

**Kirby Institute**



# ACCELERATING THE UPTAKE OF INNOVATIONS FOR DETECTION AND MONITORING OF HIV IN PAPUA NEW GUINEA POINT-OF-CARE HIV VIRAL LOAD AND DRUG RESISTANCE TESTING OF ADULTS

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# Challenges of reaching 95-95-95 targets in PNG



**HIV Prevalence**

- **45%** increased in last decade
- **1.0%** prev.in adults
- **11-20%** prev. in FSW
- **28%** vertical transmission
- In 2022, **79% tested know their HIV**

**HIV treatment**

- **18.7 %** HIVDR
- Roll out of DTG containing Regimen
- **68% ART coverage**

**Viral Suppression**

- **58% VL suppression in adults**
- **44% VL suppression in pediatrics**

# ACTUP-PNG



Aims to measure the:

- effectiveness,
- health system implementation requirements,
- cost-effectiveness
- and acceptability of point-of-care **HIV Viral Load Testing, Early Infant Diagnosis and HIV drug resistance** monitoring for the optimal clinical management of HIV when provided as part of routine HIV treatment and care services in PNG.

# ACTUP-PNG



## What we do:

The only initiative in PNG providing-

- POC HIV Viral Load on the GeneXpert™ platform.
- Same day results to clinicians and PLHIV
- HIV drug resistance (DR) testing when clinically indicated
- HIV DR testing to those newly diagnosed with HIV to monitor transmitted ART resistance.



^UNAIDS defines an adult from age 15 years.

# ACTUP-PNG

## STRENGTHENING LABORATORY SUPPORT

Two Point of Care labs established at Mount Hagen Provincial Hospital and Port Moresby General Hospital.

- HIV-1 Viral Load testing for adults as per PNG national guidelines.
- Triage patients to do HIVDR test
- Assistance with follow up testing after clinical interventions i.e., ART change, adherence counselling is provided as labs are clinic based.
- Piloting m-Pima platform for children <10 years of age



Mt Hagen Team: Selina, Joseph, Doris & Ruthy.



Port Moresby Team: Dr Gideon, Helen, Angela, Julie, Janet & Hethy.



# Progressive Results: Adult VL



## HIV-1 Viral load

### Age and sex of patients tested\* for VL

<b>Adult (15yrs+)</b>	<b>3,447<sup>^</sup></b>	
Female	2075	60.19%
Male	1372	39.80%

\*This excludes rejected samples. All data related to VL reported relates only to people on ART.

<sup>^</sup>This is the unique patient count from Mt Hagen Provincial Hospital and Port Moresby general Hospital



Venepuncture refresher training for Mt Hagen staff at Tininga clinic.

# Adult VL testing

Reasons for VL testing		
3 month follow up after High VL & adherence counselling	187	4.6%
6 month follow up after ART initiation	1967	<b>48.2%</b>
Yearly review after > 1yr on ART	1919	47.1%
Clinical failure	3	0.1%
Not Stated	1	0.0%

\*This excludes rejected samples. All data related to VL reported relates only to people on ART.

^This is the unique patient count from Mt Hagen Provincial Hospital and Port Moresby general Hospital

# Clinic of presentation



Sample numbers by Clinic N =3,719			
	Adult	Pregnant	
Tininga STI/HIV Clinic	1957	4	52.73%
Hillary Clinic	13	-	0.3%
Mt Hagen TB Clinic	20	-	0.54%
Mt Hagen Antenatal Clinic	24	27	1.40%
PMGH General Ward	1	-	0.0%
PMGH Antenatal clinic	95	15	2.95%
PMGH Well Baby clinic	11	-	0.29%
Heduru STI/HIV Clinic	1563	-	42.03%



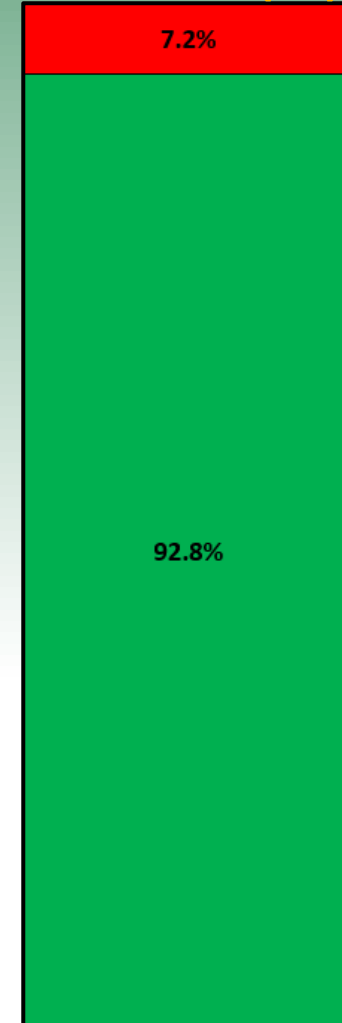
# Turnaround time of VL testing

Turn around time- Results to Clinician		
Duration	N 3684	N 46
Same Day	Adults	Pregnant
Yes	91.3% (3364)	82.6% (38)
No	8.7% (320)	17.4% (8)
Hours (hr)		
Up to 3	55.1% (2031)	56.5% (26)
3-6	23.3% (859)	13.0% (6)
>6	20.2% (744)	26.2% (12)
Not reported	50	4.3% (2)

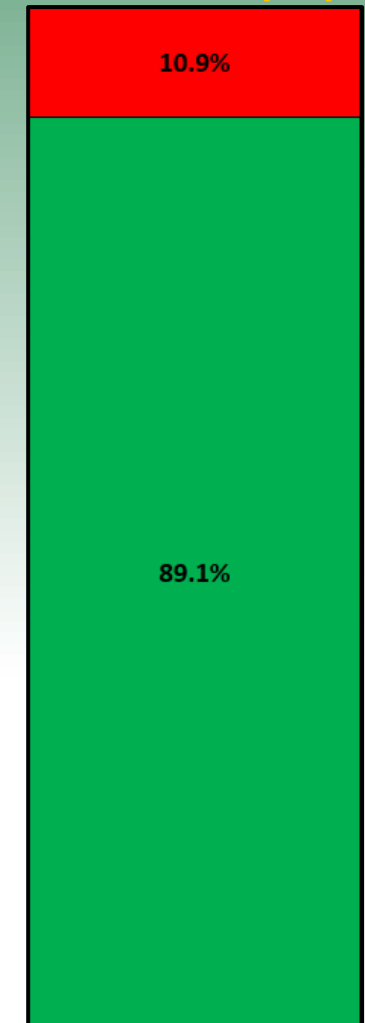
# Viral Suppression Rates

Viral load testing in Adults (> 15yrs)		
	Adult	Pregnant
<b>Mount Hagen Provincial Hospital</b>	2014	31
Virologically suppressed	1885	27
Virologically unsuppressed	129	4
Average VL of those suppressed	196 copies/mL	118
Average VL of those unsuppressed	612,684 copies/mL	80,385
<b>Port Moresby General Hospital</b>	1670	15
Virologically suppressed	1534	14
Virologically unsuppressed	136	1
Average VL of those suppressed	167 copies/mL	50
Average VL of those unsuppressed	314,469 copies/mL	13,000

**ADULTS  
THIRD 90 (95)**



**PREGNANT  
THIRD 90 (95)**



# HIV DRUG RESISTANCE



## HIVDR DBS results

Total number of Adults tested for HIVDR<sup>1</sup>

135

<sup>1</sup>Excluding people that DBS samples that contained <1000copies/mL of HIVRNA

## Reasons for HIVDR testing

Baseline- Pre ART initiation	125	92.6%
Baseline-ART Re-initiation	9	6.7%
High Viral Load post EAC <sup>2</sup>	1	0.7%

<sup>2</sup>EAC= Enhanced Adherence Counselling



PNGIMR's Simon Pekon running a client information session at Tininga clinic, Mt Hagen.

# HIV DRUG RESISTANCE



Rates of drug resistant HIV in Adults 15+ years		
Reason for HIV DR testing category	Total	Total with HIV DR (%)
Baseline - pre-ART initiation	125	17 (13.6%)
Baseline - ART re-initiation	9	2 (22.2%)
High VL post-adherence counselling	1	0 (0.0%)
Sub-total	135	19 (14.1%)



Retention in care discussions-Tininga clinic, Mt Hagen.

# HIVDR BY ART CLASS (n=19)



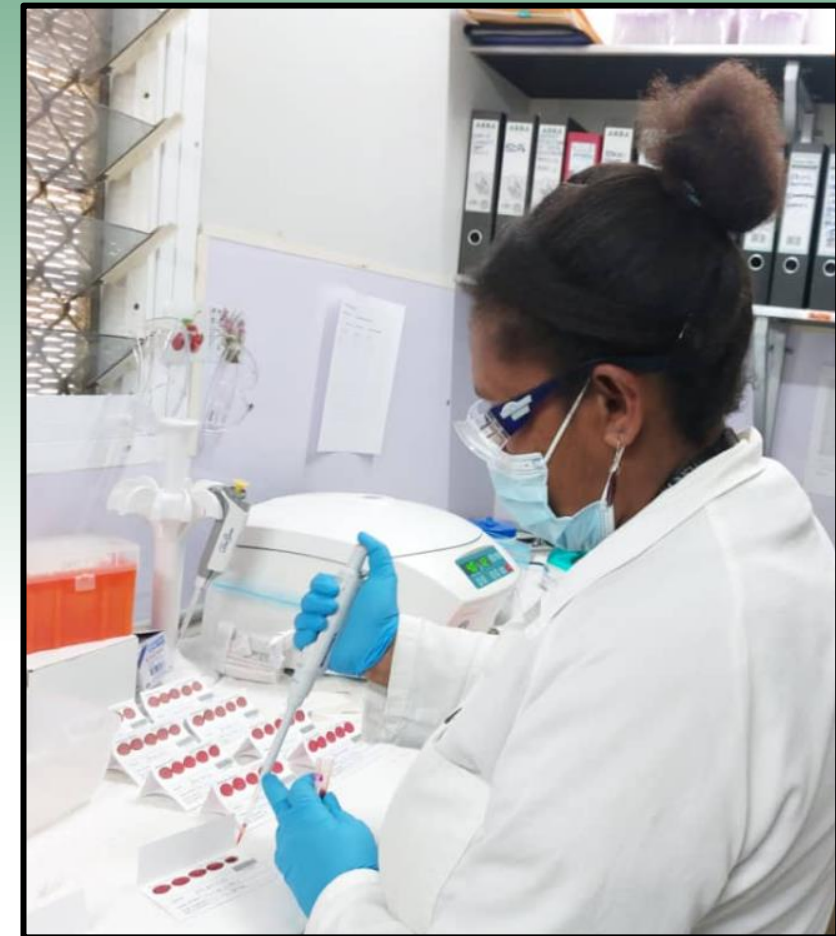
## NNRTI Drug Resistance of Adults with DR

Baseline- Pre ART initiation	14	82.4%
Baseline-ART Re-initiation	2	100.0%
High Viral Load post EAC <sup>2</sup>	-	-

## Combined NRTI and NNRTI DR of Adults with DR

Baseline- Pre ART initiation	3	17.6%
Baseline-ART Re-initiation	0	-
High Viral Load post EAC <sup>2</sup>	0	-

No protease DRMs



Lab Manager- Selina Silim preparing DBS-Tininga clinic, Mt Hagen.

# Summary



- HIV VL testing done at PoC in a clinic setting allows for same day results and HIV management
- ACTUP–PNG has demonstrated the value of active drug resistance and scale-up of these capabilities combined with HIV VL testing will enable better treatment and care for PLHIV
- Patients remaining at the clinic to receive their results in the same day is often challenging.



# Conclusion



- Molecular PoC testing is possible in PNG and can offer improved access to timely HIV testing and monitoring.
- To meet the third UNAIDS target of 95% virally suppressed and working towards ending AIDS, addressing transmission of HIV, and HIVVL suppression among, must be made urgent health priorities in PNG
- ACTUP-PNG needs to be expanded to high HIV burden provinces in PNG

# Disclosure of Interest



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# Thank you!!





# ACTUP staff and collaborators

## ACTUP-PNG Primary Investigators



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