Vuka! Let's unite towards a TB-free world!

9th SA TB Conference
8 – 11 June 2026

Automated Medication Dispensing through a Prescription Collection Unit:

Client Perspectives from a Primary Health Care Clinic in Umlazi, KwaZulu-Natal

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AIDS Healthcare Foundation
South Africa

AHF
AIDS HEALTHCARE FOUNDATION

OUTLINE

1. Background
2. Problem statement / Rationale
3. Aim, objectives, methods
4. Results
5. Interpretation
6. Programmatic / policy implications
7. Conclusion

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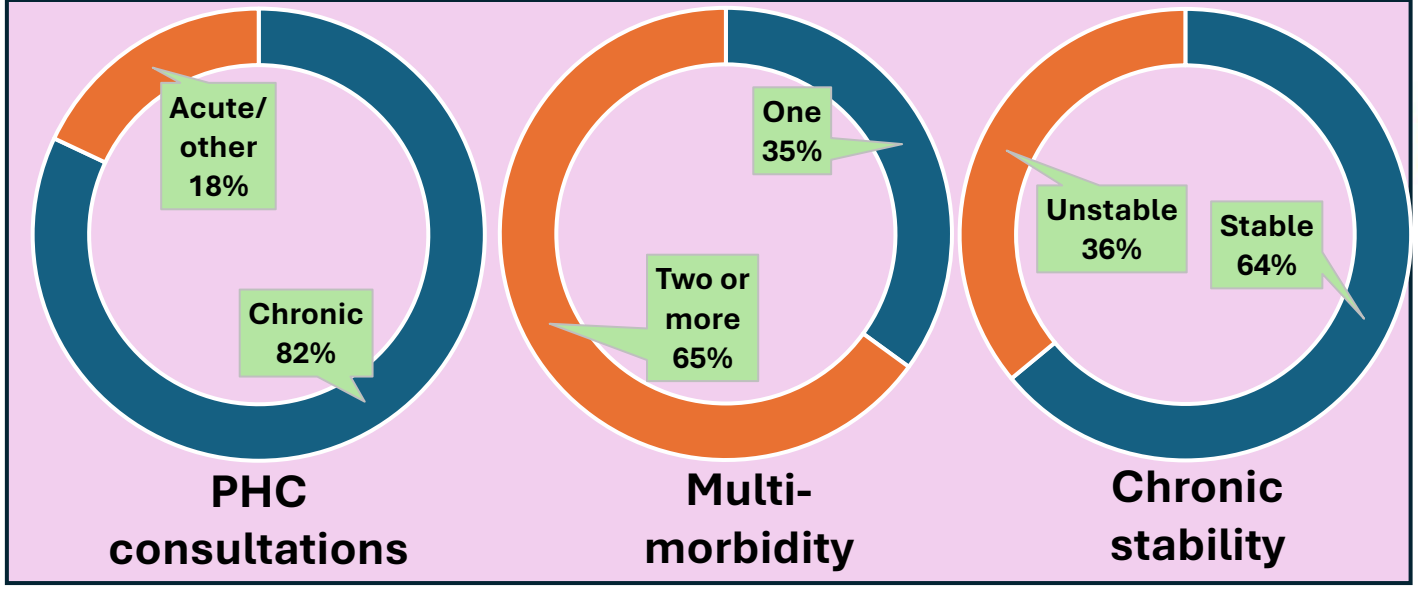
BACKGROUND (1)



Colliding epidemics of chronic conditions

- HIV
- TB
- NCDs

Congested PHC facilities

- High patient load
- Ailing infrastructure
- Paper-based HIS
- Unreliable supply chains

Long waiting times for stable clients to collect medication

Miss work / income loss
Poor adherence
Poor control of chronic conditions

Bradshaw et al. (2007); Hunter et al. (2017); Mash et al. (2021); Dagume-Ndou and Lumadi (2024)

BACKGROUND (2)

Scoping review exploring alternative mechanisms for delivery of medication in South Africa:
26 publications included.

Type of delivery mechanism	*n*
Alternative PuP	14
Workplace outreach	1
Adherence / support clubs	17
Home delivery	5
Smart lockers	0
Pharmacy Dispensing Units	0

Mash et al. (2021)

NDOH supported the development of alternative mechanisms for delivering medication to stable patients with chronic diseases.

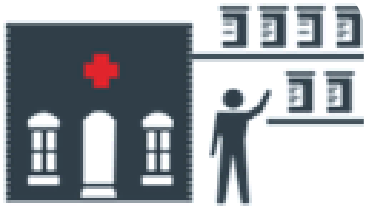
GOALS

Decongestion

Task-shifting to CHWs

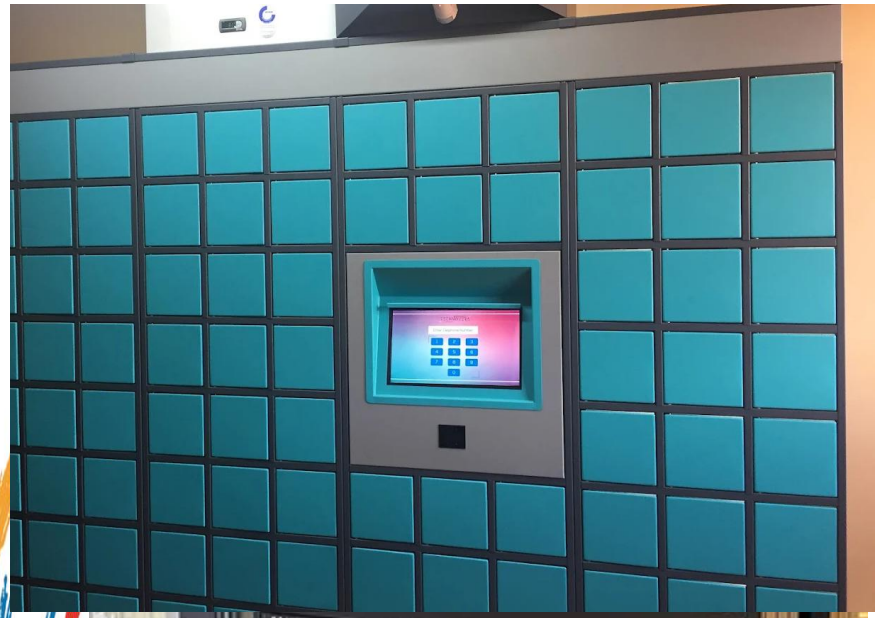
Patient-centredness

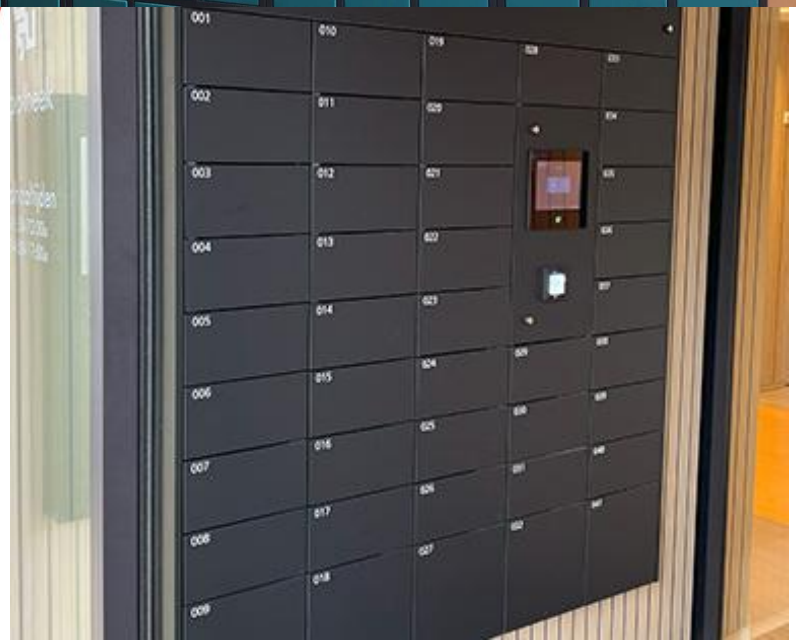
Retention and adherence



Access

BACKGROUND (3)





Images: PeleBox (2026); Olssen (2025); ReP / Service Systems (2025)

6. Parcel collection

5. Notification sent to client

4. Pre-packaged medication loaded

3. Six-month prescription

2. Enrolment

1. Client eligibility

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PROBLEM STATEMENT / RATIONALE

Assessing safety, efficiency, medication errors	• Ahtiainen et al. (2019); Syst. Review; 2005-2016 • Assaad (2017) • Belén Jiménez Muñoz et al. (2011) • Bagattini et al. (2022); Brazilian tertiary hospital • Alanazi (2022)
Assessing impact of PDU/ADU on personnel time and costs	• Chapuis et al. (2015) • de-Carvalho et al. (2017); Brazilian hospital • Wang et al. (2021); 2 year study; Taiwan • Batson et al. (2022); Systematic Review • Jeffrey et al. (2024); Systematic Review • Craswell et al. (2020); Australian hospital
Assessing client and HCW preferences for using smart lockers; acceptability	• Gobir (2024); Nigerian study • Williams et al. (2023); eSwatini • Van Heerden et al. (2024); HSRC (KZN)

- Paucity of data describing patient experience and retention of patients utilizing PCUs in South Africa.
- Important to analyse appointment-keeping, retention and acceptability, for scaling and investment considerations.

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AIM AND OBJECTIVES

Aim:

- Evaluate the experience, appointment-keeping and retention of clients enrolled on and utilizing a PCU within a Primary Health Care clinic in Umlazi, KwaZulu-Natal

Objectives (scoped):

- to examine the experiences of clients utilizing a PCU;
- to evaluate clinic appointment-keeping of PCU users; and
- to assess client satisfaction and level of acceptance of the use of a PCU at the selected clinic

METHODS

Study design:	• Observational, descriptive, involving cross-sectional survey and record review
Setting:	• PHC clinic in Umlazi, eThekwini District, KwaZulu-Natal
Period:	• 1-8 August 2025 (cohort)
Sampling frame, method and size:	• Site purposefully selected (PCU installed) • Convenience sampling on 1 week cohort of clients undergoing prescription review • Inclusion: Newly registered or existing on CCMDD with last prescription renewal over a one-week period during Feb. 2025; • One week cohort (210): 77 PCU and 133 other exPuPs • Census of 77 PCU clients for interviews

METHODS (2)

Data collection tool:	• Structured interview schedule & record review template
Data collection process:	• Structured interviews conducted by research assistant (Pharmacist)
Data analysis:	• Descriptive statistics; • Chi-square test for associations
Ethics:	• PID and informed consent (translated); confidentiality maintained • Ethics approval obtained from SAMAREC: 280808016/067/2025 • Gatekeeper permissions from KZN HRKM: KZ_202506_017 and PMMH

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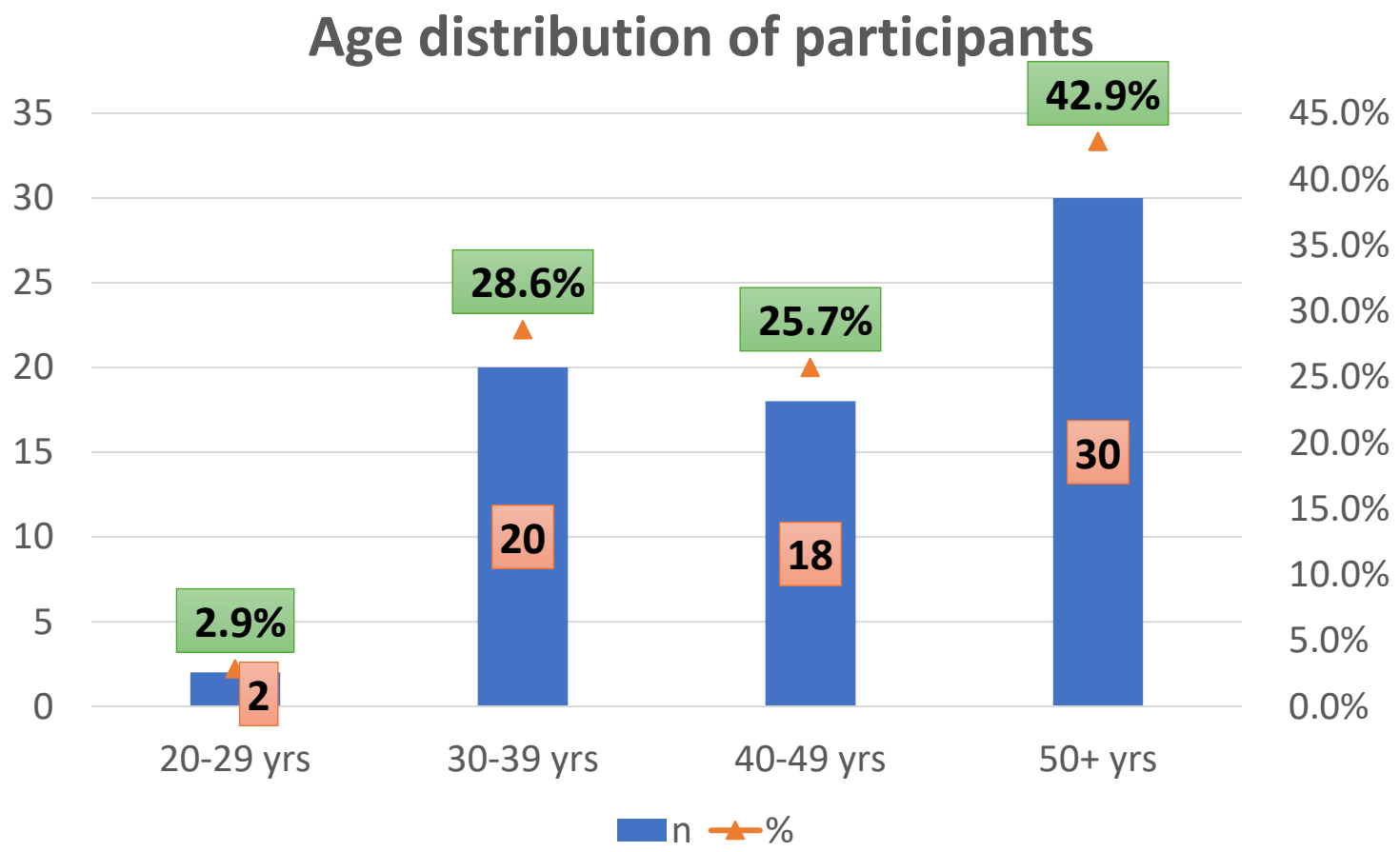
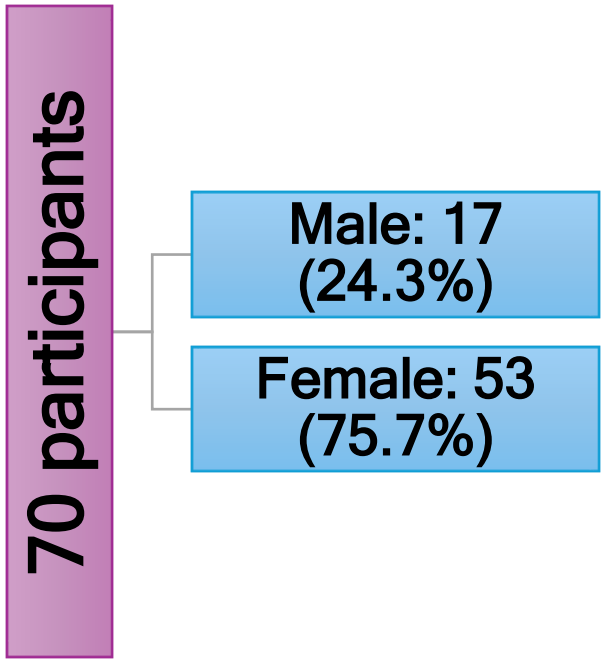
RESULTS (1)

- Total participants: 70 (90.9% response rate)
- 68 (97.1%) participants >30yrs old

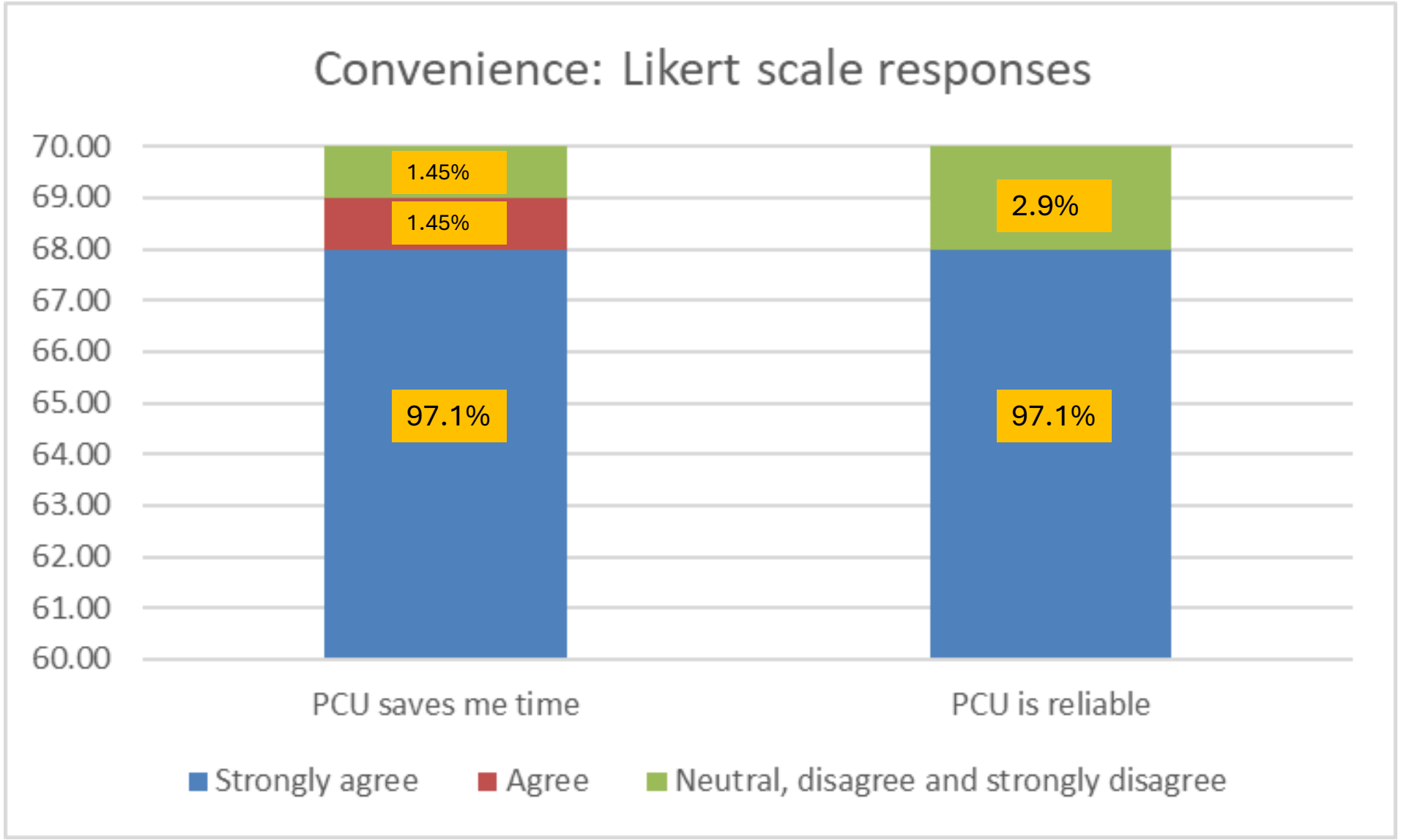




RESULTS (2): EASE OF USE AND SAFETY

Criterion	Yes
Showed how to use PCU upon enrolment?	100% (n=70)
Received OTP?	100% (n=70)
No difficulty in retrieving parcel from PCU?	100% (n=70)
Staff assisted if help needed with PCU?	100% (n=70)
Language understandable?	88.6% (n=62)
Do you feel safe?	100% (n=70)

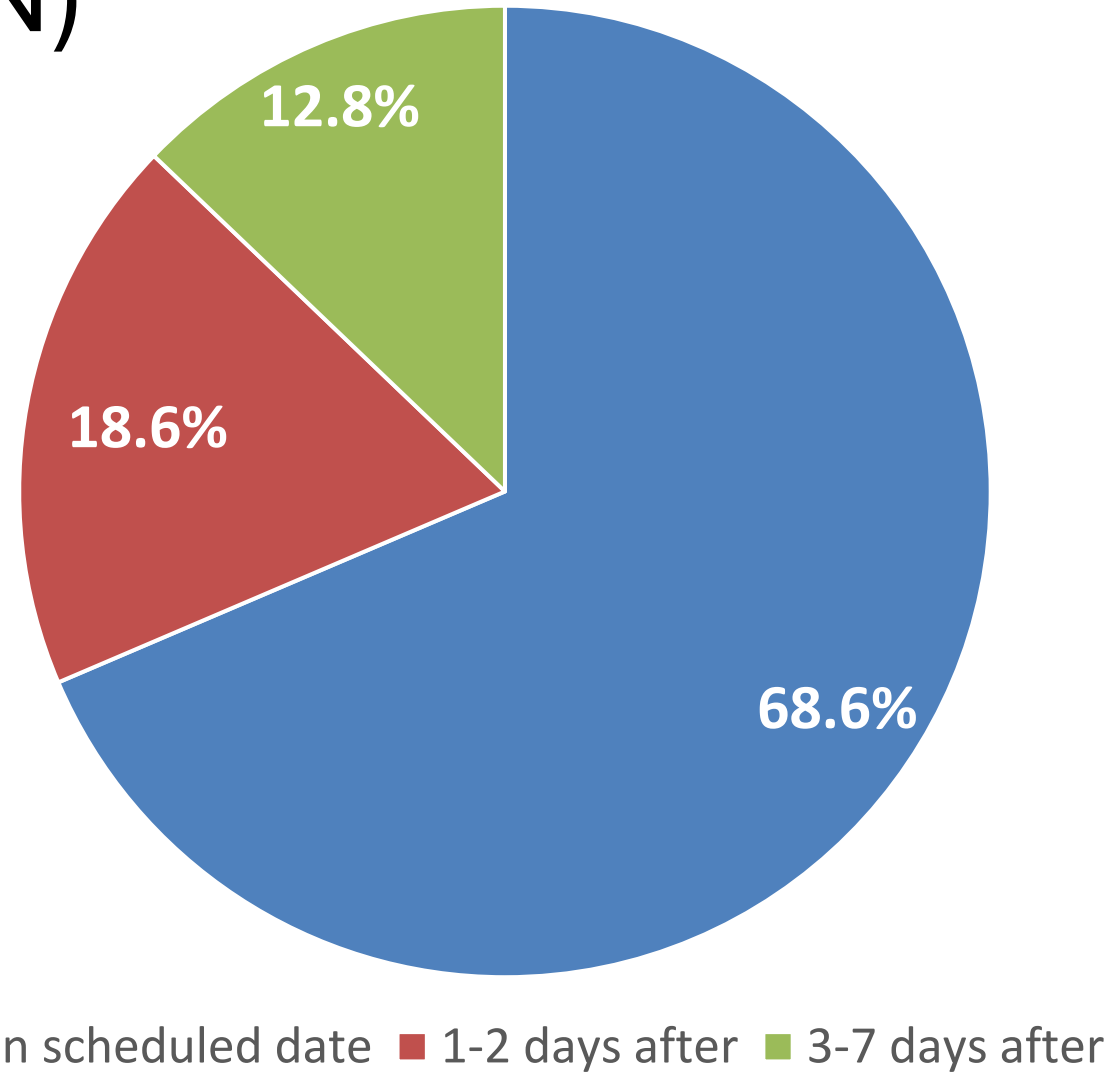
RESULTS (3): CONVENIENCE



RESULTS (4): APPOINTMENT KEEPING (PARCEL COLLECTION)

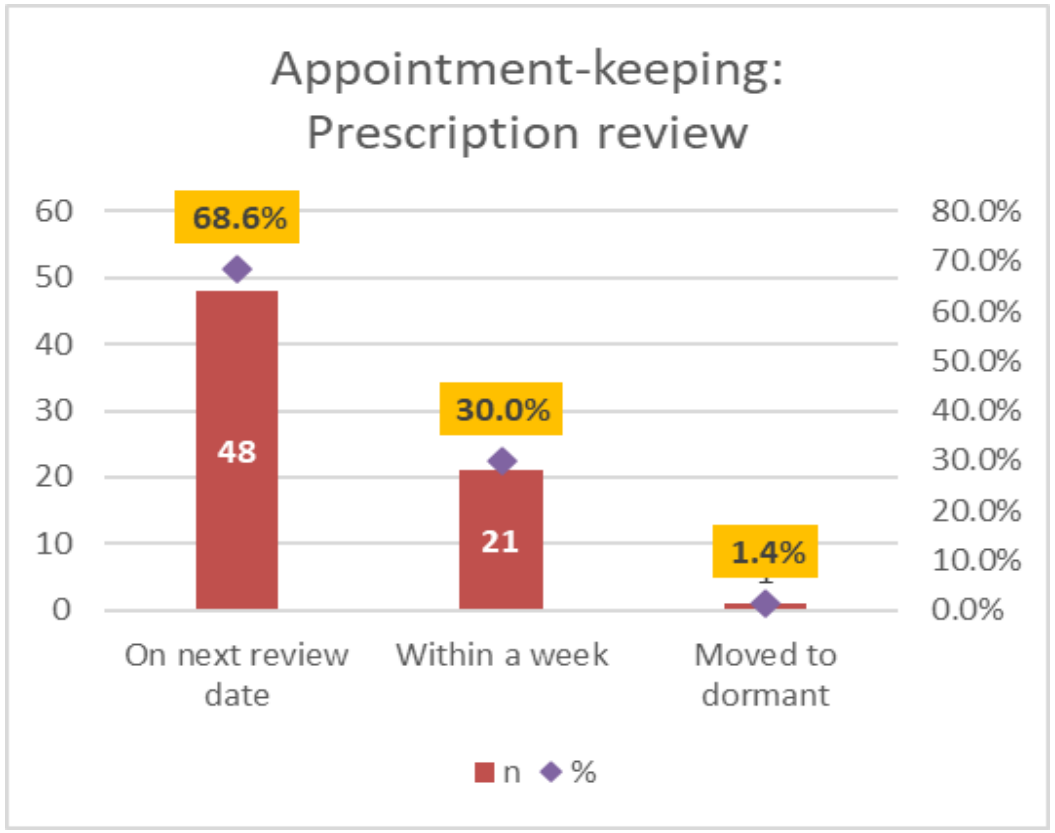
- Significantly more clients collected medication on their scheduled collection date compared to within a week (χ^2=9.66; p<0.05)

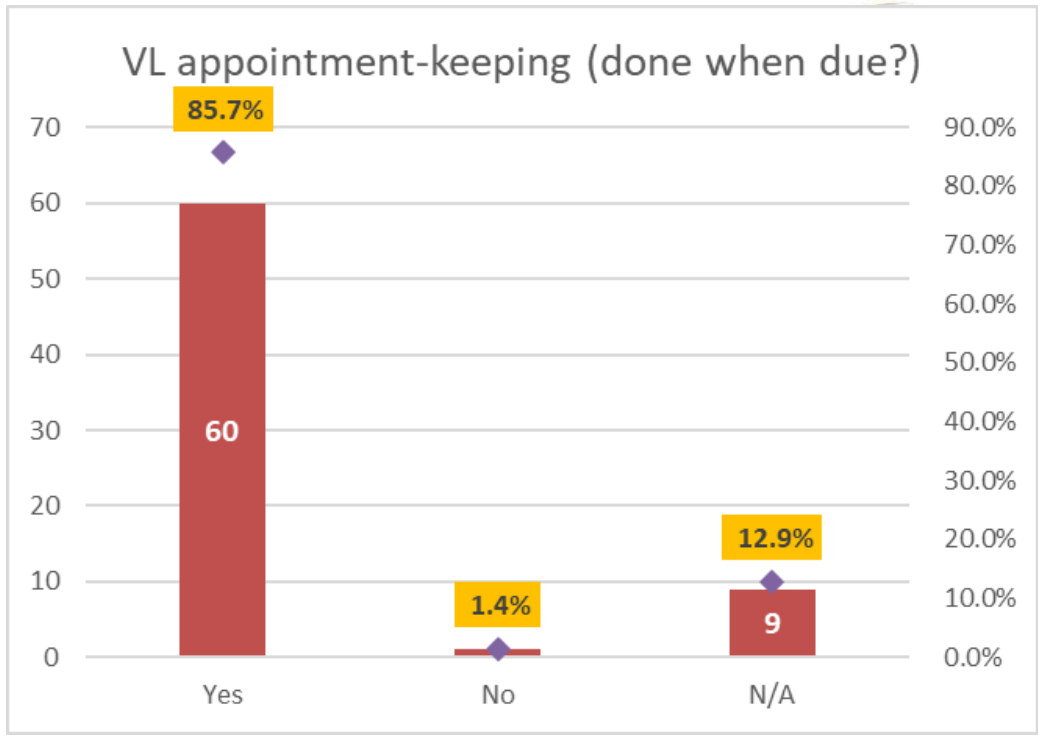
- No significant difference between males and females (χ^2=2.55, p=0.11)

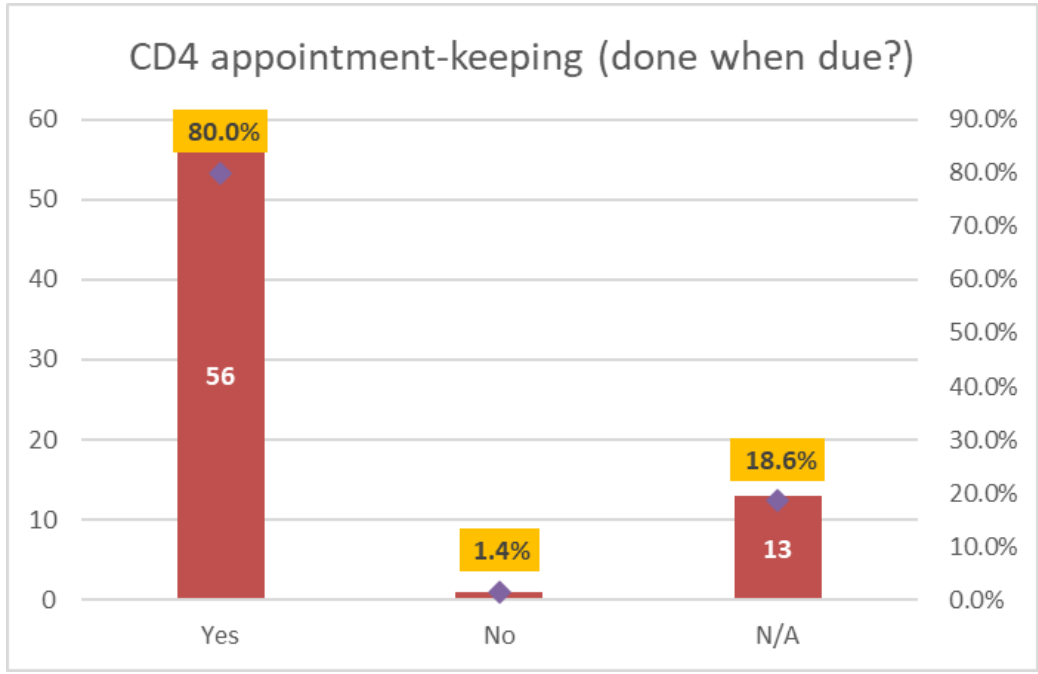


RESULTS (4): APPOINTMENT-KEEPING (PRESCRIPTION RENEWAL AND VL/CD4 DUE)

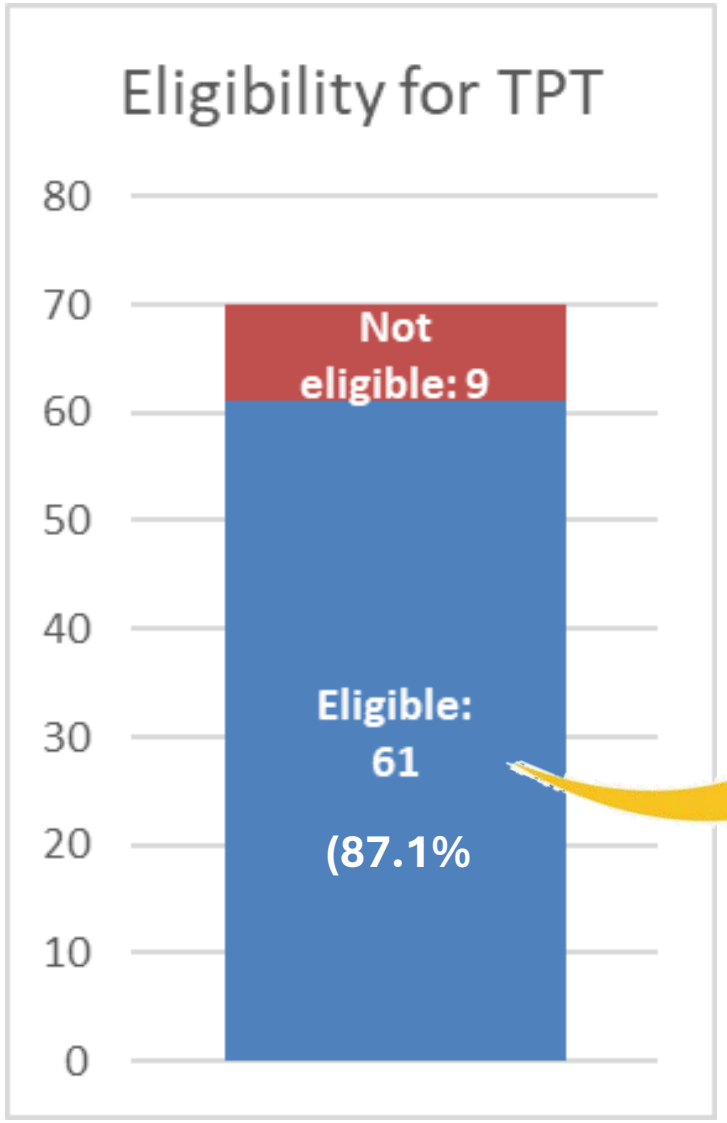
- Adherence to six-month prescription review appointments significantly higher on the scheduled date than within a week thereof (χ^2=10.55; p<0.001)



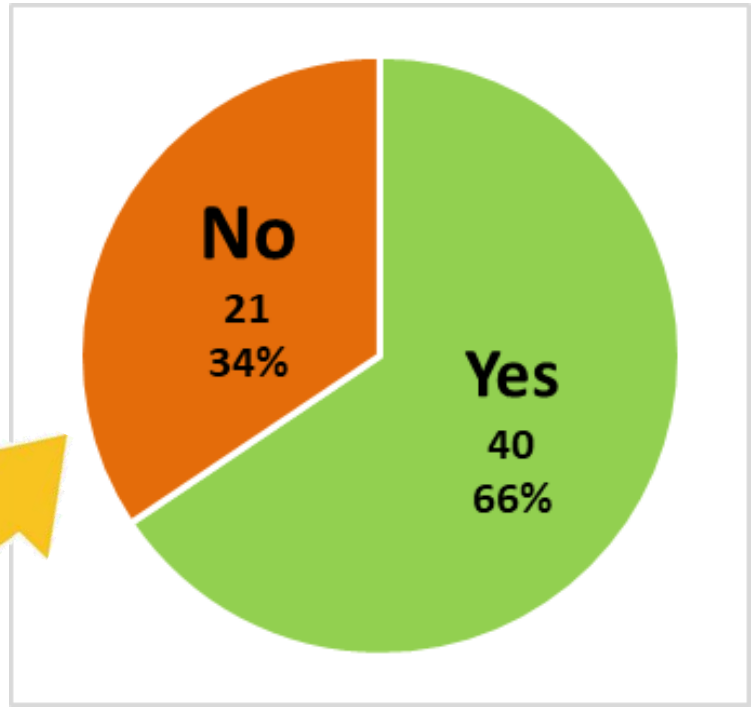




RESULTS (5): TPT COVERAGE & COMPLETION



Eligible clients on TPT:

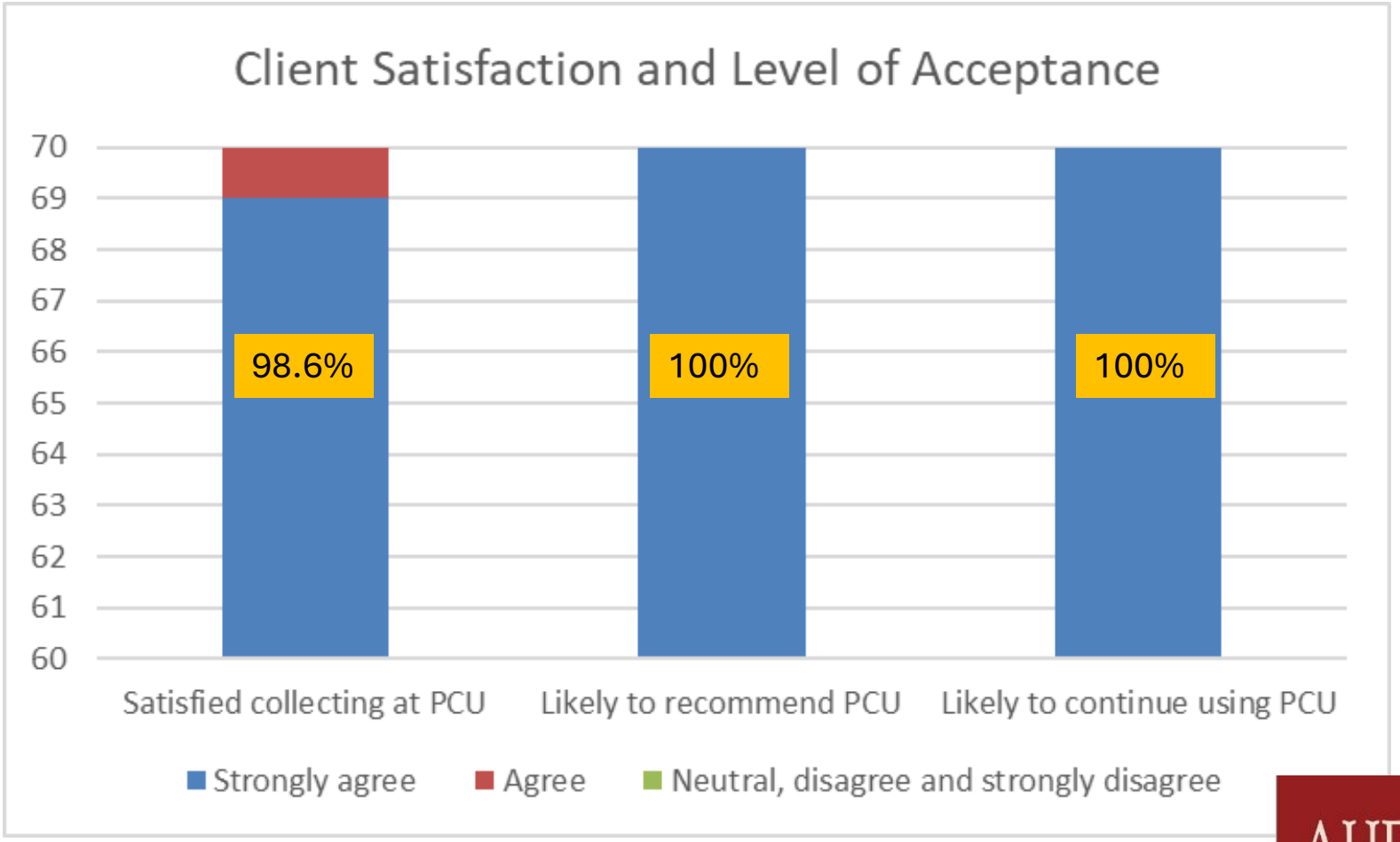


Zero clients diagnosed with TB in the prior 6 months

100% completed or compliant on TPT

RESULTS (6): CLIENT SATISFACTION

- Satisfaction with collecting medication from a PCU
  - 98.6% (n=69) strongly agree
- 100% likely to recommend its use and to continue using the PCU



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INTERPRETATION

- High degree of acceptability and satisfaction
- Easy to use, convenient, saves time; but preferred language options needed
- Vast majority of clients adhere to scheduled medication collection date
- Excellent appointment-keeping for prescription reviews; acceptable for CD4/VL, considering disparate appointment dates
- Low TPT prescribing; excellent TPT compliance

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PROGRAMMATIC/ POLICY IMPLICATIONS

DMOC	PCUs free up resources to focus on new, unstable, or DR-TB patients. Consideration for continuation phase TB treatment
Patient Support Integration	TB treatment requires holistic care; CHWs role wrt defaulters
Clinical review cycles	Consider adjusting scripting validity window for TB clients to force necessary clinical re-evaluations
Adherence Tracking	Rapid action when clients miss collection dates; narrower dormancy window-period to trigger defaulter tracing
Stricter patient selection criteria	TB requires public health safeguards. Clinically stable, smear-negative patients with good treatment literacy.
Infrastructure and costs	Capital intensive. Policies must address capital expenditures, backup power and temp. control requirements, maintenance contracts

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CONCLUSION

- PCU offers a pragmatic solution as a DSD option in decongesting a high-volume PHC facility
- High degree of satisfaction and acceptability, with minimal to no disruption in appointment-keeping and TPT compliance; TPT coverage is low
- Consideration for clients on longer term TPT regimens, comorbidities, continuation phase TB treatment
- Research on TB treatment considerations, clinical and TB outcomes, across more PCU sites recommended, considering programmatic implications

ACKNOWLEDGEMENTS

- KwaZulu-Natal Department of Health and Management of Prince Mshiyeni Memorial Hospital
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- Liezel Korf (Statistician)

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