

Prevention and Management of Antibiotic Resistant Organisms (AROs) in LTCH-RH program

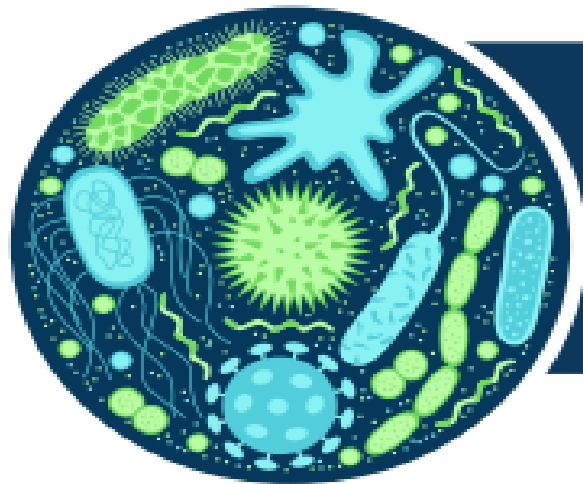


AGENDA

- AROs Statistics in Canada
- Purpose: Prevention and Management of AROs prevalence in LTCH-RH
- Goal: To reduce cost and use of resources
- Plan
 - Assessments
 - Education
 - Policy
 - AROs Algorithms
 - Fact sheets
 - Resources

ARO

ANTIBIOTIC RESISTANT ORGANISMS IN ONTARIO'S LONG-TERM CARE HOMES



Antibiotic resistant organisms (AROs) have **become increasingly prevalent in health care facilities** over the past 10 to 15 years.

This has **resulted in increased cost and use of resources** in the health care system, including long-term care homes (LTCHs).

In a 2017 survey of 139 long-term care homes' antimicrobial resistant organisms, infection control practices and antibiotic stewardship programs, results showed:

Point Prevalence

Antimicrobial resistant organisms (infections and colonizations) per 100 residents. 17,848 long-term care home residents represented.



Methicillin-resistant
Staphylococcus aureus
(MRSA)

4.1



Extended-spectrum
beta-lactamase-producing
organisms (ESBL)

2.4



Vancomycin-resistant
enterococcus (VRE)

0.9



Clostridium difficile
infections (CDI)

0.07

Carbapenemase-Producing *Enterobacteriaceae* (CPE)



11%

of surveyed LTCHs have a
screening program for CPE



18%

of LTCHs in Central and Toronto Region
have a screening program for CPE

Antimicrobial Stewardship

95%

of LTCHs surveyed have implemented some aspects of an antimicrobial stewardship program (ASP)

Common Barriers to Antimicrobial Stewardship Implementation

1. Pressure from family members of residents for immediate treatment
2. Physician attitudes, varying practices (e.g., on-call, ER physicians); ordering antibiotics before receiving laboratory confirmation
3. Time/resources/staff constraints to develop an antimicrobial stewardship program





80%

of LTCHs surveyed screen for both MRSA and VRE on admission

52%

of LTCHs surveyed have staff who are certified in infection prevention and control (CIC®)

For more information:

Contact IPAC.Surveilliance@oahpp.ca or visit publichealthontario.ca.



Assessment

Screening Tool

- Admission
- New
- Readmission
- Periodic

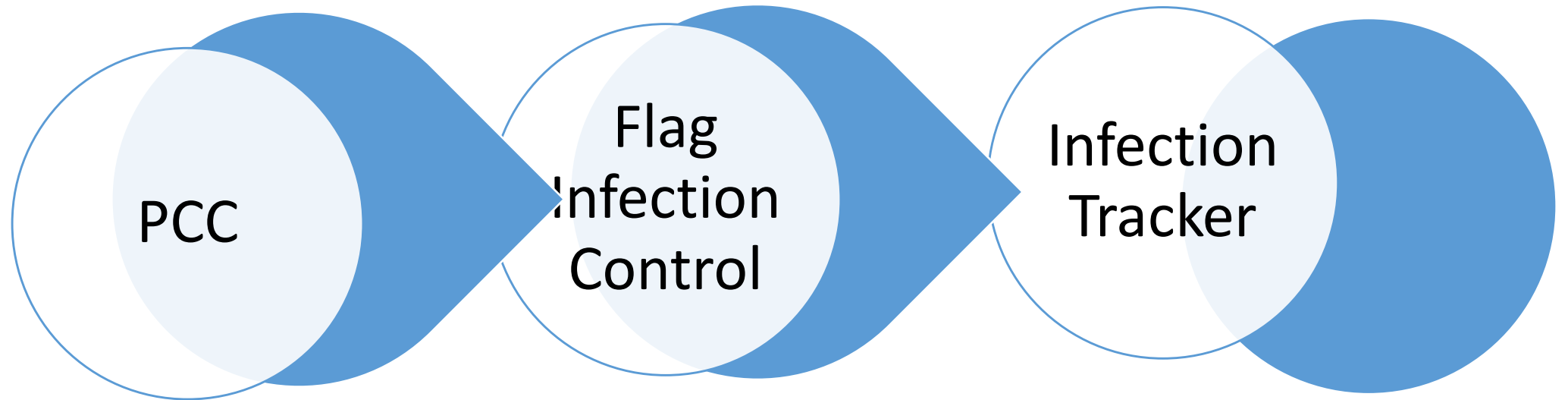
Lab

- Local
- PHL

Policy

- AROs
- C.difficile
- C.auris

Documentation



Types of AROs

Bacteria

- MRSA
- VRE
- CPE/CRE/COP
- ESBL

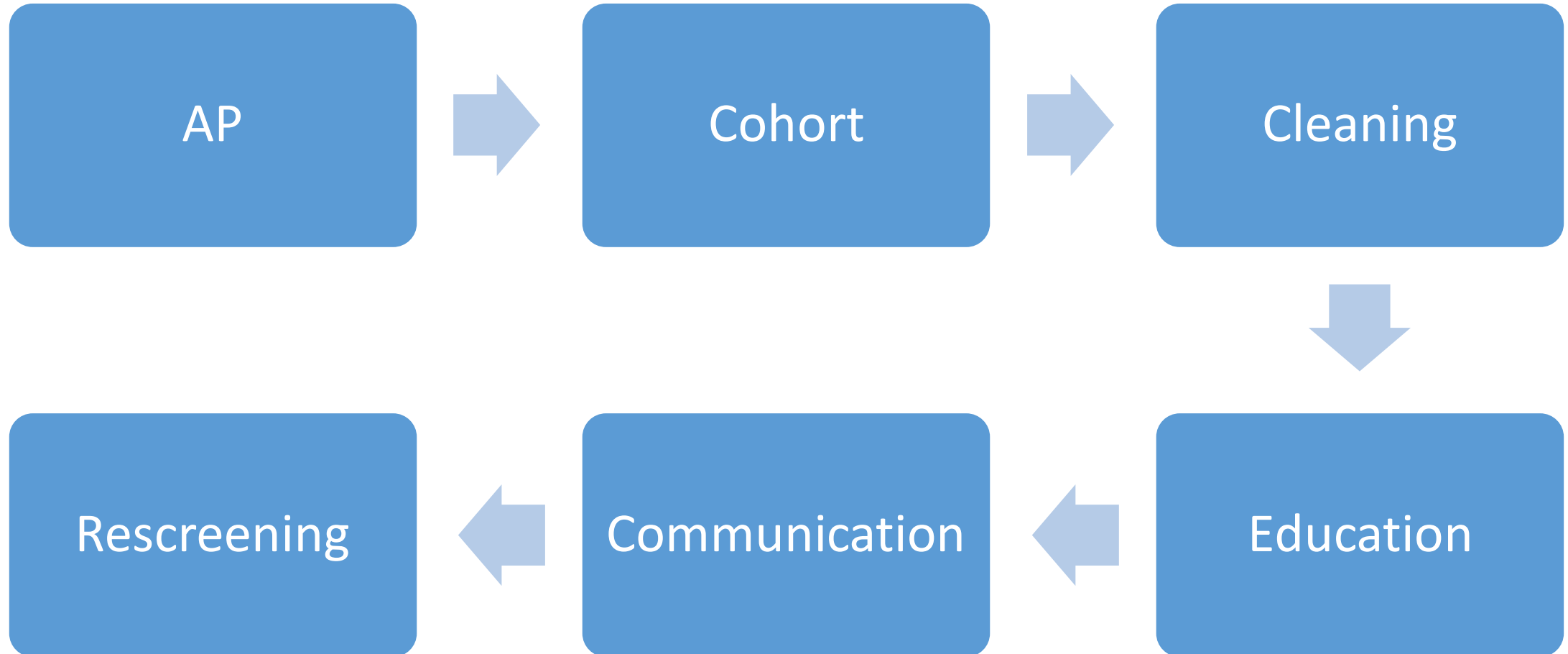
Spore forming Bacteria

- C. difficile

Fungus

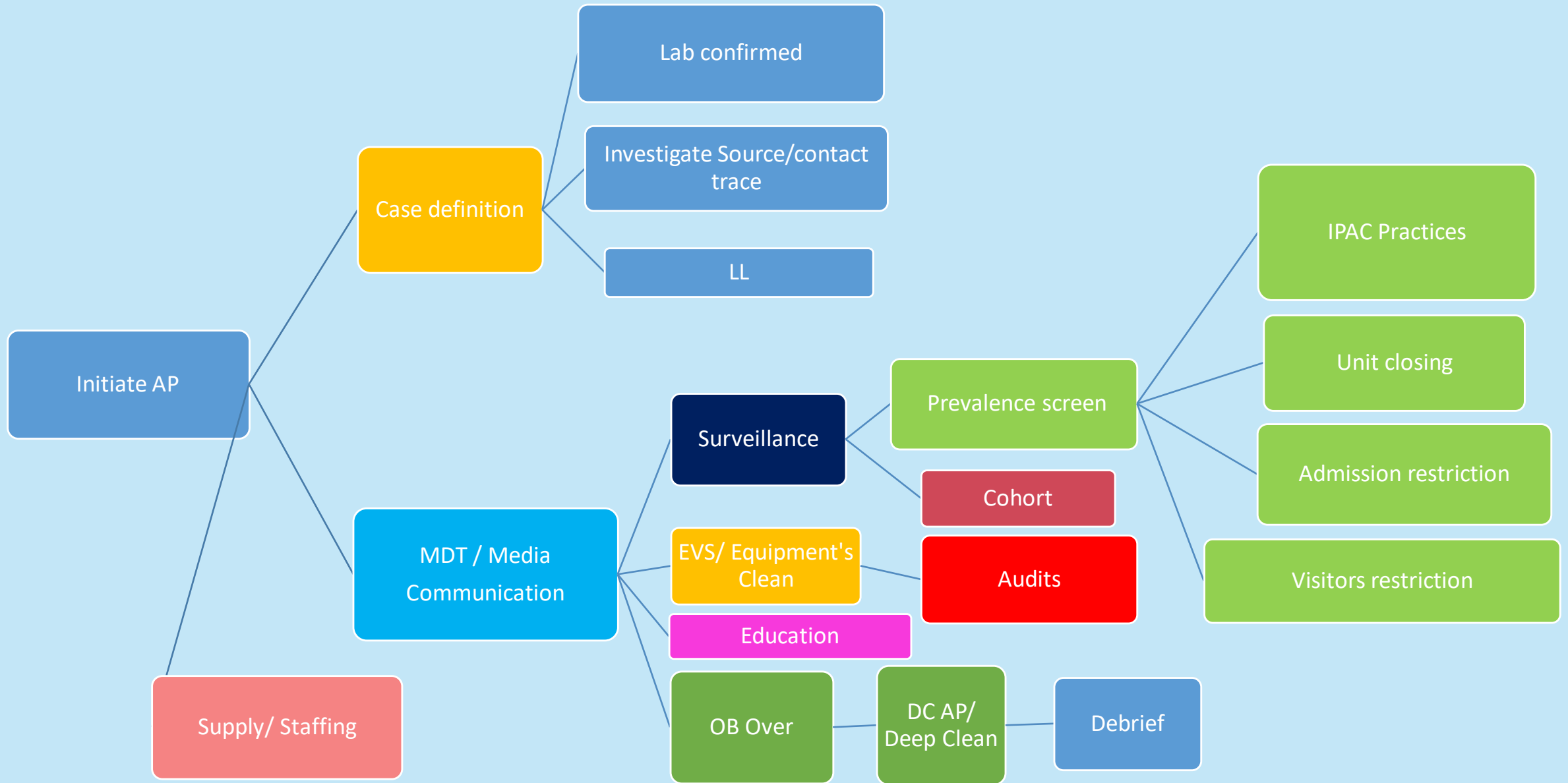
- Candida auris

Management of AROs



AROs Outbreak Management

Multistep process



Algorithms

AROs

- MRSA
- VRE
- CPE
- ESBL

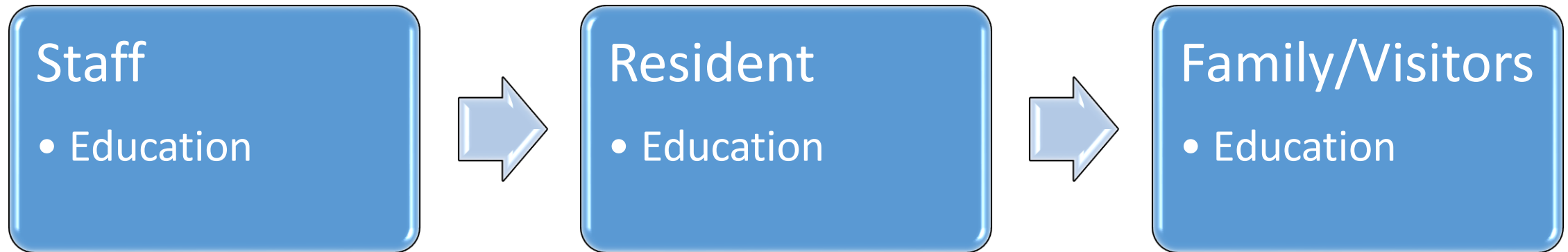
Diarrhea

- C.diff

Fungal

- C.auris

Fact Sheets



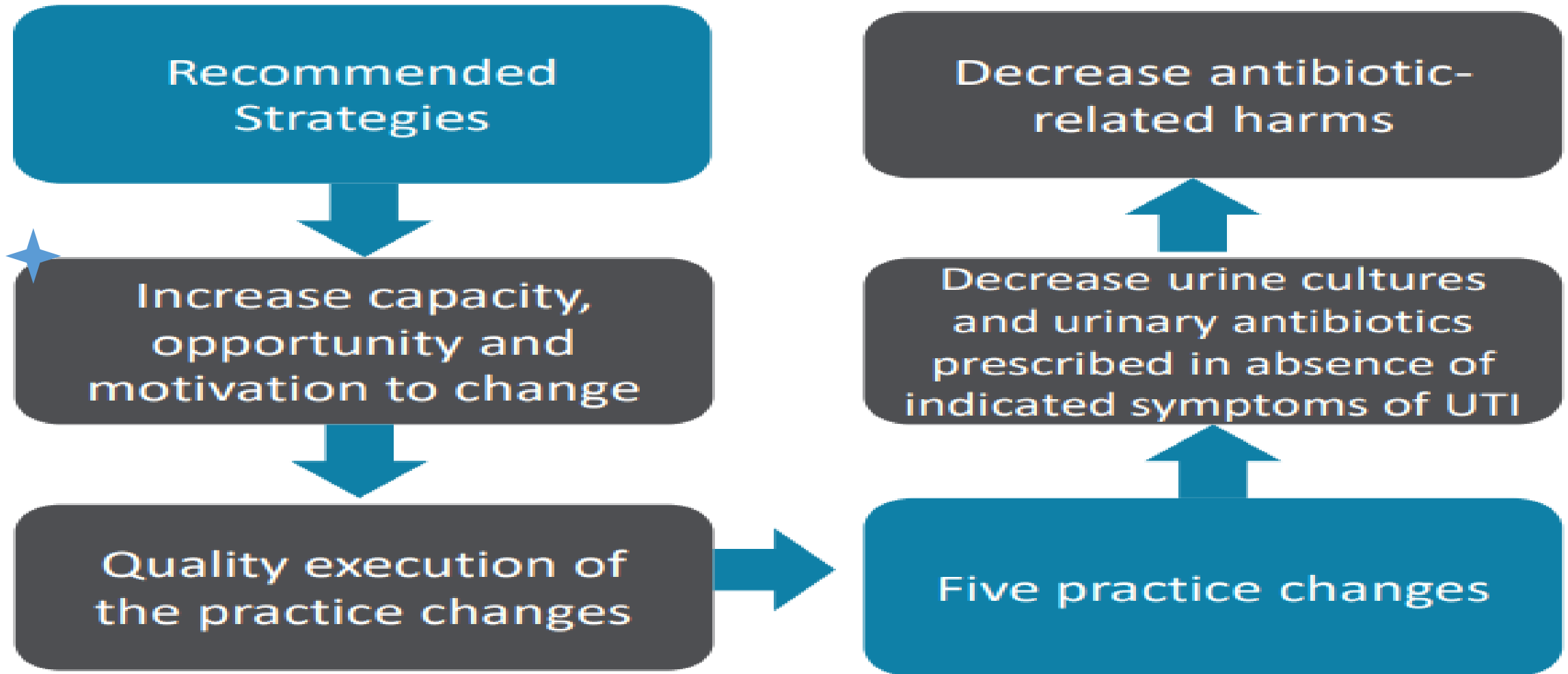
Reportable

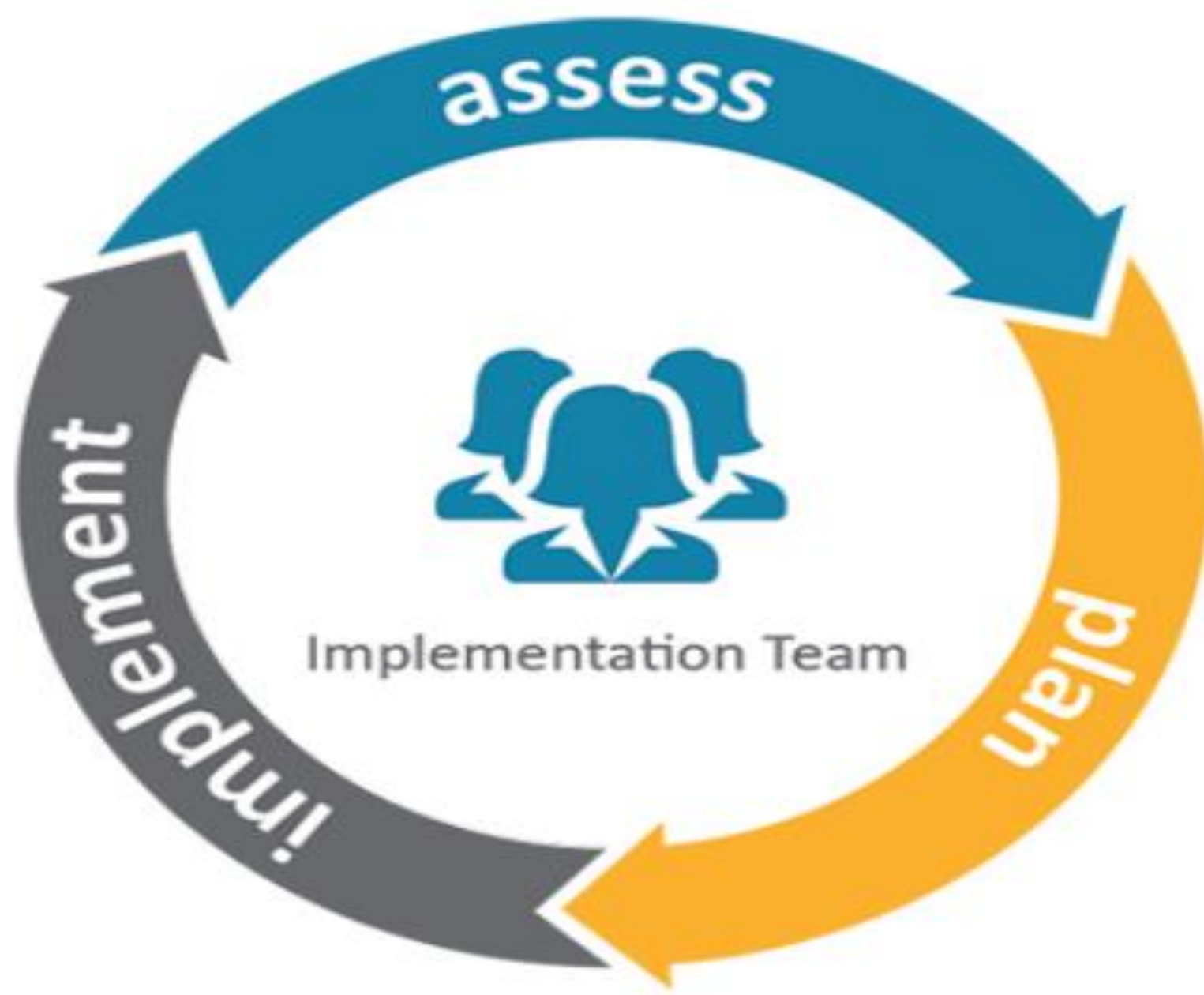
- MRSA Bacteremia
- VRE Bacteremia
- CPE
- C. difficile
- C. auris

Resources

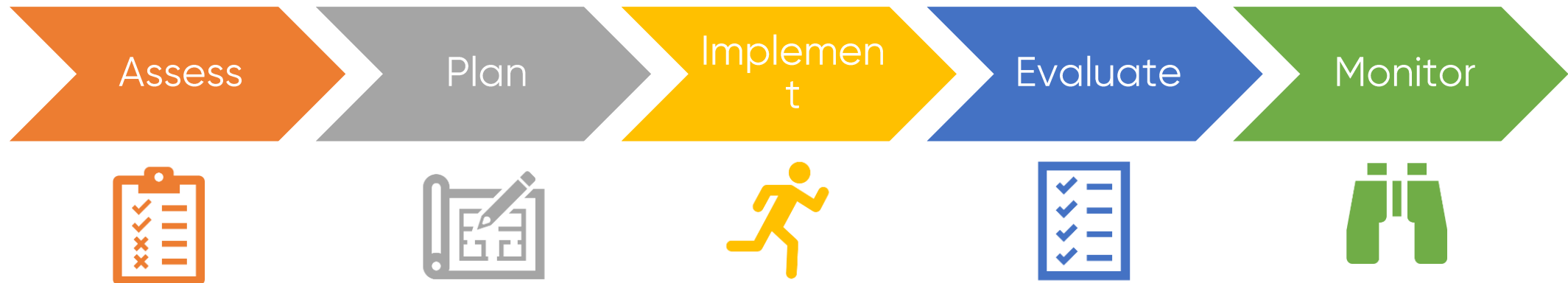
- **PIDAC: Annex A - Screening, Testing and Surveillance for Antibiotic-resistant Organisms (AROs) | January, 2013**
- **PHO Management of AROs in LTCH - RH.**

REVIEW PROGRAM OUTLINE





5 STAGES



The UTI Program: Five Practice Changes



Obtain urine cultures only when residents have indicated clinical signs and symptoms of a UTI.



Obtain and store urine cultures properly.



Prescribe antibiotics only when specified criteria have been met, and reassess once urine culture and susceptibility results have been received.



Do not use dipsticks to diagnose a UTI.

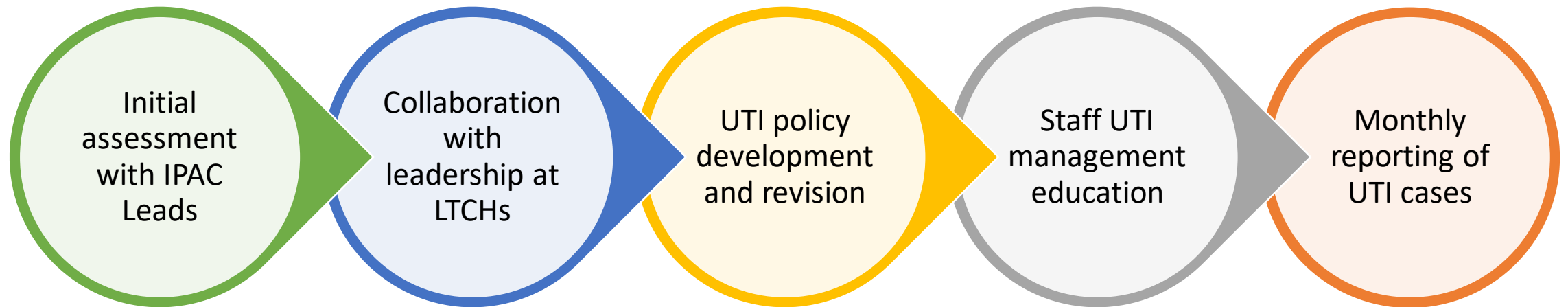


Discontinue routine annual/admission screening if residents do not have indicated clinical signs and symptoms of a UTI.

PHASE I

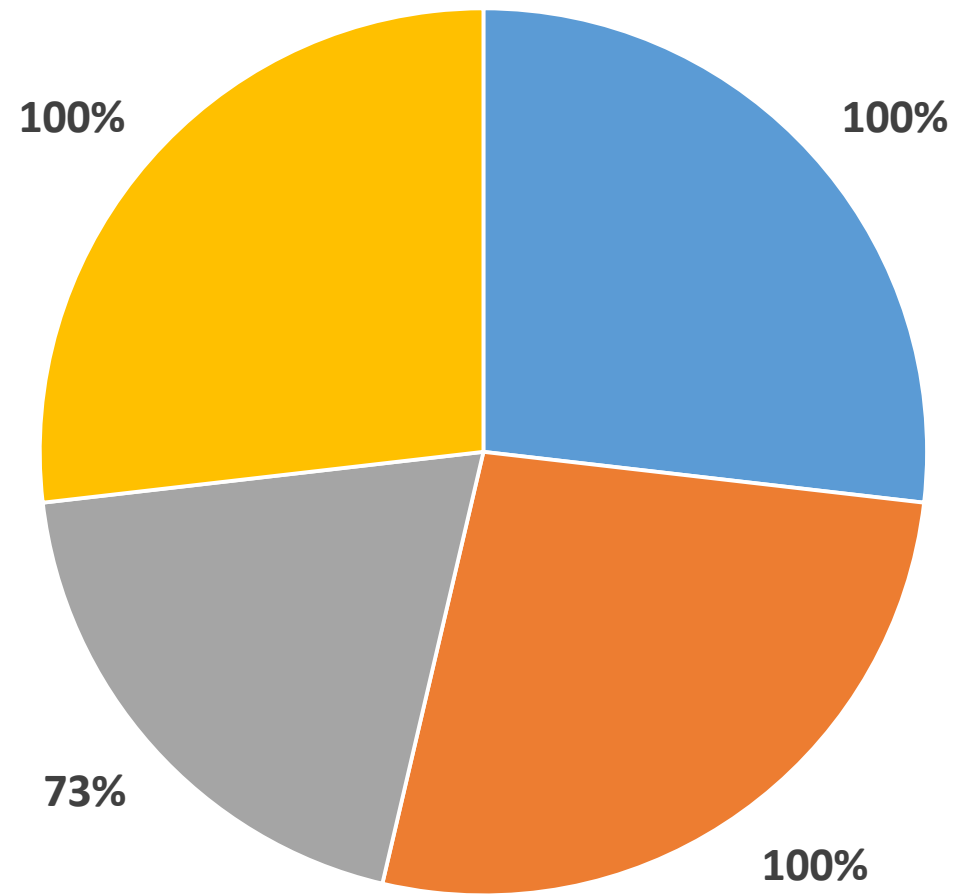
Review

PHASE I COMPONENTS Completed



Homes+	Policy	HCWs Education	Brochure for family education	ASPs Communication with MD/NP	Remarks
Home 1	Yes	Yes	Yes	Yes	Completed
Home 2	Yes	Yes	Yes	Yes	Completed
Home 3	Yes	Yes	Yes	Yes	Completed
Home 4	Yes	Yes	In progress	Yes	In progress
Home 5	Yes	Yes	Yes	Yes	Completed
Home 6	Yes	Yes	In progress	Yes	In progress
Home 7	Yes	Yes	Yes	Yes	Completed
Home 8	Yes	Yes	Yes	Yes	Completed
Home 9	Yes	Yes	In progress	Yes	In progress
Home 10	Yes	Yes	Yes	Yes	Completed
Home 11	Yes	Yes	Yes	Yes	Completed
Total Completion	11	11	8	11	8
# of Homes	11	11	11	11	11
% Completion	100%	100%	73%	100%	73%

LTCHs Progress with UTI Program (% of LTCHs That Completed Each Task)



■ Policy

■ HCWs Education

■ Brochure for family education

■ ASPs Communication with MD/NP

Outcome of PHASE I

- Dipstick Urine analysis : **Discontinued**
- Low/ Steady number of UTIs reported:
Very encouraging
- Symptomatic UTIs specimen collection :
Frontline staff / Less family pressure
- Lab confirmed UTIs Antibiotics treatment:
MD and FMD involvement



PHASE II

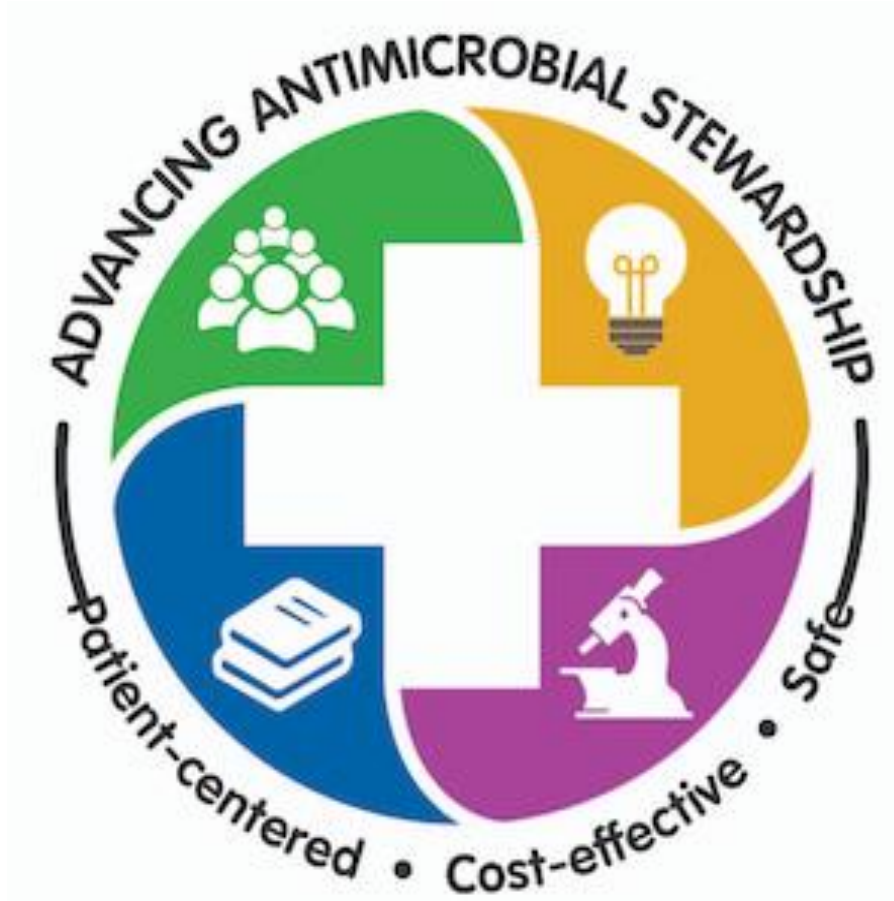
PHASE II

Purpose

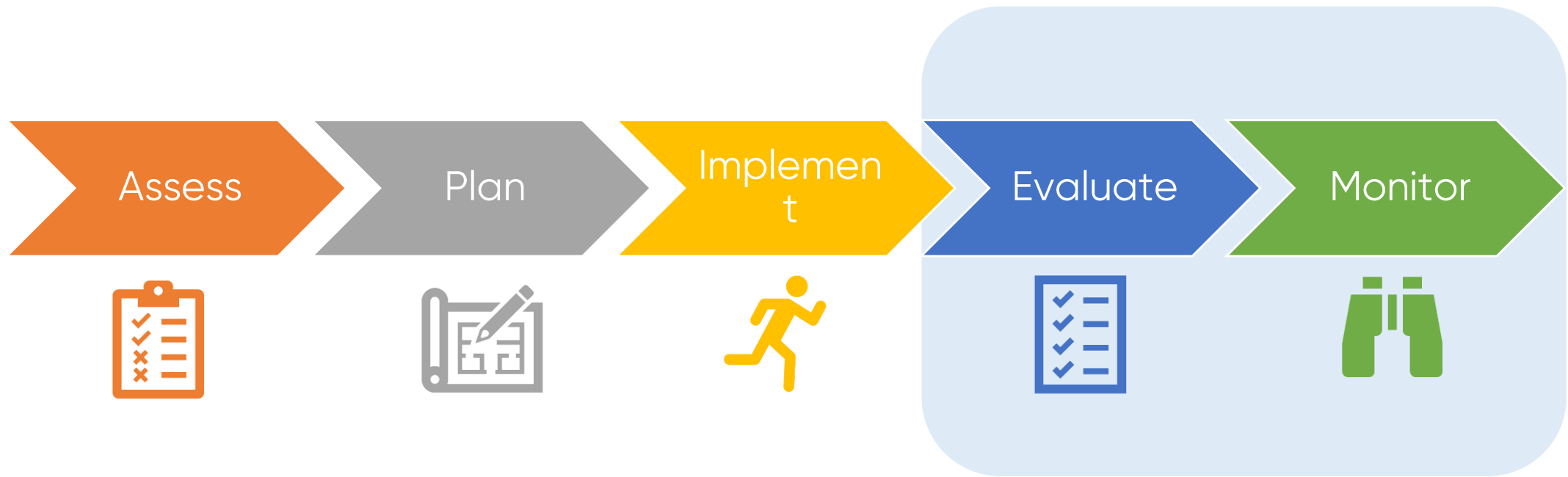
- PHO developed the UTI management program to respond to concerns about the **overuse of antibiotics** for **presumed UTIs** in LTCH residents and **antibiotic-related harms**.

Goal:

- Tracking antibiotic-resistant organisms helps us to *reduce antibiotic related harms* and *improve treatment/care for residents*.

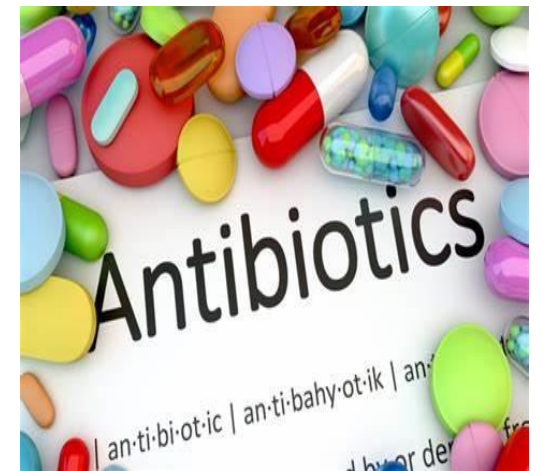
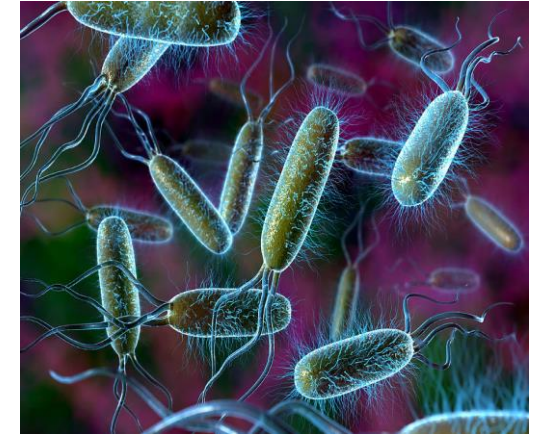


5 STAGES



PHASE II Strategy towards Goal

1. Identifying : UTIs associated with **AROs** (MRSA/VRE/ ESBL /CPE/ C.auris)
2. UTI-associated **hospitalization**
3. **New/Recurrent /Post hospital** UTIs
4. Which **antibiotics** are prescribed and **why?**
5. Monthly data **collection and analysis**
6. Evaluation of program **process**
7. Outcome
8. Goal to reduce **Antibiotics associated harm to residents wellbeing**



UTI Numbers- Rate: Monthly Tracking Report

Unit	Resident Identifier	Clinical Symptoms Present (Yes/No)	Date of Symptom Onset (DD-MMM-YYYY)	Date of Specimen Collection (DD-MMM-YYYY)
Unit 1	Resident A	Yes	1-Jan-2024	20-Jan-2024
Unit 2	Resident B	Yes	2-Jan-2024	21-Jan-2024
Unit 3	Resident C	Yes	3-Jan-2024	22-Jan-2024
Unit 1	Resident A	No	23-Jan-2024	23-Jan-2024

UTI Numbers- Rate: Monthly Tracking Report

Culture Result	Organism Grown (positive result only)	Treated (Yes/No)	Antimicrobial Prescribed	Antimicrobial Prescribed After C&S Resulted (Yes/No)	UTI Diagnosis (No Infection, New Infection, Recurrent Infection, Attributed to Hospital)
Positive	E. coli	Yes	Amoxicillin/clavul anate (Clavulin)	Yes	Attributed to Hospital
Positive	MRSA	Yes	Ciprofloxacin (Cipro)	Yes	New Infection
Mixed growth of doubtful significance	Common organism	Yes	Penicillin, class of	No	No Infection
Positive	ESBL	Yes	Nitrofurantoin (Macrobid)	Yes	Recurrent Infection

UTI Numbers- Rate: Monthly Tracking Report

Urinary Catheter Present (Yes/No)	Date of Last Urinary Catheter Insertion (DD-MMM-YYYY)	(# of) Days Since Last Urinary Catheter Insertion	Previous Hospitalization (Yes/No)	Date of Last Admission to Hospital (DD-MMM-YYYY)	(# of) Days Since Transfer to Hospital	Resident Required Hospitalization for UTI (Yes/No)
No		N/A			N/A	
No		N/A			N/A	
No		N/A			N/A	
Yes	15-Jan-2024	8	Yes	20-Dec-2023	34	No

Poll Question 1

How do you **track total number of urine samples** collected for UTI?

1. Point click care
2. Paper based forms/ Tool
3. Verbal communication by Units
4. Not sure
5. I would prefer HRH to provide me a tracking tool

Poll Question 2

How do you track **laboratory confirmed Urinary Tract Infections** ?

1. In Point click care
2. Paper based forms/ Tool
3. Verbal communication by Units
4. Not sure
5. I would prefer HRH to provide me a tracking tool

Poll Question 3

How is your understanding/ knowledge about:

Laboratory reports Interpretation and Antibiogram -Antibiotics sensitivity

Causative agent/ agents: **Antibiotic Resistant Organism** and Organisms of significance.

1. Minimal Knowledge/ understanding
2. Expert Knowledge/ understanding
3. No, I am not sure how to interpret lab results and understand sensitivity.
4. I would prefer HRH to provide me education on this topic

Poll Question 4

Do you know **how to calculate UTIs rate / 1000 resident days**?

1. Yes, I know
2. No, I am not sure how to do
3. I would prefer HRH to provide me education on this topic

REFERENCES

- Brown, K. A., Chambers, A., MacFarlane, S., Langford, B., Leung, V., Quirk, J., Schwartz, K. L., & Garber, G. (2019). Reducing unnecessary urine culturing and antibiotic overprescribing in long-term care: A before-and-after analysis. *CMAJ Open*, 7(1), E174. <https://doi.org/10.9778/cmajo.20180064>
- Chambers, A., MacFarlane, S., Zvonar, R., Evans, G., Moore, J., Langford, B., . . . Garber, G. (2018). A recipe for antimicrobial stewardship success: Using intervention mapping to develop a program to reduce antibiotic overuse in long-term care. *Infection Control & Hospital Epidemiology*, 40(1), 24-31. doi:10.1017/ice.2018.281
- Cohen, C. C., Choi, Y. J., & Stone, P. W. (2016). Costs of Infection Prevention Practices in Long-Term Care Settings: A Systematic Review. *Nursing economic\$, 34(1)*, 16–24.
- Cranley, L. A., Norton, P. G., Cummings, G. G., Barnard, D., Batra-Garga, N., & Estabrooks, C. A. (2012). Identifying resident care areas for a quality improvement intervention in long-term care: A collaborative approach. *BMC Geriatrics*, 12(59). <https://doi.org/10.1186/1471-2318-12-59>
- Lee, C., Phillips, C., & Vanstone, J. R. (2018). Educational intervention to reduce treatment of asymptomatic bacteriuria in long-term care. *BMJ Open Quality*, 7(4), e000483. <https://doi.org/10.1136/bmjog-2018-000483>
- Humber River Hospital. (2023). Our mission, vision & values. Humber River Hospital. Retrieved June 19, 2023, from <https://www.hrh.ca/who-we-are/about-us/mission-vision-values/#:~:text=Our%20Mission,health%20care%20in%20our%20community>.
- Mitropoulos, E. (2020, June 23). Better collaboration means better care for long-term care residents. Hospital News. Retrieved from <https://hospitalnews.com/better-collaboration-means-better-care-for-long-term-care-residents/>
- Public Health Ontario. (2019, November 20). UTI Program. Retrieved June 19, 2023, from <https://www.publichealthontario.ca/en/Health-Topics/Antimicrobial-Stewardship/UTI-Program?tab=4>
- Saskatchewan Infection Prevention and Control (SaskPIC). (2013). Guidelines for the Prevention and Treatment of Urinary Tract Infections (UTIs) in Continuing Care Settings. <http://saskpic.ipac-canada.org/photos/custom/UTI%20Guidelines%2019April2013.pdf>

Thank you, do you have any questions ?



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