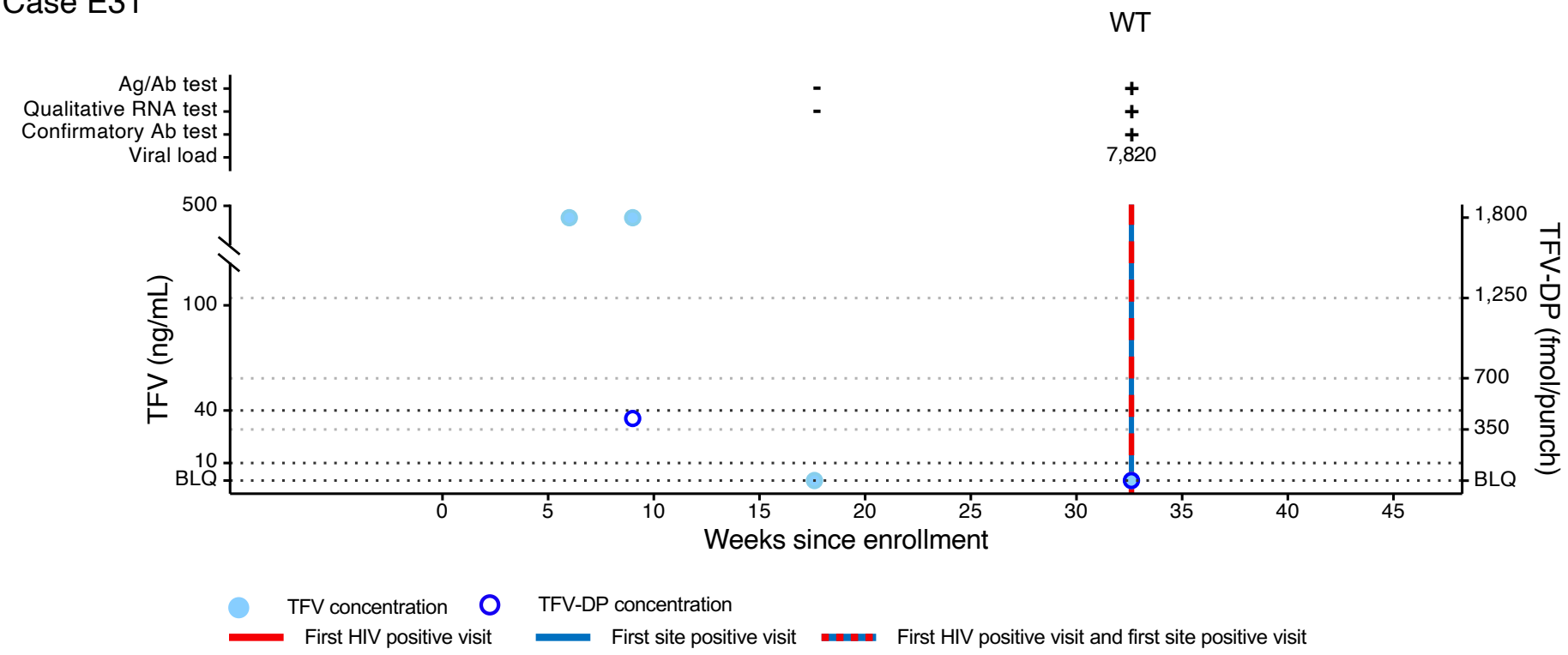
Case E29


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
45
50
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

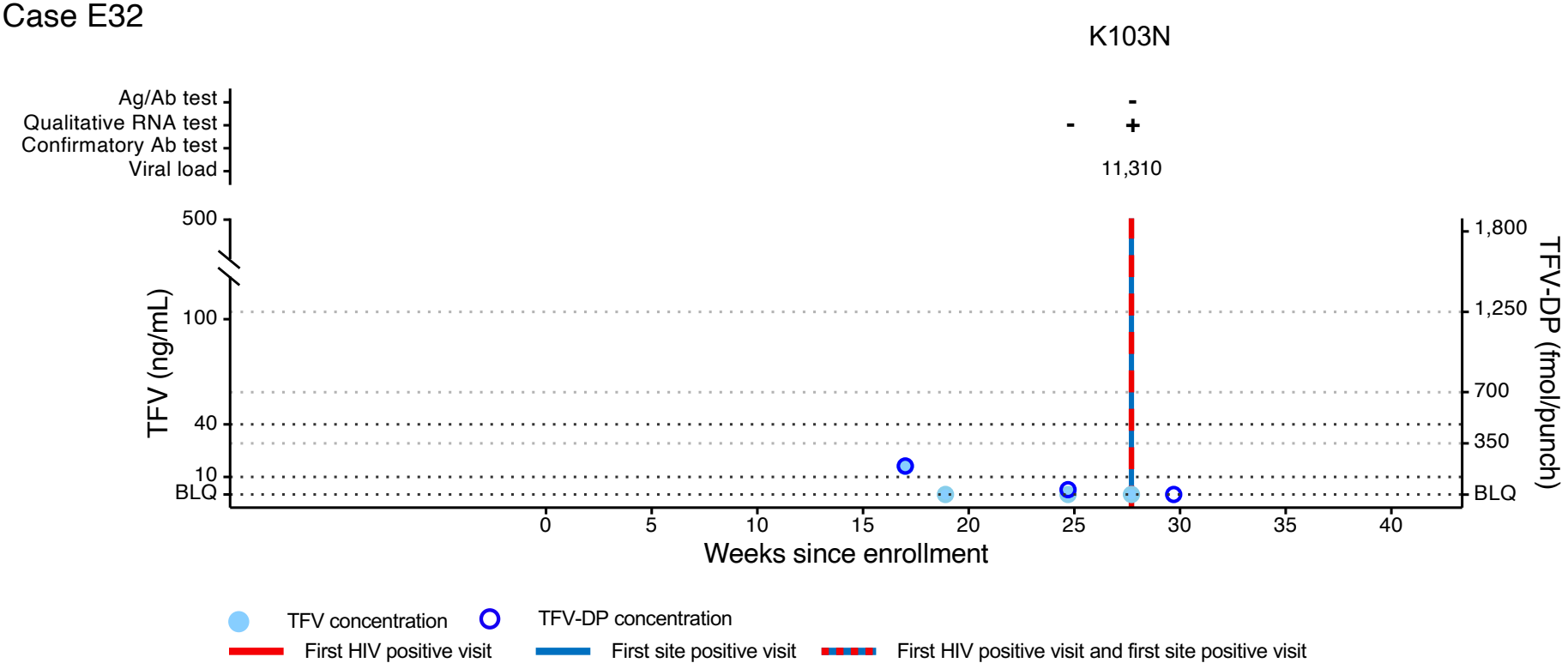
Case E30


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
+
13,230
375,210
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

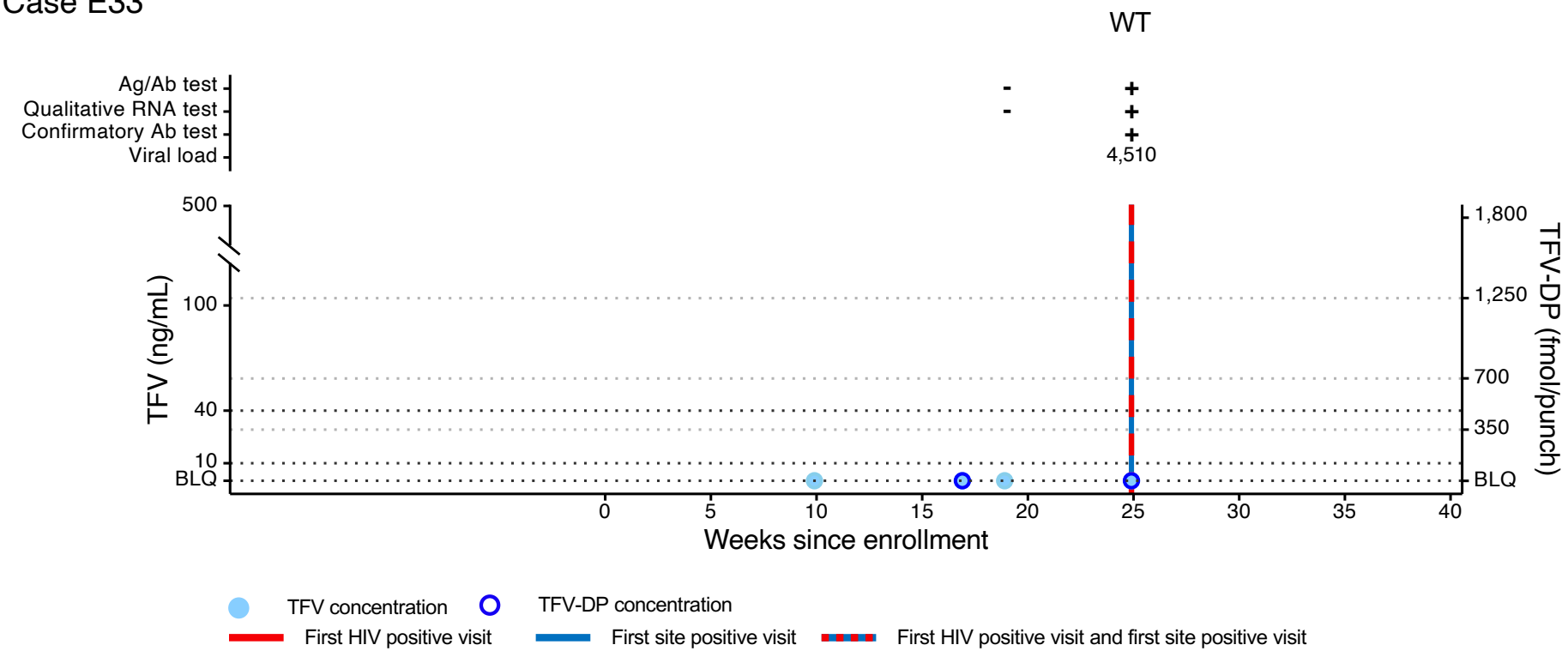
Case E31


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
7,820
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
45
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

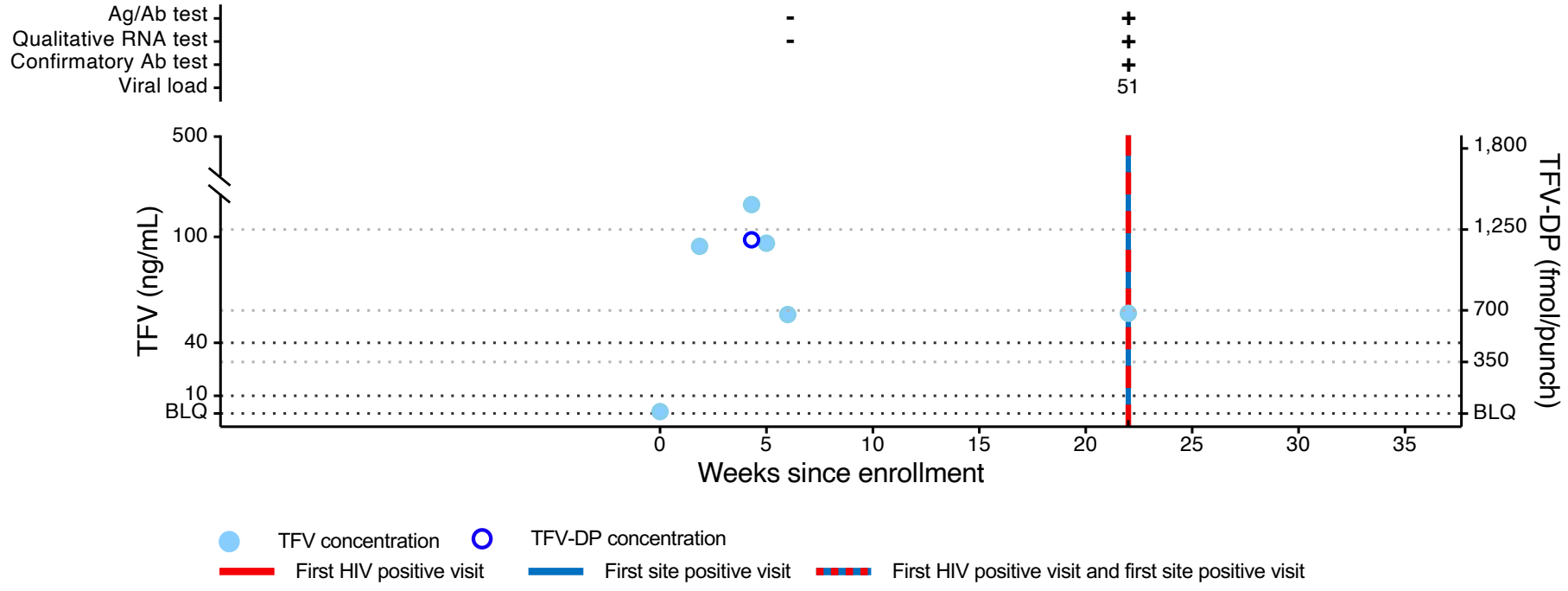
Case E32


K103N
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
11,310
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

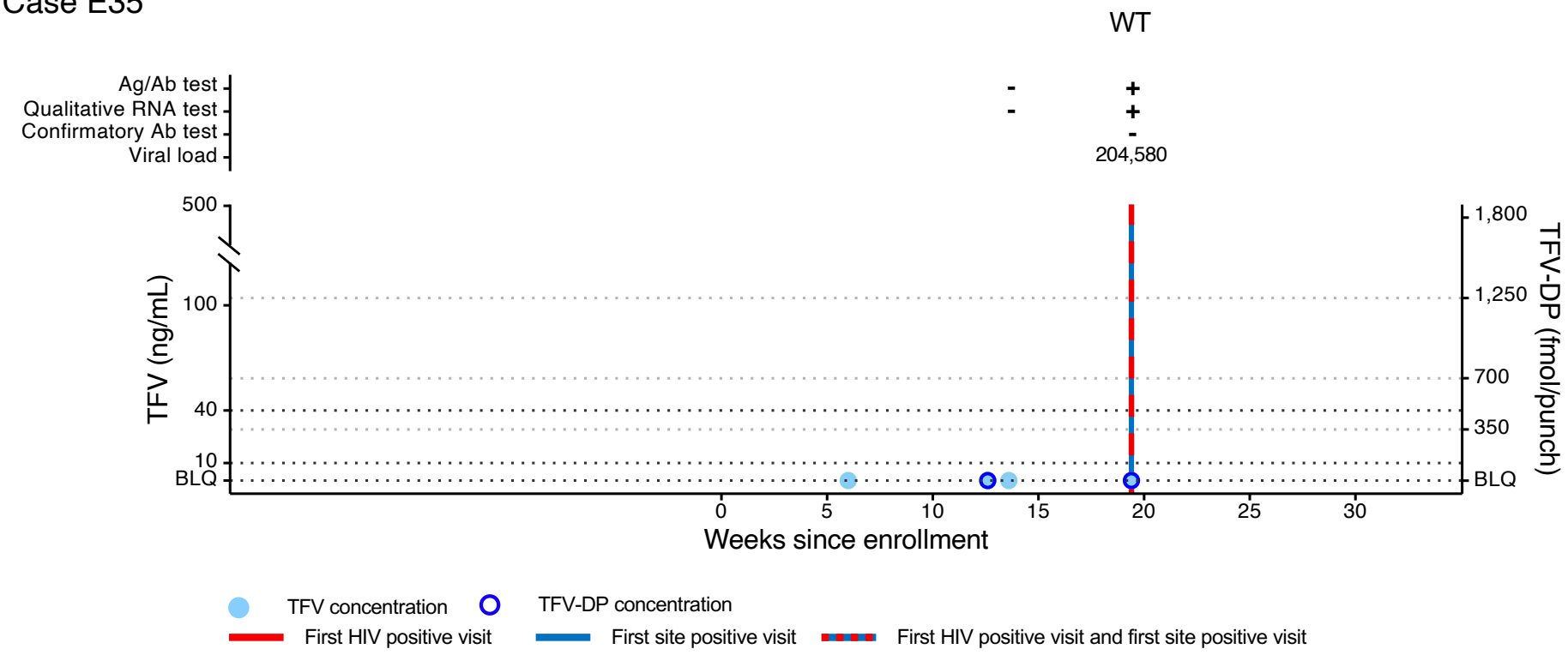
Case E33


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
4,510
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
40
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

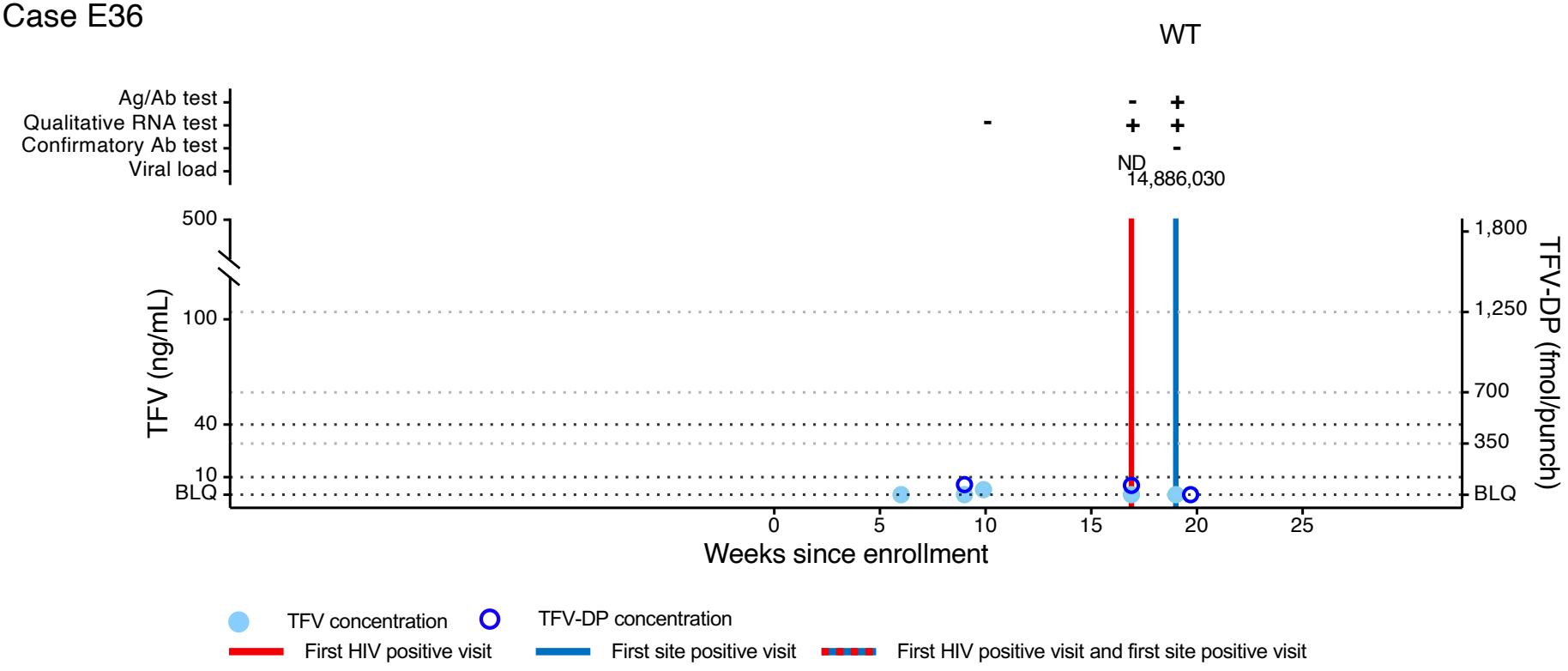
Case E34


Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
51
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
35
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

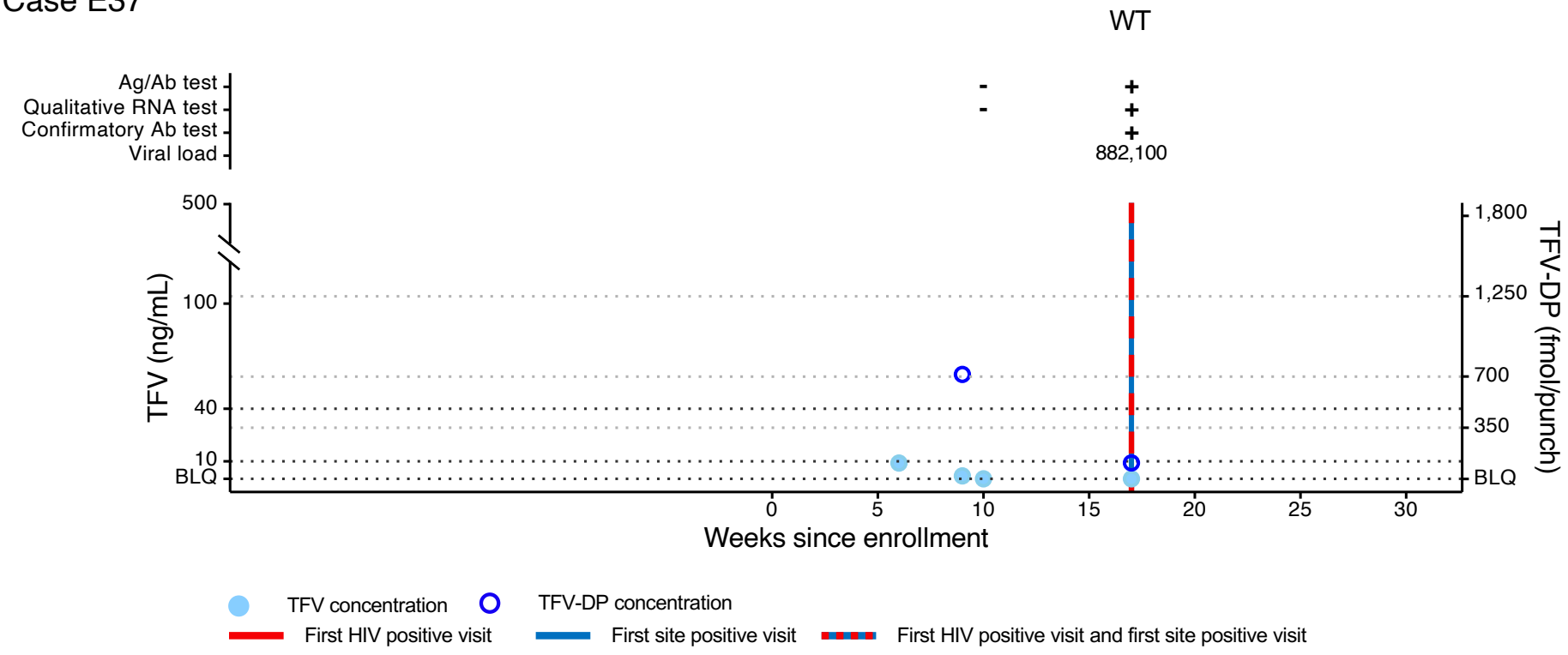
Case E35


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
-
204,580
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

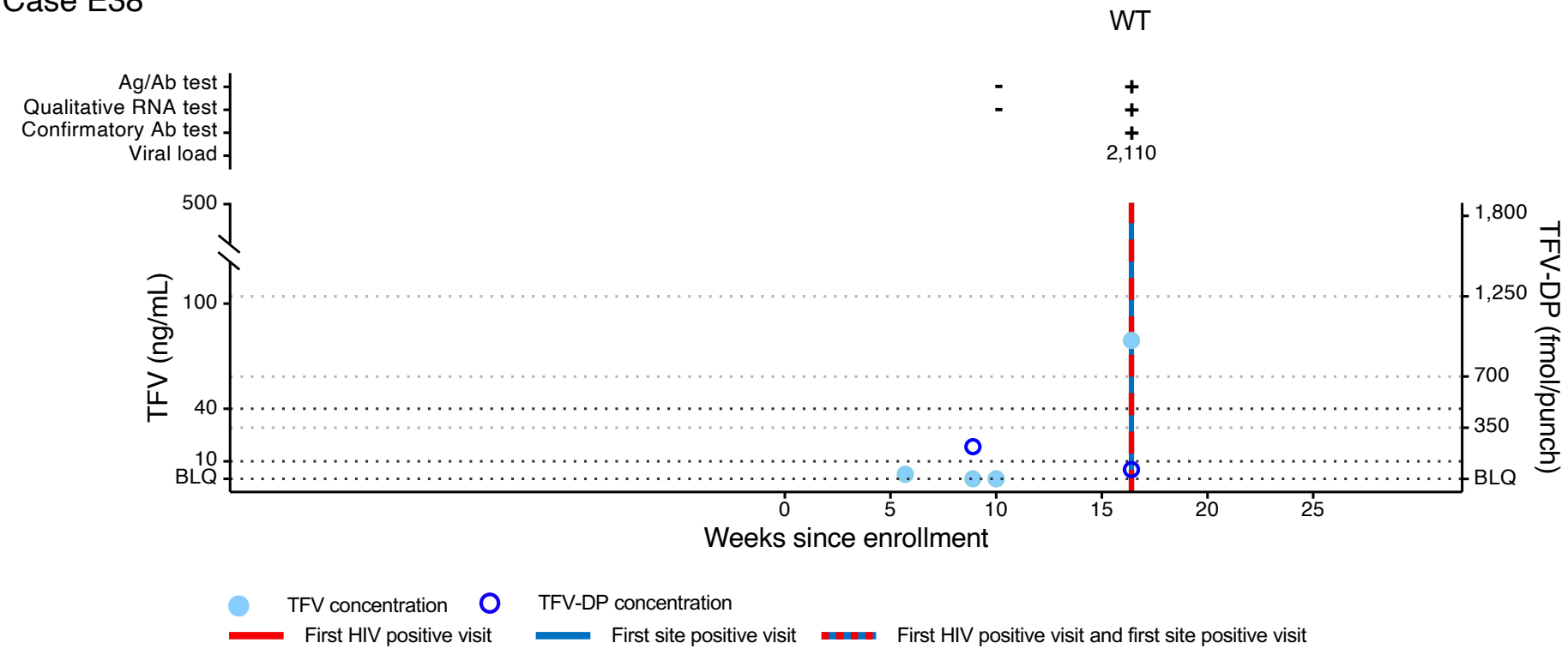
Case E36


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
- + -
+ + -
ND
14,886,030
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

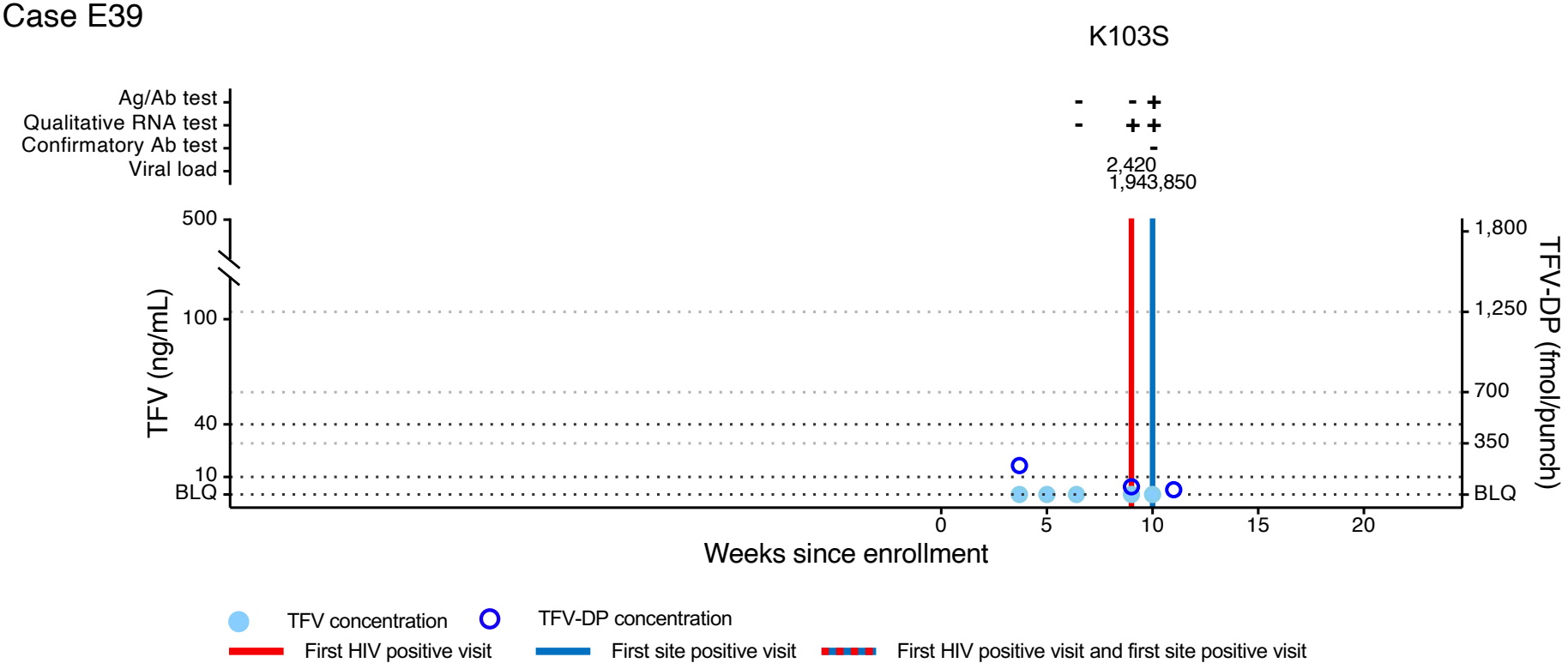
Case E37


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
882,100
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
30
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

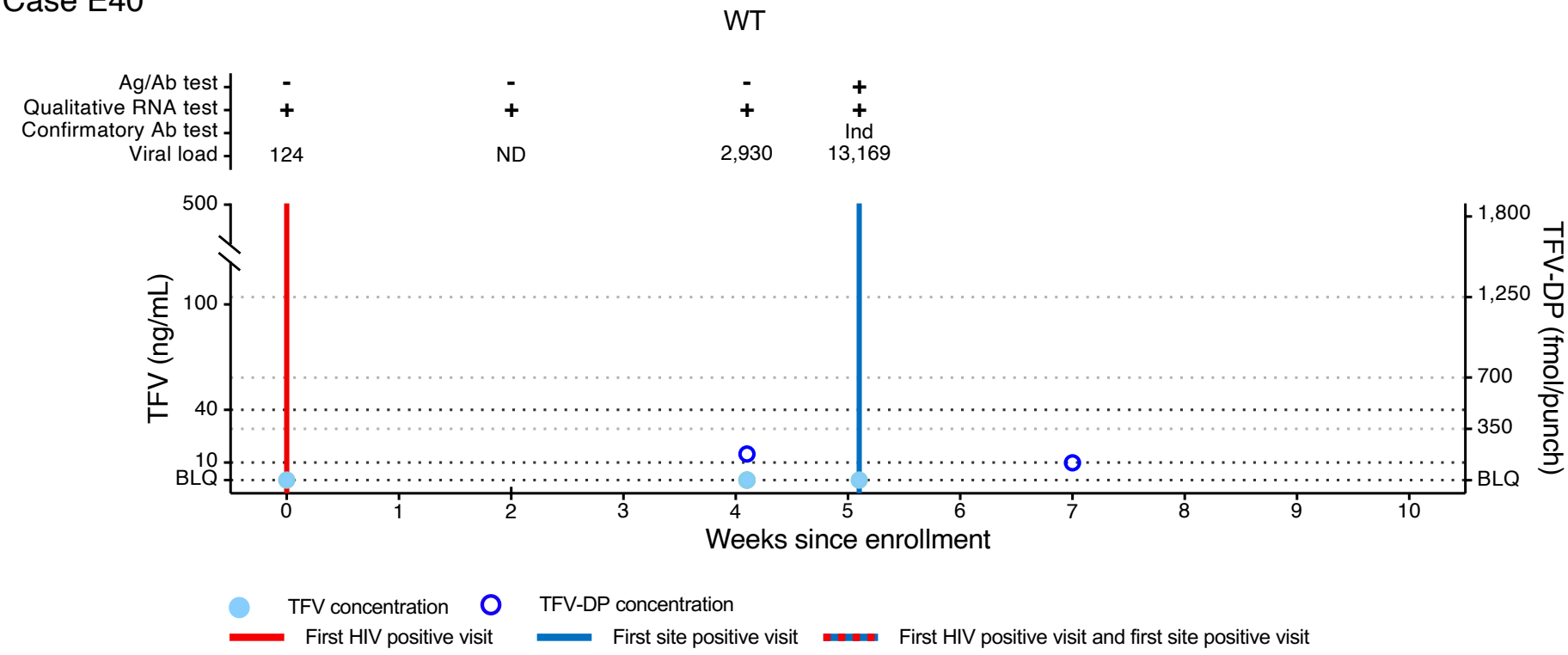
Case E38


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
-
+
+
+
2,110
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
25
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

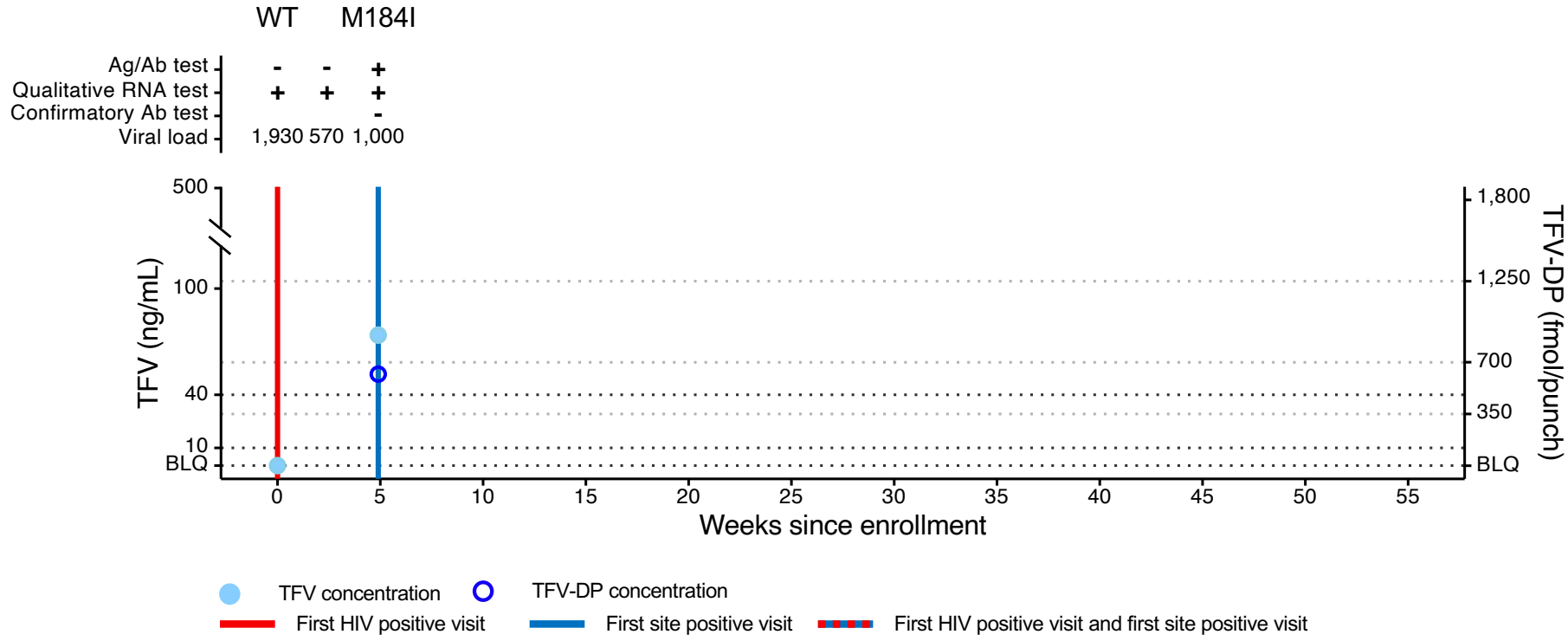
Case E39


K103S
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- - +
- + +
-
2,420
1,943,850
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
5
10
15
20
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

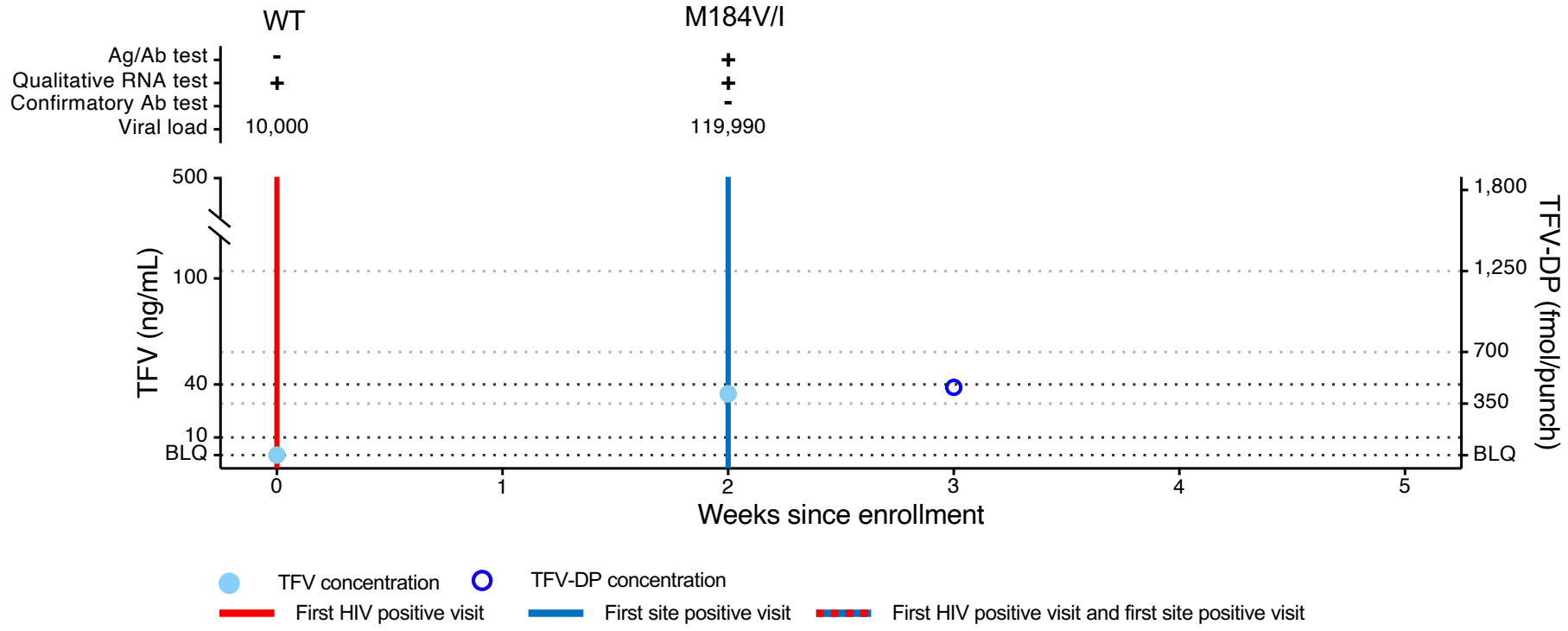
Case E40


WT
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
+
124
-
+
ND
-
+
2,930
+
+
Ind
13,169
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
1
2
3
4
5
6
7
8
9
10
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

Case E41


WT
M184I
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
- - +
+ + +
-
1,930 570 1,000
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0 5 10 15 20 25 30 35 40 45 50 55
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit

Case E42


WT
M184V/I
Ag/Ab test
Qualitative RNA test
Confirmatory Ab test
Viral load
-
+
10,000
+
+
-
119,990
500
100
40
10
BLQ
TFV (ng/mL)
1,800
1,250
700
350
BLQ
TFV-DP (fmol/punch)
0
1
2
3
4
5
Weeks since enrollment
TFV concentration
TFV-DP concentration
First HIV positive visit
First site positive visit
First HIV positive visit and first site positive visit