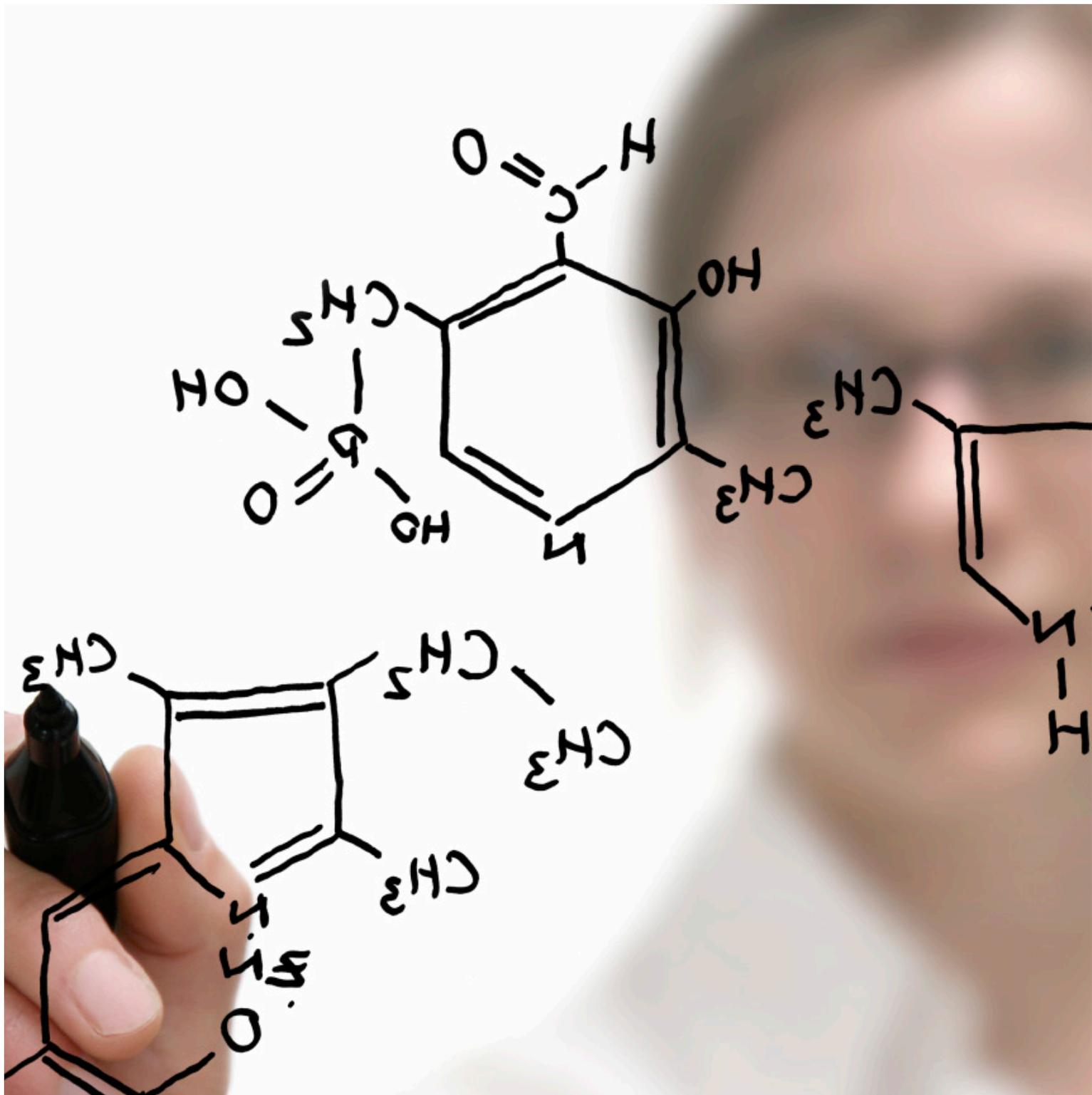


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Antimicrobial Stewardship Program (ASP)
in Intensive Care Units (ICU) ARTIC Project





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Thank you for agreeing to participate in the implementation of the CAHO Antimicrobial Stewardship Program (ASP) in Intensive Care Units (ICU) ARTIC Project (herein referred to as the CAHO ASP Project). A team led by the Mount Sinai Hospital-University Health Network Antimicrobial Stewardship Program – in close collaboration with a multi-disciplinary team from Mount Sinai Hospital, St. Michael's, Sunnybrook Health Sciences Centre and University Health Network – developed this project. The CAHO ASP Project uses a collaborative process of what is termed “prospective audit and feedback” (but is probably better termed “an interprofessional dialogue focused on patient-specific antimicrobial use”). This program has been used successfully in various ICUs to optimize antimicrobial use.

The purposes of this participant information package are to help orient participating hospitals to the project, to help identify local resources for the project, and to allow individual hospitals an opportunity to envision how their ICU ASP may take shape to best suit their local culture. Each participating hospital has agreed to implement an ASP in at least 1 ICU, although hospitals with multiple ICUs may choose to implement an ASP in more than 1 ICU.

Because our project team shares the same goals and hopes as each local hospital, we are most interested in ensuring that your hospital is successful in implementing an ASP. **We therefore strongly recommend that you read through this package carefully prior to fully assembling your team.**

We look forward to working with you in helping you develop an ASP in your ICU!

Andrew Morris, MD SM

Project Lead, CAHO Antimicrobial Stewardship Program in Intensive Care Units ARTIC Project
Director, Mount Sinai Hospital-University Health Network Antimicrobial Stewardship Program

On behalf of the ASP Project Team:

Chaim Bell, MD PhD, St. Michael's
Lisa Burry, Pharm D, Mount Sinai Hospital
Nick Daneman, MD MSc, Sunnybrook Hospital
Linda Dresser, Pharm D, University Health Network
Marion Elligsen, BSc, Phm, Sunnybrook Hospital
Rob Fowler, MD MDCM MSc, Sunnybrook Hospital
Margaret Herridge, MD MSc MPH, University Health Network
Tanaz Khory, BNSc MBA, Mount Sinai Hospital
Sangeeta Mehta, MD MSc, Mount Sinai Hospital
Matthew Muller, MD PhD, St. Michael's
Yoshiko Nakamachi, BScN BA, Mount Sinai Hospital
Sandra Nelson, Pharm D, Mount Sinai Hospital
Sandra Walker, Pharm D, Sunnybrook Hospital

Dr. Andrew Morris, Project Lead
Mount Sinai Hospital
600 University Avenue, Suite 415
Toronto, ON M5G 1X5
T. 416 586 4800 x 8102
F. 416 619 5535
Email. amorris@mtsinaï.on.ca

Yoshiko Nakamachi, Project Manager
Mount Sinai Hospital
600 University Avenue, Suite 1-E9-4
Toronto, ON M5G 1X5
T. 416 586 4800 x 6346
Email. ynakamachi@mtsinaï.on.ca

Council of Academic Hospitals of Ontario

Council of Academic Hospitals of Ontario

The Council of Academic Hospitals of Ontario (CAHO) is the non-profit association of Ontario's 24 academic hospitals and their research institutes. CAHO provides a focal point for strategic initiatives on behalf of these academic hospitals.

As research-intensive hospitals, CAHO member hospitals are fully affiliated with a university, medical or health sciences faculty. Our hospitals provide the most complex and urgent care, teach the next generation of health care providers, and foster health care innovation through research and discovery.

Across the province, CAHO hospitals are inventing the future of health care by developing new standards of patient care, evolving models of health care education, and conducting world-class health research.

CAHO Practice and Education Committee

The CAHO Practice and Education (P&E) Committee is a multidisciplinary committee comprised of executive clinical leaders representing medicine, nursing, interprofessional care and education across the CAHO membership. The P&E Committee provides oversight to the implementation of all CAHO ARTIC Projects. P&E Committee members are responsible for providing direction to the CAHO ASP project within their respective hospitals and ensuring that the program is properly resourced.



Council of Academic Hospitals of Ontario

200 Front Street West, Suite 2501
Toronto, ON M5V 3L1
416-205-1336
info@caho-hospitals.com
www.caho-hospitals.com

Michelle Grouchy, ARTIC Project Coordinator

Council of Academic Hospitals of Ontario
200 Front Street West, Suite 2501
Toronto, ON M5V 3L1
T. 416-205-1567
Email. mgrouchy@caho-hospitals.com

Adopting Research to Improve Care (ARTIC) Program

Adopting Research to Improve Care (ARTIC) Program

While creating health care innovations is a formidable task, what is often more challenging is the successful and rapid adoption of innovation into the practice of health care. Many in the health care sector have successfully shared best practices within their own organizations, professions and sometimes across communities of care such as paediatrics or mental health. However, as a health care system, Ontario has yet to realize the full potential of sharing best practices and systematizing efforts to move research evidence into practice. Too often, we have found pathways to improve care and drive quality improvement in the health care system, but that knowledge never leaves the organization that created it.

In 2010, CAHO resolved to address this challenge. Committed to fostering better collaboration and trying to establish a systematic approach to moving research evidence from the bench to the bedside, CAHO launched the Adopting Research to Improve Care (ARTIC) Program. The aim of the program is to move research evidence into practice from one hospital across the CAHO community in order to drive quality improvement and benefit the health care system as a whole. The goal is to learn from this experience in order to help build a systematic and sustainable implementation pathway for evidence adoption across the province.

Collectively, CAHO implemented two ARTIC projects in 2010 – the first is the CAHO Canadian C-Spine Rule ARTIC Project which is focused on addressing wait times in the ER by making better use of our inter-professional resources. The second project is the CAHO HandyAudit™ ARTIC Project which is meeting the challenge of infection control and hand washing compliance.

In November 2011, CAHO announced the implementation of two new ARTIC Projects which includes the CAHO Antimicrobial Stewardship Program in Intensive Care Units ARTIC Project, and the CAHO Mobilization of Vulnerable Elders (MOVE ON) ARTIC Project which is helping older patients to maintain function through early mobilization.

The following hospitals are participating in the CAHO ASP Project:

Children's Hospital of Eastern Ontario
Hamilton Health Sciences
Health Sciences North/Horizon Santé-Nord
Hospital for Sick Children
Kingston General Hospital
London Health Sciences Centre
Mount Sinai Hospital
North York General Hospital
St. Joseph's Healthcare Hamilton
St. Michael's Hospital
The Ottawa Hospital
University Health Network



ARTIC began as a self-funded initiative. Recognizing the power of this platform to test systematic implementation of new evidence and the ARTIC Program's alignment with the goals of the Excellent Care for All Strategy, CAHO received \$6.3 million over 3 years from the Ontario Ministry of Health and Long-Term Care to support implementation of the CAHO ARTIC Program.

Why has your hospital committed to this project?

In recent years, we have seen the increasing prevalence of antimicrobial-resistant organisms (AROs) and *C. difficile*, accompanied by reduced development of new classes of effective antimicrobial agents and increasing costs. This has resulted in an explosion of antimicrobial stewardship efforts, including Accreditation Canada requiring hospitals to make antimicrobial stewardship a Required Organizational Practice beginning January 2013 (Accreditation Canada, personal communication).

Intensive care units are amongst the hardest hit by these developments, primarily because critically ill patients are the sickest and most vulnerable, and upwards of 70% of ICU patients are on antimicrobials. The CAHO ASP Project Team has experience in a variety of ICUs showing that an antimicrobial stewardship program can safely reduce the overall use of antimicrobials (qualitatively and quantitatively), while also reducing antimicrobial expenditures and antimicrobial resistance.

Why is this important?

Hospital-acquired Infections (HAIs): HAIs result in thousands of deaths each year in Ontario, and the risk of an HAI is three times higher for ICU patients than it is for other patients in acute care hospitals.(1)

Antimicrobial-resistant Organisms (AROs): Since the discovery of penicillin, the development of resistance to antimicrobials has been a constant challenge for physicians. For many years, development of new agents and new classes of agents allowed us to keep pace with the development of resistance. Over the past several years, however, the antimicrobial pipeline has “dried up”,(2) resulting in what was once unforeseeable: patients once again are dying of bacterial infections without any effective agents available. Currently, the only accepted method to avoid the development of antimicrobial resistance is to avoid use of antimicrobials.

Clostridium difficile: Diarrheal illness and colitis due to this organism has been a growing problem, especially over the past 5-10 years with the spread of the NAP1 strain. This strain – which appears to be more virulent than previously circulating strains – has resulted in numerous hospital-based outbreaks, and has been responsible for a considerable number of deaths. Although infection prevention and control measures such as hand hygiene and barrier precautions play an important role in the containment of *C. difficile*, judicious antimicrobial use undoubtedly plays a role in the control of this organism.

Invasive candidiasis: Patients develop invasive candidiasis primarily because they have central venous catheters in the presence of prolonged broad-spectrum antimicrobials.

Costs: Antimicrobials constitute a considerable amount of a hospital’s budget. For most general hospitals, approximately 50% of the hospital’s antimicrobial costs are consumed in the ICU. Costs per bed-day range anywhere from approximately \$10-100, although most medical-surgical ICUs spend approximately \$40-55/patient day. The costs expended to keep patients in isolation because of AROs and *C. difficile* infection are considerably higher than this. The ICU therefore represents a good opportunity for a cost-effective intervention.

Infection prevention and control strategies are insufficient: Although anyone working in healthcare recognizes the importance of infection prevention and control strategies to combat HAIs, AROs, *C. difficile*, etc., the available evidence suggests that such approaches are necessary but not sufficient to win the battle.

Accreditation: Commencing January 2013, every acute care hospital in Canada will be required to have an antimicrobial stewardship program in place. **Successful implementation of your ASP using the project outline will meet all of Accreditation Canada’s Required Organizational Practice criteria.**

What is the evidence?

Antimicrobial stewardship is a relatively young field whose development lags at least 40 years behind that of Infection Prevention and Control, and our team is at the forefront of expanding that literature. A systematic review from 2006 focused on evaluating the efficacy of interventions influencing antimicrobial prescribing, demonstrated a strong and consistent effect from antimicrobial stewardship on reducing *C. difficile*-associated diarrhea.(3) Recent studies have reaffirmed this earlier finding,(4, 5) and a mathematical model suggests that reducing patient susceptibility to *C. difficile* through reduced antibiotic exposure will likely have a more potent effect on reducing disease than attempts to decrease cross transmission between patients.(6)

Members of our team have published a systematic review on antimicrobial stewardship interventions in the ICU.(7) This review demonstrated that such interventions are associated with improved antimicrobial utilization, corresponding reductions in antimicrobial resistance and adverse events, and do not compromise short-term clinical outcomes.

The available evidence shows that ASPs implemented in ICUs are associated with an 11-38% reduction in antimicrobial consumption, savings of US\$5-10/patient-day, and reduced duration of therapy. The systematic review also showed that administrative practices in the absence of antimicrobial stewardship, such as antimicrobial restriction and pre-authorization, were not only associated with reduced use of targeted antimicrobials, but a compensatory increase in alternative antimicrobial use (known as squeezing the balloon).

The Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America recently published guidelines for developing institutional ASPs. (8) These guidelines identify two core activities of ASPs: prospective audit and feedback, whereby antimicrobial prescribing practices are regularly reviewed and the prescribers receive expert feedback, and formulary restriction and preauthorization.

How will your Antimicrobial Stewardship Program be structured?

This will depend on whether your hospital has a structured, funded program in existence or not.

For those hospitals with an existing program, you have already defined your structure, and we have no intentions to have you change it, providing that it is adequately staffed in order to comply with the project.

For hospitals without an existing program, you will have a physician trained in infectious diseases working with a pharmacist to lead the program. They will be supported locally with existing infrastructure, and externally by the CAHO ASP Project Team. Your ASP Team will need some information system support, including the ability to access and retrieve microbiological information and antimicrobial utilization information as outlined later on in this package.



What needs to be in place prior to starting your work in the ICU?

In brief, you will need:

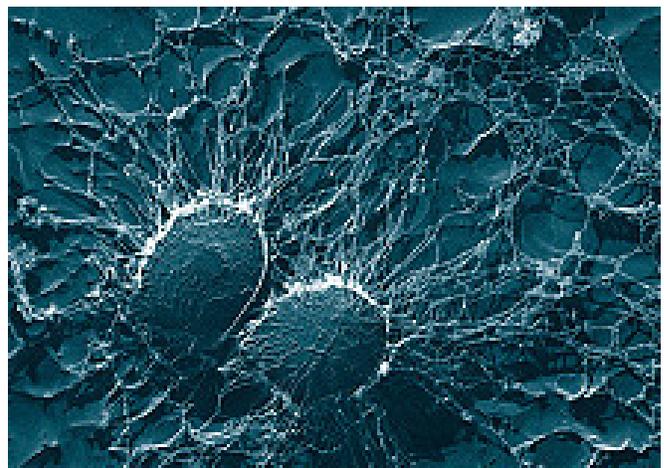
- i) To identify which ICU(s) you plan on introducing the CAHO ASP Project. For hospitals with more than 1 ICU, you may wish to introduce the ASP into 1 ICU only, or to introduce it into more than 1 ICU. This can be done in multiple ICUs at the same time, or sequentially: we can help guide you on making this decision.
- ii) Your ASP Team which – at a minimum – involves an **ASP Pharmacist (with at least 0.5 FTE protected for/dedicated to ASP activities)** and an **ASP Physician (with at least 0.2 FTE protected time for ASP activities/20 ICU beds)**.
- iii) A clear mandate with clear, widely distributed messaging from senior leaders in the hospital, including Senior Administration, Medicine, Critical Care, Infectious Diseases and Pharmacy leads, that the stewardship project will be implemented as a priority project for your hospital.
- iv) Discussion amongst all ID Physicians about the messages/principles that will be given to the ICU team (to ensure consistency of messaging).
- v) A process for the ASP Team to obtain relevant information on each patient in the ICU prior to review (i.e. microbiology information, current and prior antimicrobial information, other lab and radiology information, and narrative clinical capsule such as a sign-out sheet).
- vi) A process that allows for regular reporting of antimicrobial utilization and cost in each ICU, as well as microbiological information specific to each ICU.

What will our day look like?

Your hospital ASP Team will work together with your ICU team, especially all MDs and pharmacists, to identify the best time and place to meet for daily (preferably, although 3 days/week at a minimum) review in “Stewardship Rounds”. The time and place should be the same each day to maximize attendance and the ability of participants to get into a routine.

The ASP Team will come to Stewardship Rounds prepared to discuss all patients, with full knowledge of the patients’ antimicrobial history and microbiology results. Depending on the information systems available, the preparation may take anywhere from 1-4 minutes/patient in our experience. All patients in the ICU will be discussed vis á vis antimicrobials and infectious diseases. Discussions will include the current clinical status, investigations and results, diagnosis, need for further investigations, antimicrobials (including choice, dose, frequency, route and duration), and whether any adjunctive interventions are required. ASP Team members will also be oriented to new patients admitted to the ICU by means of a brief clinical synopsis.

Although this face-to-face interaction may take some time at first, eventually the interactions will take no more than approximately 1 minute/patient/day. The ASP Team will often offer infectious diseases advice; it is up to the ICU team to determine how they best use this information and/or advice.



What can we expect from the CAHO ASP Project and its team?

By participating in this project, you are allowing us the opportunity to work with you to help you develop your stewardship program. Ultimately, we want you to have a customized, sustainable Antimicrobial Stewardship Program that meets the needs of your institution. We will provide you with:

- i) A package of educational materials that will provide you with many of the tools needed to provide and/or receive antimicrobial stewardship advice in the ICU.
- ii) An education and orientation session in the spring that will acquaint participants to the project, and offer education surrounding the nuances of prospective audit and feedback.
- iii) A series of online education modules for team members to use as either resources or for the purpose of educating colleagues.
- iv) Ongoing project management support to help you with issues surrounding program development, data collection and management, and regular “check-ins” to ensure that implementation is proceeding in a timely and straightforward manner.
- v) Timely ID Pharmacist and ID Physician support.
- vi) Regular reporting of your program’s/ICU’s successes in comparison with those of other hospitals, akin to the Critical Care Information System’s reporting of patient outcome and bed utilization data.
- vii) Scientific evaluation and reporting of the outcomes of this project to formally evaluate the relationship between antimicrobial stewardship (in the form of prospective audit and feedback) and antimicrobial utilization, antimicrobial resistance, *C. difficile*, and patient outcomes in the intensive care unit.



When do we start?

Well, you have already started! We will be meeting with you and other key stakeholders at your hospital shortly to assess your readiness to participate. For some sites, getting an ASP in the ICU up and running will take only a few short months – and we will work with you to ensure that occurs.

For others, it will take considerable time to introduce prospective audit and feedback because of challenges with human resources, data management, or other logistical issues. All sites will be required to have key team members attend an educational retreat in the Spring. After that time, sites that will be ready will be able to start their programs at a time that is mutually agreeable. In order to ensure proper assessment of outcomes, we will be staging start dates quarterly, in a stepped pattern. (Please see the Evaluation section for further details.)

Human Resource Requirements

The following human resources requirements will be provided in-kind by each hospital.

ASP Physician (0.2 FTE/20 ICU beds)

Selection of this individual is key. He/she should have certification in either infectious disease or medical microbiology, and have a reasonable amount of clinical experience (preferably >5 years). More importantly, members of the ICU team should respect the ASP Physician for their clinical skills and acumen. Infectious diseases physicians and medical microbiologists (like other physicians) have a “style”. Descriptors attributed to such ideal ASP Physicians may include “conservative (prescriber)”, “thoughtful”, “practical”, “affable”, “deferential”, and “evidence-based”. ASP Physicians with a reputation for recommending overly cautious antimicrobial regimens (i.e. unnecessarily broad-spectrum and/or prolonged) may have more difficulty making rather judicious recommendations, especially when not seeing the patient. Similarly, because this role requires excellent interpersonal skills and an ability to work closely with the ASP Pharmacist, the physician should be a known effective collaborator with experience working with interprofessional teams.

The ASP Physician must be provided with, on average, 1.5 hours of protected time per day to dedicate to the CAHO ASP Project. They are expected to be present in the ICU on most (if not all) days when patients are being reviewed, although eventually the ASP Pharmacist will be able to run the program in the ICU autonomously. Even once this occurs, it is recommended that the ASP Physician be present several times/week. The ASP Physician is also expected to participate in conference calls with the CAHO ASP Project Team, which will occur bi-weekly initially, and then monthly after the first 3 months of the program.

ASP Pharmacist (0.5 FTE)

Ideally, this individual is an infectious diseases pharmacist (i.e. a pharmacist with additional training in infectious diseases), although we recognize there are currently few pharmacists trained with this qualification. Pharmacists with at least 5 years clinical experience and an interest in infectious diseases would be well suited for this position. The pharmacist should have previous experience providing advice to physicians, and should have very strong interpersonal skills.

Although there may be interest in having the ICU Pharmacist in this role, it is our experience that this does not work: one of the elements of a successful stewardship program is having the ASP Team separate from the ICU team.

The ASP Pharmacist must have the time available to prepare for and then review patients with the ICU team on a daily basis (preferred/recommended; at least 3 times/week minimum) at a regular, mutually agreed upon time. He/she must also have time available to evaluate antimicrobial utilization in the ICU. The ASP Pharmacist is also expected to participate in conference calls with the CAHO ASP Project Team, which will occur bi-weekly initially, and then monthly after the first 3 months of the program.

Data Analyst (0.1 FTE)

This individual must have access to patient charts, clinical electronic databases, and microbiology laboratory information systems. He/she must have an understanding of quality control, standard operating procedures, and effective presentation of data. Knowledge and understanding of Excel is required.

The Data Analyst should be available to collect data approximately 1 hour each day, and enter it into the ASPIS (Antimicrobial Stewardship Program Information System). The Data Analyst is also expected to participate in conference calls with the CAHO ASP Project Team, which will occur bi-weekly initially, and then monthly after the first 3 months of the program.

Additional Roles and Responsibilities

Success of the CAHO ASP Project relies, primarily, on interprofessional collaboration. Strong leadership from various hospital and medical portfolios will dramatically increase the likelihood of success. We are very confident that a well-organized ASP of strong individuals supported by strong leadership will be incredibly successful.

Senior Hospital Administrator

Direction for an initiative like this obviously starts near the top. A senior hospital administrator (CEO or VP) needs to champion the cause and deliver clear, strongly supportive messages to the stakeholders involved. The CAHO Practice and Education Committee representative at your hospital is ultimately accountable to ensure that the program is properly resourced.

Physician-in-Chief

Because the Physician-in-Chief (PIC) is the leader of clinical care for the Department of Medicine in the hospital, leadership from the PIC that outlines the importance of the initiative, and the need for cooperation, collegiality, and interprofessionalism is important. The PIC may be called upon to intervene and help facilitate implementation.

Surgeon-in-Chief

There are often peri-operative patients in the ICU. The ASP Team will often give evidence-based advice surrounding, for example, choice or duration of surgical prophylaxis or of antimicrobial therapy for intra-abdominal collections. This advice may be theoretically sound and evidence-based but still run counter to usual practice by one or more surgeons. It is important that the Surgeon-in-Chief give clear leadership and direction that certain practices may need reconsideration based on the evidence-based advice of the ASP Team.

Infectious Diseases Director

ASPs pose several challenges to a Division of Infectious Diseases, from identifying physician time available for ASP activities, to intra-divisional conflict regarding advice being given, to handling conflicting priorities within the division. The ID Director must be aware of these, anticipate them, and quickly address them. One of the greatest challenges surrounds patients who are being followed by the Infectious Diseases consult service while they are in the ICU. Dealing with this prior to the commencement of the ASP and clarifying “rules of engagement” will avoid most conflict. We strongly recommend that the ASP Team discuss patients that are being followed by ID consultants with the ID consultants being present. We offer the following options for consideration:

- i) ID consultants are regularly present during ASP rounds, and their patients **are discussed** by the ASP Team;
- ii) ID consultants are regularly present during ASP rounds to discuss the patients they are following, but these patients **are not discussed** by the ASP Team;
- iii) Patients followed by ID consultants are not discussed during ASP rounds.

Intensive Care Unit Director

Since this project involves the patients in the ICU Director’s unit, it is imperative that he/she not only approves of this project, but visibly and vocally supports it. Ideally, this includes modeling behavior that others can see during ASP rounds, but also being present, occasionally, when other staff intensivists are meeting with the ASP Team to observe the interprofessional interaction.

Pharmacy Director

It is the Pharmacy Director’s responsibility to ensure that the ASP Pharmacist has the appropriate skill-set for this position, and has the necessary time available to dedicate to the ASP.

ICU Attending Staff

Each staff physician who attends in the ICU is expected to participate in the daily rounds. Attending the rounds sends the message to all other members of the team that the ASP is a priority initiative. Not attending could imply that the rounds are neither important nor valuable. ICU Attending Staff are not expected to always take the advice of the ASP Team (although it is generally preferred), but are expected to consider advice received in a thoughtful manner. It is likely that the ASP Team will be giving advice counter to how the ICU attending physician has usually practiced, but much of stewardship rests on fairly sound principles of safe, judicious antimicrobial pharmacotherapy. We ask that the ICU attending physicians be open to different ideas, and strongly encourage active discussion for the rationale/evidence surrounding certain recommendations or guidelines.

ICU Pharmacist

The ICU Pharmacist is expected to participate in the daily rounds. The ICU Pharmacist's role (as it relates to antimicrobial therapy) should become more important over time, rather than less important. Nobody has better knowledge of medications administered to critically ill patients than the ICU Pharmacists. Because the CAHO ASP Project is aimed to enhance interprofessional collaboration between pharmacists and physicians, it is anticipated that the ICU Pharmacist will become further empowered over time. The long-term goal of any stewardship program should be to change the prescribing culture so dramatically that the ASP Team is no longer needed. Having capable, knowledgeable and empowered ICU Pharmacists are a necessary step in reaching this goal.

House Staff

House Staff are expected to participate in the daily rounds. It is an opportunity for them to learn about optimal antimicrobial therapy from the ASP Team, as well as an opportunity for them to learn about and participate in interprofessional collaboration in a unique way. House Staff should be encouraged to ask questions.

ICU Nursing Unit Administrator

The ICU Nursing Unit Administrator (NUA) should be engaged early in the process. Since antimicrobial stewardship is an ongoing process (your program will start with prospective audit and feedback, but will likely move forward with the addition of checklists, algorithms, guidelines, etc. over time), having nursing involved early will increase the chance of success of your program over time, and you will need nursing input for some of the innovations you will decide to introduce.

Nurses

Nurses are not expected to participate in the daily rounds, but it should be made optional to them. Nurses are among the patients' strongest advocates and know their clinical course better than most, and therefore their involvement in the stewardship process should be encouraged.

Chief Information Officer or Director of Medical Informatics

The Chief Information Officer (CIO) or their designate should be aware of the ASP. Regardless of the needs and successes of this project, the hospital will eventually need an information strategy that is harmonious with the ASP.

For the CAHO ASP Project, there may be some additional needs from the ICU or ASP Teams to ensure efficient communication between the clinical team(s) and the ASP. We deliberately have not made heavy medical informatics investment a requirement or in-kind budgetary consideration. However, individual hospitals may find that a cogent case could be made for streamlining their communication, such as developing an electronic sign-out tool, if one is not already being used.

Measurement of Project Success & Project Milestones

The primary objective of this project is to have every participating hospital over the next two years successfully introduce and sustain an antimicrobial stewardship program in their ICU, report outcome measures regularly and accurately, and be able to receive feedback on their performance compared to peer ICUs in CAHO member hospitals.

The goals of antimicrobial stewardship, however, are to improve patient outcomes, reduce antimicrobial resistance, and reduce healthcare costs through the optimization of antimicrobial utilization. Since antimicrobials are primarily over-utilized in ICUs, **reduced antimicrobial prescribing** in participating ICUs would be the primary measure of project success. Other indicators of success will include **reduced**

antimicrobial costs, reduced antimicrobial resistance, and reduced rates of *C. difficile* infection. We will also encourage the tracking of patient care indicators such as mortality, length of stay, days on ventilator, etc., which are already being captured by the Critical Care Information System.

As we have a relatively unique and rare opportunity to study the impact of antimicrobial stewardship scientifically, we will be using a stepped-wedge design; ICUs will commence their ASP at defined times in the calendar. We will be able to observe the impact of an ASP on antimicrobial use on each ICU, using other ICUs that have yet to start their ASP as negative controls. This will help account for seasonal variation in antimicrobial consumption or an infectious outbreak which might confound the data.

February, 2012	Onsite meetings with local leadership, stakeholders, and CAHO ASP Project Management Team begin.
April, 2012	Onsite meetings completed
TBD	Educational retreat for all participating hospital ASP Teams and key stakeholders (to be held in Toronto).
June, 2012	First cohort of sites commence ASP.
September, 2012	Second cohort of sites commence ASP.
December, 2012	Third cohort of sites commence ASP.
March, 2013	Fourth cohort of sites commence ASP.
June, 2013	Last cohort of sites commence ASP.
December, 2013	Data collection for project evaluation completed.
January, 2014	Final project report to CAHO Practice and Education Committee and participating hospitals.

Q1

Does this replace the Infectious Diseases consult service?

No. The ASP should be complementary to the ID consult service. It is acceptable, and often advisable, that the ASP recommends an ID consultation on certain occasions. The prospective audit and feedback process does not allow for the same kind of evaluations or nuanced care that an ID consultation provides. In our experience, the number of infectious diseases consults either does not change or increases following introduction of ASPs in ICUs.

Q2

What is the relationship between Infection Prevention and Control (IPAC) and the ASP?

These two programs serve the same purposes: to reduce the burden of disease from infectious organisms – especially drug-resistant ones – on our patients. However, the means at their disposal differs between IPAC and the ASP. IPAC programs generally focus on hand hygiene, isolation methods, barrier precautions, environmental cleaning, and careful screening of patients who may harbour an infectious disease. They also have excellent knowledge and tools to help understand the epidemiology of infections in hospitals. Antimicrobial stewardship programs try to reduce the burden of infectious organisms by minimizing the development of drug-resistant agents (by reducing drug exposure) and optimizing the appropriate treatment of infections (by ensuring that patients receive the right antimicrobials, when they need them). The two programs, therefore, are synergistic.

Q3

How is ASP advice documented?

This is entirely up to the local site. In the legal opinion we received from the Canadian Medical Protective Association (CMPA) and advice from our hospital lawyers, we have been advised that as long as treating physicians continue to accurately document the rationale for antimicrobial therapy and, where appropriate, that the ASP provided advice that supported this recommendation, there are no additional requirements for documentation. However, some local programs may be uncomfortable with this and may choose to document their advice in the medical record.

It sounds as though reviewing each patient with the ASP will be prohibitively long.

It certainly might appear that way but, in fact, the time to review patients is surprisingly short after the initial start-up period. The first few weeks are more time-consuming, as the ASP Team learns of all the new patients. At this time, both the ASP Team and the ICU team are also only starting to understand each other's personalities and communication styles.

Q4

We don't seem to have much of the technical or electronic infrastructure in place in order to make this project work. Can we still participate?

Yes. Some hospitals will be far more advanced than others regarding electronic tools to gain information around patients. This may change workflow, but the basic elements of antimicrobial stewardship using our methodology of prospective audit and feedback include: reviewing the available clinical and laboratory information, patient-focused evidence-based discussion, and decision-making. This can be done with purely paper records although, unquestionably, it may be more time-consuming.

Q5

We don't have an Infectious Diseases Pharmacist. Can we still participate?

Yes. Certainly, having a pharmacist trained in infectious diseases is an asset. But much of the basic knowledge can be acquired over time and we will be providing ASP Teams with extensive educational packages addressing many common scenarios and questions in an evidence-based manner. The reason we have an infectious diseases physician present is to supplement any knowledge the pharmacist might not have.

Q6

In some cases, Infectious Disease Physicians may have high rates of prescribing antimicrobials, including broad-spectrum agents. How should we handle this?

Successful implementation of an antimicrobial stewardship program requires very strong leadership, especially from the Physician-in-Chief and the Director of Infectious Diseases. By participating in this project, each hospital is committing to ensure that much of the knowledge our team has acquired over time (from review of the literature and experience) gets translated into practice. It is up to the hospital leadership to support the ASP Team in identifying and modifying the practices of all physicians whose practice in prescribing antimicrobials run counter to basic stewardship principles.

Q7

What happens after the project is completed and the report is submitted?

Although we cannot guarantee that hospitals will continue their financial support of the ASP once the project is completed, it is difficult to imagine why they wouldn't. ASPs in ICUs are almost always cost-effective, even when only considering direct cost savings. But the real benefit of ASPs comes from the benefit related to improved patient safety. Our goal is to have all participating hospitals running an independent, successful, self-sustaining program that improves the outcome of patients from the time of project completion onward.

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