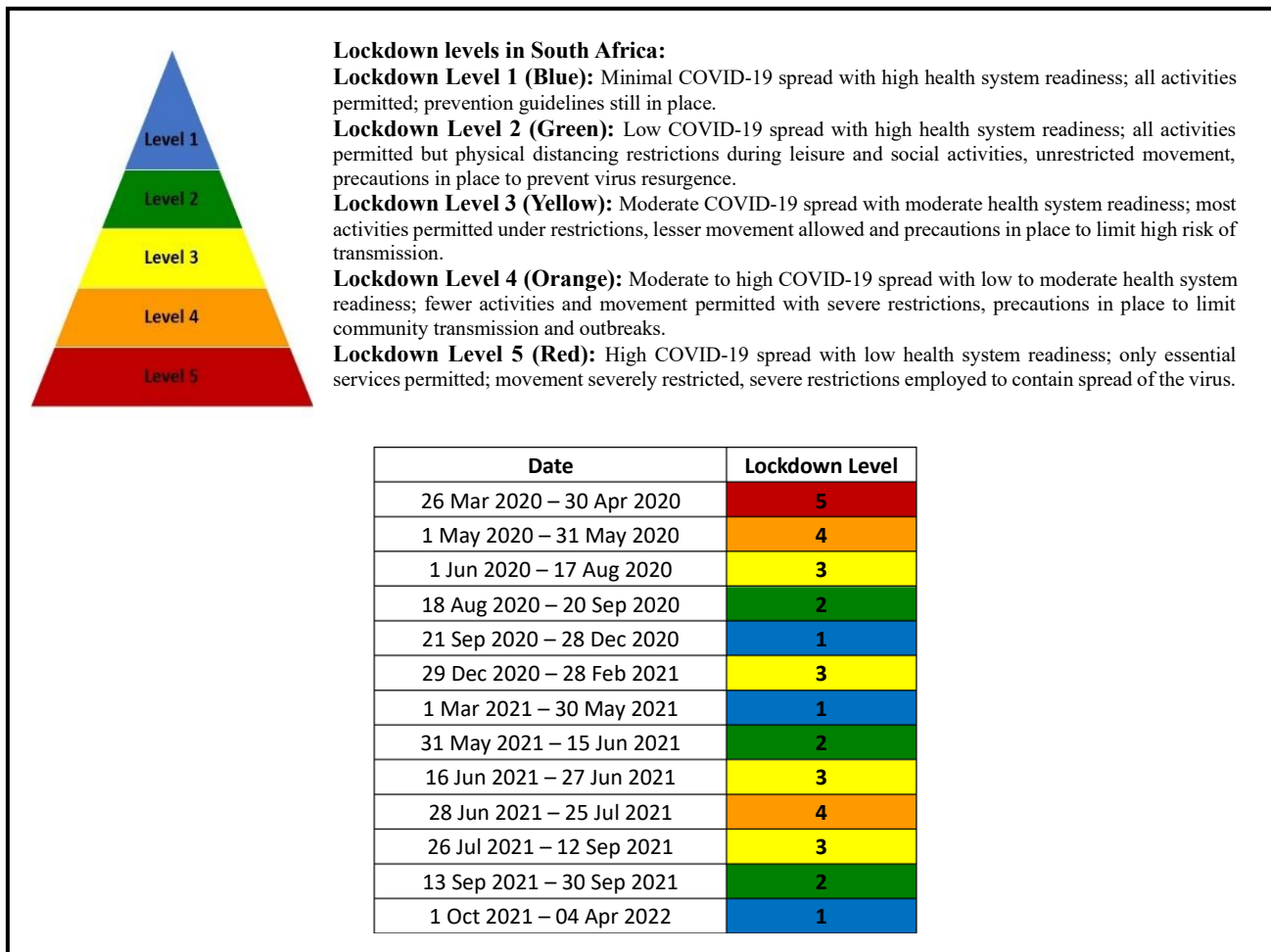


**Note:** This is Online Appendix 1 of Christie M, Haeri Mazanderani A, Sherman G, Feucht U. How paediatric HIV services weathered the COVID-19 storm in Tshwane District, South Africa. S Afr J HIV Med. 2024;25(1), a1557. <https://doi.org/10.4102/sajhivmed.v25i1.1557>



**FIGURE 1-OA1:** South African COVID-19 lockdown levels with corresponding dates and colour code

**TABLE 1-OA1:** Indicators, data sources, definitions, and calculations utilised in the study.

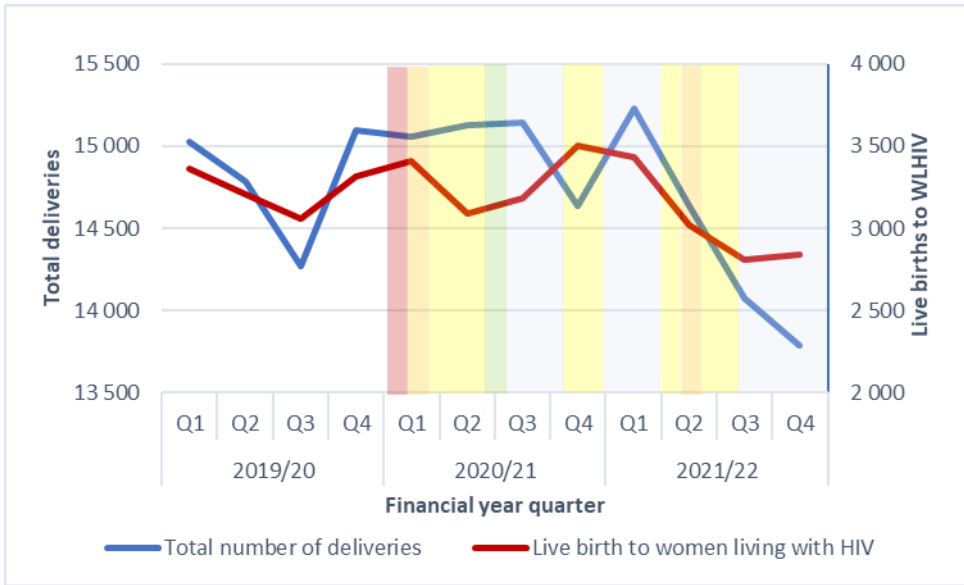
Indicators	Source	Definitions & Calculations
<b>Care of WLHIV and CLHIV</b>		
Monthly Maternal HIV prevalence [%]	DHIS	Numerator: Total number of monthly live births born women to be living with HIV at delivery Denominator: Total number of monthly live births born to all women
Mean Maternal HIV prevalence [%]	DHIS	Annual total monthly maternal HIV prevalence/12
Mean monthly live births [n]	DHIS	Total number of monthly live births born to all women Annual total number of monthly live births born to all women / 12
Mean monthly live births to WLHIV [n]	DHIS	Total number of monthly live births born women known to be living with HIV at delivery Annual total number of live births born women known to be living with HIV at delivery for each financial year / 12
Quarterly number of HIV VL tests performed [n]	NICD	Monthly valid HIV VL test <b>results deduplicated per month and subsequently</b> aggregated per quarter. Age groups: 1] WLHIV = Females aged 15 - 45 years; 2] CLHIV = <15 years
Quarterly HIV VL suppression* rates [%]	NICD	Numerator: <b>Monthly valid deduplicated</b> HIV VL test results <1000 copies/mL* aggregated per quarter Denominator: All <b>monthly valid deduplicated</b> HIV VL test results aggregated per quarter
Quarterly number of CD4 tests performed [n]	NICD	<b>Quarterly valid CD4 test results deduplicated</b> per quarter. Age groups: 1] WLHIV = Females aged 15 - 45 years; 2] CLHIV = <5 years and 5 - <15 years
Quarterly severe immunosuppression rate <sup>¶</sup> [%]	NICD	CD4 count of <200 cells/ $\mu$ L [WLHIV and CLHIV $\geq$ 5 years] or <15% [CLHIV <5 years] <sup>¶</sup> Numerator: Valid <b>deduplicated</b> CD4 test results aggregated per quarter [<15% / < 200] Denominator: All valid <b>deduplicated</b> CD4 tests aggregated per quarter
Number of CLHIV newly initiated on ART [n]	DHIS	Children <15 years started on life-long ART with no previous exposure to ART for >30 days
Number of deaths among CLHIV [n]	DHIS	Deaths among children <15 years receiving ART in the preceding quarter
Number of CLHIV lost to follow-up [n]	DHIS	Children <15 years on ART who did not attend the health facility for 90 days within the preceding quarter
<b>Paediatric HIV diagnosis</b>		
Birth HIV PCR tests [n]	NICD	HIV PCR tests performed <7 days of age
10 weeks HIV PCR tests [n]	NICD	HIV PCR tests performed from 6 weeks - <3 months of age
Six-month HIV PCR tests [n]	NICD	HIV PCR tests performed from 3 - <8 months of age
Universal 18-month HIV ELISA/ RDT test [n]	DHIS	HIV ELISA/ RDT tests performed at 18 months of age.
19 -59 months HIV ELISA/ RDT test [n]	DHIS	HIV ELISA/ RDT tests performed from 19 – 59 months of age.
5-14 years HIV ELISA/ RDT test [n]	DHIS	HIV ELISA/ RDT tests performed from 5 – 14 years of age
HIV PCR test positivity rate [%]	NICD <sup>#</sup>	Numerator: Number of first positive HIV PCR results Denominator: Total number of HIV PCR tests performed

		Age groups: 1] At Birth [<7 days of age]; 2] 10 weeks [6 weeks - <3 months]; 3] 6 months [3 - <8 months of age]
Testing coverage [%]	NICD DHIS	Numerator: Number of first positive HIV PCR results Denominator: Total number of monthly live births born to WLHIV Age groups: 1] At Birth [<7 days of age]; 2] 10 weeks [6 weeks - <3 months]
HIV ELISA/ RDT test positivity rate [%]	DHIS	Numerator: Number of positive HIV test results Denominator: Total number of HIV tests performed Age groups: 1] 18 months; 2] 19 - 59 months of age; 3] 5 - 14 years of age
HIV EID case rate [cases /100 000 live births]	NICD DHIS	Numerator: Number of first positive HIV PCR results Denominator: Total number of monthly live births born to all women Multiplier: 100 000 Age groups included: 1] At Birth [<7 days of age]; 2] 10 weeks [6 weeks - <3 months]; 3] 6 months [3 - <8 months of age]
<b>Expanded Programme on Immunisation<sup>‡</sup></b>		
BCG dose [n] <sup>‡</sup>	DHIS	BCG vaccine given to a child ≤1 year – preferably immediately after birth
DTaP-IPV-Hib-HBV-1 dose [n] <sup>‡</sup>	DHIS	DTaP-IPV-Hib-HBV 1 <sup>st</sup> dose vaccination given to a child ≤1 year – preferably at around age 6 weeks
Measles-1 dose [n] <sup>‡</sup>	DHIS	Measles vaccine 1 <sup>st</sup> dose given to a child ≤1 year – preferably at age six months
DTaP-IPV-Hib-HBV-4 [n]	DHIS	DTaP-IPV-Hib-HBV 4 <sup>th</sup> dose vaccination given to a child at around age 18 months
Monthly estimated total population immunisation coverage [%] <sup>‡</sup>	DHIS	Numerator: Total monthly immunisations administered Denominator: Mean monthly live births Vaccinations included: 1] BCG; 2] DTaP-IPV-Hib-HBV-1; 3] Measles-1; 4] DTaP-IPV-Hib-HBV-4
Estimated number of immunisations administered to infants exposed to HIV [n] <sup>‡</sup>	DHIS	Multiplicand: Mean monthly live births to WLHIV Multiplier: Monthly estimated total population immunisation coverage Vaccinations included: 1] BCG; 2] DTaP-IPV-Hib-HBV-1 and 4; 3] Measles
Integration of EID and EPI services amongst infants exposed to HIV [%]	DHIS NICD	Numerator: Monthly HIV tests performed Denominator: Estimated number of immunisations administered to infants exposed to HIV HIV tests included: 1] Birth HIV PCR; 2] 10-week HIV PCR; 3] six-month HIV PCR Vaccinations included: 1] BCG; 2] DTaP-IPV-Hib-HBV-1; 3] Measles-1

DHIS , District Health Information Service; NICD , National Institute for Communicable Diseases; HIV , Human Immunodeficiency virus; WLHIV , Women living with HIV; CLHIV , Children living with HIV; ART , Antiretroviral therapy; VL , viral load; CD , Cluster of differentiation; PCR , Polymerase Chain Reaction; ELISA , Enzyme-linked immunosorbent assay; RDT , Rapid diagnostic test; BCG , Bacillus Calmette-Guerin; DTaP-IPV-Hib-HBV , Diphtheria, Tetanus, Pertussis, Polio, Haemophilus influenzae type b, and Hepatitis B; WLHIV, Women living with HIV; EPI , Expanded Programme on Immunisation ; EID , Early Infant Diagnosis.

\*, HIV viral suppression: HIV VL of <1000 copies/mL [25].

¶, Severe immunosuppression: CD4 count of <200 cells/μL [WLHIV and CLHIV ≥5 years] or <15% [CLHIV <5 years] [31,32]; §, HIV PCR; \*HIV ELISA/ HIV RDT; #, De-duplicated using NHLS Corporate Data Warehouse record linking algorithm; ‡, Restricted to public sector data



**Source:** District Health Information Service, Tshwane District Health Services, Gauteng Province.  
**Note:** Quarters: Q1: April to June; Q2: July to September; Q3: October to December; Q4: January to March.  
 HIV, Human Immunodeficiency virus; Q, Quarter; WLHIV, Women living with HIV.

**FIGURE 2-OA1:** Total number of deliveries and live births to women living with HIV per quarter from April 2019 to March 2022.