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CHECKLIST

Antimicrobial Stewardship Essentials Checklist in Long-Term Care

This checklist supports the implementation or expansion of an antimicrobial stewardship program (ASP) in a long-term care (LTC) setting and provides some examples of resources and practical tools. Long-term care homes (LTCH) can use this checklist to track their quality improvement progress or identify gaps in their existing program.

This checklist is a supplement to Public Health Ontario's (PHO) primer on Antimicrobial Stewardship Essentials in LTC. It is recommended to review the primer prior to using this checklist.

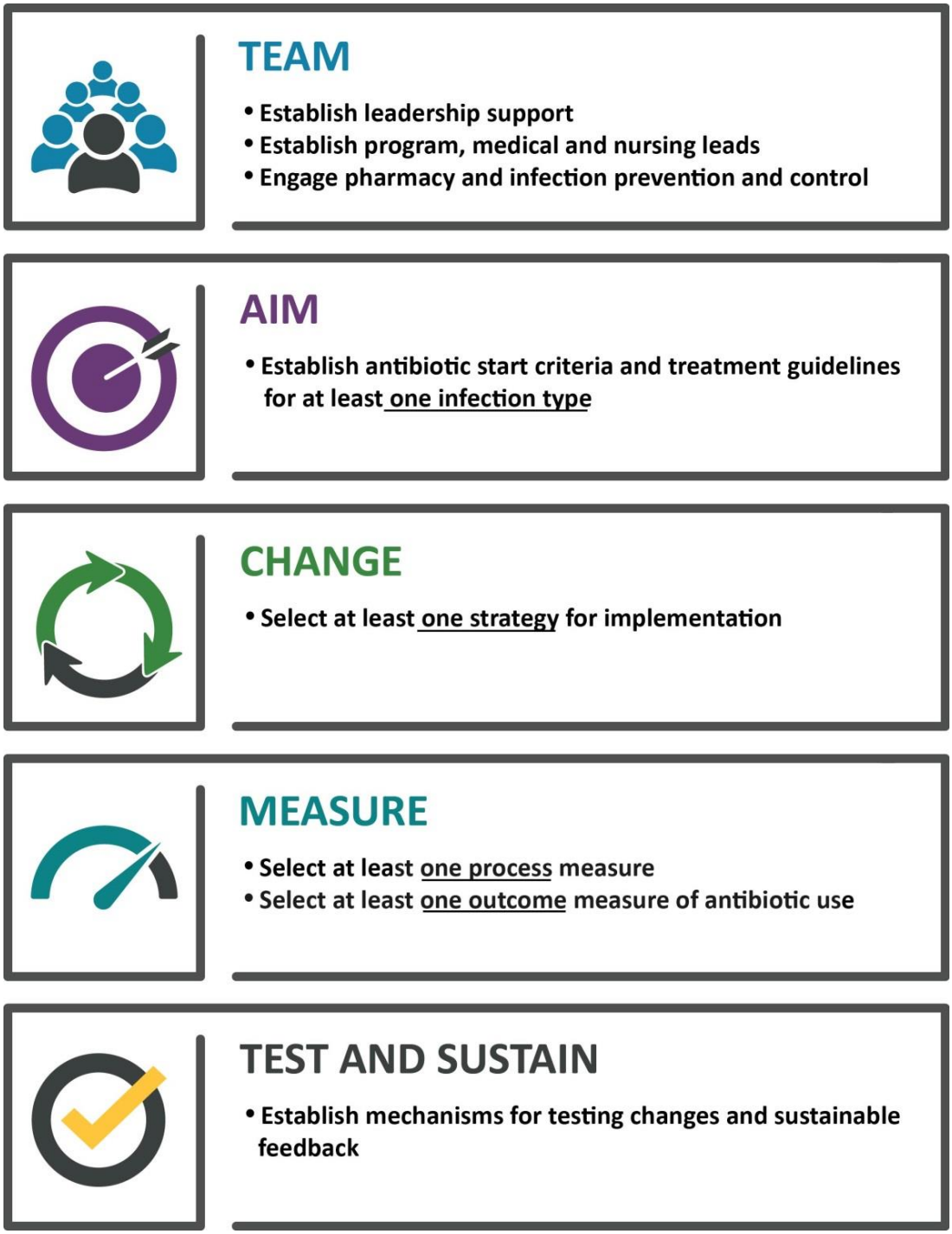
How to Use This Checklist

1. Review the five quality improvement steps to build an ASP in your home (Figure 1).

2. Identify gaps to developing an ASP in your LTCH by answering yes or no to items in the checklist.

3. For each quality improvement step with gaps identified, review suggested change ideas, consider feasible changes and develop an implementation plan.

Figure 1. Quality improvement steps for antimicrobial stewardship in long-term care



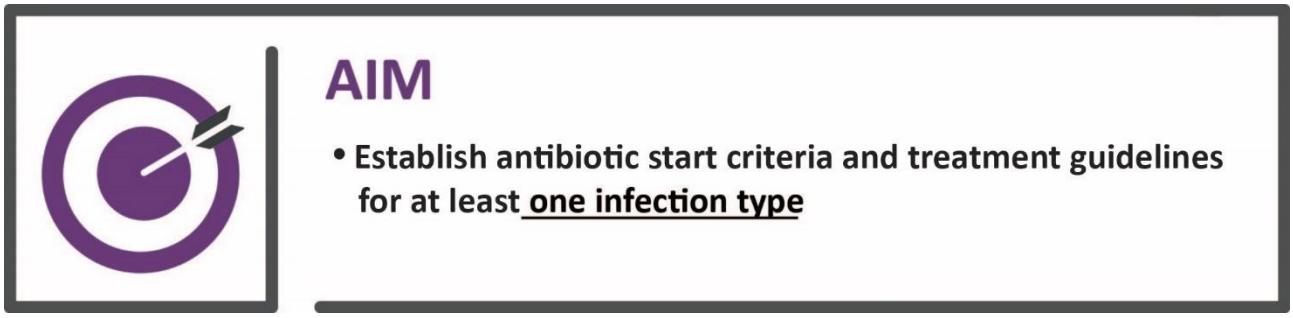
Antimicrobial Stewardship Essentials Checklist for Long-Term Care

Step 1: The Team

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Leadership support for ASP	☐	☐	Establish a policy for antimicrobial stewardship indicating commitment, team members, program actions and performance measures. Disseminate formal statement of support to improve antibiotic use to clinicians and residents; encourage stakeholders to participate in efforts.	State of Rhode Island Department of Health. Sample Statement of Leadership Commitment for Antibiotic Stewardship[1]
Program lead	☐	☐	Include accountability for ASP priorities in program lead job description; allocate dedicated resources and time if possible. Gather a multidisciplinary team to address antibiotic use.	
Medical lead	☐	☐	Include accountability for ASP priorities in medical lead job description; allocate dedicated resources and time if possible.	
Nursing lead	☐	☐	Include accountability for ASP priorities in nursing lead job description; allocate dedicated resources and time if possible.	

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Pharmacy expertise	☐	☐	Involve pharmacy staff or pharmacist consultant with a focus on antibiotic use and ASP initiatives; allocate dedicated resources and time if possible.	
Infection prevention and control expertise	☐	☐	Involve infection prevention and control with a focus on infection surveillance and antimicrobial resistant organisms (e.g., MRSA, VRE).	
ASP expertise	☐	☐	Build internal ASP capacity by encouraging interested clinicians to undertake antimicrobial stewardship training.	World Health Organization (WHO). Antimicrobial Stewardship: A competency-based approach[2] British Society for Antimicrobial Chemotherapy (BASC) and University of Dundee. Massive Open Online Course on Antimicrobial Stewardship[3] Making a Difference in Infectious Diseases (MAD-ID). Antimicrobial Stewardship Programs.[4] Society of Infectious Diseases Pharmacists (SIDP) and American Society of Consultant Pharmacists (ASCP). Long-Term Care Antimicrobial Stewardship Certificate Program[5]

Step 2: Aim



ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Antibiotic start criteria	☐	☐	Establish minimum criteria for antibiotic initiation when assessing residents with suspected infection. Focus initial efforts on a common infection such as urinary, respiratory or skin and soft tissue infections.	PHO UTI Program. Assessment algorithm for UTIs in medically stable non-catheterized residents[6] AMMI Algorithm: Diagnosis of suspected UTI in non-catheterized residents of LTCF[7] DBND. Urinary Tract Infections in LTCF Checklist[8] Loeb (2005). Development of minimum criteria for the Initiation of Antibiotics in Residents of Long-Term Care Facilities[9]
Treatment guidelines	☐	☐	Standardize treatment guidelines, including guidance on antibiotic selection, dose, administration route, and duration of therapy. Focus initial efforts on a common infection such as urinary, respiratory or skin and soft tissue infections.	PHO ASP Strategies: Disease-specific treatment guidelines, pathways, algorithms[10] Zarowitz (2016). Algorithms Promoting Antimicrobial Stewardship in Long-Term Care[11] Anti-infective Review Panel. Anti-infective Guidelines for Community-acquired Infections[12]

Step 3: Change

Front-End Strategies (Before the Prescription)

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Clinical tools for assessing residents with suspected infection	☐	☐	Implement structured nursing communication tools (e.g., SBAR tools or RAMP tool) to aid in clear communication between nurses and prescribers and to standardize assessments of residents suspected with infection. Incorporate minimum criteria for antibiotic starts into decisions on when to contact prescribers.	Trentham (2010). SBAR: A shared structure for effective team communication. An implementation toolkit[13] AHRQ. Minimum Criteria for Common Infections Toolkit (UTI, LRTI, SSTI)[14] Fleet (2014). Impact of implementation of a novel antimicrobial stewardship tool on antibiotic use (RAMP tool) in nursing homes[15]
Diagnostic testing guidelines	☐	☐	Implement tools to provide guidance on when diagnostic tests are appropriate. Encourage best practices for specimen collection and storage.	PHO UTI Program: When to collect a urine specimen for culture and susceptibility for non-catheterized resident[6] PHO UTI Program: Collecting Mid-Stream Urine Specimen[6]
Prescriber audit and feedback	☐	☐	Establish a mechanism for prescribers to regularly review their individual antibiotic prescribing reports. Encourage prescribers to reflect on prescribing patterns and possible actions on change ideas.	Health Quality Ontario (HQO). MyPractice Long-Term Care

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Clinician education on antimicrobial stewardship	☐	☐	Provide education and resources for prescribers, nurses, front-line clinicians and on-call staff about common infections and the importance of appropriate antibiotic use. Include a consistent message regarding antimicrobial resistance and role of antibiotics. Consider education via posters, newsletters, printed media, electronic communications, online resources, interactive workshops and one-on-one academic detailing.	PHO UTI program: Asymptomatic bacteriuria[6] PHO ASP Resources Page AMMI Symptom Free Pee: Let It Be. Poster[7] AMMI Asymptomatic Bacteriuria Toolkit. Myths and Truths about Urinary Tract Infections in Long Term Care Residents[7]
Resident and family education on the role of antibiotics	☐	☐	Provide education and resources for residents and families about common infections, antibiotic resistance and improving antibiotic use. Consider education via posters, newsletters, printed media, electronic communications, online resources, meetings and presentations.	PHO UTI program: FAQ for residents, families[6] AMMI Asymptomatic Bacteriuria Toolkit. Fillable resident/family letter[7]

Prescriptive Strategies (At the Prescription)

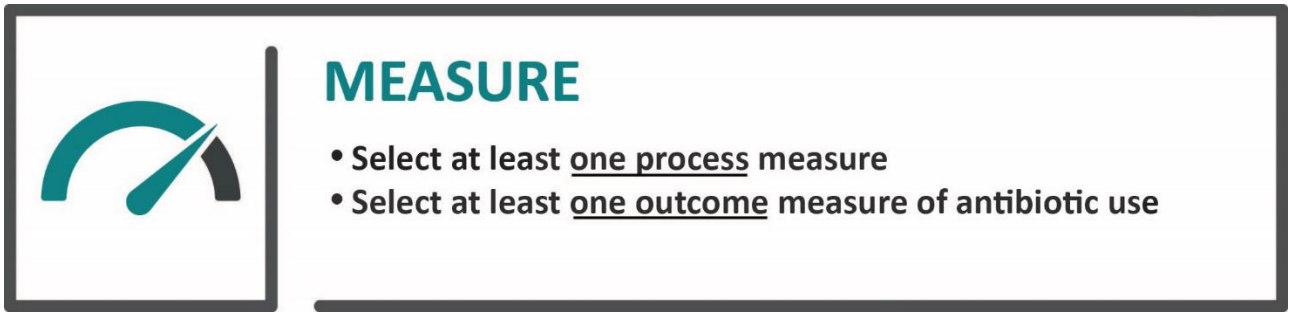
ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Indication for antibiotics	☐	☐	Require prescribers to include indication for antibiotics or use indication-specific algorithms and clinical decision tools.	
Antibiogram	☐	☐	Use locally available antibiograms to tailor your treatment guidelines and empiric antibiotic selection to antimicrobial resistance patterns most relevant to your home.	PHO ASP Strategy: Antibiograms[16] LifeLabs Antibiograms[17]

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Duration of therapy	☐	☐	Implement guidelines or resources to reduce antibiotic exposure for specific infections to the shortest effective duration.	Duration of Antibiotic Treatment for Uncomplicated Cellulitis in LTC Residents Duration of Antibiotic Treatment for Pneumonia in LTC Residents Duration of Antibiotic Treatment for Uncomplicated Urinary Tract Infection in LTC Residents Shorter is Smarter: Reducing duration of antibiotic therapy in LTC Shorter is Smarter: Reducing Duration of Antibiotic Treatment for Common Infections in LTC
Intravenous oral conversion	☐	☐	Implement guidelines or clinical decision tools to optimize use of oral antibiotic starts and appropriate criteria for timely transition from intravenous to oral therapy.	PHO ASP Strategy: Intravenous to oral conversion[18]
Allergy verification	☐	☐	Implement structured allergy assessments with thorough history of symptoms to reduce inaccurate allergy labels. Provide education and resources for clinicians and residents on distinguishing between true allergy vs. adverse reactions and appropriate alternatives for beta-lactam allergies. A comprehensive approach to allergy labels also includes proactive referrals for allergy testing or classification and clear documentation of allergy investigations to prevent residents being re-labelled with inaccurate allergies.	Sumner (2018). Script for Allergy Verification Review[19] NICE clinical guideline. Drug allergy: Diagnosis and management[20]

Back-End Strategies (After the Prescription)

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Antibiotic "time-out"	☐	☐	Flag new antibiotic starts for reassessment after two or three days of therapy. Include review of antibiotic appropriateness, activity and duration based on the resident's clinical status, lab results, cultures and/or imaging. Focus initial efforts on high-risk or broad-spectrum antibiotics (e.g., fluoroquinolones).	PHO ASP Strategy: Antibiotic Time Outs[21] PHO ASP Strategy: De-escalation and Streamlining[22]

Step 4: Measure



Process Measures

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Adherence to ASP strategies	☐	☐	Establish a mechanism for monitoring adherence to processes in your ASP strategy or develop process surveillance criteria. This measure will depend on the ASP strategy you have selected to implement.	Rate of adherence to criteria for antibiotic starts, diagnostic testing guidelines or treatment guidelines.

Outcomes Measures

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
Antibiotic use: Antibiotic starts	☐	☐	Establish a mechanism of identifying all antibiotic starts and/or identifying antibiotic starts for residents with UTI, SSTI or LRTI.	Rate of new antibiotic starts per 1000-resident days = # new antibiotic starts / total number of resident days x 1000 Rate of new antibiotic starts for UTI per 1000-resident days = # new antibiotic starts for UTI / total number of resident days x 1000
Antibiotic use: Days of therapy (DOT)	☐	☐	Establish a mechanism of tracking and adding up number of days a resident took any unique antibiotic(s). Summarize monthly or quarterly.	DOT per 1000-resident days = total # days of therapy / total number of resident days x 1000 DOT Examples:

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
				Amoxicillin 500 mg 3 times daily x 5 days = 5 DOT Ceftriaxone 1 g daily x 5 days = 5 DOT Ceftriaxone and Azithromycin daily x 5 days = 10 DOT
Clostridium difficile Infections (CDI)	☐	☐	Establish a mechanism for counting and keeping track of the number of confirmed cases of CDI acquired within the home, according to a standardized case definition. Infection prevention and control resources can review and analyze these data on an ongoing basis to identify any clusters.	Rate of CDI per 1000-resident days = # CDI / total number of resident days x 1000 PIDAC 2013. Annex C: Testing, Surveillance and Management of *Clostridium difficile* In All Health Care Settings[23]

Step 5: Test and Sustain

ASP ESSENTIALS	YES	NO	CHANGE IDEAS	NOTES, EXAMPLES, RESOURCES
PDSA cycles for ASP strategies	☐	☐	Establish a policy to test and improve ASP strategies as needed, such as via plan-do-study-act (PDSA) cycles and stakeholder feedback.	HQO's Quality Compass. Quality Improvement: Getting Started[24]
Regular feedback	☐	☐	Establish routine and sustainable processes to obtain selected process and outcomes measures. Report ASP results to prescribers, nurses and stakeholders.	
Integrate changes	☐	☐	Include ASP strategies and policies in employee manuals and orientation packages. Establish ASP as a standing item in staff meetings, team huddles or patient care rounds. Include ASP policies and awareness resources in welcome packages and education for new and existing residents and families.	

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