

An audit of pre-vaccination serology immunity screening for HIV patients new to the Mater Misericordiae University Hospital Infectious Diseases Outpatient Clinic

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Introduction

- People living with human immunodeficiency virus (PLWH) are at risk of acquiring or suffering increased morbidity and mortality from vaccine-preventable diseases(1).
- In Ireland, most new HIV diagnoses are among people who have acquired their infection abroad(2) where vaccine coverage may vary significantly.
- Research has shown impaired immune responses to many vaccines(3) and faster diminishment of vaccine-induced antibodies in HIV patients(4).
- The National Immunisation Advisory Committee recommends that HIV-positive adults receive a range of specified vaccines(5).
- The Mater Misericordiae University Hospital (MMUH) Infectious Diseases Department has developed a protocol for HIV patients new to the clinic that recommends serology screening for immunity for the following diseases, and vaccination to be given where non-immune: **measles, mumps, rubella, varicella, hepatitis A, hepatitis B.**

Aim

- **Primary:** To assess our Infectious Diseases clinic's compliance with initial pre-vaccination serology screening for immunity for vaccine-preventable diseases in HIV patients new to the clinic.
- **Secondary:** To analyse the seroprotection rates of these diseases in this patient cohort.

Methods

- Retrospective analysis of blood results and vaccination records in patient's electronic medical records (EMR, 'Patient Centre').
- **Inclusion Criteria:** HIV patients new to the Infectious Diseases (ID) clinic of MMUH between January, 2023 and December 2023. 'New' patients were classified to include both new HIV diagnoses and new transfers to the clinic (from abroad or within the country). Patient list collated from ID pharmacy antiretroviral therapy dispensary database.
- **Exclusion Criteria:** Any patient on the register who did not have HIV blood work on the EMR e.g. viral load suggesting they were not being followed. Invalid MRNs on the database.
- The following patient demographic data were collected: Gender, Age, Country of origin.
- **Data Analysis:**

Measles, Mumps, Rubella, Varicella, Hepatitis A, and Hepatitis B.

- Number of patients who were seroprotected against these diseases.

Seroprotection: Positive IgG antibody for measles, mumps, rubella, varicella, and hepatitis A; and hepatitis B surface antibody (anti-HBs) level above 10 mIU/ml or hepatitis B core antibody positive without evidence of active infection (acute or chronic).

- Descriptive statistical analysis included averages and percentages were performed.

Results

- Between January and December 2023, there were 198 new HIV patients to the clinic.
- **Population Characteristics:**
 - 125 men (63.1%). 73 women (36.9%)
 - 51 new HIV diagnosis (25.8%). 147 historical diagnoses who were a transfer of care (74.2%).
 - Average age of patients: 39 years.
 - Country of origin: 13 patients (6.7%) were Irish. 168 patients (84.8%) were non-Irish (with the most common being Zimbabwe (20.2%) and Brazil (17.7%)). 17 were unknown (8.6%).
- **Initial serology screening:**
 - 169 patients (85.3%) received complete screening.
 - 22 patients (11.1%) received partial/incomplete screening
 - 7 patients (3.5%) had no screening performed.
- **Seroprotection rates:**
 - Measles:** 69.4%. **Mumps:** 76.2%. **Rubella:** 87%.
 - Varicella:** 92.3%. **Hepatitis A:** 77.3%. **Hepatitis B:** 61.1%.



Fig 1: Distribution of HIV patients new to the MMUH ID Clinic in 2023

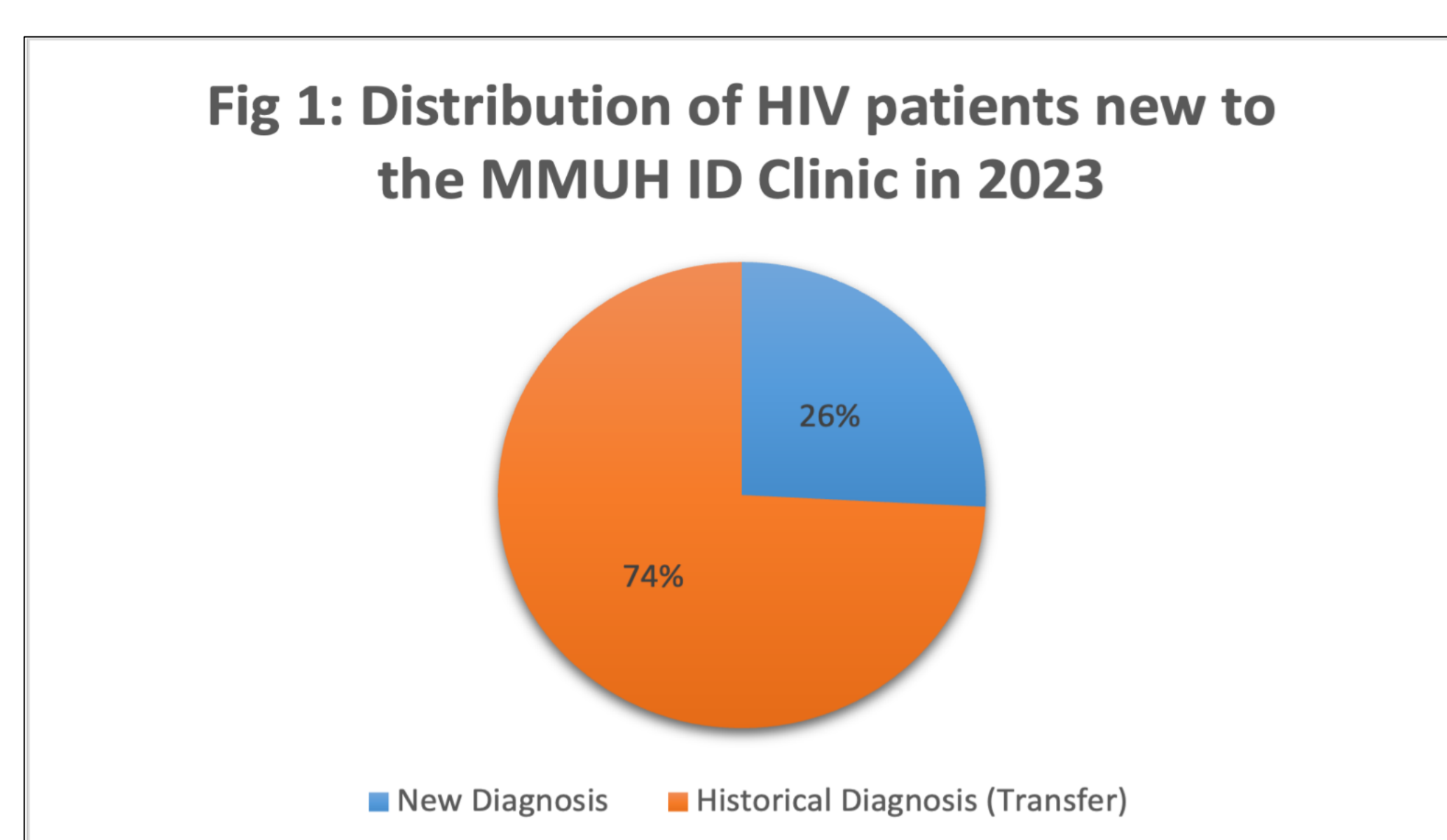


FIG 2: COUNTRY OF ORIGIN OF HIV PATIENTS TO THE MMUH ID CLINIC IN 2023

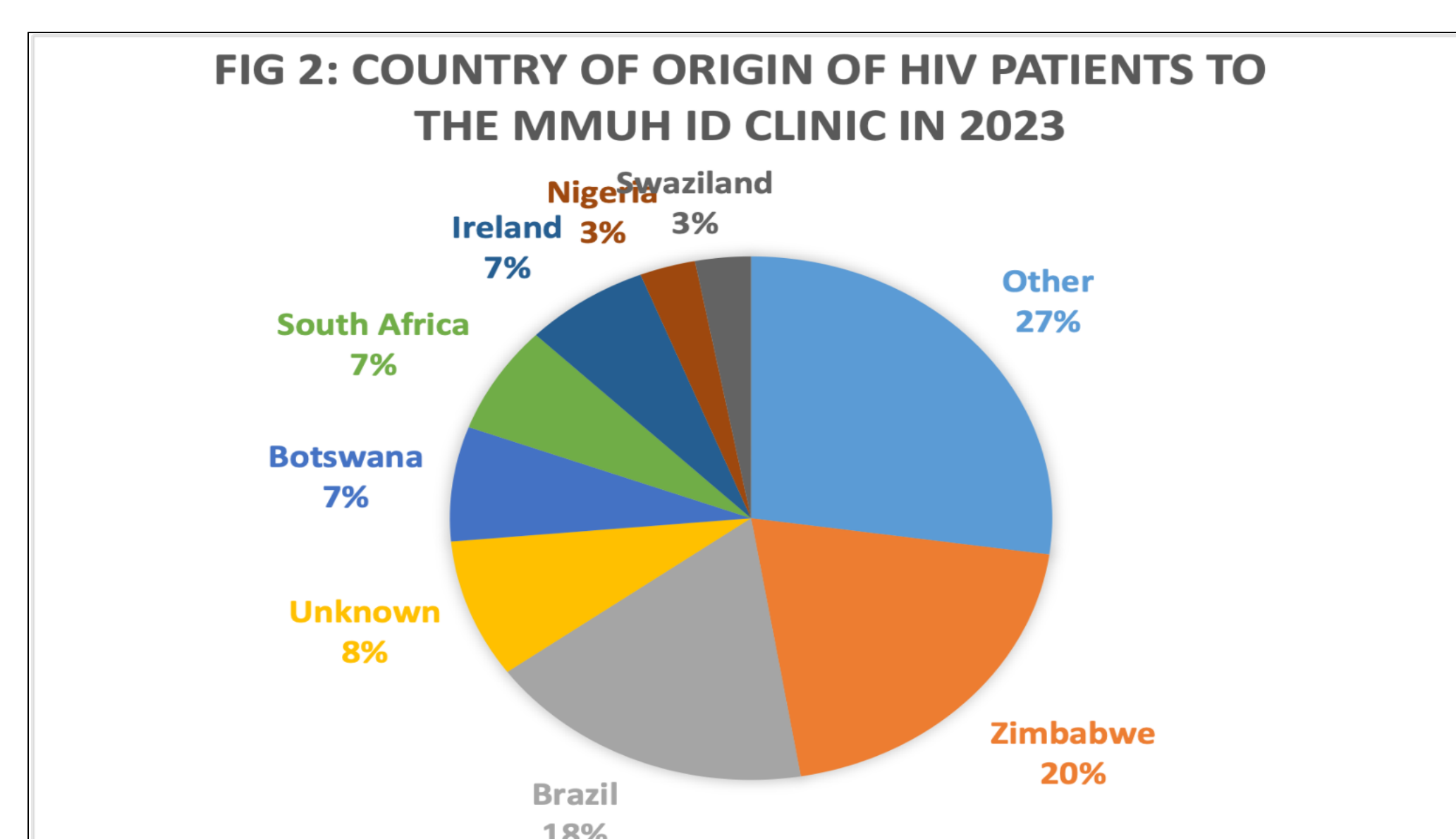


Fig 3: Percentage serology immunity screening rates for new HIV patients to MMUH ID Clinic in 2023

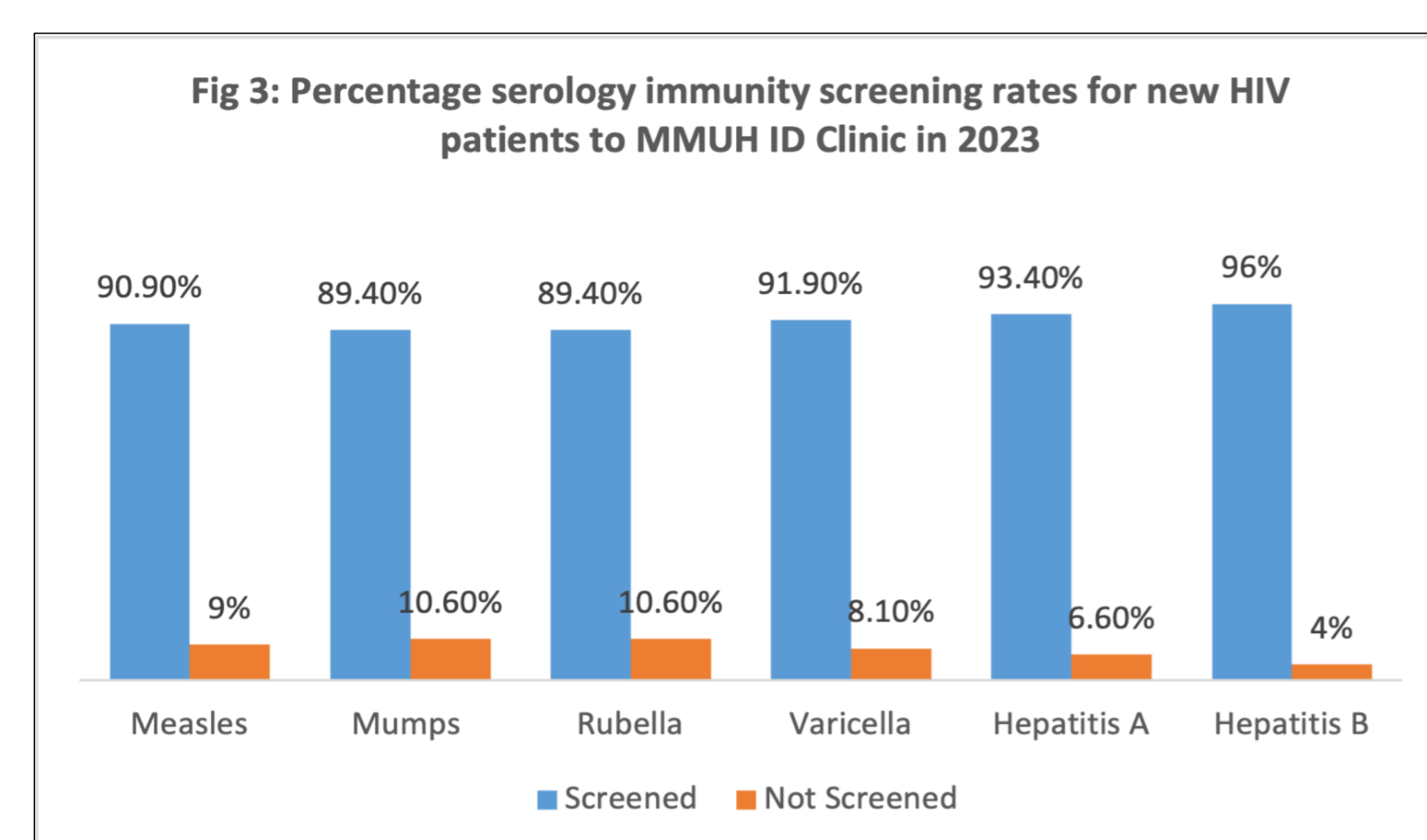
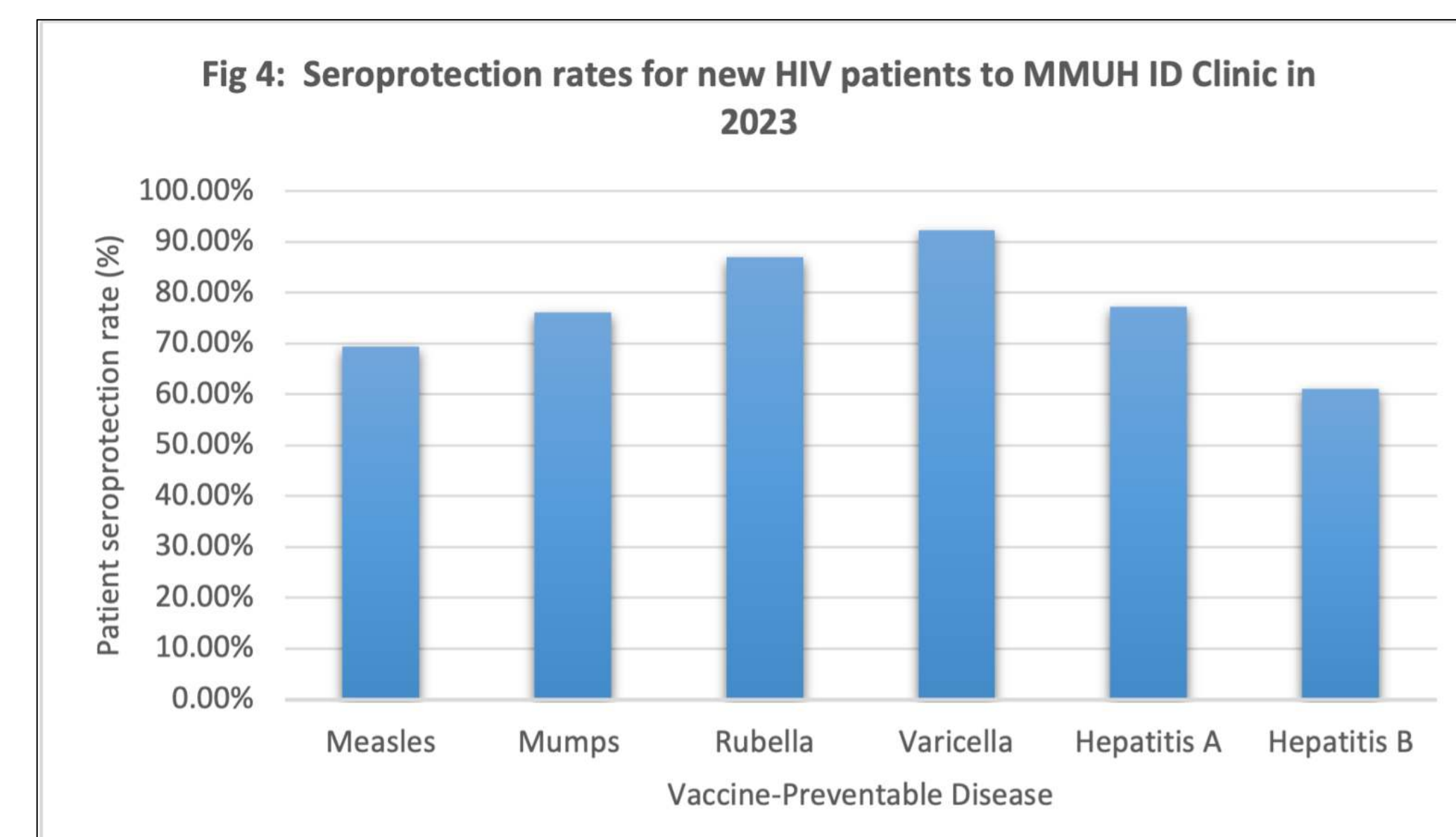


Fig 4: Seroprotection rates for new HIV patients to MMUH ID Clinic in 2023



Limitations and Conclusions

- **Limitations:** The HIV clinic patient list was obtained through the ID pharmacy dispensary database, and so may include some patients who had medications dispensed without regular clinic follow-up here (e.g. some inpatients). Rarely, blood results on the EMR included in the study may have been taken outside the ID clinic and so may not solely reflect outpatient clinic practice.
- The measles seroprotection rate was the lowest of all VPDs, considerably lower than previously reported in PLWH (92% in 2019) (6) and well below the 95% rate recommended for herd immunity.
- Thus, routine screening for immunity to VPD is an important aspect of care for HIV patients, and provides an opportunity for catch-up vaccination for patients new to the country who may not have received them in their home country.
- Majority of our new HIV patients received the recommended initial immunity screening, though not all.
- **Next Steps:** Education sessions and posters for clinical staff to order these tests at patients' first visits. Followed by re-audit to assess for improved screening rates. Audit on the number of non-immune patients who subsequently received catch-up vaccination.

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