AHS IPC works in the healthcare and public domains to promote practices that prevent and control the spread of infections. Most IPC staff and physicians are facility based and their work is primarily directed to patient populations and healthcare providers. AHS IPC also works with partners who focus more directly on providing information targeted to the public.

Promoting awareness and education in the healthcare domain

Appropriate antibiotic use is identified as one of the key initiatives to prevent and control the spread of antimicrobial resistance, as described in the Council of Canadian Academies *When Antibiotics Fail* (2019), the *Alberta Health Infection Prevention and Control Strategy* (2015), and as reinforced by the Office of the Auditor General of Alberta. The council report states that antimicrobial resistance levels continue to rise. Currently, there is a 26 per cent resistance rate to first-line antimicrobials in Canada.

**AHS Antimicrobial Stewardship Program**

The AHS Antimicrobial Stewardship Program is led by AHS Pharmacy Services and is supported by AHS IPC. Dr. John Conly and Dr. Lynora Saxinger provide medical leadership as chairs of the AHS Antimicrobial Stewardship Committee, which reports to the AHS Drugs and Therapeutics Committee. Each of the five zones maintains a committee or working group that oversees the usage of antimicrobials within the zone, and identifies and coordinates the implementation of initiatives to improve antimicrobial use.

There are also additional antimicrobial stewardship physicians providing designated support at select AHS and Covenant Health sites, and several antimicrobial stewardship pharmacists who support provincial and zone antimicrobial stewardship initiatives. Due to the need for infectious disease clinicians to manage COVID-19, there was reduced activity and promotion of antimicrobial stewardship in 2020.

The AHS provincial drug formulary is a complete listing of the drugs available within AHS and Covenant Health, including antimicrobials. Antimicrobials and their related policies are regularly reviewed and updated by the Antimicrobial Stewardship Committee to provide correct and up-to-date guidance to clinicians. The introduction of Connect Care has allowed for the creation of an antimicrobial stewardship module to be embedded into the decision-making process for clinicians. As sites go-live, this module will further improve both the awareness of antimicrobial stewardship and the use of antimicrobials in our facilities.
Approaches to appropriate antibiotic use need to be evidence-informed, measurable, and targeted. Significant work is ongoing to increase the knowledge of healthcare providers about appropriate antibiotic use, which in turn informs patient care best practices. There are several initiatives and activities that AHS is undertaking to support the appropriate use of antimicrobials in acute care environments.

**The Appropriate Stewardship in Asymptomatic Bacteriuria Initiative**

The Appropriate Stewardship in Asymptomatic Bacteriuria Initiative is an interdisciplinary, province-wide project with the goals to reduce inappropriate urine testing and antibiotic treatment of asymptomatic bacteriuria using patient-centered cases to differentiate asymptomatic bacteriuria from urinary tract infections. In 2020/21, work to promote uptake of the initiative continued. An asynchronous learning module delivered through MyLearningLink was launched. The module, which is available to all healthcare professionals, teaches staff how to differentiate between asymptomatic bacteriuria and a urinary tract infection, how to interpret and understand lab results, and understand when antibiotics are appropriate. Education sessions were also offered ad hoc.

In 2020/21, two such sessions were provided virtually for the Geriatrics Consult Team and the Geriatric Assessment Unit staff at Grande Prairie Regional Hospital.

A pediatric algorithm for the Evidence-based Criteria for Urinary Tract Infection Testing was added to the suite of tools, after several rounds of inter-professional consultation and expert review. This increases the scope of this initiative to include patients from most stages of life.

In 2020/21, following the successful pilot at the Foothills Medical Centre Emergency Department, a similar approach was used to introduce the initiative in the South Health Campus Emergency Department. Complete implementation is planned for 2021/22, which will be followed by an assessment of the impact on urine culture ordering.

**Update on vancomycin dosing and monitoring**

In 2020/21, consensus was reached to update the recommendations for vancomycin dosing and monitoring. In AHS, area under the curve to minimum inhibitory concentration ratio (AUC:MIC)-based vancomycin monitoring and dosage adjustment is not recommended. AHS endorses vancomycin trough-based monitoring with recommended steady-state target vancomycin trough range of 10-20 mg/L and to order vancomycin trough levels only when necessary and at appropriate times. These updated recommendations are described in detail in the Update on Vancomycin Monitoring. Anticipated benefits include increased patient safety due to lower incidence of nephrotoxicity and increased savings from reduced vancomycin level testing and reduced drug utilization.

**COVID-19 management**

With the emergence of COVID-19, antimicrobial stewardship experts were involved in the development of Current Guidance for the Management of Adult Hospitalized Patients with COVID-19. These recommendations help clinicians to optimize the treatment of patients with COVID-19, including best use of antivirals, and limiting the use of empiric antibacterial therapy to those patients with suspected or confirmed bacterial infection.

**PREVENT CDI-55**

To better understand the role probiotics may have in patient care, a multidisciplinary team conducted a quality improvement project in the Calgary Zone that concluded in 2020/21. Probiotics were administered to hospitalized patients 55 years and older during their entire course of antibiotic therapy. This initiative, known as PREVENT CDI-55, was funded through a grant from AHS and Alberta Innovates. The evaluation measured practitioners’ adherence to prescribing probiotics, the effect on hospital-acquired Clostridium difficile infections and antibiotic-associated diarrhea, and the budget impact to AHS. The results are expected to be available in 2021/22.
Covenant Health Antimicrobial Stewardship Program

The Covenant Health Antimicrobial Stewardship Program is led by Dr. Holly Hoang and Dr. Gordon Stewart, who also chair the Covenant Health Antimicrobial Stewardship Committee. The committee includes pharmacists, Covenant Health IPC staff, and operational stakeholders. The goal of this interdisciplinary team is to promote patient safety through the appropriate selection, dosing, route and duration of antimicrobial therapy.

Antimicrobial Stewardship information is housed on the Covenant Health intranet called CompassionNet, where staff can easily access information such as quarterly newsletters called CHASE (Covenant Health Antimicrobial Stewardship e-Newsletter), twice yearly site-based antibiotic utilization reports, educational posters and pre-printed forms and tools for management of key infectious syndromes to optimize antimicrobial use.

Promoting awareness and education in the public domain

Several partners collaborate with AHS IPC to provide the public with information about preventing infections, antimicrobial resistance, and appropriate use of antimicrobials. In late 2019/20 and throughout 2020/21, as part of the response to the COVID-19 pandemic, AHS IPC answered emails from the public. While most questions from the public were directed to Health Link, some were sent to IPC via the “Contact Us” section on the external AHS IPC website. Questions varied from industry requesting information to assist them in their business continuity planning, to people seeking advice on situations when self-isolating or testing was required, modes of transmission of COVID-19, and how to prevent exposure. Email responses from AHS IPC were intended to provide reassurance to the public and point them in the right direction for the most accurate information on the COVID-19 webpage on the external AHS website or the COVID-19 info for Albertans webpage on the external Alberta Health website.

Do Bugs Need Drugs®

Do Bugs Need Drugs® has three ongoing initiatives focused on public awareness and education for antimicrobial resistance and antimicrobial stewardship best practices. These initiatives are aimed at a range of audiences including children, parents and teachers, adults in the workplace, and healthcare providers.

Do Bugs Need Drugs® currently emphasizes the distribution of its public education materials at a provincial level in all AHS zones and Covenant Health, and is working with partners across Alberta communities to promote its three key messages:

- Hand hygiene is the best way to stop infection transmission;
- Bacteria and viruses are different and antibiotics do not work for viral infections; and
- Use antibiotics wisely to limit the development of antibiotic resistance.

In 2020/21, Do Bugs Need Drugs® reorganized its activities to recognize the effects of the pandemic on program operations and its partners. The approach to preventing antimicrobial resistance using three key messages was adjusted. Efforts focused on supporting information for day cares, day homes, and early childhood educators; distributing the Guide to Wise Use of Antibiotics, which was translated into 14 languages last fiscal year; and assessing how different variables affected the measurable uptake of electronically-distributed resources.
In 2020/21, IPC developed two new patient care handouts:

- *Learning About Multidrug-resistant Candida auris in the Hospital* and
- *Hand hygiene: A guide to clean hands.*

The handout on *Candida auris* was developed after a patient tested positive for this organism in 2019/20, which was the first identified case in the province. The handout on Group A *Streptococcus* was developed to support the 2019/20 provincial change in practice requiring all healthcare providers to wear a procedure mask if they are within two metres of the perineum during a vaginal delivery and any subsequent perineal repair.

All patient care handouts were imported to Connect Care in late 2020/21. These handouts will be provided to patients upon discharge, either electronically or printed, where appropriate.

AHS IPC worked with advisory council representatives through a focus group facilitated by Community Engagement to develop the patient care handout *Wearing a mask to stop the spread.* The group advised using simpler, clear wording and renaming the handout. This handout, which was only available from mid- to late 2020/21, had 2,608 visits, making it one of the most visited handouts.
“IPC has been a key part of helping MyHealth.Alberta.ca leverage critical safety and health information for the public, patients, and their families during the COVID-19 pandemic... As the information changes, we work with IPC to update the content quickly, so it reflects the most current public health measures. Working closely with IPC has been an efficient and rewarding process. MyHealth.Alberta.ca looks forward to our continued collaboration.”

– Yvette Debrecen, Health Content Consultant, Personal Health Portal (PHP) Content Management, Clinical Knowledge & Content Management (CKCM) - Chief Medical Information Office (CMIO)

Similar to last fiscal year, the Isolation Precautions for Adult Patients: Contact and Droplet Isolation Precautions continued to be the most visited handout (Figure 10). Visits appear to coincide with the waves of the pandemic. There was a noticeable increase in the number of visits to Isolation Precautions for Adult Patients: Contact Isolation Precautions. This metric refers to the number of times a user viewed a specific page but may also have viewed other pages on MyHealth.Alberta.ca in the same visit. Visit is a period of time in which a user is engaged. A visit ends after the user leaves or is inactive for 30 minutes.

**Figure 10: Visits for patient care handouts by fiscal quarter**
In addition to developing and revising patient care handouts, AHS IPC started work with Interpretation and Translation Services to translate handouts into other languages. For example, *A Guide to Clean Hands in Healthcare Facilities* was translated into several languages including Amharic, Arabic, Blackfoot, French, Hindi, Punjabi, Simplified Chinese, Somali, Spanish, Tigrinya, Traditional Chinese, and Vietnamese.

**Connecting with AHS Community Engagement and Communications**

AHS IPC consults with AHS Community Engagement and Communications to facilitate public awareness and input into IPC-related resources. This team provides structure and helpful tools to engage with Albertans and links with frontline and support staff, patients and clients, the public, advisory councils, provincial and municipal leaders, charitable foundations, post-secondary partners, and other stakeholders.

AHS IPC continues to explore ways the program engages with patients, families, and communities at a provincial level. In 2020/21, IPC connected directly with the Canadian Hard of Hearing Association to address concerns from the public about communications during healthcare encounters with people who have hearing difficulties. It was identified that significant measures to address communication challenges were not included in the *Options and Adaptations for Healthcare Providers to Address Patient Communication Challenges* resource. In a collaborative effort, the Communication Supports section of the resource was updated to include options such as pen and paper, hearing loops and apps that convert speech to text, as well as to provide brief information about, and contact details for the Canadian Hard of Hearing Association.

> “While this document does not cover all communication supports, it does provide some examples…and refers to the Canadian Hard of Hearing - Edmonton Branch (CHHA-Ed) as a resource. Realizing that people who are hard of hearing often report feeling frustrated communicating in healthcare settings and certain situations can also have serious consequences, has led to this collaboration. There are avenues to address concerns. We hope that working together… and having referrals… is a step in the right direction. This working group gave us the ability to provide information and to create a Hearing Healthcare Kit for these settings…”

– Cindy Gordon, Canadian Hard of Hearing Association-Edmonton Branch
As an additional support to persons with hearing difficulties or deafness, AHS Contracting, Procurement, and Supply Management worked to provide clear masks that meet medical mask standards and that allow visibility of the mouth. The market for such products is limited but helps to address the communication challenges resulting from the pandemic masking requirements.

“… IPC… Thank you so much for your important and imperative support during the pandemic response. You are valued and appreciated.”

– Tricia Miller, Manager, Speech Language Pathology, Audiology, Children’s Allied Health

AHS IPC values the contributions and inputs from these departments in developing and revising resources that impact patients and families such as the MyHealth.Alberta.ca handouts. This work supports AHS in its Patient First Strategy, which focuses on strengthening AHS’ culture and practices that put patients and families at the forefront of all healthcare activities.