In This Issue

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DATA-2000 Waiver Elimination

By: Anthony Angyal, Pharm.D.

What is buprenorphine and its prior prescribing constraints? Buprenorphine, an opioid partial agonist, is a Schedule III Controlled Substance approved by the Food and Drug Administration (FDA) to treat individuals with opioid use disorder (OUD).[1] Specific requirements that limited the number of approved prescribers and the number of patients who could receive this medication were imposed by the Drug Addiction Treatment Act of 2000 (DATA-2000). Products including Suboxone® (buprenorphine/naloxone), Subutex® (buprenorphine), and their respective generic medications indicated for OUD were included within the Act's requirements.

What was the DATA-2000 Waiver? The Drug Addiction Treatment Act of 2000 required that prescribers apply for a waiver, known as the X-Waiver, that allowed them to treat OUD with buprenorphine outside of an opioid treatment program.[2,3] The waiver required the completion of an 8-hour training course for prescribing buprenorphine. Documentation showing that the X-Waiver applicant was a qualified physician was submitted with a waiver notification to the Drug Enforcement Agency (DEA) and Substance Abuse and Mental Health Services Administration (SAMSA). Once approved by these agencies, prescribers had an X-suffix added to their DEA numbers which designated their ability to prescribe buprenorphine products for OUD. Initially DATA-2000 limited the number of patients per approved prescriber to 30. However, a 2015 amendment eliminated the 30-patient limit for medical group practices. A 2016 amendment increased the number permitted to be treated to 100 for those with the DATA-2000 Waiver for 1 year. The 2018 Support Act allowed certain physicians who held a 100-patient waiver for 1 year to treat

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Respiratory Syncytial Virus Vaccines for Older Adults

By: Brigid Perry, Pharm.D.

What is respiratory syncytial virus? Respiratory syncytial virus (RSV) is well-known as a common cause of respiratory illness in infants and children.[1] However, RSV can also affect older adults and patients with comorbidities such as asthma, chronic obstructive pulmonary disease, and congestive heart failure. Results of a meta-analysis of RSV incidence data derived from high-income countries (e.g., the United States, Canada, Europe, Japan) estimated a total of 5.2 million cases of RSV, with 470,000 RSV-related hospitalizations, and 33,000 in-hospital deaths in patients ≥ 60 years of age in 2019.

Which vaccines are currently available to prevent RSV? What are the main differences between these vaccines? As of May 2023, two vaccines have received Food and Drug Administration (FDA) approval for preventing RSV-associated lower respiratory tract disease (LRTD) in patients 60 years and

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up to 275 patients and permitted nurse practitioners and physician assistants who held a 30-patient DATA-2000 Waiver for 1 year to treat up to 100 patients.

What has changed with the passing of the Waiver Elimination–Mainstreaming Addiction Treatment (MAT) Act? Section 1262 of the Consolidated Appropriations Act of 2023, also known as the Omnibus bill, contains the MAT Act.[4] This Act removed the DATA-Waiver requirement that put constraints on the prescribing of buprenorphine for OUD. The parameters regarding the number of patients allowed to be treated by each prescriber have been eliminated by this Act. Any prescriber of controlled substances with a valid DEA number can now treat an unlimited number of patients with buprenorphine for OUD. However the Omnibus bill does include the Medication Access and Trained Expansion (MATE) Act which requires all prescribers of controlled substances to complete an 8-hour substance use disorder training session or attain other equivalent competencies upon renewing or receiving their DEA licenses.[5]

What are the new requirements for a practitioner to now prescribe buprenorphine for OUD? As of June 27, 2023, when renewing the DEA registration or when applying for a new DEA registration to prescribe any Schedule II-IV controlled medication, the practitioner will need to attest on the DEA application to one of the following:[5,6]

- Eight hours of training from certain approved organizations on opioid or other substance use disorders
- Board certification in addiction medicine or addiction psychiatry from the American Board of Medical Specialties, American Board of Addiction Medicine, or the American Osteopathic Association
- Graduation within 5 years and status in good standing from medical, advanced practice nursing, or physician assistant schools in the United States that included successful completion of an opioid or other substance use disorder curriculum of at least 8 hours

If a practitioner previously held an X-Waiver are there any additional steps required to meet compliance? No, if the practitioner previously held an X-waiver then all the requirements established to prescribe buprenorphine for OUD have been met under the MATE Act.[4,5]

Why was the DATA-Waiver elimination put in place? This waiver elimination was implemented to expand care for patients with OUD.[7] The prior limitations in the number of patients allowed to be treated by each prescriber impeded accessibility. Recently, the crisis of opioid-related deaths in the United States has worsened during the pandemic emphasizing the importance of increased access to OUD treatment.[8]

Who can prescribe buprenorphine under the new MAT Act? All practitioners who hold an active DEA registration with Schedule II-IV authority, where state law allows, except veterinarians, may prescribe buprenorphine and related products for OUD.[5]

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older.[2,3] Arexvy® is a recombinant adjuvanted RSV vaccine manufactured by GlaxoSmithKline (GSK). It is available as a lyophilized, RSV glycoprotein F protein stabilized in the pre-fusion conformation (RSVPreF3) as its antigenic component.[2] Before use, it must be reconstituted with $AS01_E$, an adjuvant suspension. Arexvy® induces an immune response against RSVPreF3 that protects against LRTD caused by RSV. Abrysvo™ is a bivalent recombinant RSV vaccine manufactured by Pfizer that contains 120 mcg of RSV stabilized prefusion F proteins (60 mcg RSV preF A and 60 mcg RSV preF B).[3] Unlike Arexvy®, Abrysvo™ is reconstituted with sterile water for injection. Abrysvo™ induces an immune response against RSV preF that protects against RSV-induced LRTD. Both Arexvy® and Abrysvo™ are inactivated, recombinant vaccines.[2,3]

What are the current RSV vaccination recommendations from the Centers for Disease Control and Prevention (CDC)? Can other vaccines be administered simultaneously with Arexvy® and Abrysvo™? The Advisory Committee on Immunization Practices (ACIP) states that adults ≥ 60 years old may receive one dose of an RSV vaccine based on shared clinical decision-making.[4] Even though safety data are lacking, the CDC does support the coadministration of the RSV vaccine with other adult vaccines during the same office visit.[6] Of note, coadministration of GSK's Fluarix Quadrivalent® with Arexvy® resulted in lower RSV and influenza antibody titer levels; the clinical significance of this is unknown.

Which clinical efficacy trials led to the FDA approval of Arexvy® and Abrysvo™? Two separate, ongoing, phase III trials evaluated the efficacy and safety of Arexvy® and Abrysvo™ in adults ≥ 60 years old.[5,7] The primary endpoint of these studies was vaccine efficacy against RSV-associated LRTD. The Abrysvo™ trial stratified the primary endpoint by those experiencing two or more symptoms, or those experiencing three or more symptoms indicating more severe illness.[7] Although the primary endpoint was not stratified per se in the Arexvy® trial, investigators did determine efficacy in those with more severe symptoms. Each trial randomized their patient population on a 1:1 basis to receive the vaccine or placebo before RSV season. There were 11 cases of RSV-associated LRTD in patients who received Abrysvo™ (n=17,215), compared with 33 patients who received placebo (n=17,069) (vaccine efficacy 66.7%; 96.66% Confidence Interval (CI), 28.8-85.8). Additionally, there were two cases of those who received the vaccine with three or more signs or symptoms of RSV compared with 14 cases of those who received placebo (vaccine efficacy 85.7%;96.66% CI, 32-98.7). There were seven cases of RSV-associated LRTD in patients who received Arexvy® (n=12,467) compared to 40 cases in those who received a placebo (n=12,499) (vaccine efficacy 82.6%; 95% CI, 57.9-94.1).[5] There was one case of severe RSV-related LRTD in the Arexvy® group compared with 17 cases in the placebo group (vaccine efficacy 94.1%; 95% CI, 62.4-99.9).

What are the most common adverse reactions of Arexvy® and Abrysvo™? The most frequently reported adverse reactions of Arexvy® were injection site pain (60.9%), fatigue (33.6%), myalgia (28.9%), headache (27.2%), and arthralgia (18.1%).[2] The most common adverse effects of Abrysvo™ were fatigue (15.5%), headache (12.8%), pain at the injection site (10.5%), and muscle pain (10.1%).[3]

What is the dosing and administration of Arexvy® and Abrysvo™? Arexvy® and Abrysvo™ are both administered as a single 0.5 mL intramuscular dose.[2,3]

What is the availability of Arexvy® and Abrysvo™? What are the storage requirements for Arexvy® and Abrysvo™? Both Arexvy® and Abrysvo™ are commercially available. Arexvy® must be refrigerated at 36°F-46°F (2°C-8°C) before reconstitution.[2] It may be refrigerated after reconstitution for up to 4 hours. Abrysvo™ must also be refrigerated before reconstitution.[3] However it can be stored at room temperature, 59°F-86°F (15°C-30°C), for up to 4 hours after reconstitution.

What is the formulary status of Arexvy® and Abrysvo™? Abrysvo™ was recently added to the CCHS Adult Formulary.[8]

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Ublituximab for Multiple Sclerosis

By: Vivian Nguyen, Pharm.D.

Background: Multiple sclerosis (MS) is an incurable, chronic immune-mediated inflammatory disease of the central nervous system involving demyelination of nerve fibers.[1] It has been estimated that there are approximately 1 million individuals in the United States currently diagnosed with MS.[2] Twice as many women have MS than men, with individuals of Northern European descent being most at risk of developing this disease.[1] There are four different forms of MS. Relapsing-remitting MS (RRMS) which affects 85% of MS patients, presents with relapses or exacerbations of neurological symptoms (e.g., numbness, tingling, pain) followed by periods of asymptomatic remission. Relapsing-remitting MS may progress to secondary progressive MS (SPMS) in which patients experience relapses with or without periods of remission. Primary progressive MS manifests as continual worsening symptoms with no relapses or remissions. Progressive-relapsing MS, affects fewer than 5% of MS patients, starts with intermittent flare-ups with worsening of symptoms and has no periods of remission. Disease-modifying therapy (DMT) remains the mainstay treatment to help prevent progression from RRMS to more severe forms of this disorder, control symptoms, and help improve quality of life. Various DMTs for MS include anti-CD20 monoclonal antibodies (mAb) (e.g., ocrelizumab, rituximab), anti-CD52 mAb (e.g., alemtuzumab), alpha-4 integrin (e.g., natalizumab), and pyrimidine synthesis inhibitor (e.g., teriflunomide). A new anti-CD20 agent, ublituximab (Briumvi™; TG Therapeutics, Inc.), was recently approved by the Food and Drug Administration in December 2022 to treat RRMS and active SPMS in adults.[3]

Mechanism of Action: B cells have been thought to be associated with the pathogenesis of MS.[3] Ublituximab is a novel monoclonal antibody that specifically targets CD20, a protein that is present on pre-B and mature B cells. Upon its binding to CD20, ublituximab activates two processes, a complement-dependent and an antibody-dependent cellular cytolysis which ultimately destroys the B cells.

Clinical Trials: Steinman and colleagues performed the ULTIMATE-1 and ULTIMATE-2 trials, which were two similarly designed, phase 3, double-blind, double-dummy trials conducted simultaneously at non-overlapping centers in Europe.[4] The goal of these studies was to compare the efficacy and safety of ublituximab to teriflunomide. Patients included in these trials were 18-55 years old with a confirmed relapsing MS diagnosis according to the 2010 McDonald Criteria.[4,5] They also had an Expanded Disability Status Scale (EDSS) of 0-5.5, a stable neurological status for at least 30 days, at least two relapses in the previous 2 years or one relapse within 1 year, or at least one gadolinium-enhancing lesion confirmed on magnetic resonance imaging (MRI).[4] Key exclusion criteria were prior use of an anti-CD20 mAb, B-cell directed therapy or other select DMT therapies, and disease duration exceeding 10 years with an EDSS score ≤ 2. Patients were randomized into two groups in a 1:1 ratio. One group received ublituximab 150 mg on day 1 via intravenous (IV) infusion over 4 hours, followed by 450 mg infused over 1 hour on day 15, weeks 24, 48, and 72 and an oral placebo. The other group received oral teriflunomide 14 mg once daily for 95 weeks and an IV placebo. Approximately 98% of patients had RRMS and 2% had active SPMS. In ULTIMATE-I, patients in the ublituximab group had an annualized relapse rate (ARR) of 0.08 compared to 0.19 in the teriflunomide group (RR, 0.41 [0.27 – 0.62], p <0.001). In ULTIMATE-II, patients in the ublituximab group had an ARR of 0.09 compared to 0.18 in the teriflunomide group (RR, 0.51 [0.33 – 0.78], p <0.002). Overall, patients in the ublituximab group had a 49%-59% risk reduction in ARR compared to those in the teriflunomide group. Secondary endpoints were analyzed hierarchically. In the hierarchical analysis, the results of subsequent endpoints after the first point of failure to demonstrate a significant between-group difference were not to be considered statistically significant. Key hierarchical secondary endpoints assessed at week 96 included 1) the total number of gadolinium-enhancing lesions per T1-weighted MRI, 2) the total number of new or enlarging hyperintense lesions per T2-weighted MRI, 3) worsening of disability confirmed at week 12 (pooled across the two trials), 4) the number of patients with no evidence of disease activity from week 24–96, 5) the number of participants with impaired status according to the Symbol Digit Modalities Test, and 6) the percentage of change in brain volume from baseline. Due to the failure of hierarchical analysis to demonstrate a significant between-group difference for the third secondary endpoint, the subsequent secondary endpoints (4 through 6) were not deemed significant. Table 1 summarizes the results of the significant secondary outcomes.

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Table 1: Significant Secondary Outcomes[4]

ULTIMATE-1		
	Ublituximab (n=271)	**Teriflunomide** (n=274)
Lesions per T1-weighted MRI by week 96, mean (95% CI)	0.02 (0.01 – 0.03)	0.49 (0.35 – 0.68)
Rate ratio (95% CI)	0.03 (0.02 – 0.06) p < 0.001	
New or enlarging lesions per T2-weighted lesion per MRI by week 96, mean (95% CI)	0.21 (0.14 – 0.32)	2.79 (2.14 – 3.64)
Rate ratio (95% CI)	0.08 (0.06 – 0.10) p < 0.001	
ULTIMATE-2		
	Ublituximab (n=272)	**Teriflunomide** (n=272)
Lesions per T1-weighted MRI by week 96, mean (95% CI)	0.01 (0.00 – 0.02)	0.25 (0.16 – 0.39)
Rate ratio (95% CI)	0.04 (0.02 – 0.06) p < 0.001	
New or enlarging lesions per T2-weighted lesion per MRI by week 96, mean (95% CI)	0.28 (0.20 – 0.40)	2.83 (2.13 – 3.77)
Rate ratio (95% CI)	0.10 (0.07 – 0.14) p < 0.001	

MRI=magnetic resonance imaging CI=confidence interval

Patients in the ublituximab group had a higher number of grade 3 or greater adverse events compared to patients in the teriflunomide group, 21.3% vs. 14.1%, respectively. One of the most common adverse events of ublituximab was infusion-related reactions (IRRs) occurring in 47.7% of patients. From the results of these studies, the authors concluded that among patients with relapsing MS, ublituximab resulted in a lower ARR and fewer brain lesions on MRI than teriflunomide over 96 weeks, but was associated with more IRRs.

Safety: The most common adverse events reported in at least 10% of patients in the ublituximab group were IRRs (47.7%), headache (34.3%), nasopharyngitis (18.3%), pyrexia (13.9%), and nausea (10.6%).[3] The IRRs may occur during the first or subsequent doses. However, the incidence of IRRs was highest with the first infusion (43%) and decreased with subsequent infusions (10% with the second, 8% with the third).

Dosing and Administration: Ublituximab is administered 150 mg IV for the first dose, infused over 4 hours, followed by subsequent doses of 450 mg IV, infused over 1 hour at week 2, then every 6 months thereafter.[3] It is recommended to pre-medicate with methylprednisolone (or an equivalent corticosteroid) and an antihistamine (e.g., diphenhydramine) before each ublituximab infusion. Patients should be monitored closely for at least 1 hour after the completion of the first two infusions. Post-infusion monitoring for subsequent infusions is at the discretion of the physician. For severe life-threatening IRRs, the infusion should be stopped immediately and supportive treatment should be provided. For less severe IRRs, management may include stopping the infusion, reducing the infusion rate or administering symptomatic therapy. Ublituximab doses are diluted in 250 mL of 0.9% sodium chloride.

Cost and Availability: Ublituximab is available as a 150mg/6mL vial (NDC: 73150-150-06) with an average wholesale price of $11,800.[3,6] The average annual cost of therapy is approximately $82,600 per patient including one initial dose of 150 mg and two subsequent 450 mg doses.

Formulary Status: Ublituximab is on the CCHS Adult Formulary restricted to the Department of Neurology for outpatient use only.

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Additions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
DaxibotulinumtoxinA-lanm (Daxxify®) Intramuscular Injection	Neuromuscular Blocking Agent	Treatment of Glabellar Lines	Restricted to outpatient use only for the treatment of glabellar lines
Dextromethorphan-bupropion (Auvelity™) Tablet	NMDA Receptor Antagonist	Antidepressant	Restricted to the Department of Psychiatry for initiation of therapy as a third-line agent following at least two trials of antidepressants, one of which must include a NDRI; continuation of therapy from home is not restricted
Efgartigimod alfa and Hyaluronidase-qvfc (Vyvgart® Hytrulo) Subcutaneous Injection	Neonatal FcRn Inhibitor	Myasthenia Gravis	Restricted to the Department of Neurology for outpatient use only in patients with refractory gMG positive anti-acetylcholine receptor antibodies
Elranatamab-bcmm (Elrexfio®) Subcutaneous Injection	Monoclonal Antibody	Relapsed or Refractory Multiple Myeloma	Restricted to the Department of Hematology/ Oncology. After the first two doses, elranatamab is restricted to outpatient use only
Nifurtimox (Lampit®) Tablet	Antiprotozoal	Chagas Disease	Restricted to the Department of Infectious Diseases for the treatment of Chagas Disease
Pegunigalsidase alfa-iwxj (Elfabrio®) Intravenous Injection	Enzyme	Fabry Disease	Restricted to the the Department of Hematology/ Oncology for outpatient use only
Respiratory Syncytial Virus Vaccine (Abrysvo™)	Vaccine	RSV	No restrictions
Talquetamab-tgvs (Talvey™) Subcutaneous Injection	Monoclonal Antibody	Relapsed or Refractory Multiple Myeloma	Restricted to the Department of Hematology/ Oncology. After the first four doses of step-up dosing, talquetamab is restricted to outpatient use only
Tofersen (Qalsody™) Intrathecal Injection	Antisense Oligonucleotide	ALS	Restricted to the Department of Neurology for outpatient use only

NMDA=N-methyl D-aspartate NDRI=Norepinephrine-dopamine reuptake inhibitor FcRn=Neonatal Fc receptor
gMG=Generalized myasthenia gravis RSV=Respiratory syncytial virus ALS=Amyotrophic lateral sclerosis

Removal the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Pneumococcal Conjugate Vaccine-13 (PCV13; Prevnar 13®)	Vaccine	Pneumonia Prevention	With the addition to 20-valent pneumococcal conjugate vaccine (PCV20; Prevnar 20®), a decision was made to remove Prevnar 13® from the Adult and Pediatric Formularies. Prevnar 20® replaces Prevnar 13® in the pediatric pneumococcal vaccination series and replaces Prevnar 13® and Pneumovax® 23 in the adult vaccination series.

Denials to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Acetaminophen (Ofirmev®) Intravenous Injection	Analgesic	Fever/Pain Reliever	A request submitted by the Department of Obstetrics and Gynecology to re-evaluate acetaminophen IV for use in the treatment of maternal (intrapartum) fever. It was felt that requests for its use for this patient population could be handled on a case-by-case basis and addition to the Formulary was not granted.
Fecal Microbiota Spores, Live-brpk (Vowst™) Capsules	Microbiota	C. difficile Infection	Vowst™was not added to the CCHS Formulary, however inpatients will be able to use their home supply via the patient medication from home policy and procedure if needed.
Sotagliflozin (Inpefa™) Tablets	SGLT-2	Heart Failure Cardiovascular Risk Reduction	The CCHS Adult Formulary has other SGLT-2 inhibitors and it was felt that the addition of sotagliflozin would not provide a significant benefit over the other agents. Inpatients may be able to use a home supply per the home policy and procedure if needed.

IV=Intravenous C difficile=Clostridium difficile SGLT-2=Sodium-glucose cotransporter 2

Changes in Restrictions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Brivaracetam (Briviact®) Tablet	Antiepileptic Agent	Various 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. Continuation of home therapy is not restricted
Carfilzomib (Kyprolis®) Intravenous Injection	Antineoplastic Agent	AMR	Modified restrictions to include: 1. Inpatient use by the Lung Transplant team for AMR
Letermovir (Prevymis®) Tablet and Intravenous Injection	Antiviral Agent	CMV Prophylaxis	Modified restrictions to include: 1. Kidney Transplant for prophylaxis of CMV infection in high-risk (D+/R-) kidney transplant recipients

AMR=Antibody-mediated rejection CMV=Cytomegalovirus

Changes in Restrictions to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Meropenem (Merrem®) Intravenous Injection	Antibiotic	Various Infections	Modified restrictions to the following: 1. For meropenem use duration less than 72 hours: Restricted to treatment in patients with a concern for or history of resistant organism, or severe, life-threatening beta-lactam allergy 2. For meropenem use duration 72 hours and beyond: Restricted to the Department of Infectious Diseases and the Department of Hematology/ Oncology for patients receiving high-dose methotrexate (> 500 mg/m^2)
Rasburicase (Elitek®) Injection	Enzyme	TLS	Modified restrictions to state: 1. Restricted to Hematology/Oncology and Nephrology for the treatment of TLS in patients with otherwise unexplained AKI. Specific doses according to uric acid levels and renal function are listed in Lexicomp. 2. No additional doses will be given within 24 hours of administration. Use of rasburicase will not be permitted in patients undergoing RRT or anticipated to initiate RRT within 24 hours.

TLS=Tumor lysis syndrome AKI=Acute kidney injury RRT=Renal replacement therapy

Process Changes to the Adult CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Acyclovir Formulation Standardization	Antiviral	Various Infections	Acyclovir products will be standardized to 400 mg tablets and 200 mg/5 mL suspension 1. Acyclovir 200 mg capsules will be removed 2. Acyclovir 800 mg tablets will be removed
Antimicrobial Dose Rounding	Antimicrobial Agents	Various Infections	The Dose Rounding Policy will be updated to include various antimicrobial agents. Details are in Lexicomp.
Dalbavancin Dosing Guidelines	Antibiotic	Various Infections	Recommendations for dalbavancin dosing in adults were added to the Cleveland Clinic Antimicrobial Guidelines
Medication Dose Optimization and Monitoring Standard Operating Procedure Additions	Various Medications	Various Indications	Pharmacists may automatically dose adjust medications per the Medication Dose Optimization Policy. Each quarter the P&T Committee will review and approve additions to the Medication Dose Optimization Service Appendix. These agents have been added to Appendix 1 (Medications for Pharmacist-Initiated Adjustment in Adult Patients): 1. Trospium 2. Nifurimox
Tirofiban (Aggrastat®)	Glycoprotein IIA/IIIB Inhibitor	ACS	In order to expand access to tirofiban, it was recommended to no longer limit use to cardiac stepdown and intensive care units. The Adult IV Guidelines will be updated to allow use of tirofiban intravenous infusions on all nursing units.

ACS=Acute coronary syndrome

Additions to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
DTaP/IPV/Hib/HepB Vaccine (Vaxelis®)	Vaccine	Vaccine to protect against diphtheria, tetanus, pertussis, poliomyelitis, hepatitis B, and *Haemophilus influenzae* type b	No restrictions
Nifurtimox (Lampit™) Tablet	Antiprotozoal	Chagas Disease	Restricted to the Department of Infectious Diseases for the treatment of Chagas Disease
Nirsevimab-alip (Beyfortus™) Intramuscular Injection	Monoclonal Antibody	Prevention of RSV	Restricted to outpatient use only in: 1. Infants < 8 months old, and 2. Infants 8 to 19 months of age at high risk of severe RSV
Pneumococcal Conjugate Vaccine-20 (PCV20; Prevnar 20®)	Vaccine	Vaccine to protect against *Streptococcus pneumoniae*	No restrictions
Sotalol (Betapace®) Intravenous Injection	Nonselective Beta-Blocker	Antiarrhythmic	Restricted to EP provider approval
Tadalafil (Tadliq®)	Phosphodiesterase Type 5 Inhibitor	PAH	Restricted to the Departments of Pediatric Cardiology and Pulmonology for initiation of therapy Continuation of therapy is not restricted

RSV=Respiratory syncytial virus EP=Electrophysiology PAH=Pulmonary arterial hypertension

Removals from the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Fenoldopam (Corlopam®) Intravenous Injection	Dopamine Agonist	Severe Hypertension	Product has been discontinued by the manufacturer
Pneumococcal Conjugate Vaccine-13 (PCV13; Prevnar 13)	Vaccine	Various Infections	See Adult Table for Details

Changes in Formulary Restrictions to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Restrictions/Comments**
Bortezomib (Velcade®) Intravenous Injection	Antineoplastic Agent	T-cell Lymphoblastic Lymphoma	Modified restrictions to include use by the Department of Pediatric Hematology/Oncology and Bone Marrow Transplant for the treatment of T-cell lymphoblastic lymphoma
Buprenorphine-Naloxone (Suboxone®) Tablet	Analgesic	Sickle Cell Disease Related Pain	Modified restrictions to include the Department of Pediatric Hematology/Oncology for the treatment of pain in patients with sickle cell disease
Hyaluronidase (Amphadase®) Subcutaneous Injection	Enzyme	Facilitate Subcutaneous Fluid Administration	Modified restrictions to include use for facilitation of subcutaneous fluid administration*
Meropenem (Merrem®) Injection	Antibiotic	Various Infections	Please see Adult Table for Details
Propranolol Intravenous Injection	Beta Blocker	Antiarrhythmic	Added restrictions to include pediatric patients with an EP Consult, or in the Pediatric ICU or Pediatric Cardiac ICU
Vedolizumab (Entyvio®) Intravenous Injection	Monoclonal Antibody	Acute, Steroid Refractory GVHD	Modified restrictions to include the Department of Pediatric Hematology/Oncology and Bone Marrow Transplant for patients with acute, steroid refractory GVHD or intolerance to steroid therapy

*Note: Due to extensive nursing education and the need to develop a protocol for subcutaneous fluid administration, these changes will not go-live on November 7th, 2023.
EP=Electrophysiology ICU=Intensive care unit GVHD=Graft versus host disease

Process Changes to the Pediatric CCHS Formulary			
Drug	**Pharmacologic Class**	**Formulary Use**	**Comments**
Subanesthetic Ketamine Infusion Standard Operating Procedure	Analgesic	Pain Control	Ketamine for subanesthetic dosing is restricted to:* 1. Nursing units meeting monitoring parameters in the Subanesthetic Ketamine Infusion SOP 2. The Departments of Pediatric Hematology/Oncology, Palliative Medicine, Anesthesiology, and ICUs
Medication Dose Optimization and Monitoring Standard Operating Procedures	Various Medications	Various Indications	Pharmacists may automatically dose adjust medications per the Medication Dose Optimization Policy. Each quarter the P&T Committee will review and approve additions to the Medication Dose Optimization Service Appendix. This agent has been added to Appendix 2 (Medications for Pharmacist-Initiated Adjustment in Pediatric Patients): 1. Nifurimox
Pediatric Oral Liquid Dose Rounding	Various Medications	Various Indications	Updated Pediatric Oral Dose Rounding; 1. For all doses < 0.2 mL, round to the nearest 0.01 mL 2. For all doses between 0.2-1 mL, round to the 0.05 mL 3. For all doses between 1-10 mL, round to the nearest 0.2 mL 4. For all doses between 10-20 mL, round to the nearest 0.5 mL 5. For all doses between 21-31 mL, round to the nearest 1 mL

*These changes will not be implemented on November 7, 2023.
SOP=Standard operating procedure ICU=Intensive care unit