

Low positivity from routine provider-initiated testing and counseling for HIV on pediatric surgical wards in Mozambique

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Background

- The UNAIDS established a “90-90-90” target for 2020¹:
 - 90% of HIV-positive patients diagnosed
 - 90% of diagnosed patients on antiretroviral therapy (ART)
 - 90% on ART with viral suppression
- At the end of 2019, Mozambique reported 66%-66%-73% for the above targets for children²
- To **enhance case-finding**, the World Health Organization and Mozambique Ministry of Health recommend all patients admitted to the hospital undergo routine **provider-initiated HIV testing and counseling (PITC)**^{3,4}
- Recent studies reported PITC rates as low as 35% in pediatric wards in Mozambique, despite an overall 8.3% positivity rate⁵
- Older literature from 2005-2007 identified HIV positivity rates of 39.8-55% in pediatric surgical wards of similar settings,^{6,7} although recent studies from the past decade are lacking
- UCLA began a collaborative **quality improvement (QI) project** in Oct 2019 to expand testing in pediatric surgical wards of the 3 largest hospitals in Mozambique: Hospital Central Maputo (HCM), Hospital Central Nampula (HCN), and Hospital Central Beira (HCB)

Research Aims

- Describe results of QI project and report on **PITC coverage**
- Determine the **prevalence** of HIV-positivity and HIV-exposure
- Characterize the burden of **HIV-associated surgical pathologies**

Methods

- Cohort: patients aged ≤14 years discharged from pediatric surgical wards at three hospitals from October 1, 2019 to June 30, 2020
- All HIV testing done according to national PITC guidelines
- Retrospective analysis of discharge registers which include data on diagnoses and surgical procedures, and were adapted to include PITC results and ART information
- Description of PITC coverage, positivity, linkage to ART, and surgical management of HIV-positive and HIV-exposed patients

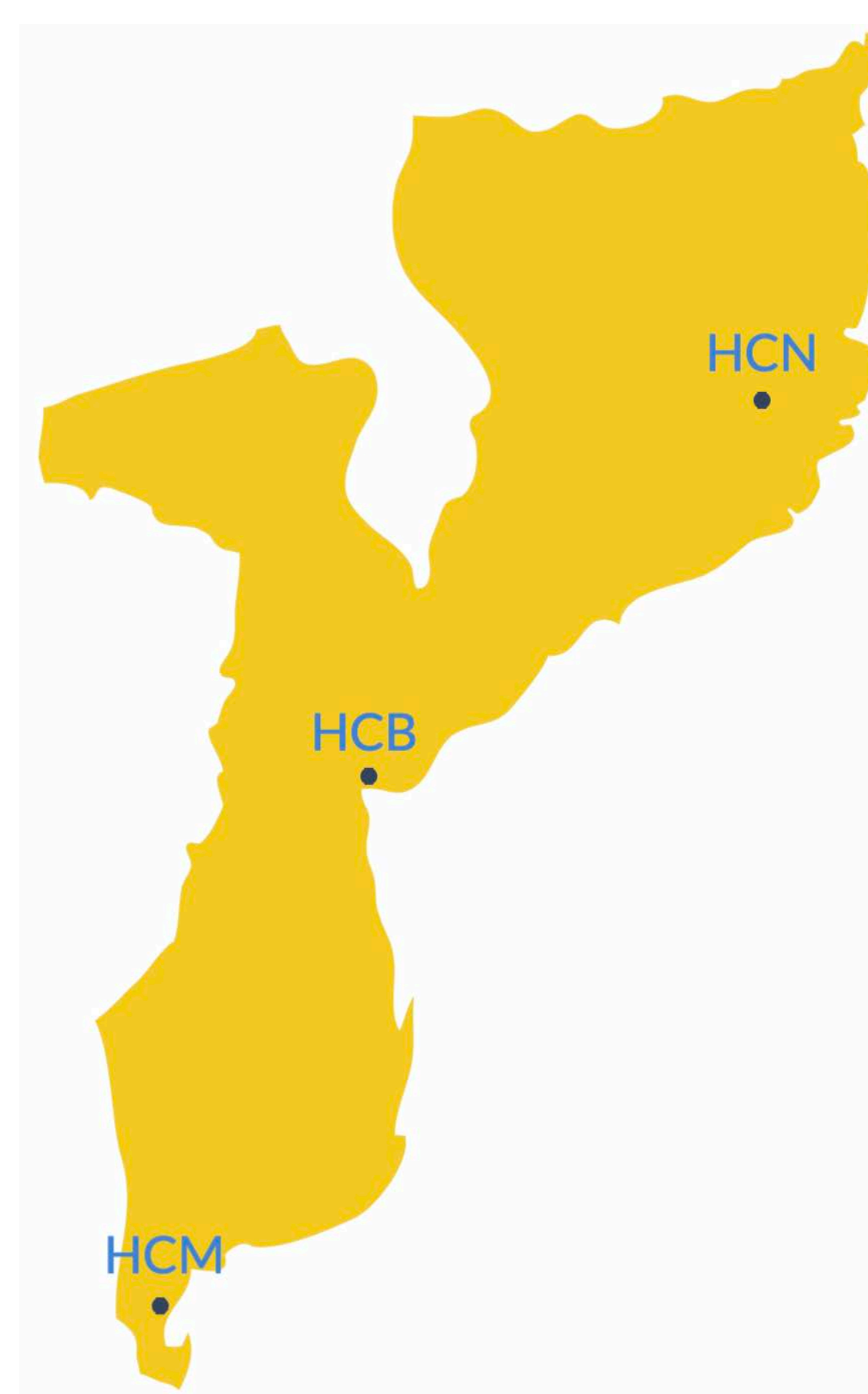


Figure 1 Map of three study sites in Mozambique

Results

- 817** patients, **675** with known serology by discharge = 83%
- Patient distribution → HCM: 570 | HCN: 165 | HCB: 82
- 0.1%** of patients tested **newly HIV-positive** (n=1)

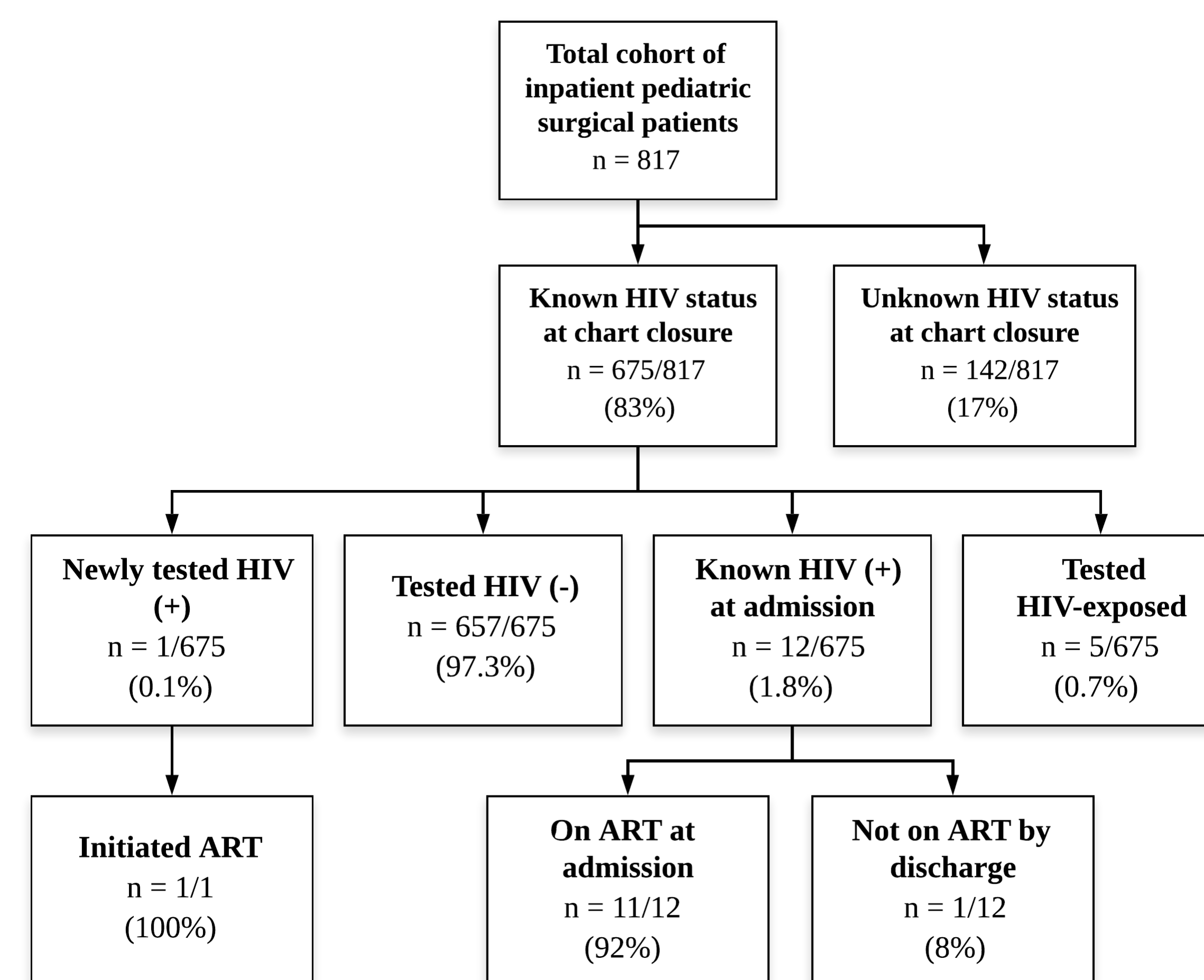


Figure 2 CONSORT flow diagram of study participants

- HIV-positive patients (n=13) had median age of 7 years (IQR=5-10)
- HIV-exposed patients (n=5) had median age of 2 months (IQR=2-3)

Table 1 HIV-positive patient profiles

Age (yr)	Sex	Diagnosis	Surgery	On ART?	If yes, new initiation?
1	M	Inguinal abscess	Incision/drainage	Y	Y
3	F	Umbilical hernia	Herniorrhaphy/hernioplasty	Y	N
5	F	Inguinal hernia	Herniotomy	Y	N
5	M	Scalp contusion	None	Y	N
6	M	Pressure ulcer	None	Y	N
6	M	Pressure ulcer, sepsis	None	Y	N
7	F	Abd. rhabdomyosarcoma	Biopsy	Y	N
8	F	Clitoral edema	None	Y	N
10	M	Hirschsprung disease	None	Y	N
10	M	Hodgkin's lymphoma	Laparotomy and biopsy	Y	N
11	M	Appendicitis	Appendectomy	Unk	Unk
12	F	Cellulitis	None	Y	N
14	M	Appendicitis	Appendectomy	Y	N

Table 2 HIV-exposed patient profiles

Age (mo)	Sex	Diagnosis	Surgery
1	M	Cystic hygroma	Total excision
2	M	Hirschsprung disease	None
2	F	Hirschsprung disease	Colostomy
3	M	Cervical abscess	Incision/drainage
6	M	Anorectal malformation	Anorectoplasty

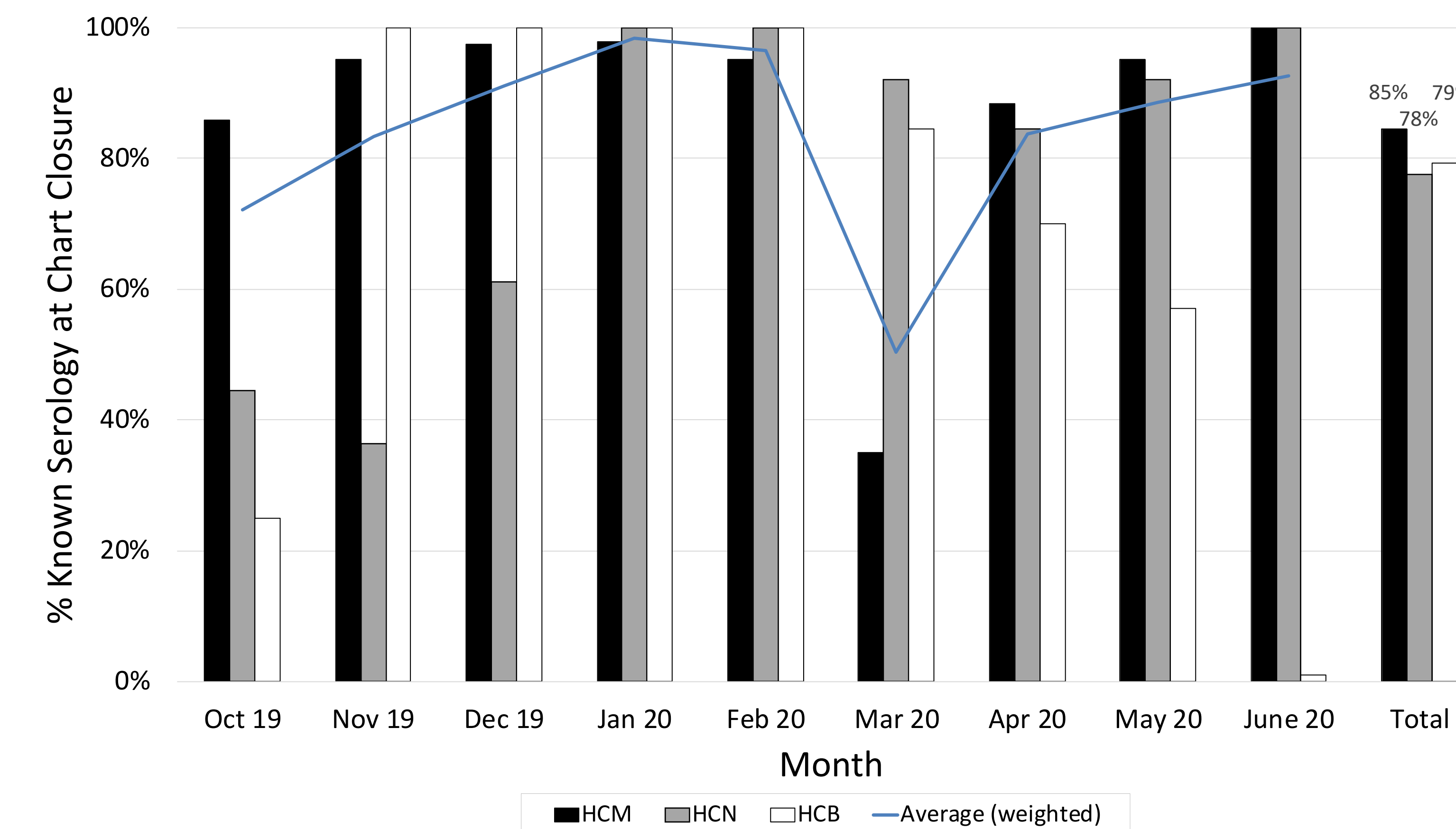


Figure 3 Percentage of patients with known serology at chart closure (PITC coverage) by hospital

- Total PITC coverage was **83%**, including a **21%** increase over the study course (9 months)
- Peak weighted PITC coverage in January 2020, month 4 (**98%**)
- Lowest weighted PITC coverage in March 2020 (**50%**), coinciding with the onset of COVID-19 pandemic

Limitations

- Pediatric surgical consults and outpatients were not included
- No extensive pre-intervention data (ward registers were not previously organized to collect PITC information)

Discussion

- The QI project was successful** → PITC coverage increased considerably at all three hospital sites
 - Key successes:** task shifting with lay counselors & psychologists, training surgeons on PITC
 - Challenges:** limited nurse engagement, key staff rotativity
- Very low diagnostic yield** → only 0.1% test positivity
- Most HIV-positive patients had **surgical pathologies likely not related to HIV**

Conclusion

- In light of **limited resources** for PITC in countries like Mozambique and logistical difficulties of establishing routine PITC, **testing should not be prioritized in pediatric surgical wards** until coverage rates are improved for other pediatric inpatient wards with known higher positivity rates

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