

Small Cycles, Big Impact

Using iterative PDSA cycles to make meaningful/sustainable to
Antimicrobial Stewardship in Aged Residential Care

Mikaela Shannon

Clinical Director — Enliven Aged Care Services, Presbyterian Support Central

Presenting Author | PhD professional Candidate in Health



AMR is a growing patient-safety risk in aged residential care

1

High antibiotic utilisation

Aged care residents are frequently prescribed antibiotics, often for prolonged or recurrent infections.

2

Clinical complexity

Multiple comorbidities and frailty increase the likelihood of inappropriate prescribing.

3

Variation across sites

Inconsistent practice between facilities limits reliable, organisation-wide antimicrobial stewardship (AMS).

This project aimed to implement a standardised AMS programme across our residential sites, strengthening IPC practice and reducing unwarranted variation through an interprofessional approach.

Project at a Glance

14

Aged residential
care sites

900+

Residents
supported

18

Months of
implementation

An interprofessional team

IPC Leads

Nurses

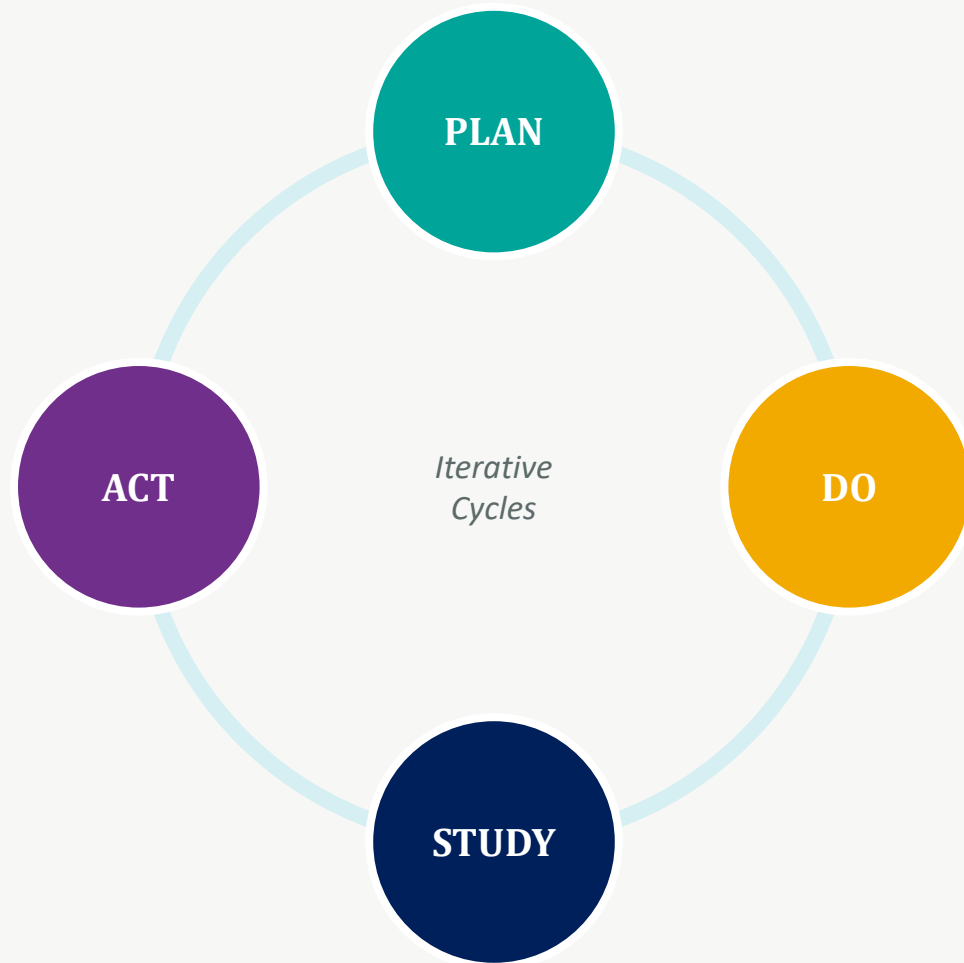
General Practitioners

Pharmacists

Care Staff

supported implementation, with IPC Leads acting as local change agents driving rollout, audit, and education at each site.

A Structured PDSA Approach



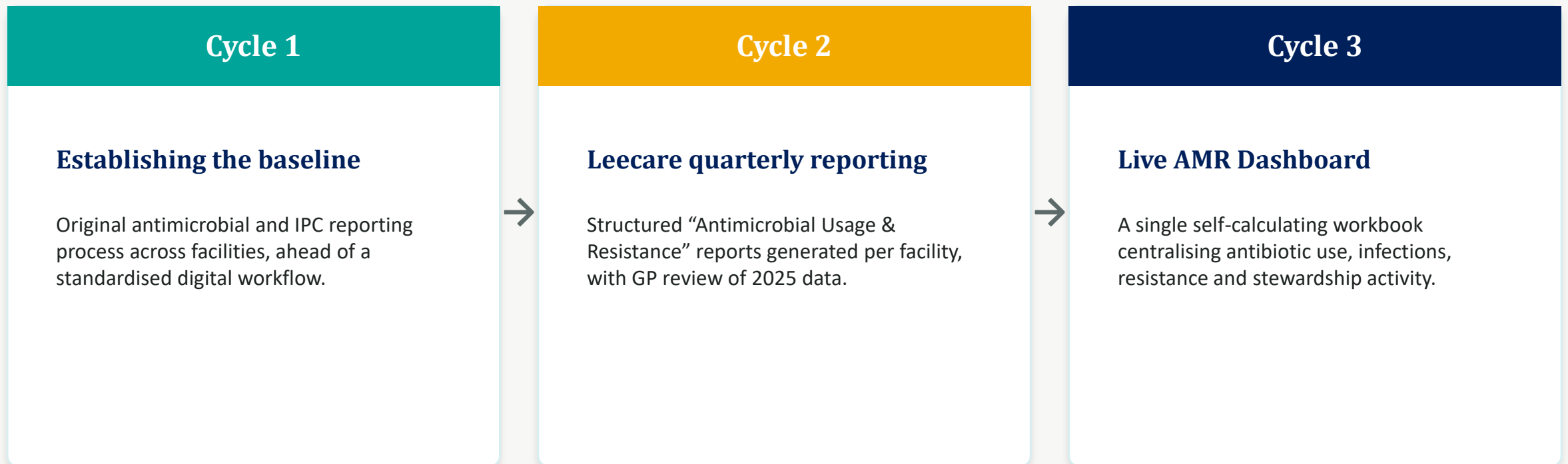
Plan: Standardised AMS policy designed with IPC Leads, nurses, GPs, pharmacists and care staff.

Do: Rollout at each site: prescribing audits, targeted education, and local adaptation.

Study: Regular audit and feedback loops give real-time visibility of prescribing practice.

Act: Findings feed the next cycle — adapting to local context while keeping consistency.

Our PDSA Journey in Antimicrobial Reporting



The following slides walk through each cycle in more detail — with real examples of the data, policy, and practice behind them.

Establishing the Baseline

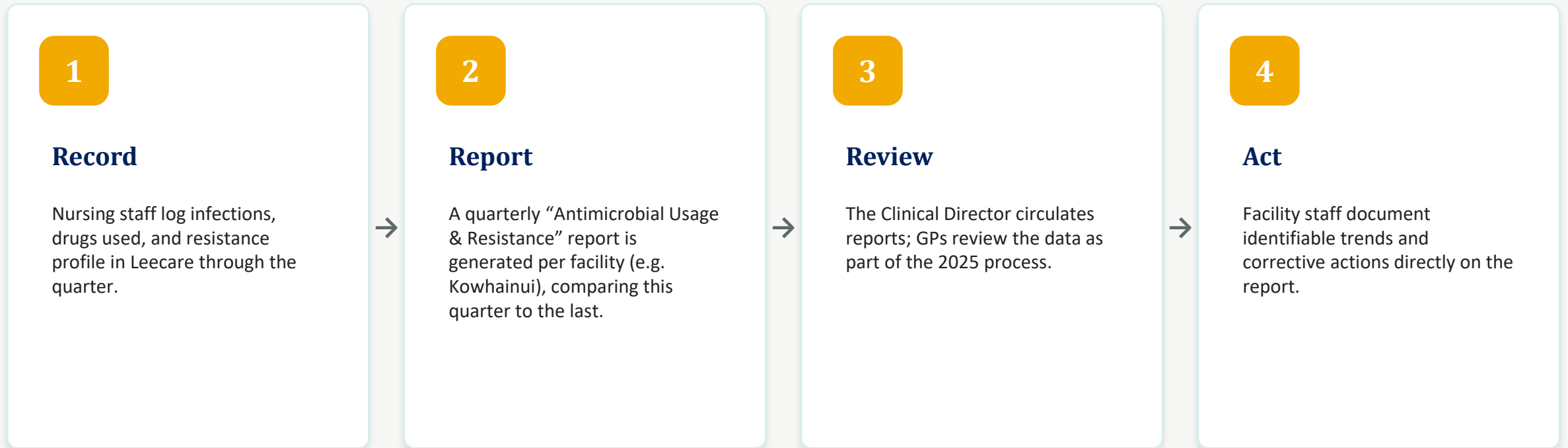
What practice looked like

- Antimicrobial and IPC data recorded per facility, largely on paper and within Leecare's built-in audit forms.
- No standardised, organisation-wide view of antibiotic use or resistance trends across sites.
- Stewardship activity (education, audits) tracked inconsistently between facilities.
- Reporting was reactive rather than a planned, recurring quality-improvement cycle.

Why a new cycle was needed

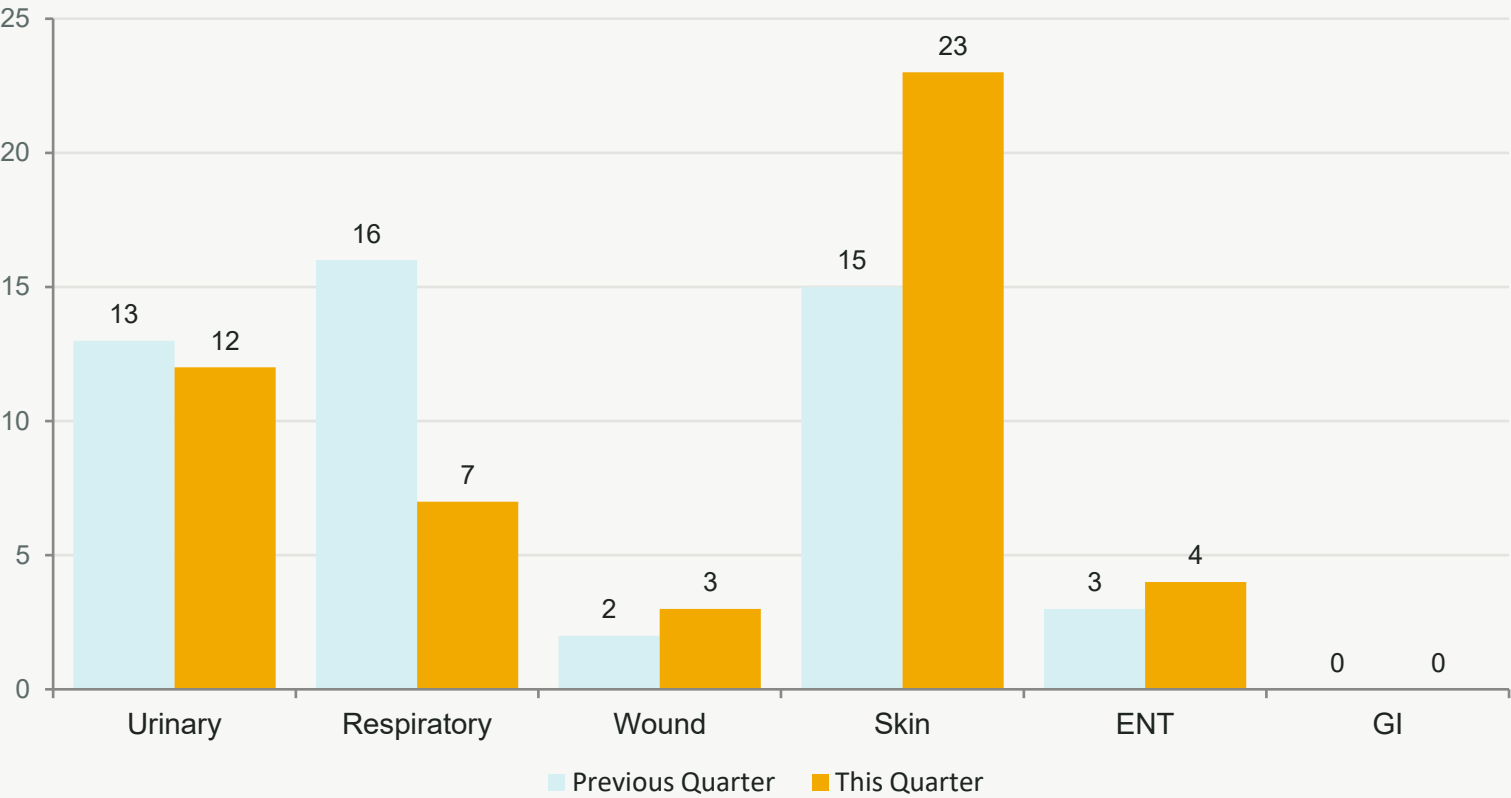
Fragmented, facility-level data made it hard to see resistance patterns, benchmark prescribing, or target stewardship support — the case for a structured, standardised reporting process.

Leecare Quarterly Antimicrobial Reporting



Source: “Antimicrobial usage and resistance – quarterly report,” Leecare, Kowhainui facility, 2026.

Infections by Type — Kowhainui Facility



What the data flagged

- UTIs held steady
- Respiratory infections roughly halved
- Skin infections rose — largest shift
- GI infections nil, both quarters

Source: Leecare quarterly report, Kowhainui facility, 2026.

From Data to Action on the Ground

Identifiable trends

“UTIs remained the same; an increase in respiratory and skin infections. One resident has ongoing toe issues causing ingrown toenails and fungal infections — seen by podiatrist, needs slippers replaced. One obese resident on the hot side of the building is prone to fungal infections and cellulitis, and has declined to finish antibiotic courses. One resident has monthly urine tests for renal review, consistently positive, and is charted antibiotics even when asymptomatic.”

Corrective actions taken

- Reminded staff to support residents with regular hand washing to reduce spread of infection.
- Residents with a respiratory infection to stay in their room while actively coughing.
- Reinforced the 5 moments of hand hygiene at handover.
- Hand-washing competencies and infection modules on PIO to be completed.

Source: Leecare quarterly report, Kowhainui facility — recorded by facility RN, 2026.

Challenges Along the Way

What made implementation hard — and what's still ahead



Engagement in the early stages

Getting consistent engagement from IPC Leads and leadership was hard to sustain early on.



Staff time pressures

Competing clinical demands left little time for IPC Lead involvement.



Turnover of IPC Leads

Staff changes disrupted momentum and meant repeated re-training.



Inconsistent documentation

IPC practices were documented differently across facilities.



Varying confidence with the data

Comfort using the Excel workbook and interpreting results varied widely.



The Culture Shift

This is more than a process change. It will take time for staff to get comfortable using the tools to question practice, learn from the data, and see IPC/AMS as everyone's responsibility — not just the IPC Lead's.

2025: A PDSA Cycle in Its Own Right

The Infection Control Day, 3 April 2025, is where Cycle 2 was actually built — home by home.

Kandahar Court	MRSA & wound management
Chalmers	UTIs & wound infections
Coombrae	UTIs & antibiotic stewardship — reduction achieved
Woburn	Isolation, outbreak kits & MOH reporting
Huntleigh	Outbreak management & systems
Kowhainui	Skin infections & environment

Source: Infection Control Day Return 2025 (6 of 14 homes shown).

Governance established in 2025

- Quarterly infection data reported to the IPC Committee
- IPC audits rotated across staff, not just IPC Leads
- Face-to-face Peer Support Days (8 hrs allocation each)
- Clinical Director site visits, scheduled quarterly
- IPC policy reviewed annually, or sooner if triggered

What We Heard From IPC Leads

Honest themes from IPC Lead discussion, feeding directly into how we run the next cycle.

Make the numbers meaningful

Most staff see the IPC graphs and hear the numbers in meetings — but we're not always making them meaningful for everyone, especially non-clinical staff. People need to understand what the numbers mean for their specific role.

Performance vs. practice

There's frustration that staff sometimes “perform” during audits without sustaining that practice day to day. The weight of sustaining it can end up resting largely on IPC Leads — though auditing feels most rewarding when it actually leads to visible improvement.

Ownership, consistency & finding gaps

One IPC Lead spoke about owning the role and responding to what's actually happening, not just what you want to see. And improvement isn't just about showcasing what we do well — it's being willing to identify gaps too.

Source: IPC Leads discussion notes, 2025.

Continuous Improvement: the Wider Bar

CONTINUOUS IMPROVEMENT (CI)

Driving measurable, sustainable change

WHAT CI IS

- ✓ Goes further than Nga Paerewa
- ✓ Drives systematic change
- ✓ Must be measurable, monitored, sustained

EVIDENCE NEEDED

- ✓ Review and analysis
- 📈 Measurable outcomes (e.g, safety, satisfaction)
- ✓ Ongoing evaluation
- ✓

TIMEFRAMES

- 🕒 No fixed duration
- 🎯 Focus on measurable impact

CERTIFICATION FACTORS

- ★ High-quality, consistent care
- ⚙️ System improvements
- ✓ Robust audits and benchmarking

CI IN THE SECTOR

14 **14%** of audit reports include CI

Common CI areas

- Meaningful activities
- Quality systems
- Restraint reduction
- Risk management
- Dining experience
- Workforce training

2024 SNAPSHOT

- 📄 464 audit reports
- 📄 67 reports with CI
- ✓ 105 total CIs awarded

HOW TO ACHIEVE CI

- ✓ Set clear goals
- ✓ Engage stakeholders
- ✓ Track progress



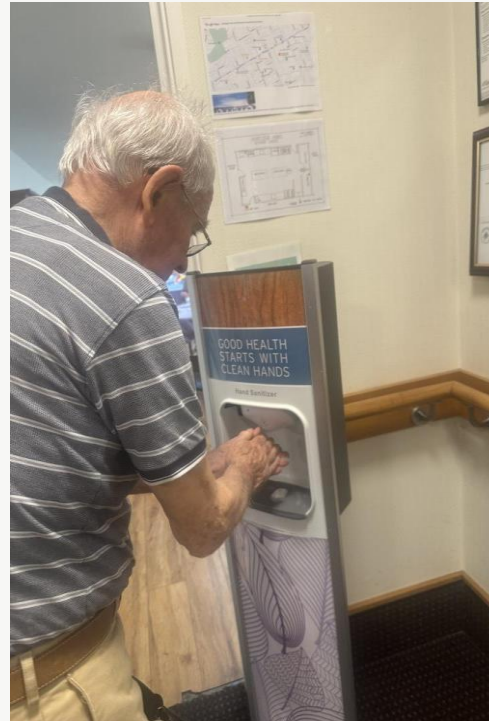
Only 14% of audit reports include CI — our common areas:

- Meaningful activities
- Restraint reduction
- Dining experience

- Quality systems
- Risk management
- Workforce training

Source: Enliven Continuous Improvement (CI) sector overview, 2024 data.

Case Study: the February Challenge, Huntleigh Home



PPE, hand hygiene & outbreak preparedness — led by the IPC Nurse and IPC Team, with strong resident participation: a “Hand Hygiene Hero” campaign, sanitiser stations, and hands-on PPE demonstrations.

“Infection prevention is not just policies or checklists — it's building a culture where safety becomes second nature.”

IPC Nurse, Huntleigh Home. Source: February IPC Challenge report, 2026.

The Numbers Behind the Campaign (One site)

28

staff completed the
handwashing competency

55

staff completed the
hand hygiene quiz

51%

achieved a
perfect score

91%

scored 18/20
or higher

What the quiz flagged — and what we did about it

- Minor knowledge gaps: staff weren't always sure of the outbreak kit location.
- A misconception that wearing gloves replaces the need for hand hygiene.
- The IPC Nurse gave targeted one-on-one education to close both gaps immediately.

Source: Hand Hygiene & Handwashing Competency Quiz, Huntleigh Home, February 2026.

Building Leadership Capability

This training is part of our ongoing commitment to the highest standards of care and service across our facilities.

What senior staff covered

Effective leadership in healthcare, continuous quality improvement processes, and the latest best practices in resident care — equipping senior staff with the knowledge and tools to drive improvement.

Ongoing support to sustain it

- Regular check-ins
- Access to expert advice
- Cross-team collaboration to share ideas and successes

We're confident these initiatives lead to positive outcomes for staff and residents alike — and we look forward to our senior team continuing to lead the way.

One Live Workbook, Not Five PDFs

The AMR Dashboard workbook replaces static quarterly PDF reports with a single, self-calculating tool.



Dashboard

Auto-updating summary: prescriptions, infections, stewardship sessions, resistance rate.



Antibiotic Use

One row per prescription — resident, drug, indication, dates, and (new) ethnicity.



Infection Incidents

Logged monthly; resistance profile auto-highlights when “Resistant” is detected.



Stewardship & IPC Measures

Education sessions, audits, and hygiene measures in one merged log.



Key Metrics

Quarterly KPIs vs. target — prescription rate, infection rate, resistance rate.

Source: *AMR_Dashboard_for_Quality_and_Risk.xlsx* (PSC / Enliven, 2026).

Key Metrics, Calculated Automatically

Metric	Calculation	Target
Antibiotic Prescription Rate	Prescriptions ÷ residents × 100 / month	≤20 per 100
Infection Incidence Rate	Infections ÷ residents × 100 / month	Trend ↓
Resistance Rate	Resistant isolates ÷ total isolates	<15%
Stewardship Sessions / Month	Count of interventions logged	≥2 / month
Prescriptions with Documented Indication	Rows with indication filled ÷ total rows	≥90%

Each quarter's figures are pulled live from the Antibiotic Use, Infection Incidents, and Stewardship tabs — no manual re-tallying.

Source: AMR_Dashboard_for_Quality_and_Risk.xlsx, Key Metrics tab.

Stewardship & IPC Measures in Action

Date	Type	What happened	Outcome
21 Feb	Staff Education	Handwashing, outbreak management, PPE — all staff	Positive
12 Apr	Staff Education	RN referred for review of a UTI culture result, to check antibiotic appropriateness	Positive
13 Apr	Staff Education	New-staff orientation on correct hand-washing technique and 5 moments of hand hygiene	Positive
13 Apr	Resident Education	Resident coached on hygiene to prevent recurrence of UTI	Ongoing — resident declining
17 Apr	IPC Measure	Staff briefed on E. coli urine result linked to hygiene technique; technique reminder given	Positive

Stewardship & IPC Measures in Action

How the pharmacy team and prescribers work together day to day



Checking scripts against guidelines

Every antibiotic script is checked against local prescribing guidelines before it's dispensed.



Direct line to GPs and NPs

Pharmacists follow up with the prescriber whenever a script needs clarifying or looks out of step with best practice.



IPC built into daily routine

Hand hygiene, PPE and cleaning practices are reinforced at the counter as part of everyday work, not a separate task.



Data feeding back to practice

Dashboard insights are shared with GPs and NPs, closing the loop between what's dispensed and how it's prescribed.



Inside the AMR Dashboard Workbook

AMR Prevention & Stewardship — Quarterly Dashboard										
Use the data entry sheets to populate this dashboard. Metrics auto-calculate from source data.										
Antibiotic Prescriptions			Infection Incidents			Stewardship Sessions		Resistance Rate		Facilities Active
2			1			6		0.0%		0
📄 Monthly Summary — Antibiotic Use & Infections										
Month	Prescriptions	Infections	Stewardship Sessions	% Resistance	Prescription Rate	Infection Rate				
Jan	0	0	0	0.0%	0	0				
Feb	0	0	0	0.0%	0	0				
Mar	0	0	0	0.0%	0	0				
Apr	0	0	0	0.0%	0	0				
May	0	0	0	0.0%	0	0				
Jun	0	0	0	0.0%	0	0				
Jul	0	0	0	0.0%	0	0				
Aug	0	0	0	0.0%	0	0				
Sep	0	0	0	0.0%	0	0				
Oct	0	0	0	0.0%	0	0				
Nov	0	0	0	0.0%	0	0				
Dec	0	0	0	0.0%	0	0				

Dashboard tab - auto-updatingmonthly summary

Key Metrics & Performance Indicators						Resident Count		
Assumed resident population: update cell H2 with actual headcount for accurate rate calculations.						100		
Metric	Calculation	Q1	Q2	Q3	Q4	Annual Total	Target	Status
Antibiotic Prescription Rate (per 100 residents/month)	Prescriptions / residents × 100	0.0	0.0	0.0	0.0	0.0	≤20 per 100	✓ On Track
Infection Incidence Rate (per 100 residents/month)	Infections / residents × 100	0.0	0.0	0.0	0.0	0.0	Trend ↓	Manual review
Resistance Rate (%)	Resistant isolates / total isolates	0.0	0.0	0.0	0.0	0.0	<15%	✓ On Track
Stewardship Sessions / Month	Count of interventions	0.0	0.0	0.0	0.0	0.0	≥2 / month	Manual review
Prescriptions with Documented Indication (%)	Rows with Indication filled / total rows	0.0%	0.0%	0.0%	0.0%	0.0	≥90%	✓ On Track
Note (per IPC review, Jul 2026): H2 is a single resident-count value applied to all four quarters. Updating it retroactively recalculates every quarter's rate, so prior-quarter figures will shift if H2 is changed mid-year. Process decision: keep as a single manually-updated value for now; revisit if a per-quarter count is needed.								

Key Metrics tab - quarterly KPIs against target

Leecare quarterly PDF report - Cycle 2 source document

Antibiotic Use tab - one row per prescription

Stewardship & IPC Measures tab - merged education & hygiene log

CNM Leads & Facility Teams at Work



Quality improvement and reporting-workbook training — the same collaborative review process that shaped every cycle in this paper.

Frontline Feedback, Actioned

IPC leadership reviewed the draft workbook and returned practical suggestions — each was actioned before rollout.

Area	Suggestion	Outcome
Dashboard tab	Remove duplicate Alert & Thresholds table	Removed — thresholds live on Key Metrics only
Key Metrics	Clarify which resident count to use for rates	Documented as a known limitation; single value retained for now
Antibiotic Use	Add an ethnicity field aligned to Leecare categories	Added, with a matching dropdown list
Hygiene Measures	Fold into Stewardship tab to cut duplication	Merged into “Stewardship & IPC Measures”

Source: IPC leadership review correspondence, 22 July 2026.

Simplifying Policy, Strengthening Response

1

IPC Policy Simplification

IPC-related policies are being condensed into shorter, more user-friendly versions, with detailed content moved into appendices.

2

Outbreak Job Cards

Staff job cards for outbreak management were well received as clear and simply worded, with a further edited version to follow the updated policy.

3

Outbreak Kit & Forms Review

The outbreak kit checklist and forms are under review — including whether the GOSH register is still in use — moving toward one complete package per outbreak.

Source: IPC Peer Support Day updates for IPC Leads, April 2026.

Simplifying Policy, Strengthening Response

2

Outbreak Job Cards

Staff job cards for outbreak management were well received as clear and simply worded, with a further edited version to follow the updated policy.

ACUTE RESPIRATORY ILLNESS — OUTBREAK JOB CARD		Home Manager
IMMEDIATE — NOTIFY (THEN DAILY UPDATES) - Public Health / Te Whatu Ora - Regional Manager & Clinical Director - Chief Operating Officer - HOPs portfolio manager - Schedule outbreak team meetings — ASAP, then daily - Document minutes on the outbreak meeting form	WITH CNM — JOINT RESPONSIBILITIES - Assess staffing & resources. Limit staff movement between areas - Establish isolation and bubbles of residents and staff - Check IPC equipment is available and accessible - Undertake outbreak review	
ACCESS & COMMUNICATION - Communicate with residents, whānau, visitors & staff — use handouts and notices - Limit points of entry and include signage - Minimise access to the home to reduce transmission risk - Cancel day support programs; postpone admissions as necessary - Ensure outbreak cleaning: laundry & terminal cleans. Distribute job cards - Commence outbreak log and register	 AIRBORNE VIRUSES: Designate changing room OUTSIDE resident areas. Clearly signpost CLEAN ZONE and DIRTY ZONE. Follow Outbreak Management policy for changing uniforms.	

Refer to the Outbreak Management Policy for full procedures | Eslava Adult Residential Care | Penetration Support Central

Home Manager job card

ACUTE RESPIRATORY ILLNESS — OUTBREAK JOB CARD		Kitchen Service
ENTRY RESTRICTIONS - Kitchen staff must NOT enter isolation rooms or isolation areas - Care staff must collect and deliver food to affected areas — NOT kitchen staff - Care staff must NOT enter the kitchen area — place signage at entry - Wear gloves when handling items used by residents; remove and wash hands when finished	STOP! Kitchen staff ONLY during outbreak. Care staff deliver all food to affected areas.	
EQUIPMENT & DISHES - Use a SEPARATE trolley for equipment/dishes going to/from affected areas - Dirty dishes from outbreak area → 60L lidded container; stays in area until ready - Wash outbreak dishes LAST in hot soapy water; sanitise at ≥82°C - Steam clean or Ecolab Disinfectant wipes on trolley daily — let dry fully - Remain home and report to manager if you become unwell	DIETARY CONSIDERATIONS - Increase availability of free fluids — no lumps, bits or pulp - Consider alternative dietary needs for affected residents - Discuss with CNM to identify residents needing changes	
 If YOU become unwell — remain home and report to manager.		

Kitchen Service job card

Audit, Learning & Competency — Aligned

1

Antimicrobial Reports Audit (Trial)

A new Excel-based antimicrobial stewardship audit is being trialled monthly, replacing the previous P6 Leecare audit form.

2

Consolidated IPC Audit

Remaining Leecare IPC audits are being consolidated into a single document, with IPC Leads asked for input on what to capture.

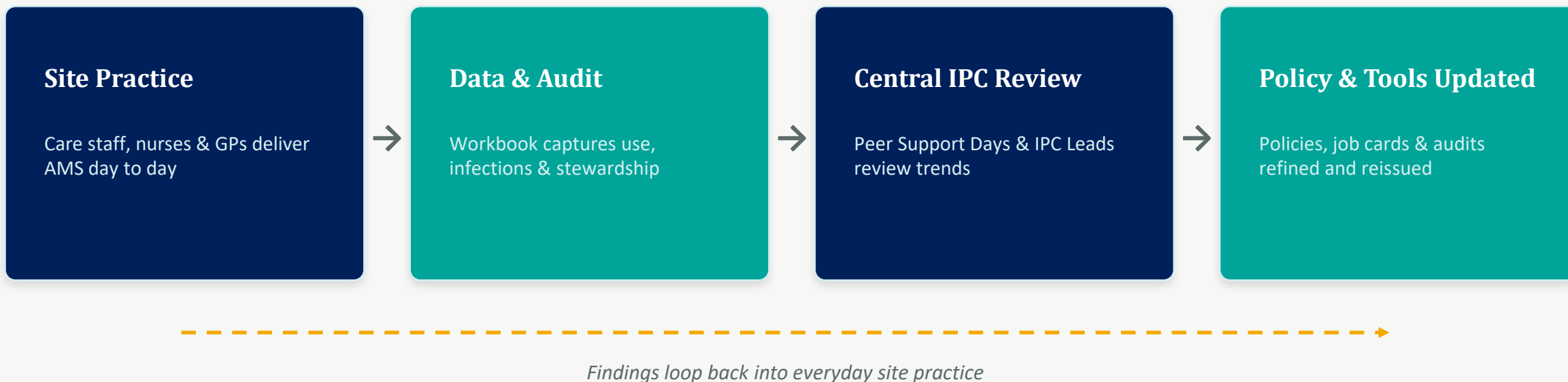
3

Learning & Competencies

IPC eLearning modules in PIO are being reviewed to align with the updated policy; IPC competencies are now live in PIO.

Source: IPC Peer Support Day updates for IPC Leads, April 2026.

A Feedback Loop, Not a One-Off Rollout



Measurable Gains Across 14 Sites



Reduction in overall antibiotic use, with improved consistency in prescribing practices across all sites



Increased compliance with AMS policy and enhanced documentation



Clearer visibility of antibiotic use at both site and organisational level



Improved staff understanding and application of best-practice standards



Strengthened collaboration and accountability, embedding AMS into routine IPC governance

An interprofessional, PDSA-driven approach enabled effective translation of policy into practice.

Measurable improvements in antimicrobial use were achieved across a large, multi-site aged care population — demonstrating that small, iterative cycles can produce organisation-wide impact.

Sustaining and Scaling the Gains

1

Sustained collaboration

Keep the interprofessional model - IPC Leads, nursing, GPs, pharmacy and care staff - active beyond the initial rollout.

2

Ongoing audit & feedback

Maintain regular audit cycles and real-time data sharing to keep prescribing practice visible.

3

Invest in IPC leadership

Continued investment in IPC Lead capability is essential to maintain gains and support scalability across the sector.

The IPC Team Today



Every cycle in this paper was built by this group

IPC Leads, Clinical Director, and facility leadership from across our aged residential care sites — the interprofessional team that turned Plan-Do-Study-Act into everyday practice.

Thank you for your ongoing commitment to safer, more consistent care.

Thank you

Questions & discussion welcome

Mrs Mikaela Shannon

Clinical Director, Enliven Aged Care Services — Presbyterian Support Central

Mikaela.Shannon@psc.org.nz | www.psc.org.nz