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Spesolimab for Generalized Pustular Psoriasis

By: Emma Gerthoffer, Pharm.D., MBA

Background: Generalized pustular psoriasis (GPP) is a rare, life-threatening condition that falls under the broader disease state of pustular psoriasis.[1,2] The disease, which first presents as painful skin pustules overlying erythematous skin, can progress to serious systemic manifestations such as cholestasis, cholangitis, interstitial pneumonitis, and acute renal failure. Its clinical course can be relapsing with recurrent flares or persistent with intermittent flares.[1,3] Off-label treatments have included cyclosporine, retinoids, methotrexate, and biologic agents such as infliximab. However, the use of these agents has been associated with various adverse effects and limited efficacy. Consequently, the need for a newer biologic agent to treat this disease state has led to the approval of spesolimab-sbzo (Spevigo®; Boehringer Ingelheim Pharmaceuticals) by the Food and Drug Administration in September 2022 for the treatment of GPP flares in adults.[4,5]

Mechanism of Action: It is speculated that the interleukin-36 (IL-36) pathway is associated with the pathogenesis of GPP.[1,3,6] Spesolimab is a humanized monoclonal immunoglobulin G1 antibody that inhibits IL-36 signaling by specifically binding to the IL-36 receptor.[5] Binding of spesolimab to IL-36 receptor is thought to prevent the downstream activation of the pro-inflammatory cytokines that trigger GPP.

Clinical Trial: The Effisayil 1 trial was a phase II, multicenter, randomized, double-blind, placebo-controlled study that evaluated the efficacy and safety of spesolimab for GPP flare.[3] The trial enrolled patients 18 to 75 years of age with a history of GPP. Patients had to have a GPP flare of moderate-to-severe intensity [defined as a Generalized Pustular Psoriasis Physician Global Assessment (GPPGA) total score of ≥3, new or

(Continued on page 2)

Nadofaragene firadenovec for BCG-Unresponsive Bladder Cancer

By: Megan LoFaso, Pharm.D.

Background: Approximately 80,000 people are diagnosed with bladder cancer in the United States annually, most commonly as urothelial carcinoma which presents as either non-muscle invasive or muscle invasive.[1] The category of non-muscle invasive bladder cancer (NMIBC) is comprised of high-grade (HG) carcinoma in situ (CIS) and high- or low-grade Ta or T1 tumors.[2] In all cases, the primary treatment for NMIBC is surgery with either transurethral resection with fulguration or cystectomy. Intravescial therapy is also warranted in patients with HG tumors of high malignant potential. Since 2012, the mainstay of treatment for these patients has been intravesical Bacillus Calmette-Guerin (BCG). However, many patients will progress to BCG-unresponsive disease for which the recommended treatment is radical cystectomy.[3] Unfortunately, many are unwilling or medically unable to undergo this procedure, necessitating the need for other options.[4] Alternatives to radical cystectomy have historically been in-

(Continued on page 3)

(Continued from page 1)
worsening pustules, a GPPGA pustulation subscore of ≥2, and ≥5% of body-surface area with erythema and the presence of pustules]. The primary endpoint was GPPGA pustulation subscore of 0 (no visible pustules) at the end of week 1. The key secondary endpoint was a GPPGA total score of 0 or 1 (clear or almost clear skin) at the end of week 1. Safety events at week 1 and through week 12 were included if the adverse events began or worsened between the start of spesolimab or placebo administration and the end of the residual-effect period (16 weeks after the placebo dose or the last dose of spesolimab). Patients were randomly assigned in a 2:1 ratio to receive a single intravenous (IV) dose of 900 mg of spesolimab or placebo and followed to week 12. On day 8, patients from both groups were eligible to receive a single, open-label, IV dose of 900 mg of spesolimab if they had persistent symptoms based on a predefined threshold. After week 1, rescue treatment with a single IV dose of 900 mg of spesolimab could be administered to patients from both the placebo and treatment groups in case of reoccurrence of a flare. Escape treatment (defined as standard-of-care therapy, according to the treating physician's choice) was allowed for patients with worsening disease that warranted immediate treatment during week 1 and those with disease worsening who did not qualify for open-label spesolimab after week 1. Thirty-five patients were in the spesolimab group and 18 were in the placebo group. For the primary endpoint, after 1 week, 19 out of 35 patients (54%) in the spesolimab group had a GPPGA pustulation subscore of 0 (no visible pustules) compared to one out of 18 patients (6%) in the placebo group (difference, 49 percentage points; 95% confidence interval (CI), 21-67; P<0.001). For the key secondary endpoint, 15 out of 35 patients (43%) in the spesolimab group had a GPPGA total score of 0 or 1 at the end of the week compared to two out of 18 patients (11%) in the placebo group (difference, 32 percentage points; 95% CI, 2-52; P=0.02). A total of 82% of the patients who received at least one dose of spesolimab experienced an adverse event during the 12-week follow-up period. Infections were reported in 47% of the patients who received at least one dose of spesolimab at any time in the trial. Adverse events reported as drug reactions with eosinophilia and systemic symptoms (DRESS) occurred in two patients who received spesolimab. The authors concluded that spesolimab resulted in a higher incidence of lesion clearance at 1 week than placebo, but was associated with infections and systemic drug reactions and that larger trials with a longer duration were needed to further evaluate safety and efficacy.

Safety: The most common adverse effects (≥5%) of spesolimab in the Effisayil 1 trial were asthenia and fatigue, nausea and vomiting, headache, pruritus and prurigo, infusion site hematoma and bruising, and urinary tract infection.[3,5]

Dosing and Administration: Spesolimab is administered as a single 900 mg dose in 100 mL of 0.9% sodium chloride infused over 90 minutes.[5] If flare symptoms persist, an additional dose may be administered 1 week after the initial dose. Spesolimab-associated hypersensitivity reactions may include immediate reactions such as anaphylaxis and delayed reactions such as DRESS. If a patient develops signs of anaphylaxis or other serious hypersensitivity, discontinue spesolimab immediately and initiate appropriate treatment, Evaluate patients for tuberculosis (TB) before initiating spesolimab. Patients should be monitored for signs and symptoms of active TB during and after spesolimab therapy.

Cost and Availability: Spevigo® is available as a 450 mg/7.5 mL single-dose vial NDC 0597-0035-10 (two vials in one carton) with an average wholesale price of $61,359.60 per 900 mg dose.[5,7]

Formulary Status: Spesolimab is NOT available on the CCHS Formulary.

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travesical chemotherapy or intravenous pembrolizumab. Currently no pharmacologic option has been established as a preferred therapy for BCG-unresponsive NMIBC. Nadofaragene firadenovic-vncg, (Adstiladrin®; Ferring Pharmaceutical), a recombinant adenovirus alfa with Syn3 (rAdINFα/Syn3) intravesical therapy, was shown to be effective in clinical trials for BCG-unresponsive bladder cancer.[6] It was approved in December 2022 by the Food and Drug Administration for the treatment of adult patients with BCG-unresponsive NMIBC with CIS with or without papillary tumors and afterwards incorporated into the National Comprehensive Cancer Network Guidelines for Bladder Cancer.[4,6]

Mechanism of Action: Nadofaragene firadenovec is a recombinant, non-replicating adenoviral vector-based gene therapy that delivers a copy of the gene encoding human interferon alpha-2b (IFNα2b) to the bladder urothelium.[6] A polyamide surfactant, Syn3, is incorporated into the drug formulation (rAd-IFNα/Syn3) to enhance transduction to the bladder lining.[7] This gene therapy mimics the physiologic events associated with a viral infection, resulting in a localized production of IFNα-2b within the bladder and subsequent anti-tumor effects.[6,7]

Clinical Trial: The safety and efficacy of nadofaragene firadenovec was evaluated in a multicenter, single-arm, open-label, repeat-dose phase III study at 33 sites in the United States between September 19, 2016 and May 24, 2019.[5] The study included patients 18 years or older who met the definition of BCG-unresponsive NMIBC. One hundred fifty-seven patients were stratified into two cohorts as follows: CIS cohort (n=107), the patients in this cohort could also have concurrent papillary tumors, and HG Ta or T1 cohort (n=50). All patients were to receive nadofaragene firadenovec at a dose of 3 x 10^{11} viral particles/milliliter (vp/mL) in 75 mL. Patients were monitored with urine cytology and cystoscopy every 3 months. If, during these visits, the patient was free from recurrence, then the drug was re-dosed at months 3, 6, and 9. At 12 months, the patients were biopsied to assess disease status. Those free from recurrence could continue receiving the agent at 3 month intervals. The primary endpoint was the proportion of patients with complete response (CR) at any time within 12 months in the CIS cohort. Secondary endpoints included: durability of CR in the CIS cohort, HG recurrence-free survival (RFS) in the Ta or T1 cohort, HG RFS in both cohorts, radical cystectomy-free survival, overall survival and safety. Most patients in the study were white males with a median age of 71 years (66-77 year) diagnosed with bladder cancer at least 18 months before the study. Most had received at least two courses of BCG, had a baseline diagnosis of CIS, and had an Eastern Cooperative Oncology Group status of 0. In the CIS cohort, 53.4% of patients had CR at 3 months with a median duration of response of 9.69 months (9.17 – not estimable). In the Ta/T1 cohort the median duration of HG RFS was 12.35 months with 43.8% of patients maintaining HG RFS at month 12. Radical cystectomy was required for 40 (26%) patients in the entire cohort by month 12. Post-hoc analysis revealed that patients in the CIS cohort who had experienced CR had a significantly longer median time to cystectomy than those without CR, 11.35 months and 6.36 months, respectively (p=0.043). Similarly, in the Ta or T1 cohort, patients free from HG recurrence at 3 months had a significantly longer median time to cystectomy than those with recurrence, 12.42 months and 5.31 months, respectively (p=0.0095). Based on these results, the authors concluded that nadofaragene firadenovec was effective for patients with BCG-unresponsive NMIBC.

Safety: In the phase III trial, adverse effects related to the study drug occurred in 70% of patients.[5] The most common adverse reactions were discharge around the catheter during instillation (25%), fatigue (20%), bladder spasm (15%), and micturition urgency (14%). Most adverse reactions were transient and classified as grade 1-2.

Dosing and Administration: Nadofaragene firadenovec is administered as 75 mL of 3 x 10^{11} vp/mL instilled intravesically via urinary catheter once every 3 months for up to 12 months or until disease progression or unacceptable toxicity.[6] Patients should be pre-medicated with anticholinergics before administration to prevent bladder spasms. After administration, the patient should retain the agent in the bladder for 1 hour, repositioning every 15 minutes to maximize bladder surface area exposure.

Cost and Availability: Adstiladrin® will be available as a carton with four 20 ml vials each containing 3 x 10^{11} vp/mL NDC 55566-1050-1.[6,8] Its cost is not currently known, since the drug is not yet available.

Formulary Status: Nadofaragene firadenovec has not been reviewed for addition to the CCHS Formulary.

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Additions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Epcoritamab-bysp (Epkinly™) Subcutaneous Injection	Monoclonal Antibody	Diffuse Large B Cell Lymphoma	Restricted to the Department of Hematology/ Oncology for outpatient use
Givosiran (Givlaari®) Subcutaneous Injection	siRNA	Acute Hepatic Porphyria	Restricted to Hematology/ Oncology and Geneticists for outpatient use only
Lecanemab-irmb (Leqembi™) Injection	Anti-Amyloid Monoclonal Antibody	Alzheimer's Disease	Restricted to the Center for Brain Health for outpatient use only in a formalized protocol. In the Enterprise, cognitive neurologists not part of the Center for Brain Health may also prescribe lecanemab-irmb in the outpatient setting under this formalized protocol (i.e., are able to meet all aspects of the formalized protocol including monitoring and managing of adverse drug reactions)
Lincomycin (Lincocin®) Intralesional Injection	Antibacterial Agent	HS Furuncles Acne	Restricted to the Department of Dermatology for outpatient use only
Minocycline (Minocin®) Injection	Tetracycline	Various Infections	Restricted to the following (Must meet all criteria): 1. Restricted to the Department of Infectious Diseases 2. For the treatment of documented carbapenem-resistant Gram-negative bacteria 3. In patients unable to take oral minocycline
Pegcetacoplan (Syfovre™) Intravitreal Injection	Ophthalmic Agent	Geographic Atrophy Secondary to AMD	Restricted to the Department of Ophthalmology for outpatient use only

siRNA=Aminolevulinate synthase 1-directed small interfering ribonucleic acid HS=Hidradenitis suppurative
AMD=Age-related macular degeneration

Additions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Teplizumab-mzwv (Tzield™) Injection	Anti-CD3 Antibody	Delay Onset of Stage 3 Type 1 Diabetes	Restricted to Endocrinology for outpatient use only for adult patients that meet all of the following criteria: 1. Have a relative with type 1 diabetes, and 2. Have two or more diabetes autoantibodies, and 3. Have stage 2 diabetes (stage 2 diabetes is having dysglycemia such as impaired fasting glucose intolerance, or a HbA1c that is elevated but not in diabetes range)
Ublituximab-xiiy (Briumvi®)	Anti-CD20 Monoclonal Antibody	Multiple Sclerosis	Restricted to the Department of Neurology outpatient use only

HbA1c=Hemoglobin A1C

Denials to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Dinoprostone (Cervidil™) Vaginal Insert	Prostaglandin	Induction of Labor	The Women's Health and Medical Staff P&T Committees agreed not to add dinoprostone to the CCHS Formulary, since there are no data demonstrating it is safer or more efficacious than misoprostol and it is more expensive.
Metoclopramide (Gimoti®) Nasal Spray	Antiemetic Gastrointestinal Agent	Refractory Gastroparesis Nausea/Vomiting	Metoclopramide Nasal Spray is significantly more expensive than the injection. It is only available as a 9.8 mL bottle. Use of this medication in the emergency department would likely result in much of the nasal spray being wasted.
Oteseconazole (Vivjoa™) Capsule	Antifungal	Recurrent Vulvovaginal Candidiasis	Due to the limited indication of recurrent vulvovaginal candidiasis as well as cost and fetal toxicity risk, it was not added to the CCHS Formulary.*

*Patients prescribed oteseconazole for outpatient use who are subsequently admitted may continue therapy inpatient with their home supply the Medications from Home Policy (for use of non-formulary medications)

Changes in Restrictions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Albumin 25% Intravenous Injection	Blood Product	Plasma Volume Expander	Modified restrictions to include: 1. Use by Dr. Adriano Tonelli in the CCHS outpatient infusion center for patients with autonomic dysfunction and/or preload insufficiency refractory to traditional therapies. Patients would only be offered this treatment if they experience significant improvement in symptoms and longer duration of effect than crystalloids.
Ertapenem (Invanz®) Intravenous Injection	Antibiotic	Various Infections	Modified restrictions to include: 1. Department of Infectious Diseases, or 2. For the treatment of infection caused by confirmed ESBL-producing organisms
Meropenem (Merrem®) Injection	Antibiotic	Various Infections	Modified restrictions to state: 1. Meropenem use duration less than 72 hours: For patients with a concern for or history of resistant organism, or severe, life-threatening beta-lactam allergy 2. Meropenem use duration 72 hours or greater: Restricted to the Department of Infectious Diseases and to the Department of Hematology/Oncology for patients receiving high-dose methotrexate therapy (>500 mg/m^2)
Naltrexone ER (Vivitrol®) Intramuscular Injection	Opioid Antagonist	Alcohol and Opioid Dependence	Modified restrictions to state: 1. Restricted to physicians certified in Addiction Medicine and Psychiatry for management of alcohol and opioid dependence; however, continuation of therapy from home is not restricted

ESBL=Extended spectrum beta-lactamase

Changes in Restrictions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Papillomavirus (9 valent) vaccine (human, recombinant) (Gardasil®9)	Vaccine	Prevention of HPV Infection	Use for secondary prevention in previously unvaccinated patients of all ages
Vedolizumab (Entyvio®) Intravenous Injection	Monoclonal Antibody	Acute, Steroid-Refractory GVHD	Modified restrictions to include: 1. Restricted to the Department of Hematology/ Oncology for adults with acute, steroid-refractory GVHD

HPV=Herpes papillomavirus GVHD=Graft versus host disease

Removals from the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Penicillin G Sodium Intravenous Injection	Antibiotic	Various Infections	A decision was made for CCHS to exclusively stock penicillin G potassium as the sole intravenous penicillin product and remove penicillin G sodium from the CCHS Adult Formulary. Please see explanation in Product Standardization Table.
Penicillin G Procaine/ Benzathine (Bicillin® CR)	Antibiotic	Various Infections	A decision was made for CCHS to exclusively carry Bicillin® LA and remove Bicillin® CR from the CCHS Adult Formulary. Please see explanation in Product Standardization Table.

Product Standardizations to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Penicillin G Potassium Injection	Antibiotic	Various Infections	Intravenous penicillin G formulations (penicillin G potassium and penicillin G sodium) are pharmacokinetically and pharmacodynamically equivalent. There have been some medication safety events that occurred due to the erroneous interchange between parenteral formulations. Therefore, a decision was made for CCHS to exclusively stock penicillin G potassium as the sole intravenous penicillin product and remove penicillin G sodium from the CCHS Adult Formulary.
Penicillin G Benzathine (Bicillin® LA)	Antibiotic	Various Infections	Long-acting intramuscular penicillin G injection formulations (penicillin G procaine/ benzathine (brand Bicillin® CR) and penicillin G benzathine (brand Bicillin® LA) are not equivalent. Only Bicillin® LA is indicated for syphilis. There have been medication safety events regarding use of Bicillin® CR for syphilis. Therefore, a decision was made for CCHS to exclusively carry Bicillin® LA and remove Bicillin® CR from the CCHS Adult Formulary. An automatic, indication-based therapeutic interchange from Bicillin CR® to Bicillin LA® was created and is in Lexicomp.

Process Changes to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Eravacycline (Xerava™) Intravenous Injection	Antibiotic	Various Infections	Eravacycline doses will be rounded to the nearest 25 mg. Doses < 12.5 mg round down, doses ≥ 12.5 mg round up
Lacosamide (Vimpat®) Injection	Antiseizure Agent	Various Seizures	All lacosamide IV infusion doses will be converted to IV push administered over 5 minutes in adult patients. Pediatric patients are excluded from this initiative
Vancomycin Injection	Antibiotic	Various Infections	The following updates were made to the Vancomycin Dosing and Monitoring Standard Operating Procedure Operation: 1. Updated vancomycin trough goals from 15-25 mcg/mL to 15-20 mcg/mL for serious *S. aureus* infections and retained goal trough range of 10-20 mcg/mL as a second option. 2. Pharmacists will select the default goal vancomycin trough upon order verification based on the indication selected, as outlined in the SOP. If a LIP would prefer a different trough range, the LIP will document this in the chart and communicate with the pharmacist 3. Updated vancomycin dose modification guidance in the Antimicrobial Use Guidelines to account for changes in goal trough range

IV=Intravenous SOP=Standard of practice LIP=Licensed independent practitioner

Additions to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Tadalafil (Adcirca®) Tablet	Phosphodiesterase-5 Enzyme Inhibitor	Pulmonary Arterial Hypertension	Restricted as follows: 1. Initiation of therapy is restricted to Pediatric Cardiology 2. Continuation of home therapy is not restricted 3. Only the tablets will be stocked
Minocycline (Minocin®) Injection	Antibiotic	Various Infections	Restricted to the following (must meet all criteria) 1. Restricted to the Department of Infectious Diseases 2. For the treatment of documented or suspected carbapenem-resistant Gram-negative bacteria 3. In patients who are unable to take oral minocycline
Risankizumab-rzaa (Skyrizi®) Intravenous Injection	Monoclonal Antibody	Crohn's Disease	Restricted to the Department of Pediatric Gastroenterology for outpatient use only
Velmanase alfa-tycv (Lamzede®) Intravenous Injection	Enzyme	Alpha-Mannosidosis	Restricted to the Department of Pediatric Hematology/ Oncology for outpatient use only

Changes in Restrictions of the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Abatacept (Orencia®) Intravenous Injection	Selective T-Cell Costimulation Blocker	Graft versus Host Disease Prophylaxis	Modified restrictions to include: 1. The Department of Pediatric Hematology/ Oncology and Bone Marrow Transplant for use in pediatric BMT patients (inpatient and outpatient) for graft versus host disease prophylaxis
Anakinra (Kineret®) Subcutaneous Injection	Antirheumatic	Recurrent Pericarditis	Modified restrictions to include: 1. Initiation of therapy for recurrent pericarditis is restricted to Pediatric Cardiology with Pediatric Rheumatology Consult 2. Restricted to Pediatric Cardiology for continuation of therapy for the treatment of recurrent pericarditis in patients with contraindications or failure to standard therapies (e.g., colchicine, NSAIDs, and corticosteroids)
Brivaracetam (Briviact®) Tablet and Intravenous Injection	Antiepileptic	Partial-Onset Seizures	Modified restrictions to include: 1. Initiation of therapy is restricted to Epilepsy or Neurology (if hospital does not have Epilepsy Consult Service) AND patient must have an intolerance (severe behavioral reaction) to levetiracetam 2. If patients are on oral brivaracetam prior to admission and need IV therapy, they are permitted to receive IV brivaracetam 3. Continuation of home therapy is not restricted 4. Note: Levetiracetam is still the preferred agent as there is no difference in efficacy compared to brivaracetam, and levetiracetam is significantly less expensive compared to brivaracetam

BMT=Bone marrow transplant NSAID=Nonsteroidal anti-inflammatory agent IV=Intravenous

Changes in Restrictions of the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Ertapenem (Invanz®) Intravenous Injection	Antibiotic	Various Infections	Modified restrictions to include: 1. Department of Infectious Diseases, or 2. For the treatment of confirmed ESBL-producing organisms
Meropenem (Merrem®) Intravenous Injection	Antibiotic	Various Infections	Modified restrictions to include: 1. Meropenem use duration less than 72 hours: For patients with a concern for or history of resistant organism, or severe, life-threatening beta-lactam allergy 2. Meropenem use duration 72 hours or greater: Restricted to the Department of Infectious Diseases and to the Department of Hematology/Oncology for patients receiving high-dose methotrexate therapy (>500 mg/m^2)
Treprostinil (Remodulin®) Intravenous and Subcutaneous Injection	Prostaglandin	Pulmonary Arterial Hypertension	Modified restrictions to include: 1. Ordering (initiation, titration, and continuation) by the Pediatric Pulmonary Hypertension Nurse Practitioner

ESBL=Extended spectrum beta-lactamase

Removals from the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Penicillin G Sodium Intravenous Injection	Antibiotic	Various Infections	A decision was made for CCHS to exclusively stock penicillin G potassium as the sole intravenous penicillin product and remove penicillin G sodium from the CCHS Pediatric Formulary. Please see explanation in Product Standardization Table.
Penicillin G Procaine/ Benzathine (Bicillin® CR)	Antibiotic	Various Infections	A decision was made for CCHS to exclusively carry Bicillin® LA and remove Bicillin® CR from the CCHS Pediatric Formulary. Please see explanation in Product Standardization Table.

Product Standardizations to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Penicillin G Potassium Injection	Antibiotic	Various Infections	Intravenous penicillin G formulations (penicillin G potassium and penicillin G sodium) are pharmacokinetically and pharmacodynamically equivalent. There have been some medication safety events that occurred due to the erroneous interchange between parenteral formulations. Therefore, a decision was made for CCHS to exclusively stock penicillin G potassium as the sole intravenous penicillin product and remove penicillin G sodium from the CCHS Pediatric Formulary.
Penicillin G Benzathine (Bicillin® LA)	Antibiotic	Various Infections	Long-acting intramuscular penicillin G injection formulations (penicillin G procaine/ benzathine (brand Bicillin® CR) and penicillin G benzathine (brand Bicillin® LA) are not equivalent. Only Bicillin® LA is indicated for syphilis. There have been medication safety events regarding use of Bicillin® CR for syphilis. Therefore, a decision was made for CCHS to exclusively carry Bicillin® LA and remove Bicillin® CR from the CCHS Pediatric Formulary. An automatic, indication-based therapeutic interchange from Bicillin CR® to Bicillin LA® was created and is in Lexicomp.

Process Changes to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Polyethylene Glycol 3350 (MiraLAX®) Powder	Laxative	Constipation Bowel Preparation	The Neonatal Subcommittee of the Medical Staff Pediatric P&T Committee proposed a modification to the automatic dose rounding for oral doses of polyethylene glycol 3350 (MiraLAX®) to accommodate lower doses for some patients. Details are in Lexicomp.
Vancomycin Injection	Antibiotic	Various Infections	The following updates were made to the Vancomycin Dosing and Monitoring Standard Operating Procedure Operation: 1. Updated vancomycin trough goals from 15-25 mcg/mL to 15-20 mcg/mL for serious *S. aureus* infections and retained goal trough range of 10-20 mcg/mL as a second option. 2. Pharmacists will select the default goal vancomycin trough upon order verification based on the indication selected, as outlined in the SOP. If a LIP would prefer a different trough range, the LIP will document this in the chart and communicate with the pharmacist 3. Updated vancomycin dose modification guidance in the Antimicrobial Use Guidelines to account for changes in goal trough range
Vigabatrin (Sabril®) Tablet	Antiseizure	Refractory Complex Partial Seizures	Physicians and pharmacists from the Epilepsy Service approved conversion from the authorized generic vigabatrin 500 mg tablet manufactured by Lunbeck to an AB-rated (therapeutic equivalent) generic vigabatrin 500 mg tablet manufactured by Teva/Actavis based on key medication considerations including excipient ingredients. The Teva/Actavis vigabatrin is half the cost of the Lunbeck product.

SOP=Standard of Practice LIP=Licensed independent practitioner