

Mayo Clinic Pharmacy Grand Rounds

Activity Description

Mayo Clinic Pharmacy Grand Rounds Podcast is a weekly podcast delivered by pharmacists to healthcare professionals who routinely manage the selection and monitoring of medication(s) as part of their patient care duties. Each week, speakers deliver insight to healthcare providers on evidence-based pharmacology topics in nearly every specialty area. The podcast content applies to pharmacists, physicians, physician assistants, and nurse practitioners in the inpatient and ambulatory care practice settings who care for neonatal through geriatric patient populations.

Target Audience

This activity is appropriate for physicians, pharmacists, nurse practitioners, physician assistants, residents, fellows, students and allied health professionals.

Learning Objectives

Upon conclusion of this activity, participants should be able to:

- Select patient-specific pharmacotherapy for a broad scope of disease states
- Recall evidence-based literature to direct medication best-practices
- Identify controversial pharmacology topics and their potential impact on patient care

Attendance at this Mayo Clinic course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

Accreditation Statement



In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Credit Statement(s)

AMA

The Mayo Clinic College of Medicine and Science designates this enduring material for a maximum of 79.75 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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AAPA



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Disclosure Summary

As a provider accredited by Joint Accreditation for Interprofessional Continuing Education, Mayo Clinic College of Medicine and Science must ensure balance, independence, objectivity and scientific rigor in its educational activities. All who are in a position to control the content are required to disclose all financial relationships with any ineligible company. Faculty will also identify any off-label and/or investigational use of pharmaceuticals or instruments discussed in their content for FDA compliance.

Listed below are individuals with control of the content of this program who have disclosed...

Relevant financial relationship(s) with ineligible companies:

Patrick M. Wieruszewski, Pharm.D., BCCCP

Consultant: La Jolla Pharmaceutical Company

All relevant financial relationships listed for these individuals have been mitigated.

No relevant financial relationship(s) with ineligible companies:

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 Nicholas J. Vollmer, Pharm.D.
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 Kristina L. Westcott, Pharm.D.
 Andrew (Andy) F. Wiener, Pharm.D., R.Ph.
 Erin D. Wieruszewski, Pharm.D., BCCCP
 Alex B. Wontor, Pharm.D.
 Nikitha Yagnala, Pharm.D.
 Ming (May) M. Zhang, Pharm.D., R.Ph.
 Joseph J. Zieminski, Pharm.D.

References to off-label and/or investigational usage(s) of pharmaceuticals or instruments in their presentation:

Mikhaila L. Rice, Pharm.D.	Merck & Co, Inc. - Letermovir
Allison P. Golbach, Pharm.D.	Dronabinol, Nabilone
Andrew J. Webb, Pharm.D.	X-Gen Pharamceuticals, Inc. – Neomycin Eli Lilly & Co – Vancomycin, Tobramycin Sandoz Inc – Amikacin Merck Inc. – Gentamicin Pfizer Inc. – linezolid, Clindamycin Janssen Inc – Levofloxacin Bayer Pharmaceuticals – Ciprofloxacin Sanofi, LLC – Telithromycin
Mikhaila L. Rice, Pharm.D.	Merck & Co., Inc.: Letermovir
Casey O'Connell, Pharm.D.	Fluoxetine, Sertraline, Citalopram, Escitalopram, Paroxetine, Fluvoxamine, Lithium, Ondansetron, Cyproheptadine, Olanzapine, Chlorpromazine
Mikaela M. Hofer, Pharm.D.	Amitriptyline, Brexanolone, Bupropion, Citalopram, Duloxetine, Escitalopram, Fluoxetine, Fluvoxamine, Nortriptyline, Paroxetine, Sertraline, Venlafaxine
Jade L. Kutzke, Pharm.D.	Biogen & Genentech, Inc.: Rituximab, Novartis Pharmaceuticals, Inc.: Cyclosporine A, Hospira, Inc.: Vincristine, Cumberland Pharmaceuticals, Inc.: N-acetylcysteine, Millenium Pharmaceuticals, Inc.: Bortezomib, & Shire Pharmaceuticals, Inc.: Recombinant ADAMTS13
Abby K. Hendricks, Pharm.D.	Aripiprazole, Asenapine, Chlorpromazine, Haloperidol, Iloperidone, Lurasidone, Olanzapine, Paliperidone, Quetiapine, Risperidone, Thiothixene, Ziprasidone, Lorazepam, Melatonin, Ramelteon, Suvorexant, Valproate
Alex B. Wontor, Pharm.D.	Acetaminophen, Atenolol, Cholestyramine resin, Dexamethasone, Digoxin, Diltiazem, Esmolol, Hydrocortisone, Lithium, Saturated solution of potassium iodide (SSKI), Methimazole, Metoprolol, Propranolol, Propylthiouracil
Victoria R. Milano, Pharm.D.	Prednisone, Methylprednisolone, Mycophenolate, Tacrolimus, Cyclophosphamide, Infliximab, & Tocilizumab

Deann N. Tims, Pharm.D.	Emmaus Life Sciences, Inc.: L-Glutamine (Endari); Novartis: Crizanlizumab (Adakveo); Global Blood Therapeutics: Voxelotor (Oxbryta)
Joseph C. Osborne II, Pharm.D.	Gabapentin, Pregabalin
Jamie Reed, Pharm.D., BCPS	Varies: Albuterol, Diphenhydramine, Famotidine, Methylprednisolone, Prednison, Ranitidine
Nicholas J. Vollmer, Pharm.D.	Apotex Corp., Myland Pharmaceuticals Inc.: Tranexamic Acid; Teva Pharmaceuticals USA, Inc., Heritage Pharmaceutical: Tranexamic Acid; Prasco Laboratories, Acella Pharmaceuticals, LLC: Tranexamic Acid; X-GEN Pharmaceuticals, Inc., Fresenius Kabi USA, LLC: Tranexamic Acid; American Regent, Inc.: Tranexamic Acid
Natalie A. Haddad, Pharm.D.	Varies: Midodrine
Madison L. Fazio, Pharm.D.	Amgen and Sobi-anakinra; Novartis-canakinumab
Mikhaila L. Rice, Pharm.D.	Janssen Biotech, Inc.-Ibrutinib; AstraZeneca-Acalabrutinib; AbbVie Inc. and Genentech USA, Inc.-Venetoclax
Cassandra J. Schmitt, Pharm.D.	Genentech-Tenecteplase (TNKase)
Ashley O. Otto, Pharm.D.	Ursodeoxycholic acid (ursodiol); Diatrizoate meglumine; Diatrizoate sodium; Polyethylene glycol 3350 and electrolytes oral solution
Kyle S. Wamsley, Pharm.D.	Varies-Oral antibiotics for IE
Hannah M. Brokmeier, Pharm.D.	Pfizer-Eplerenone; Varies-Spironolactone
Jennifer Adema, Pharm.D.	Lilly USA LLC: Olumiant (Baricitinib); EMD Serono: Rebif (Interferon Beta-1a)
Mikhaila L. Rice, Pharm.D., BCPS	Novartis Pharmaceuticals Corporation: Imatinib; Pfizer, Inc.: Sunitinib; Bayer: Regorafenib; Deciphera Pharmaceuticals, Inc.: Ripretinib; Blueprint Medicines Corporation: Avapritinib; Takeda Pharmaceutical Co. Ltd.: Ponatinib; Exelixis, Inc.: Cabozantinib; Merck, Inc.: Lenvatinib; Pfizer, Inc.: Crenolanib; Jiangsu Chia-Tai Tianqin Pharmaceutical: Anlotinib; Daiichi Sankyo: Pexidartinib; Bristol Myer Squibb: Ipilimumab, Nivolumab; Karoypharm Therapeutics: Selinexor; Merck, Inc.: Temozolomide; Novartis, Inc.: Spartalizumab
Yen Tran, Pharm.D., M.B.A.	Belatacept, Bortezomib, Carfilomib, Clazakizumab, Daratumumab, Eculizumab, Imlifidase, Intravenous immunoglobulin, Obrituzumab, Rituximab, Tocilizumab
Nicole L. Hlavacek, Pharm.D.	Varies: Magnesium
Allison P. Golbach, Pharm.D., BCPS	Azacitadine, Cytarabine, Daunorubicin, Decitabine, Filgrastim, Fludarabine, glasdegib, Idarubicin, Liposomal daunorubicin/cytarabine, Pegfilgrastim, Venetoclax
Mikaela M. Hofer, Pharm.D.	New Medicon Pharma, Ferring Pharmaceuticals: Terlipressin (Teripress, Glypressin), Selepressin, Adreclizumab
Nathan T. Smith, Pharm.D., BCPS	Varies: Leuprolide, Nafarelin, goserelin, triptorelin, buserelin, histrelin, Flutamide, bicalutamide, Spironolactone, Finasteride, dutasteride, Estradiol, conjugated estrogens, progesterone, Medroxyprogesterone acetate, Testosterone enanthate, testosterone cypionate, Testosterone undecanoate
Erin D. Wieruszewski, Pharm.D., BCCCP	Varies: Desmopressin, Tranexamic acid
Kyle S. Wamsley, Pharm.D.	Varies: Phenobarbital
Natalie Haddad, Pharm.D.	Sobi: Anakinra, Generic: Aspirin, Roche: Tocilizumab, Multiple manufacturers: Infliximab, CSL Behring AG, Grifols Therapeutics inc.: Intravenous immunoglobulin
Mai Uyen Alissa Le, Pharm.D.	N/A: Bivalirudin
Audrey J. Umbreit, Pharm.D., BCACP	Varies: Baclofen, Gabapentin, Ondansetron, Topiramate
Hannah M. Brokmeier, Pharm.D.	The Medicines Company: Bivalirudin, Grifols Biologicals, Inc.: Thrombate III, GTC Biotherapeutics: Atryn
Cassandra J. Schmitt, Pharm.D.	Varies: Tenecteplase
Sydney E. Schultz, Pharm.D.	Takeda: Bortezomib, Genmab: Daratumumab, Varies: Dexamethasone, Thalidomide
Marissa Z. Powell, Pharm.D.	Eli Lilly: Olanzapine
Molly A. McCord, Pharm.D.	Bristol Myers Squibb: Belatacept
Kaylee A. Clark, Pharm.D.	Various: Famotidine, Diphenhydramine
Jo Ann Leal, Pharm.D.	Various: Omeprazole, Pantoprazole, Sucralfate, Esomeprazole, Lansoprazole, Dexlansoprazole, Rabeprazole, Cimetidine, Famotidine, Ranitidine, Nizatidine

Nikitha Yagnala, Pharm.D.	Actavis Elizabeth, Boehringer Ingelheim, Teva: clonidine; Eli Lilly and Company: methadone; Pfizer: dexmedetomidine; Actavis Elizabeth, Apotex, Impax Labs Inc, Mylan, Sandoz: guanfacine, quetiapine, trazodone. Hospira, Inc – norepinephrine. Shire US Inc. – midodrine. Novartis Pharmaceuticals Corporation – octreotide.
Divya A. Khandekar, Pharm.D., M.S.	Boehringer-Ingelheim: Empagliflozin; AstraZeneca: Dapagliflozin (Farxiga); Novartis: Sacubitril/Valsartan (Entresto); AstraZeneca: Candesartan (Atacand); Varies: Spironolactone (Aldactone) Varies: Amifostine, Cevimeline, Donepezil, Doxepin, Octreotide, Palifermin, Genentech - Tocilizumab (Actemra), Swedish Orphan Biovitrum (Sobi) - Anakinra (Kineret), EUSA Pharma - Siltuximab (Sylvant)
Jennifer M. Nelson, Pharm.D.	Albendazole, Amikacin, Clofazimine, Levofloxacin, Linezolid, Moxifloxacin, Paromomycin
Aeryana N. Beaudrie-Nunn, Pharm.D.	Swedish Orphan Biovitrum AB: Anakinra; Eli Lilly and Company: Baricitnib; Merck & Co., Inc; Pfizer Labs: Dexamethasone; Genentec, Inc.: Tocilizumab; Gilead Sciences, Inc.: Remdesivir; Sanofi-Aventis U.S. LLC: Sarilumab
Rachel J. Johnson, Pharm.D.	Carbamazepine, Corticosteroids, Eculizumab, Gabapentin, Immune globulin
Jai Yin Townley, Pharm.D., BCPS	Cholestyramine, Clonidine, Octreotide, Pancreatic enzymes, Pantoprazole, Omeprazole
Cassandra J. Schmitt, Pharm.D.	Merck: Molnupiravir; Pfizer: Nirmatrelvir/ritonavir; GlaxoSmithKline and Vir Biotechnology, Inc.: Sotrovimab
Rachael M. Sheehan, Pharm.D., R.Ph.	Merck Share & Dohme Copr: Aprepitant, Varies: Benzodiazepines, Capsaicin, Corticosteroids, Droperidol, Haloperidol, Eli Lilly: Olanzapine, Varies: Opioids, Propranolol, Tricyclic antidepressants
Stacy A. Bernard, Pharm.D.,R.Ph.	Cyclosporine (modified and non-modified), Tacrolimus (immediate and extended release), Sirolimus, Everolimus, Prednisone
Michaela E. Wermers, Pharm.D., R.Ph.	Ferric carboxymaltose, Iron sucrose, Iron dextran, Ferric gluconate
Molly A. McCord, Pharm.D., R.Ph.	antithymocyte globulins, basiliximab, belatacept, mycophenolate mofetil, mycophenolate sodium, sirolimus, valganciclovir
Lauren M. Dolly, Pharm.D. P.Ph.	Olanzapine, Risperidone, Lithium, Lamotrigine, Liothyronine, Ketamine, L-methylfolate
Hannah M. Brokmeier, Pharm.D	Pfizer / Hospira - calcium chloride, epinephrine, methylprednisolone, sodium bicarbonate, vasopressin
Kaylee A. Clark, Pharm.D.	Imatinib, Dasatinib, Sorafenib, Midostaurin, Gilteritinib, Azacitidine
Andrew J. Jatis, Pharm.D.	Abbvie - Dalbavancin (Dalvance®), Melinta Therapeutics - Oritavancin (Orbactiv®). Hospira, Inc – norepinephrine. Shire US Inc. – midodrine. Novartis Pharmaceuticals Corporation – octreotide. Various: furosemide, torsemide, bumetanide, metolazone, chlorothiazide, acetazolamide.
Kyle A. Hess, Pharm.D., R.Ph.	Bayer – Apirin, Bristol-Meyers/Sanofi Pharmaceuticals – Clopidogrel, AstraZeneca – Ticagrelor, Eli Lilly – Prasugrel, La Jolla Pharmaceutical - Angiotensin II, Various – Vasopressin, Insulin, Dextrose, Glucagon, Calcium Gluconate, Calcium Chloride, Methylene Blue, Lipid Emulsion, Epinephrine, Norepinephrine, Dobutamine, Dopamine, Milrinone
Aeryana Nichet Beaudrie-Nunn, Pharm.D.	Bristol-Myers Squibb Company – Apixaban, Boehringer Ingelheim Pharmaceuticals, Inc. – Dabigatran, Daiichi Sankyo Co., LTD. – Edoxaban, Janssen Pharmaceuticals, Inc. – Rivaroxaban
KaShena L. Kennedy, Pharm.D.	Alexion Pharmaceuticals - eculizumab
Sarah A. Chase, Pharm.D., R.Ph.	Various – Ertapenem, Meropenem, Piperacillin/tazobactam, Infliximab, Adalimumab, Golimumab, Certolizumab, Ustekinumab, Vedolizumab
Devon S. Stonerock, Pharm.D.	Various – Cyclosporine, Eltrombopag, Posaconazole, Fluconazole, Sulfamethoxazole/trimethoprim, Dexamethasone, EUSA Pharma – Siltuximab, Sobi – Anakinra,
Megan A. Galle, Pharm.D.	Alexion Pharmacueticals - Eculizumab
Uzoamaka C. Abajue, Pharm.D.	Pfizer – Dexrazoxane, Genetech - Tocilizumab (Actemra), Swedish Orphan Biovitrum (Sobi) - Anakinra (Kineret), EUSA Pharma - Siltuximab (Sulvant)
Mark P. Layden, Pharm.D., R.Ph.	Various - Ascorbic acid
Alejandro Del Rio Verduzco, Pharm.D.	Baxter Healthcare Corporation – Immune globulin/gammagard liquid, Amgen – Filgrastim, Epoetin Alfa, Novartis – Eltrombopag, Various – Levofloxacin, Cefdinir

Caitlin C. Schanz, Pharm.D., R.Ph.	Multiple – Dexamethasone, Hydrocortisone, Methylprednisolone, Prednisolone, Prednisone, Warfarin, Heparin, Rivaroxaban, Apixaban, Aspirin, Argatroban, Bivalirudin, Enoxaparin
Ming (May) M. Zhang, Pharm.D., R.Ph.	Multiple – Dalteparin, Enoxaparin, Tinzaparin, Unfractionated Heparin
Shienna Anne Braga, Pharm.D., R.Ph.	TerSera Therapeutics – goserelin, Watson Pharmaceuticals – triptorelin, AbbVie Inc - leuprolide
Christopher R. Cahoon, Pharm.D., R.Ph.	Amgen – Denosumab, Multiple – Ibandronate, Novartis Pharmaceuticals Corporation – Pamidronate, Multiple – Zolendronic acid
Kristina M. Thurber, Pharm.D., R.Ph.	Multiple – Topiramate, Bupropion, Naltrexone
Ashton C. Praska, Pharm.D., R.Ph.	Paratek Pharmaceuticals – Omadacycline, Tetrphase Pharmaceuticals - Eravacycline
Taylor E. Praska, Pharm.D., R.Ph.	Paratek Pharmaceuticals – Omadacycline, Tetrphase Pharmaceuticals - Eravacycline
Jonathan G. Leung, PharmD, BCPS, BCPP	Multiple - Clozapine
Kelli C. Herrin, Pharm.D., R.Ph.	Multiple – diflunisal, doxycycline, tauroursodeoxycholic acid [TUDCA], epigallocatechin-3-gallate [EGCG]
Hailey A. Thompson, Pharm.D., R.Ph.	Eli Lilly – Donanemab, fludrocortisone, hydrocortisone
Natalie T. Hagy, Pharm.D.	Pfizer – Fosmanogepix, Scynexis – Ibrexafungerp, F2G Inc. - Olorofim
Tanner A. Melton, Pharm.D., R.Ph.	Theophylline - Leading Pharma, Terbutaline - Chartwell Rx, Isoproterenol - Avara Liscate Pharmaceutical Services

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Prerequisites for Participation

There are no prerequisites needed prior to participating in this education activity.

Method of Participation

Participation in this activity consists of listening to the online podcast and completing the post-test and evaluation.

How to Obtain Credit

To obtain credit, complete the post-test, evaluation and submit.

Release and Expiration Dates

Release Date: September 2, 2020
Expiration Date: December 31, 2024

Acknowledgement of Commercial Support

No commercial support was received in the production of this activity.

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