



Adherence 2017

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145 - Does an adherence-enhancing program increase retention in care in the Swiss HIV Cohort?

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Outline

- Background
- Aim
- Methods (Setting, Intervention, Participants, Design, Inclusion Criteria, Outcomes and Data Analysis)
- Results
- Strengths & Limitations
- Conclusions

Background

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HIV CARE CONTINUUM:

THE SERIES OF
STEPS A PERSON
WITH HIV TAKES
FROM INITIAL
DIAGNOSIS
THROUGH THEIR
SUCCESSFUL
TREATMENT WITH
HIV MEDICATION



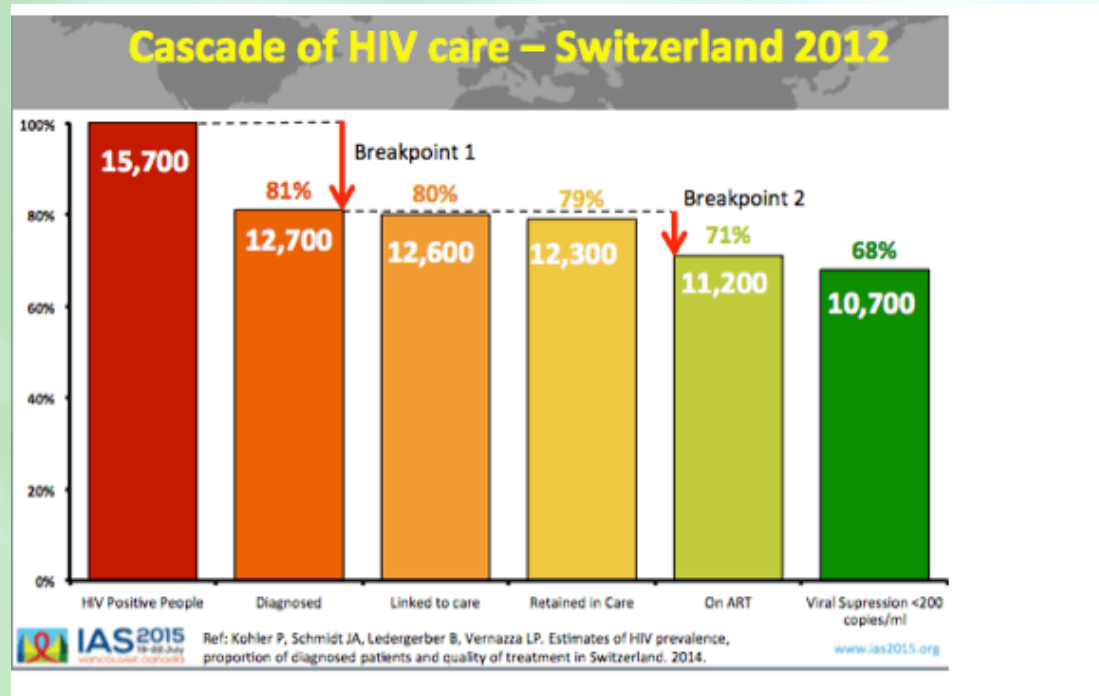
Source: Aids.gov

Background

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- Scalable interventions are needed to achieve low HIV infectiousness by improving HIV treatment adherence and retention in care.
- In Gardner's cascade, adherence to cART is the last step in the cascade to ensure retention and engagement in care.



Gardner EM, et al. The spectrum of engagement in HIV care and its relevance to test-and-treat strategies for prevention of HIV infection. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America. 2011;52(6):793-800.CDC, July 2016, HIV care continuum.

Kohler, Philipp, et al. "The HIV care cascade in Switzerland: reaching the UNAIDS/WHO targets for patients diagnosed with HIV." *Aids* 29.18 (2015): 2509-2515.



Aim

- This study tested a theory-based medication adherence enhancing intervention to increase HIV treatment engagement and retention in care.



Methods

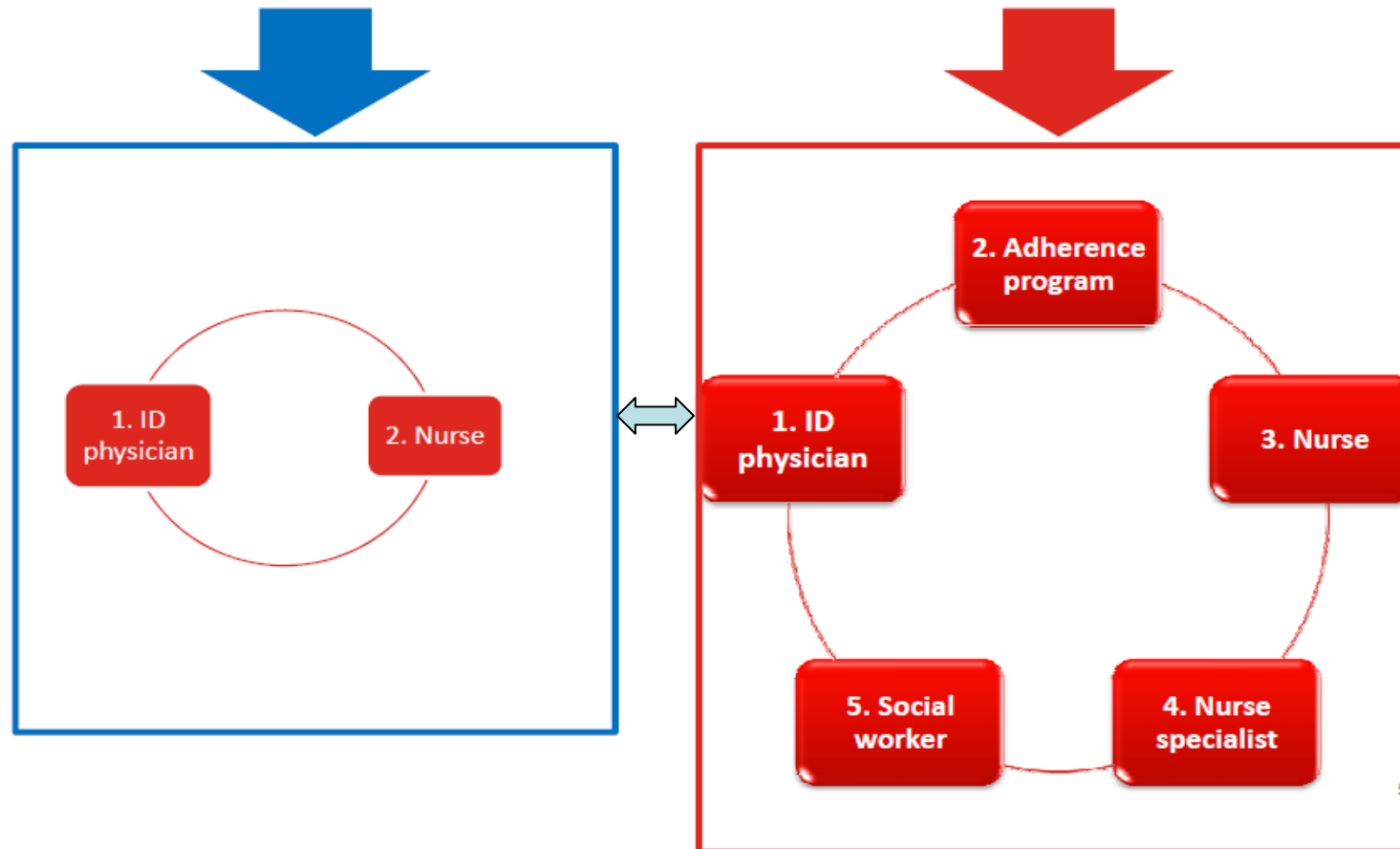
Setting

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How do we work in the HIV tertiary clinic in Lausanne?

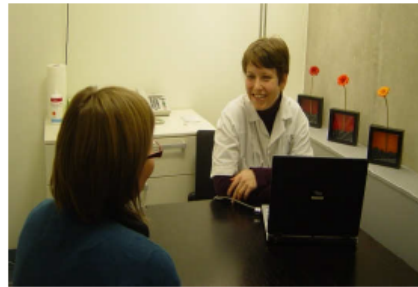
ID physician and nurse decide with the patient the type of care required





Intervention

Medication Adherence program in Lausanne



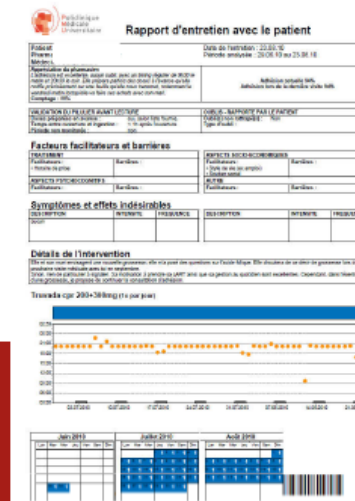
Motivational interviewing patient- pharmacist (MI)

- Face-to-face
- Patient-centered
- Directive & goal-oriented
- Short but repeated



Medication Event Monitoring System (MEMS®)

- Objective and dynamic measure of daily medication intake



Medication adherence report

- Data collection and secure record
- Feedback to the patient/physician
- Continuity of care



Participants

- Part of the SHCS.
- Comparative populations in Geneva and Lausanne.
- Medical visits at least every 6 months combined with a laboratory visit.
- Laboratory visits are scheduled with nurses, and often precede medical visits.
- Reminders sent to those who miss their medical appointments (1 letter).



Design and Inclusion Criteria

- We retrospectively compared two French speaking centers participating in the SHCS between 2004-2012.
- IG and CG included all patients attending the Lausanne and Geneva centers for > 6 months.
- All patients in the Lausanne center were included in the IG.



Outcomes and Data Analysis

- Primary and secondary outcomes were defined as a **>6-month** (LTFU6) and **>12-month** (LTFU12) gaps of care (LTFU) intervals without any **registered medical laboratory visit**.
- The incidence of **medical visit gaps**, length of the gaps and time till the first gap in care were also calculated.
- Inverse-probability and treatment weights (IPTW) were used to adjust for the differences in the patient populations at the two centers.



Results

Table 1: Baseline characteristics*

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	Intervention n=451	Standard of Care n=311
Male, n (%)	281(63.31)	194 (62.38)
Age, median (IQR)	37(30,45)	35(30,45)
Non-White, n (%)	184(40.80)	165(53.05)
Higher education, n (%)	125(27.72)	150(48.23)
Mode of transmission, n (%)		
MSM	141(31.26)	81(26.05)
Heterosexual	244(54.10)	190(61.09)
IVDU	42(9.31)	19(6.11)
CD4 cells, median (IQR)	246(127,329)	367(212,483)
Prior ART treatment, n (%)	174(38.58)	215(69.13)
Time since HIV infection (years), median (IQR)	0.4(0,3)	0.2(0,0.6)
Used MEMS, n (%)	180(39.91)	0(0)
ART class, n (%)		
NNRTI	237 (52.55)	181(58.20)
PI	121 (26.83)	77 (24.76)
Boosted PI	69 (15.30)	30 (9.65)

* Baseline is the first follow-up visit closest to the date of starting ART



Table 2: Effect of the intervention on 6-month treatment gaps using IPTW to adjust for different patient populations at the two centers

	N	OR (95% CI)	p	HR (95% CI)	p
Crude	759	0.45 (0.33 – 0.62)	<0.001	0.62 (0.52 – 0.75)	<0.001
Adjusted for covariates	634	0.41 (0.27 – 0.64)	<0.001	0.59 (0.48 – 0.73)	<0.001
IPTW weighted model	634	0.43 (0.28 – 0.65)	<0.001	0.67 (0.53 – 0.86)	0.001

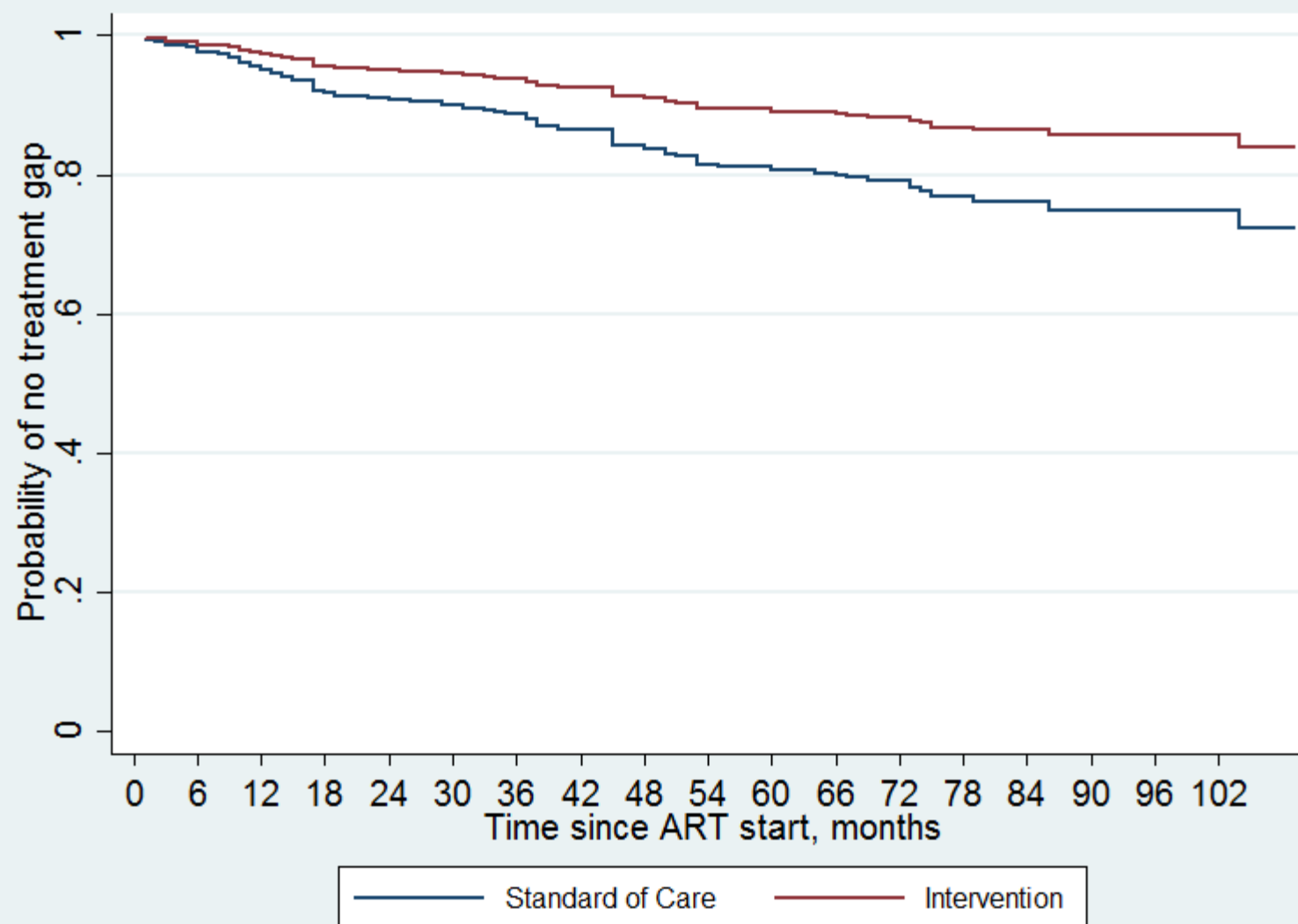
Covariates adjusted for: age, gender, ethnicity, citizenship, education, income source, risk group for HIV infection, depression, psychiatric problems, smoking, living alone, hepatitis B, hepatitis C, CD4 at cART start, AIDS, prior treatment with cART, cART class, and years living with HIV.



- The IG included 451 patients, CG 311. In the IG, 180 (40%) took part in the medication adherence program for a median of 109 weeks (IQR: 39-189).
- LTFU6 was significantly more likely to happen in the CG vs. IG (74.6% vs. 56.9%, $p < 0.001$).
- LTFU12 could be evaluated in 709 (93%) patients and was significantly more likely to occur in the CG compared the IG (22.6% vs. 12.5%, $p < 0.001$).



- The **median time until the first treatment gap** was significantly longer in the IG VS CG (120 vs 84 weeks, $p < 0.001$).
- The incidence of visit gaps was significantly reduced in **those who participated in the medication adherence program (n=180)** vs. who did not in Lausanne (n=268) (44.4% vs. 65.3%, $p < 0.001$).





Strengths & Limitations

Strength:

- This study is the first to show the positive impact of a theory-based inter-professional medication adherence intervention on retention in care.

Limitations:

- Due to a lack of randomization, advanced statistical approaches were used to adjust for differences in patient characteristics to attempt to balance the two centers as in a controlled trial.
- The IG had more reminders by the pharmacy, and 1 letter + 2 phone calls in case they missed their pharmacy visit.
- We did not compare adherence or clinical outcomes between 2 centers (future work).
- We did not do a cost effective analysis (future work).



Conclusions

- This study showed the effectiveness of a theory-based adherence enhancing intervention to reduce loss to follow up among HIV+ adults.
- The intervention significantly reduced LTFU at 6 and 12 months.

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Extra

	N	OR (95% CI)	p	HR (95% CI)	p
Crude	759	0.45 (0.33 – 0.62)	<0.001	0.62 (0.52 – 0.75)	<0.001
Adjusted for covariates	634	0.41 (0.27 – 0.64)	<0.001	0.59 (0.48 – 0.73)	<0.001
Adjusted for propensity score	634	0.51 (0.34 – 0.76)	0.001	0.62 (0.50 – 0.76)	<0.001
Adjusted for propensity score + covariates	634	0.45 (0.29 – 0.69)	<0.001	0.61 (0.49 – 0.76)	<0.001
IPTW weighted model	634	0.43 (0.28 – 0.65)	<0.001	0.67 (0.53 – 0.86)	0.001
SMR weighted model	709	0.35 (0.21 – 0.56)	0.01	0.67 (0.51 – 0.88)	0.004

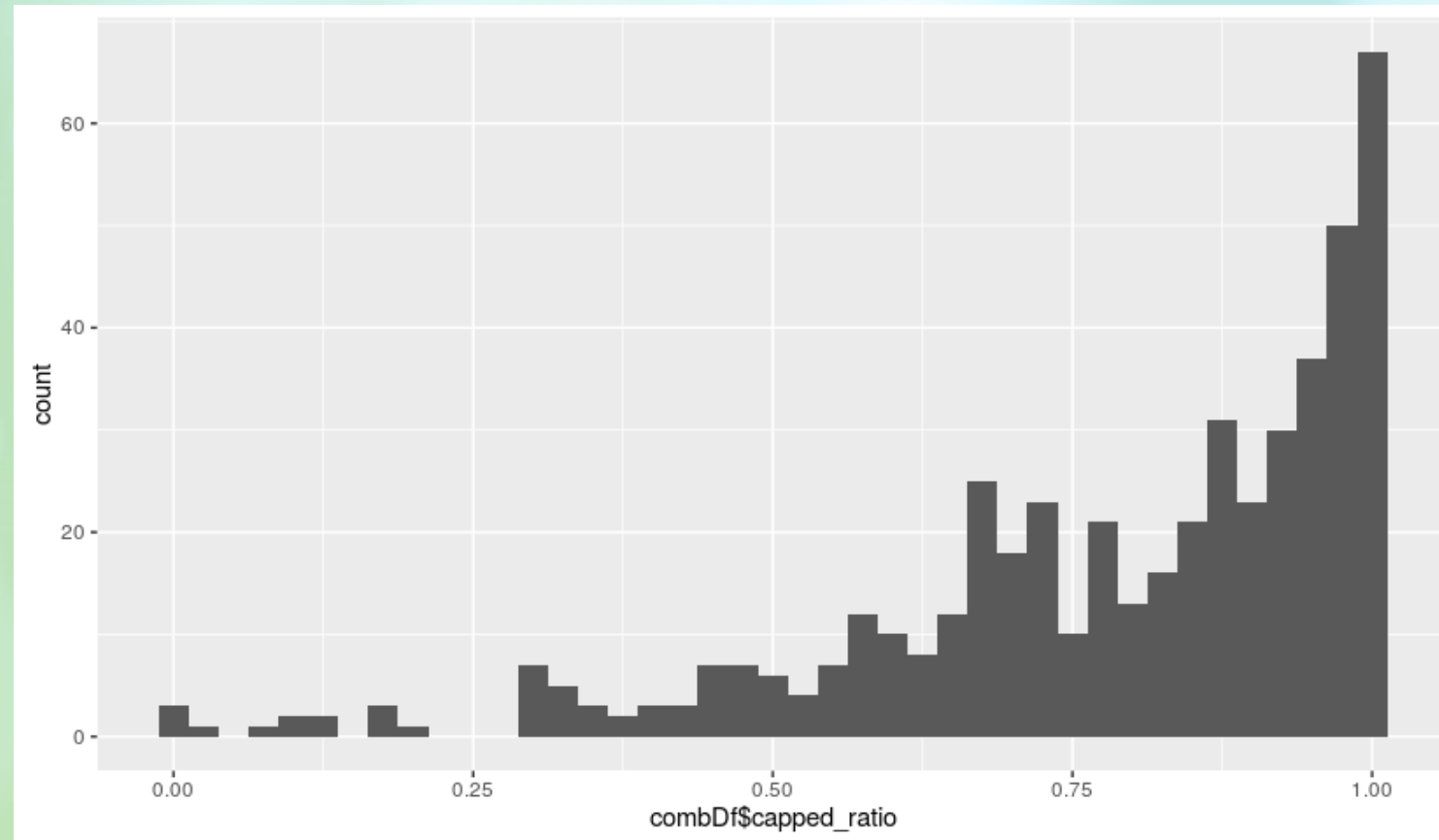


Extra

- The average propensity score for those in the intervention was 0.68 (sd 0.19) compared to 0.46 (sd 0.22) for those in the standard of care. The average IPTW weights for those in the intervention was 1.67 (sd 0.78) compared to 2.47 (sd 2.04) for those in the standard of care. All models produced similar results and there was a clear effect of the intervention on treatment gaps >6 months.



Adherence in IG (2008-2016) , n= 524





- The **percentage of patients with visit gaps** was compared using chi-square test. The **median length of the gap and the median time until the first gap** in care were compared using Wilcoxon rank sum test.
- The incidence of 12-month visit gaps was reduced in **those who participated in the medication adherence program** vs. those who did not (10.2% vs. 13.8%, $p=0.29$) however the difference was not significant.
- Of these, 16.6% had a gap of care of 12 months or more after a median of 91 weeks of treatment (IQR: 47-193) with a length of the gap lasting a median of 72 weeks (IQR: 58-108) instead of the planned 52 week-interval between 2 lab tests.
- More than half of the patients (64.2%) had a gap of care of 6 months or more after a median of 106 weeks of treatment (IQR: 55-175) and lasting a median of 30 weeks (IQR: 27-38) instead of the planned 24 week-interval between 2 lab tests. My comment on the April 4 version has not been addressed: