



MRC  
Clinical  
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**Penta**  
Child Health Research

# SARS-COV-2 IN CHILDREN & ADOLESCENTS LIVING WITH HIV IN EUROPE & SOUTH AFRICA

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On behalf of the European Pregnancy and Paediatric Infections Cohort Collaboration (EPPICC)

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Smarter Studies  
Global Impact  
Better Health

# Background

- PLWHIV may be at greater risk of severe COVID-19 outcomes, including mortality <sup>1</sup>
- Seroprevalence studies of SARS-CoV-2 antibody amongst adults living with HIV have reported varying results (e.g. 2% in Germany, 55% in India)<sup>2,3</sup>
- There are currently no published data on seroprevalence of SARS-CoV-2 antibody in children and adolescents living with HIV (CALWHIV)
- Aim: to estimate prevalence of SARS-CoV-2 antibody in CALWHIV and how this changes over time, overall and by key age groups and regions

<sup>1</sup> Venturas Semin Respir Crit Care Med 2023;

<sup>2</sup> Kaddu-Mulindwa et al, HIV Med 2021;

<sup>3</sup> Ghate et al, Int Assoc Prov AIDS Care 2022

# Study design and setting

- Repeat SARS-CoV-2 seroprevalence study within:
  - 7 cohorts in 5 countries in EPPICC
  - CALWHIV and HIV negative adolescents in CTAAC (Cape Town Adolescent Antiretroviral Cohort)
- Eligibility:
  - All participants <25 years
  - CALWHIV diagnosed with HIV <18 years



# Methods

- Consenting participants gave two blood samples at routine visits (separated by ~6 months), between May 2020 and July 2022
- Tested for SARS-CoV-2 antibody using locally available tests (~75% anti-S IgG)
- Clinical data extracted at each visit
- Participant questionnaire on SARS-CoV-2 risk factors and vaccine uptake
- Data on circulating variants obtained from GISAID<sup>1</sup>
- Calculated percentage of participants / tests positive overall and by sex, age, setting and calendar time

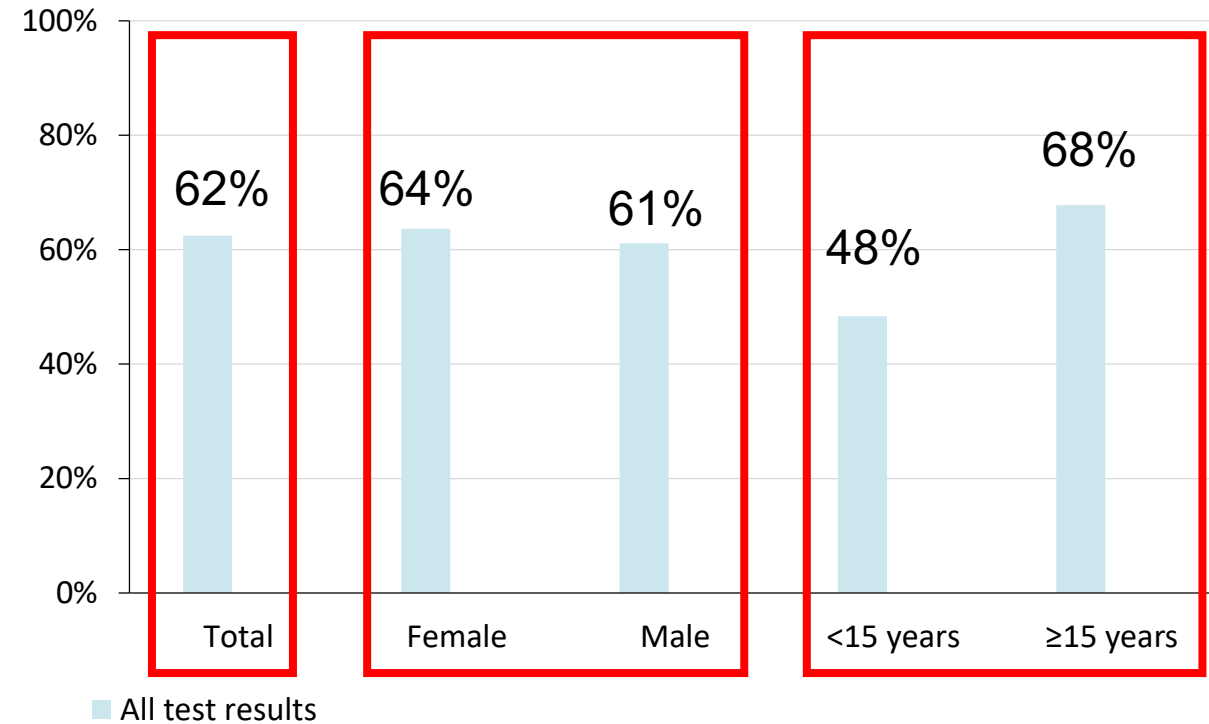
# Results: baseline characteristics (N = 906)

Characteristic	Median [IQR] or n (%)
Living with HIV	803 (89%)
Sex, female	477 (53%)
Age, years	17.1 [14.7 - 19.2]
<i>Among children / adolescents living with HIV (n = 803)</i>	
ART before enrolment (n = 765)	761 (99%)
Age at ART start, years (n = 763)	3.0 [0.9 – 6.7]
CD4 count, cells/ $\mu$ L (n = 725)	666 [478 - 858]
Undetectable viral load* (n = 772)	588 (76%)

# SARS-CoV-2 results at end of follow-up

COVID-19 variable	n (%)
Documented PCR+ or vaccination (n=863)	228 (26%)
Previous SARS-CoV-2 PCR+ (n = 870)*	46 (5%)
Self-reported COVID-19 (n = 873)	95 (11%)
Received $\geq 1$ vaccine dose (n = 873)	203 (23%)
<b>Serological status during follow-up</b>	
<b><math>\geq 1</math> +ve serology result (n = 903)</b>	<b>564 (62%)</b>

Percentage with  $\geq 1$  positive serology result

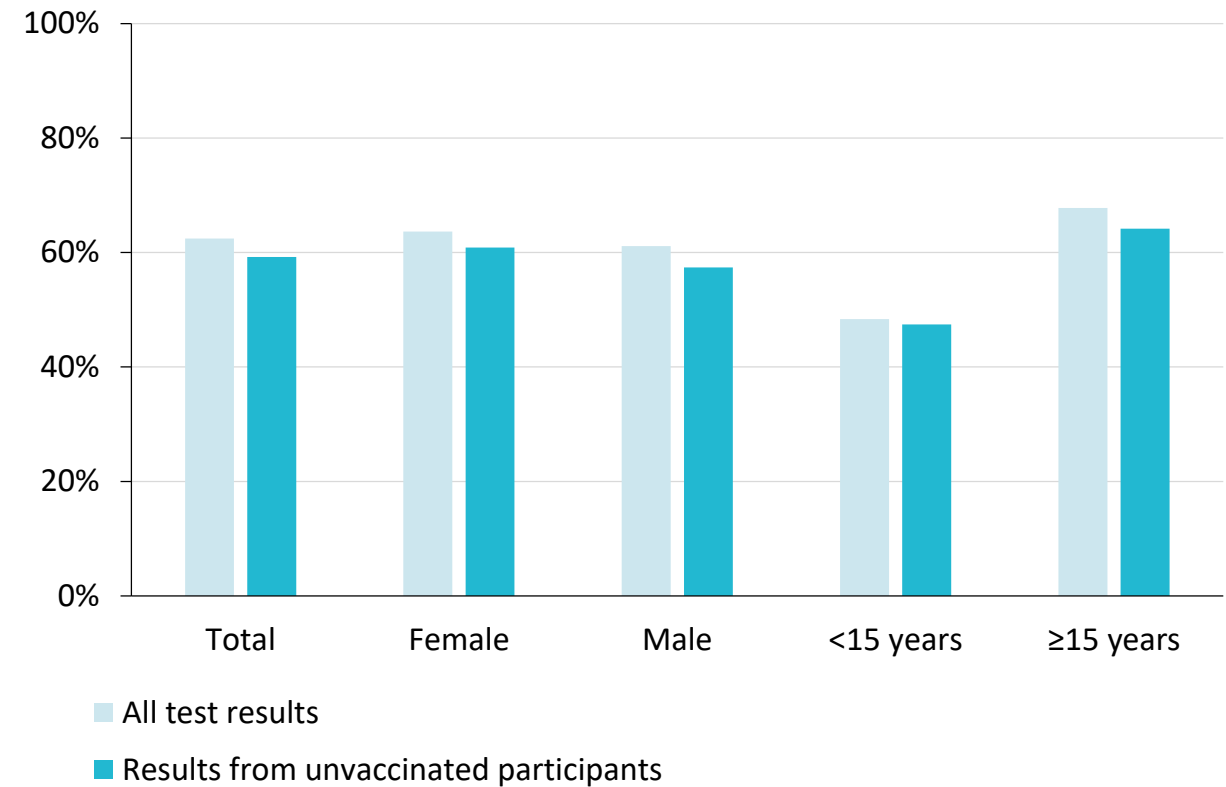


\* Includes 2 COVID-19 hospitalisations, neither severe

# SARS-CoV-2 results at end of follow-up

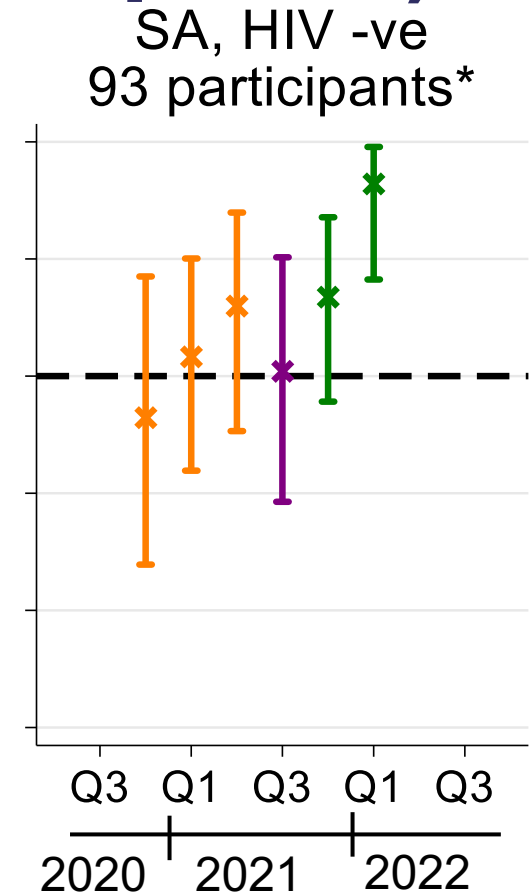
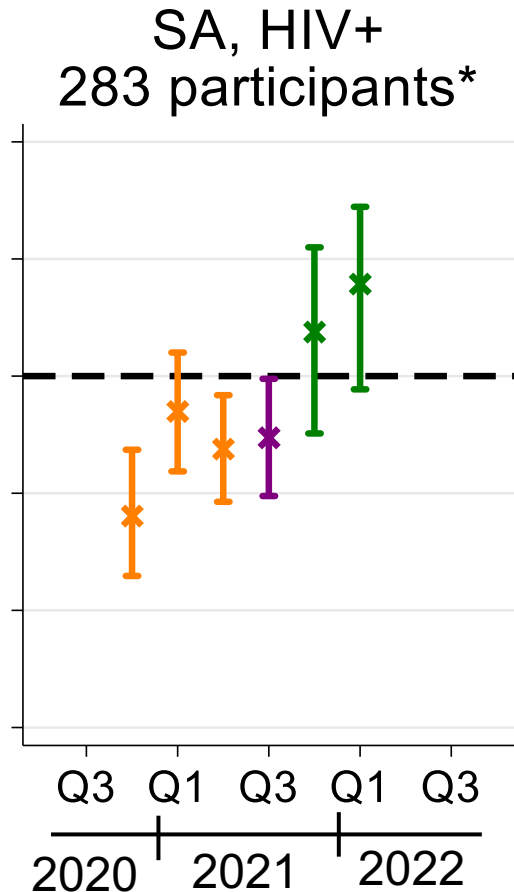
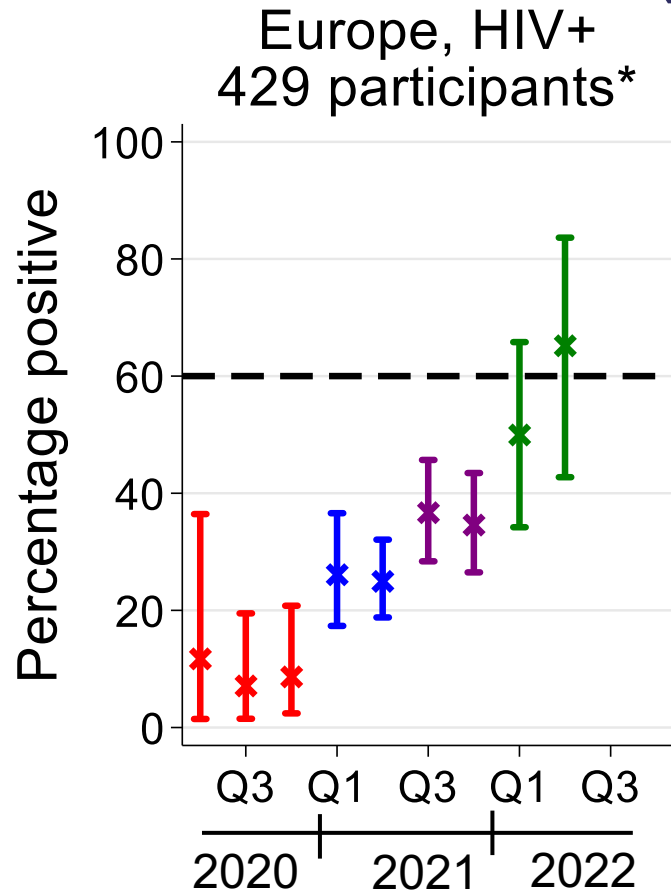
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Self-reported COVID-19 (n = 873)	95 (11%)
Received ≥1 vaccine dose (n = 873)	203 (23%)
<b>Serological status during follow-up</b>	
≥1 +ve serology result (n = 903)	564 (62%)
≥1 +ve serology result, unvaccinated (n = 802)	475 (59%)

Percentage with ≥1 positive serology result



\* Includes 2 COVID-19 hospitalisations, neither severe

# Percentage of serology tests positive by calendar time (unvaccinated participants)



\* Total unvaccinated participants over study period



# Conclusions

- High seroprevalence of SARS-CoV-2 antibody by mid-2022 in CALWHIV in Europe and South Africa
- Similar to studies of HIV negative children / young people in these countries
- Few cases of reported COVID-19 and low vaccination coverage at time of tests
- Point estimates of seroprevalence higher in HIV -ve participants than CALWHIV
- Variation in tests and timing, antibody waning → minimum estimate of prevalence of previous infection
- SARS-CoV-2 did not appear to cause severe disease in this cohort
- Vaccination coverage was low and could be increased in this population

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- All participating cohorts
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