

MUHC - Antimicrobial Stewardship Program

Terms of Reference

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Introduction

Antimicrobials are among health care's most precious resources and have transformed the practice of medicine. However the emergence and rise of antimicrobial resistance (AMR) and of antibiotic-associated infections such as *C. difficile* (CDI), threaten the very foundations of modern medicine. Unless significant efforts are invested now to curtail the rise of AMR, not only will common infections become more difficult to treat, but also routine medical procedures and therapies such as surgery and chemotherapy will be jeopardized. Optimizing antibiotic prescriptions is one of the key strategies required to address the problem of AMR. A *structured institutional* approach to optimizing antimicrobial utilization is therefore a critical patient safety, public health and economic issue.

The Antimicrobial Stewardship Program (ASP) of the MUHC is a multidisciplinary and collaborative program with the primary objective of optimizing the use of antimicrobials across the institution to improve infection treatment outcomes and reduce adverse events associated with inappropriate antibiotic use. Currently 20-50% of all antibiotics prescribed in acute care hospitals are either unnecessary or inappropriate. Further, antimicrobials account for about 10% of the total pharmacy budget of most acute care institutions including the MUHC where direct costs attributable to antimicrobials (Class 8 drugs) is around **2 Million\$** per year. The ASP primarily aims to help improve the quality of patient care and safety through improved treatment cure rates and reduced rates of CDI, antibiotic resistance and adverse events – however through effective antimicrobial utilization strategies, it is reasonable to expect that ASP strategies will help reduce antimicrobial use by 15-20%, generating direct cost savings in the range of 3-400,000\$ per year (in addition to significant indirect cost benefits).

A physician with expertise in Infectious Disease, and a pharmacist with interest in stewardship will co-lead the ASP. The ASP team will operate with oversight from the ASP committee (formerly called the antimicrobial subcommittee of the P&T committee). This document describes the Terms and References relating to the ASP committee structure, the ASP team, and the functions and activities that will be undertaken.

1) Accountability

The ASP team is accountable to the ASP committee, which in turn is directly accountable to the MUHC Director of Infectious Diseases (ID) and the Chief of Pharmacy. A representative from the ASP committee (the chair or the co-chair) sits as an officio

member of the P&T committee to report on the activities of the ASP and to serve as a link between the P&T and the ASP committees.

II) Purpose

The ASP aims to optimize antimicrobial effectiveness while minimizing the potential for adverse events, antimicrobial drug resistance and costs. In order to achieve these objectives, the ASP will employ a systematic approach focused on:

- *Advising* best practice policies and guidelines for the use of antimicrobial agents at the MUHC;
- *Educating* health professionals on matters related to antimicrobials and their appropriate use;
- *Tracking* (surveillance) antimicrobial use within the institution
- *Reporting* (feedback) information on antibiotic use and resistance profiles to relevant clinical and administrative staff
- *Researching* the impact of specific interventions on antimicrobial use in the MUHC.

III) Composition, functions and activities of ASP team

The ASP team consists of the stewardship pharmacists, selected ID physicians, the ASP lead and co-lead (who are also the chair and co-chair of the ASP committee, respectively). The ASP team reports to the ASP committee on a monthly basis. The functions of the stewardship team are to:

1. **Review** antibiotic prescriptions with intervention and direct feedback to prescribers (*active surveillance*), as outlined in an annual strategic plan:
Activities: Perform weekly *unit-based* targeted quantitative and qualitative assessments of antimicrobial use, with suggestions communicated to clinical teams on a per-patient basis (audit and feedback); perform periodic *service-based* qualitative and quantitative reviews of antimicrobial use, with feedback on common themes; identify areas of suboptimal antimicrobial use through surveillance and recommend intervention strategies for those areas
2. **Collect** key performance indicator data
Activities: capture and document audit data and compliance rates in pre-established data collection forms; present data and observations to the ASP committee on a monthly basis;
3. **Provide** regular educational feedback and reinforcement sessions to prescribers regarding the results of specific audits and adherence with policies and criteria on antimicrobial use
Activities: develop teaching materials, or participate in the delivery of teaching sessions as outlined by the ASP committee

IV) Functions and core activities of the ASP Committee

The committee will provide high-level advice, advocacy and decision-making with regards to the overall approach of optimizing antimicrobial use at the MUHC; the committee will support and provide overall oversight of the program activities. The specific functions of the ASP committee are to:

Function 1: Liaise and make recommendations to the P&T committee on all issues relating to antimicrobials and their use:

Activities: review and endorse antimicrobial formulary content, recommend antimicrobial restrictions, evaluate new antimicrobials, provide guidance in cases of shortages, discontinuations and safety alerts

Function 2: Consult in the design and implementation of MUHC policies involving infectious diseases

Activities: review and endorse protocols, algorithms, care maps, clinical practice guidelines, pre-printed care orders or electronic order sets which involve infectious diseases, antimicrobial use and/or the clinical microbiology laboratory; liaise with MUHC clinical governance committees (eg: committee for quality) when required for matters relating to specific events

Function 3: Endorse and approve specific strategies developed by the stewardship team to optimize antimicrobial use at the MUHC

Activities: advocate and obtain financial support for implementation of analytical (electronic) tools to monitor antibiotic prescriptions and microbiologic results at the point of care (eg: intelligence software able to integrate data from microbiology lab information systems, electronic medical records and pharmacy prescription database); perform monthly review of ASP team activities, endorse systems (electronic and manual) to review antimicrobial prescribing and feedback to prescribers

Function 4: Review aggregate data on unit-based quantitative and qualitative assessments performed by the stewardship team on a periodic basis

Activities: approve audit and feedback plans developed by ASP team, monthly review of audit results (per care unit and per service), report results of audits to director of ID and chief of pharmacy on a quarterly basis

Function 5: Review, in collaboration with Microbiology and Infection Prevention and Control, aggregate data on trends of antibiotic susceptibility trends at the MUHC

Activities: annual review of antibiograms for selected organisms and annual review of antibiotic susceptibility reporting protocol(s) of the microbiology laboratory to ensure they are aligned with formulary and hospital therapeutic guidelines

Function 6: Develop and promote educational programs for MUHC staff and patients on matters related to antimicrobials and their use.

Activities: plan and implement stewardship teaching program for students, residents and fellows in collaboration with ID division, McGill ID training program, IPC, and Pharmacy (tutorials and rounds using case studies, flipped class room recorded lectures, didactic training sessions); update/develop and implement educational materials for patients (eg: flyers on wards on MDRO and CDI)

Function 7: Promote and support clinical research of antimicrobial agents, antimicrobial use, and antimicrobial pharmaco-economics

Activities: liaise with researchers to facilitate access to data on antimicrobial use and antimicrobial resistance in MUHC patients; review and endorse clinical research projects aiming to monitor the effectiveness of strategies used in the ASP; review results of studies to inform future strategies and key performance indicators

V) ASP committee membership and roles

Chair/co-chair

The MUHC Director of the Division of Infectious Diseases and the Chief of Pharmacy will appoint the chair and co-chair respectively. Under normal circumstances the chair will be a physician trained in Infectious Diseases, and the co-chair a clinical pharmacist with an interest in antimicrobial stewardship. The Chair and co-chair will ideally be appointed in a staggered manner (eg: within a one-year interval) in order to ensure smooth transition between tenures. The Chair and co-chair will each be appointed for 4-year terms, renewable twice.

The chair and co-chair are expected to prepare for and lead committee meetings, propose strategic direction, prepare annual strategic plans for approval by the committee, submit annual reports (to the chief of Pharmacy and MUHC Director of ID) based on review of the team activities and data from performance indicators.

Since antimicrobial stewardship is a key strategy in the prevention and management of healthcare associated infections (HAI), the ASP committee chair will be an officio member of the MUHC Infection Prevention and Control (IPC) Committee to facilitate liaison with IPC; additionally, an IPC delegate will be invited as a member of the ASP committee.

Members

Members appointed by virtue of their position (i.e. MUHC Director of ID, or chief of pharmacy) shall remain members for the natural term of these positions. Directors of departments will appoint the members representing their department (ex: medicine, surgery, pharmacy); additionally the chair or co-chair can suggest individuals to be

invited as potential members of the committee. Members shall be appointed for a two-year term renewable 4 times.

Members are expected to play an active role in the development, implementation and review of ASP strategies. Members are expected to attend at least half of all annual meetings; failure to do so will result in overall review of attendance and contribution, and can result in removal from the committee at the discretion of the chair and co-chair. Members represent their unit, department or discipline, and as such, may liaise with staff in their unit when broad input is needed e.g. development of a protocol for a specific infectious condition. Members are also expected to champion the ASP in their own unit, and demonstrate leadership for stewardship in their areas of practice as well as in their knowledge and attitudes.

Membership of the ASP committee will consist of:

- a. Infectious Diseases physician lead (chair)
- b. Pharmacy co-lead (vice-chair)
- c. Stewardship pharmacists from all MUHC sites
- d. Infectious Diseases physician(s) participating in the ASP team
- e. Medical microbiologist (representing Laboratory department)
- f. The chief resident for the Infectious Diseases training program
- g. Delegate from Infection Prevention and Control
- h. Nursing representative
- i. Up to 5 clinical (physician) staff representatives (from medicine, ICU, hematology-oncology, surgery and emergency departments)
- j. Other personnel, research assistants, IT specialists and hospital epidemiologist (eg: member of the MUHC Technology Assessment Unit), may be co-opted as required to assist the work of the committee and the stewardship team

The chief of pharmacy and the MUHC Director of ID will be *ex-officio* members of the ASP committee, and will have voting rights similar to those of all members, however they will not be counted in determining the number required for a quorum or in determining whether or not a quorum is present.

VI) Quorum

A quorum, consisting of half the number of members plus one, must be in attendance for decision-making. In the absence of quorum, the meeting can proceed however the agenda, the minutes of previous meetings and new decisions cannot be approved.

VII) Frequency of Meetings

The meetings will be held monthly between the months of September and June for a total of 10 annual meetings, to be held on the 3rd Wednesday of the month, between

11:30 and 1PM, in a conference room in the Central Pharmacy at the Glen site. The meetings will be set at the beginning of each calendar year and circulated to members. An electronic reminder invitation will be sent the week prior to meetings, to all members.

VIII) Agenda Preparation and Minutes Circulation

Papers for the committee will be prepared by the ASP Committee Secretary and circulated one week prior to the meeting date, along with the meeting invitation, by email.

The committee co-chairs will determine the agenda prior to each meeting. Agenda items proposed by committee members should ideally be forwarded to the Secretary prior to the circulation of the agenda. Members can also ask items be added to the agenda at the beginning of the meeting, however approval will be at the discretion of the chair.

The Committee Secretary will distribute minutes to the members within 3 weeks of the meeting date (along with the agenda of the upcoming meeting).

In addition to committee members, minutes will be forwarded to:

- Pharmacy and Therapeutics Committee
- Chief of Pharmacy
- MUHC director of Infectious Diseases
- Infection Prevention and Control Committee

IX) Reporting

The ASP chair and co-chair will report to the MUHC Director of ID and the Chief of Pharmacy on a quarterly basis, and submit an annual report which will also be sent to the Director of Professional Services. This report will include:

- The annual strategic plan
- Gap analyses or risk assessments undertaken to direct strategies for the ASP
- Data and reports reviewed by the committee relevant to the ASP (e.g. reports of audit/feedback, aggregate antimicrobial usage reports, antimicrobial resistance trends in the hospital)
- Other actions taken by the team and the committee (i.e. educational activities, reviews undertaken, resources developed, research projects, items endorsed, planning, liaison with key stakeholders for antimicrobial prescribing).

X) Evaluation/Key Performance Indicators

The Key performance indicators for the ASP committee and the stewardship program are:

- 1) Meeting frequency, minutes, and attendance in accordance with the terms of reference
- 2) Publication and distribution of ASP annual reports, which will include monitoring of the ASP performance measures:
 - Process measures: number and type of ASP interventions, acceptance and compliance rates
 - Antimicrobial use (DDD, DOT and expenditures per drug)
 - Antimicrobial resistance measures (aggregate resistance trends, *C. difficile* infection rates, hospital associated drug resistant infection rates eg MRSA, VRE, CRE)

XI) Decision Making:

The Committee will strive to arrive at decisions by consensus (willingness among all members to support a decision) as determined by the Chair/co-Chair. Consensus does not mean all members agree unanimously on each decision, rather that all members feel their position has been expressed, heard, understood (and duly recorded in the minutes), in the process of arriving at the final decision.

When consensus cannot be reasonably reached, members may agree to disagree. At this time the Co-Chairs, or any voting member of the committee, can ask for a formal vote with resolution based on a majority vote. The Co-Chairs will have equal voting rights as members.

A voting member unable to attend a meeting may send a designated representative if notification is provided to the Co-Chairs in advance of the meeting. Designated representatives will count towards a quorum, and may participate and vote on behalf of the voting member.

XII) Resources:

The ASP will operate with the following resources provided by the department of pharmacy and the division of Infectious Diseases:

Human resources:

- Stewardship pharmacists: 2 FTE for the Glen site, 1 FTE for the MGH, 0.25 FTE for MNI and 0.25 FTE for Lachine
- ASP committee secretary (0.25 FTE): will work closely with the chair and co-chair to prepare agenda and minutes; send reminders; assist with annual reports, liaise with other committees

Material and other expenses:

- An annual budget of 7,500\$ for discretionary funds (eg. for snacks/light lunches during committee meetings; to purchase educational materials)
- One time budget of 3,500\$ for equipment purchases (tablets/i-pads) for stewardship pharmacists, in order to capture electronic data on process measures during audit sessions

The ASP committee will evaluate a number of commercial “intelligent softwares” able to integrate the laboratory information system and pharmacy database; proposals to purchase or license one such software will be submitted by the ASP committee.

Remuneration: the Chair and co-chair of the ASP committee will not request financial compensation from the MUHC for their roles for the first 2 years after adoption of these terms of reference, however the issue of compensation for program leads will be revised after 2 years. The chair can bill RAMQ for committee meetings (meeting code) and for chart audits (control visit), in addition to the base microbiology “forfait”; time spent on stewardship activities will count towards Microbiology and “infectiologie collective” activities at the MUHC.

The co-chair, as an employee of the department of pharmacy, will be liberated from other obligations in order to fulfill his/her ASP duties for a minimum of 2 hours per week.

Members of the ASP committee will serve as volunteers and will not receive stipends or financial compensations.

XIII) Conflicts of interest:

Voting members of the ASP committee are required to disclose any conflicts of interest according to the *MUHC Conflict of Interest Policy*. The chair and co-chairs of the ASP committee, as program leads for the antimicrobial stewardship program, will refrain from receiving any direct financial payments such as speaking and consultancy fees from the pharmaceutical industry during their tenure, and will refrain from directly profiting from any commercial software/analytical tools implemented for the ASP. The ASP leads can receive funding (cash or in-kind) from industry for Investigator-initiated research projects related to stewardship, however such funding (source and amount) have to be disclosed to the committee.

XIV) Organisational Risks Addressed by the Antimicrobial Stewardship program

The key risks to the MUHC that will be managed by the ASP include:

- 1) Risks associated with inappropriate use of antimicrobials, namely:
 - Increased incidence of *C. difficile* infection (CDI),
 - Infection or colonization with multi-drug-resistant organisms (MDRO),

- Toxicity associated with antimicrobial use
- Unnecessary costs (direct costs of antimicrobials, and indirect costs related to prolonged hospitalization, hospital associated infections, and others).

2) Conflicts that may arise with prescribers, clinical pharmacists or other health care professionals from formulary restrictions and/or performance measures based on concordance with clinical guidelines.

XV) Confidentiality

Matters discussed at the ASP Committee meetings may be of a confidential nature and must be treated as such by members. Committee materials, proposals, business cases and procurement decisions that come into a committee member's possession must only be used or disclosed for the purpose of the ASP Committee function. To protect confidentiality, individual members must destroy all proposals or information (electronic or paper form) provided in a secure way once the purposes for which it was provided have been fulfilled.

XVI) Review

The Terms of Reference of the ASP committee will be reviewed every 2 years by the ASP committee and approved by the Chiefs of Pharmacy and the MUHC Director for ID.