

From concept to clinical impact: outcomes of South Africa's first digital clinical pharmacy unit

Theme: Reimagining healthcare quality: AI, equity and innovation in South Africa

Messina AP₁ · Laubscher A₂ · Nagoor K₂

1 Digital Medication Management

2 Digital Clinical Pharmacy — Netcare Ltd

Presenting author: Angeliki Messina
angeliki.messina@netcare.co.za

Extending specialist pharmacy expertise through digital tools

Innovative adoption of digital tools has created new frontiers in clinical pharmacy delivery in Netcare.

- The Digital Clinical Pharmacy Unit (DCPU) harnesses an **electronic medical record (EMR) and infection management software** to enable master's-qualified pharmacists to execute high-impact clinical services remotely across 44 private hospitals in South Africa, irrespective of geographical location.

Building on Netcare's own earlier network-wide antimicrobial stewardship programme,

- the DCPU translated that pharmacist-led model into a fully digital, outcomes-tracked service spanning **antimicrobial, anticoagulant and Clostridioides difficile stewardship**.

Grounded in Netcare's own evidence

An earlier network-wide antimicrobial stewardship programme across 47 Netcare hospitals cut antibiotic consumption by 18% — the pharmacist-led foundation the DCPU has now taken fully digital.

Brink et al., Lancet Infect Dis, 2016

The case for stewardship, globally

A pooled analysis of antibiotic stewardship programmes found a significant protective effect against *Clostridioides difficile* infection — a risk reduction of roughly half.

Feazel et al., J Antimicrob Chemother, 2014

Extending impact to anticoagulation

Across 35 studies and over 10,000 patients, pharmacist-led anticoagulation interventions were linked to more appropriate therapy, fewer bleeding events, and lower hospitalisation.

Kefale et al., Eur Heart J Qual Care Clin Outcomes, 2024

Two objectives guided this two-year quality-improvement review

01

Showcase clinical outcomes

Showcase the clinical outcomes and quality-improvement impact achieved by the DCPU in its first two years, across three clinical programmes: Antimicrobial Stewardship (AMS), Anticoagulant Stewardship (ACS), and Clostridioides difficile Infection (CDI) management.

02

Demonstrate value at scale

Demonstrate the value of a digitally enabled, remote clinical pharmacy model delivered at national scale — across 44 hospitals, with quality metrics tracked consistently network-wide.

How the DCPU's three programmes were run and evaluated

01

Establishment

Established May 2024; the DCPU comprises 18 master's-qualified clinical pharmacists overseeing 44 hospitals nationally

02

Three Clinical Programmes

High-impact, value-based initiatives across AMS, ACS and CDI, each with defined processes and outcome measures guided by quality-improvement methodology. Clear SOPs, frameworks and KPIs communicated

03

Digital Infrastructure & Data Capture

Activity captured through the EMR and infection management software, generating notifications, audits and time-stamped recommendations with prescriber acceptance rates

04

Outcome Measures & Engagement

Outcome metrics tracked: hang time compliance, DDD, DOT and antimicrobial cost per 100 patient days, alongside training, journal clubs, AMS committee meetings and newsletters

Scale of impact across the network

22

Months of DCPU operation captured in this outcomes review (July 2024–May 2026)

29,462

Total clinical interventions recorded

153,926

Patients reviewed across the DCPU network

44

Private hospitals served nationally

Antimicrobial & anticoagulant stewardship

26,262

AMS interventions recorded — focused on “low hanging fruit” high-impact interventions

77.8%

AMS prescriber acceptance rate

3,074

ACS interventions recorded — focused on under- and over-utilisation of anticoagulants

74.8%

ACS prescriber acceptance rate

CDI stewardship & quality outcome metrics

64%

CDI prescriber acceptance rate, up from 41% at launch,
across 126 interventions reviewed

−8.1%

Reduction in antimicrobial cost per 100 patient days

27.40

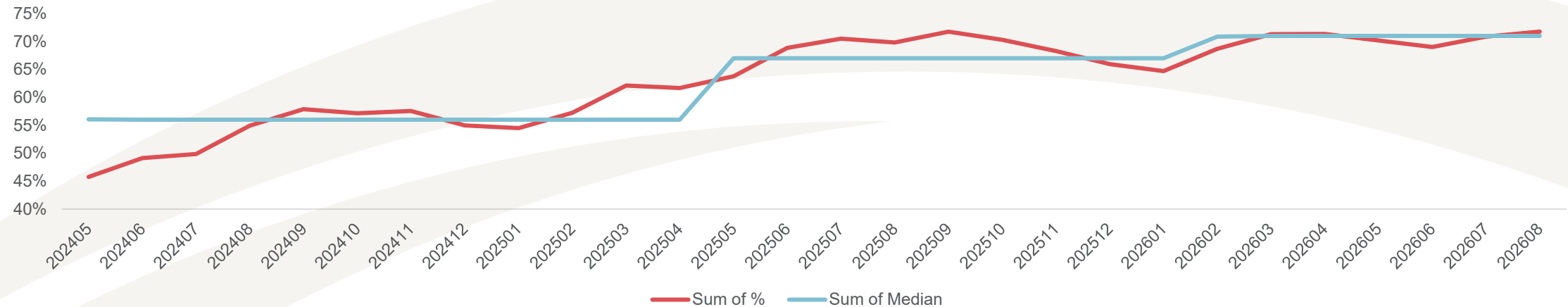
Days of therapy (DOT) per 100 patient days, down from
29.48 (>7% reduction)

68.3%

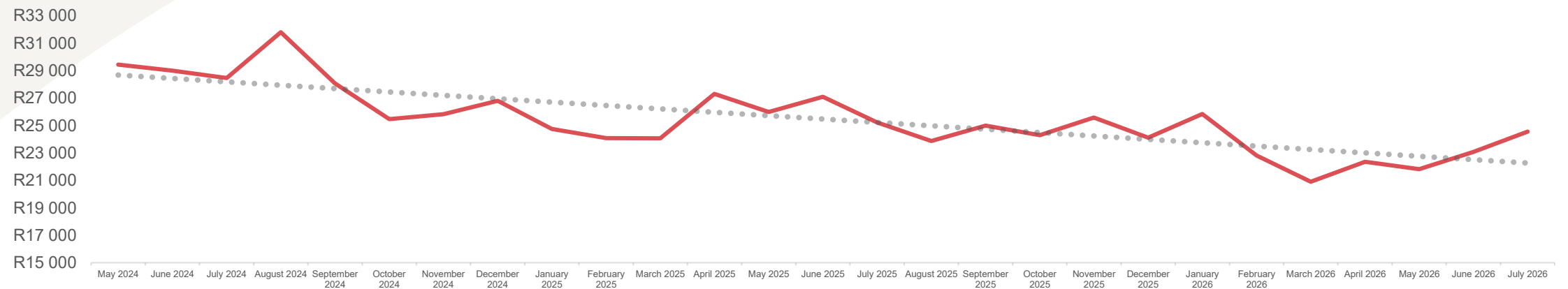
Hang time compliance, up from 57.4% at launch

Trends in hang time compliance and cost over time

Group Hang Time Compliance Over Time



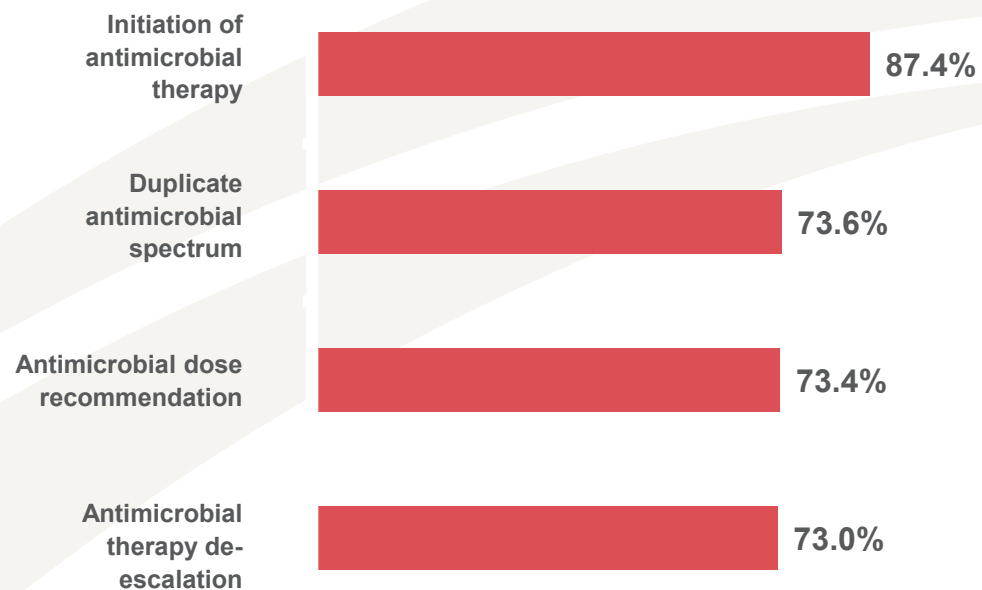
Cost per 100 patient days



RESULTS

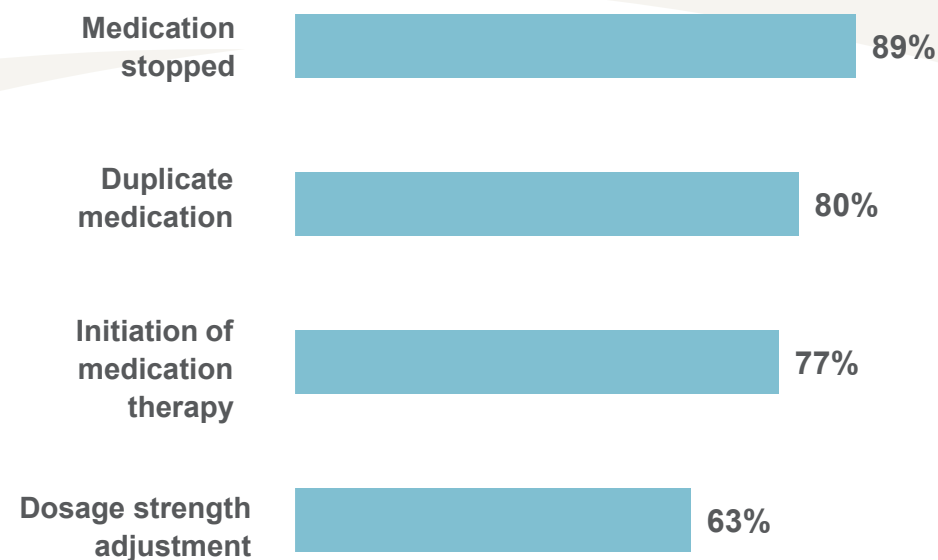
Where interventions landed, and how readily they were accepted

Top AMS intervention types



% of AMS interventions accepted (n=26,262 total)

Top ACS intervention types



% of ACS interventions accepted (n=3,074 total)

Source: DCPU EMR and infection-management software audit trail, May 2024–Mar 2026. Ranked by intervention volume within each programme.

Digital pharmacy delivers measurable quality impact

The DCPU demonstrates that remote clinical pharmacy drives measurable improvement across multiple quality outcome indicators.

- Reduced antimicrobial exposure,
- improved stewardship metrics, and
- lower costs —

Underpinned by:

- Multidisciplinary collaboration,
- strong leadership, and
- purposeful digital tool adoption —

Confirms this as an innovative, technology-driven model for healthcare quality impact and better patient outcomes.

QUESTIONS & DISCUSSION

Thank you

Angeliki Messina

Presenting author · Digital Medication Management, Netcare Ltd

angeliki.messina@netcare.co.za



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