

Supplementary Online Content

Hwang TJ, Orenstein L, Kesselheim AS, Bourgeois FT. Completion rate and reporting of mandatory pediatric postmarketing studies under the US Pediatric Research Equity Act. *JAMA Pediatr*. Published online November 19, 2018.
doi:10.1001/jamapediatrics.2018.3416

eTable 1. PREA Studies With Status Provided by the FDA

eTable 2. List of Included New Drugs and Supplemental Indications Approved by the FDA

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. PREA Studies With Status Provided by the FDA

Drug	Study description	Type	Status
Maraviroc (Selzentry)	Deferred pediatric study under PREA for the treatment of HIV in pediatric subjects from birth to ≤ 2 years of age. This study will determine the maraviroc exposure (pharmacokinetic profile) followed by 48 weeks of dosing with efficacy based on viral load reduction through 48 weeks of dosing, and safety monitored over 96 weeks for pediatric subjects from birth to 2 years of age to support maraviroc dose selection, safety and efficacy.	New drug approval	Released (2015)
Methylnaltrexone (Relistor)	Conduct a pharmacokinetics and safety study of Relistor in pediatric patients ages 5 to 17 years with opioid induced constipation and advanced illness receiving palliative care.	New drug approval	Released (2012)
Tapentadol (Nucynta)	Treatment of moderate to severe acute pain in pediatric patients	New drug approval	Ongoing
Vilazodone (Viibryd)	Deferred pediatric study under PREA for the treatment of major depressive disorder in pediatric patients aged 7 to 17. Conduct a study to obtain pharmacokinetic, safety, and tolerability data and provide information pertinent to dosing of vilazodone in the relevant pediatric population	New drug approval	Released (2014)
Perampanel (Fycompa)	A prospective, randomized, controlled, double-blind, efficacy and safety study of FYCOMPA (perampanel) in children ages 2 years to < 12 years for the adjunctive treatment of partial onset seizures with a long term safety extension. The primary efficacy endpoint during the controlled phase will examine seizure frequency based upon diary data. Safety will be evaluated during the controlled phase and long term extension.	New drug approval	Released (2016)
Levetiracetam (Keppra)	Deferred pediatric study under PREA for adjunctive therapy in the treatment of primary generalized tonic-clonic seizures in pediatric patients ages 2 to 6 years of age with idiopathic generalized epilepsy.	New indication	Released (2007)
Peginterferon alfa-2a (Pegasys)	Evaluate the safety and antiviral effectiveness (as measured by sustained virologic response (SVR)) of Pegasys/Copegus combination therapy in pediatric patients by conducting an open-label, study of HCV-infected patients 3 to 5	New indication	Released (2014)

Drug	Study description	Type	Status
	years of age. The study must provide safety		
	and SVR data for at least 10 subjects 3 to 5 years of age who receive the Copegus oral solution formulation in combination with Pegasys. Analysis of safety and effectiveness should be conducted when all subjects in the 3 to 5 year age group have reached 24 weeks post-treatment, and these interim analyses should be submitted to FDA for review.		
Tenofovir (Viread)	Deferred pediatric study under PREA for the treatment of chronic hepatitis B virus infection in pediatric patients ages birth to <2 years of age.	New indication	Released (2015)
Vigabatrin (Sabril)	The study is to be a multi-center, randomized, placebo-controlled double blind parallel design study evaluating the safety and efficacy of several fixed doses of Sabril (vigabatrin) as adjunctive therapy in pediatric patients age 10 years and above with refractory complex partial seizures. Adequate visual monitoring and stopping rules must be incorporated into this study.	New drug approval	Fulfilled (2013)
Darunavir (Prezista)	Deferred pediatric study under PREA for the treatment of HIV-1 infection in treatment-naïve pediatric subjects from 3 to <12 years of age. Conduct a pediatric safety and activity study of darunavir, in combination with ritonavir, in the treatment-naïve population with activity based on the results of virologic response over at least 24 weeks of dosing and safety over 48 weeks.	New indication	Fulfilled (2013)

eTable 2. List of Included New Drugs and Supplemental Indications Approved by the FDA

Generic name	Brand name	Summary Indication	FDA Approval Date
abatacept	Orencia	Treatment of moderate to severe polyarticular juvenile idiopathic arthritis (JIA)	Apr-08
adalimumab	Humira	Treatment of adult patients with moderate to severe chronic plaque psoriasis who are candidates for systemic therapy or phototherapy, and when other systemic therapies are medically less appropriate	Jan-08
adalimumab	Humira	Reducing signs and symptoms and inducing and maintaining clinical remission in adult patients with moderately to severely active Crohn's disease who have had an inadequate response to conventional therapy; and reducing signs and symptoms and inducing clinical remission in these patients if they have also lost response to or are intolerant to infliximab	Feb-07
albiglutide	Tanzeum	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Apr-14
aliskiren	Tekturna	Treatment of hypertension	Mar-07
alogliptin	Nesina	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Jan-13
alvimopan	Entereg	Treatment for the acceleration of time to gastrointestinal recovery following partial large or small bowel resection surgery with primary anastomosis	May-08
aripiprazole	Abilify	Treatment of irritability associated with autistic disorder in pediatric patients (aged 6 to 17 years)	Nov-09
asenapine	Saphris	Acute treatment of schizophrenia in adults; and Acute treatment of manic or mixed episodes associated with bipolar I disorder in adults	Aug-09
atazanavir	Reyataz	Treatment of HIV-1 infection in pediatric patients (ages 6 to 18 years of age)	Mar-08
azilsartan	Edarbi	Hypertension, either alone or in combination with other antihypertensive agents	Feb-11
belimumab	Benlysta	Active, autoantibody-positive lupus (systemic lupus erythematosus) who are receiving standard therapy, including corticosteroids, antimalarials, immunosuppressives, and nonsteroidal anti-inflammatory drugs	Mar-11
boceprevir	Victrelis	Chronic hepatitis C (CHC) genotype 1 infection, in combination with peginterferon alfa and ribavirin, in adult patients (≥ 18 years of age) with compensated liver disease, including cirrhosis, who are previously untreated or who have failed previous interferon and ribavirin therapy	May-11
canagliflozin	Invokana	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Mar-13
caspofungin	Cancidas	In pediatric patients (3 months to 16 years of age), empirical therapy for presumed fungal infections in	Jul-08

Generic name	Brand name	Summary Indication	FDA Approval Date
		febrile, neutropenic patients	
ceftaroline	Teflaro	Acute bacterial skin and skin structure infections and community acquired pneumonia	Oct-10
ceftolozane/ tazobactam	Zerbaxa	Treat adults with complicated intra-abdominal infections (cIAI) and complicated urinary tract infections (cUTI)	Dec-14
certolizumab	Cimzia	Provides for the treatment of reducing the signs and symptoms of Crohn's disease and maintaining clinical response in adult patients with moderately to severely active disease who have an inadequate response to conventional therapy	Apr-08
certolizumab	Cimzia	Treatment of adults with moderately to severely active rheumatoid arthritis	May-09
clevidipine	Cleviprex	Reduces blood pressure when use of oral therapy is not feasible or not desirable	Aug-08
colesevelam	Welchol	Reduction of LDL-C levels in boys and postmenarchal girls, 10 to 17 years of age, with heterozygous familial hypercholesterolemia as monotherapy or in combination with a statin after failing an adequate trial of diet therapy	Oct-09
crofelemer	Fulyzaq	Symptomatic relief of non-infectious diarrhea in adult patients with HIV/AIDS on anti-retroviral therapy	Dec-12
dabigatran	Pradaxa	Treatment of deep venous thrombosis (DVT) and pulmonary embolism (PE) in patients who have been treated with a parenteral anticoagulant for 5-10 days	Apr-14
dalbavancin	Dalvance	Acute bacterial skin and skin structure infections (ABSSSI) caused by designated susceptible strains of Gram-positive microorganisms	May-14
dalteparin	Fragmin	Extended treatment of symptomatic venous thromboembolism (VTE) [proximal deep vein thrombosis (DVT) and/or pulmonary embolism (PE)] to reduce the recurrence of VTE in patients with cancer	May-07
dapagliflozin	Farxiga	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Jan-14
darunavir	Prezista	Treatment of human immunodeficiency virus (HIV) in antiretroviral treatment-naïve adults	Dec-08
desvenlafaxine	Pristiq	Major depressive disorder	Feb-08
dexmedetomidine	Precedex	Sedation of non-intubated patients prior to and/or during surgical and other procedures	Oct-08
difluprednate	Durezol	Inflammation and pain associated with ocular surgery	Jun-08
dimethyl fumarate	Tecfidera	Relapsing forms of multiple sclerosis	Mar-13
dolutegravir	Tivicay	HIV-1 infection in adults and children aged 12 years and older and weighing at least 40 kg	Aug-13
doripenem	Doribax	Complicated intra-abdominal (cIAI) and complicated urinary tract (cUTI) infections caused by susceptible isolates of the designated microorganisms	Oct-07
dulaglutide	Trulicity	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Sep-14
efinaconazole	Jublia	Topical treatment of onychomycosis of the toenails	Jun-14

Generic name	Brand name	Summary Indication	FDA Approval Date
		due to Trichophyton rubrum and Trichophyton mentagrophytes	
elvitegravir, cobicistat, emtricitabine, tenofovir	Stribild	Treatment of HIV-1 infection in adults who are antiretroviral treatment-naïve	Aug-12
empagliflozin	Jardiance	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Aug-14
eslicarbazepine	Aptiom	Adjunctive treatment of partial-onset seizures	Nov-13
etravirine	Intelence	Provides in combination with other antiretroviral agents for the treatment of hiv-1 infection in treatment-experienced adult patients, who have evidence of viral replication and hiv-1 strains resistant to a non-nucleoside reverse transcriptase inhibitor (NNRTI) and other antiretroviral agents.	Jan-08
ezogabine	Potiga	Adjunctive treatment of partial-onset seizures in patients aged 18 years and older	Jun-11
fesoterodine	Toviaz	Overactive bladder with symptoms of urge urinary incontinence, urgency, and frequency	Oct-08
fidaxomicin	Dificid	Clostridium difficile-associated diarrhea (CDAD)	May-11
fingolimod	Gilenya	Relapsing forms of multiple sclerosis to reduce the frequency of relapses and to delay the accumulation of physical disability	Sep-10
fospropofol	Lusedra	Sedative hypnotic agent indicated for monitored anesthesia care (MAC) sedation in adult patients undergoing diagnostic or therapeutic procedure	Dec-08
gabapentin	Horizant	Moderate-to-severe primary Restless Legs Syndrome (RLS) in adults	Apr-11
gadobutrol	Gadavist	Contrast agent indicated for intravenous use in diagnostic MRI in adults and children (2 years of age and older) to detect and visualize areas with disrupted blood brain barrier (BBB) and/or abnormal vascularity of the central nervous system	Mar-11
gadoterate	Dotarem	Contrast agent indicated for intravenous use with magnetic resonance imaging (MRI) in brain (intracranial), spine and associated tissues in adult and pediatric patients (2 years of age and older) to detect and visualize areas with disruption of the blood brain barrier (BBB) and/or abnormal vascularity	Mar-13
gadoxetate	Eovist	Contrast agent for use in magnetic resonance imaging (mri) of the liver in adult patients to provide contrast in the t1 weighted images to aid in the detection and characterization of focal liver pathologies in pre-surgical evaluation	Jul-08
golimumab	Simponi	Moderately to severely active Rheumatoid Arthritis (RA) in adults, in combination with methotrexate; Active Psoriatic Arthritis (PsA) in adults, alone or in combination with methotrexate; Active Ankylosing Spondylitis in adults	Apr-09
iloperidone	Fanapt	Acute treatment of schizophrenia in adults	May-09
lacosamide	Vimpat	Adjunctive therapy for partial onset seizures in	Oct-08

Generic name	Brand name	Summary Indication	FDA Approval Date
		patients with epilepsy 17 years or older; indicated as short-term replacement when oral administration is not feasible in these patients	
lacosamide	Vimpat	Use as monotherapy (conversion to and initial) in the treatment of partial-onset seizures in patients with epilepsy age 17 years and older	Aug-14
ledipasvir/ sofosbuvir	Harvoni	Chronic hepatitis C (CHC) genotype 1 infection in adults	Oct-14
levetiracetam	Keppra	Adjunctive therapy in the treatment of primary generalized tonic-clonic seizures in adults and children 6 years of age and older with idiopathic generalized epilepsy	Mar-07
linaclotide	Linzess	Irritable bowel syndrome with constipation (IBS-C) and Chronic idiopathic constipation (CIC) in adults	Aug-12
linagliptin	Tradjenta	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	May-11
liraglutide	Victoza	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Jan-10
lisdexamfetamine	Vyvanse	Treatment of Attention Deficit Hyperactivity Disorder (ADHD) in children 6-12 years of age	Feb-07
lorcaserin	Belviq	Adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in adults with an initial body mass index (BMI) of: • 30 kg/m ² or greater (obese) or • 27 kg/m ² or greater (overweight) in the presence of at least one weight-related comorbid condition, (e.g., hypertension, dyslipidemia, type 2 diabetes)	Jun-12
lubiprostone	Amitiza	Treatment of Irritable Bowel Syndrome with constipation in women ≥18 years old	Apr-08
luliconazole	Luzu	Topical treatment of interdigital tinea pedis, tinea cruris, and tinea corporis caused by the organisms Trichophyton rubrum and Epidermophyton floccosum, in patients 18 years of age and older	Nov-13
lurasidone	Latuda	Treatment of patients with depressive episodes associated with bipolar I disorder (bipolar depression)	Jun-13
lurasidone	Latuda	Schizophrenia in adults	Oct-10
maraviroc	Selzentry	CCR5-tropic HIV-1 infection	Aug-07
methoxy polyethylene glycol-epoetin beta	Mircera	Treatment of anemia associated with chronic renal failure, including patients on dialysis and patients not on dialysis	Nov-07
methylnaltrexone	Relistor	Provides for the treatment of opioid-induced constipation in patients with advanced illness who are receiving palliative care, when response to laxative therapy has not been sufficient	Apr-08
micafungin	Mycamine	Treatment of patients with candidemia, acute disseminated candidiasis, Candida peritonitis and abscesses	Jan-08
milnacipran	Savella	Selective serotonin and norepinephrine reuptake inhibitor (SNRI) indicated for the management of fibromyalgia	Jan-09

Generic name	Brand name	Summary Indication	FDA Approval Date
mirabegron	Myrbetriq	Overactive bladder (OAB) with symptoms of urge urinary incontinence, urgency, and urinary frequency	Jun-12
montelukast	Singulair	Prevention of exercise-induced bronchoconstriction in patients 15 years of age and older	Apr-07
netupitant; palonosetron	Akynzeo	Prevention of acute and delayed nausea and vomiting associated with initial and repeat courses of cancer chemotherapy, including, but not limited to, highly emetogenic chemotherapy	Oct-14
ocriplasmin	Jetrea	Symptomatic vitreomacular adhesion	Oct-12
ombitasvir, paritaprevir and ritonavir; dasabuvir	Viekira Pak	Genotype 1 chronic hepatitis C virus (HCV) infection including those with compensated cirrhosis	Dec-14
onabotulinumtoxina	Botox	Treatment of overactive bladder with symptoms of urinary incontinence, urgency, and frequency, in adults who have had an inadequate response to or are intolerant of an anticholinergic medication	Jan-13
onabotulinumtoxina	Botox	Treatment of adults with urinary incontinence due to detrusor overactivity associated with a neurologic condition (e.g., spinal cord injury, multiple sclerosis) who have an inadequate response to or are intolerant of an anticholinergic medication	Aug-11
onabotulinumtoxina	Botox	Prophylaxis of headaches in adults with chronic migraine	Oct-10
onabotulinumtoxina	Botox	Treatment of upper limb spasticity	Mar-10
oritavancin	Orbactiv	Acute bacterial skin and skin structure infections caused or suspected to be caused by susceptible isolates of designated Gram-positive microorganisms	Aug-14
palonosetron	Aloxi	Prevention of postoperative nausea and vomiting for up to 24 hours following surgery	Feb-08
peginesatide	Omontys	Treatment of anemia due to chronic kidney disease (CKD) in adult patients on dialysis	Mar-12
peginterferon alfa-2a	Pegasys	Treatment of chronic hepatitis C in combination with Copegus in patients 5 to 17 years of age	Aug-11
peginterferon beta-1a	Plegridy	Relapsing forms of multiple sclerosis	Aug-14
peramivir	Rapivab	Acute uncomplicated influenza in patients 18 years and older who have been symptomatic for no more than two days	Dec-14
perampanel	Fycompa	Adjunctive therapy for the treatment of partial-onset seizures with or without secondarily generalized seizures in patients with epilepsy aged 12 years and older	Oct-12
pregabalin	Lyrica	Management of fibromyalgia	Jun-07
raltegravir	Isentress	In combination with other antiretroviral agents for the treatment of HIV-1 infection in treatment-experienced adult patients who have evidence of viral replication and HIV-1 strains resistant to multiple antiretroviral agents	Oct-07
retapamulin	Altabax	Impetigo	Apr-07
rilpivirine	Edurant	In combination with other antiretroviral agents for the treatment of HIV-1 infection in treatment-naïve adult patients	May-11

Generic name	Brand name	Summary Indication	FDA Approval Date
rivaroxaban	Xarelto	Treatment and reduction in risk for pulmonary embolism and deep vein thrombosis	Nov-12
saxagliptin	Onglyza	Adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus	Jul-09
simeprevir	Olysio	Chronic hepatitis C (CHC) infection as a component of a combination antiviral treatment regimen	Nov-13
sodium picosulfate, magnesium oxide and citric acid	Prepopik	Cleansing of the colon as a preparation for colonoscopy in adults	Jul-12
sofosbuvir	Sovaldi	Chronic hepatitis C (CHC) infection as a component of a combination antiviral treatment regimen	Dec-13
spinosad	Natroba	Head lice infestation in patients ages 4 years and older	Jan-11
sulfur hexafluoride lipid microsphere	Lumason	Ultrasound contrast agent indicated for use in patients with suboptimal echocardiograms to opacify the left ventricular chamber and to improve the delineation of the left ventricular endocardial border	Oct-14
tapentadol	Nucynta	Opioid analgesic indicated for the relief of moderate to severe acute pain in patients 18 years of age or older	Nov-08
tavaborole	Kerydin	Topical treatment of onychomycosis of the toenails due to Trichophyton rubrum or Trichophyton mentagrophytes	Jul-14
tbo-filgrastim	Neutroval	Reduction in the duration of severe neutropenia in patients with non-myeloid malignancies receiving myelosuppressive anti-cancer drugs associated with a clinically significant incidence of febrile neutropenia	Aug-12
tedizolid	Sivextro	Acute bacterial skin and skin structure infections (ABSSSI) caused by designated susceptible bacteria	Jun-14
telaprevir	Incivek	Genotype 1 chronic hepatitis C (CHC) in adult patients with compensated liver disease, including cirrhosis, who are treatment-naïve or who have been previously treated with interferon-based treatment, including prior null responders, partial responders, and relapsers	May-11
telavancin	Vibativ	Treatment of hospital-acquired bacterial pneumonia/ventilator-associated bacterial pneumonia (HABP/VABP) caused by susceptible isolates of Staphylococcus aureus (including methicillin-susceptible and resistant isolates) when alternative treatments are not suitable	Jun-13
telavancin	Vibativ	Complicated skin and skin structure infections (cSSSI) caused by susceptible Gram-positive bacteria	Sep-09
tenofovir	Viread	Treatment of Chronic Hepatitis B	Aug-08
teriflunomide	Aubagio	Relapsing forms of multiple sclerosis	Sep-12
tigecycline	Tygacil	Treatment of community acquired bacterial pneumonia	Mar-09
tocilizumab	Actemra	Adult patients with moderately-to severely- active rheumatoid arthritis who have had an inadequate response to one or more TNF antagonist therapies	Jan-10

Generic name	Brand name	Summary Indication	FDA Approval Date
tocilizumab	Actemra	Treatment of active systemic juvenile idiopathic arthritis in patients 2 years of age and older	Apr-11
tofacitinib	Xeljanz	Moderately to severely active rheumatoid arthritis who have had an inadequate response or intolerance to methotrexate. It may be used as monotherapy or in combination with methotrexate or other nonbiologic disease-modifying antirheumatic drugs (DMARDs)	Nov-12
tolvaptan	Samsca	Treatment of clinically significant hypervolemic and euvolemic hyponatremia [serum sodium < 125 mEq/L or less marked hyponatremia that is symptomatic and has resisted correction with fluid restriction], including patients with heart failure, cirrhosis, and Syndrome of Inappropriate Antidiuretic Hormone (SIADH)	May-09
ustekinumab	Stelara	Moderate to severe plaque psoriasis who are candidates for phototherapy or systemic therapy	Sep-09
vedolizumab	Entyvio	Adult patients with moderately to severely active UC who have had an inadequate response with, lost response to, or were intolerant to a tumor necrosis factor (TNF) blocker or immunomodulator; or had an inadequate response with, were intolerant to, or demonstrated dependence on corticosteroids; Adult patients with moderately to severely active CD who have had an inadequate response with, lost response to, or were intolerant to a TNF blocker or immunomodulator; or had an inadequate response with, were intolerant to, or demonstrated dependence on corticosteroids	May-14
vigabatrin	Sabril	Refractory complex partial seizures in adults; should be used as adjunctive therapy in patients who have responded inadequately to several alternative treatments	Aug-09
vilazodone	Viiibryd	Major depressive disorder in adults	Jan-11
vortioxetine	Brintellix	Major depressive disorder	Sep-13