



Rx-Press

Co-Editors:
Kasey Leggette, PharmD and Jennifer T. Nguyen, PharmD

Mission Statement: Making the best use of medications through D.R.U.G.S.



Distribution of medication and drug information
Research to develop and enhance drug therapy
Utilization review and drug therapy monitoring
Growth through education
Service that is the best!

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New Pharmacy Residents

Kasey Leggette, PharmD and Jennifer T. Nguyen, PharmD

Christine “Christie” Aguilar, PharmD, from Tucson, Arizona, received her Doctor of Pharmacy from the University of Arizona College of Pharmacy. Her professional affiliations in pharmacy school included ASHP, APhA-ASP, PLS, Arizona Pharmacy Association, and KΨ. She served as president of her college’s PLS chapter, diabetes and health fair coordinator for APhA-ASP, and philanthropy chair for ASHP. Dr. Aguilar’s areas of interest include infectious diseases, internal medicine, and transplant. After completing her PGY-1 residency, she plans to pursue a PGY-2 residency or obtain a clinical pharmacist position.

Kasey Leggette, PharmD, originally from Georgia, received her Doctor of Pharmacy from The University of Texas at Austin College of Pharmacy. During pharmacy school, she served as president of Kappa Epsilon; her other involvements included ASHP, APhA, and serving on her college’s Pharmacy Council. Dr. Leggette’s interests include mental health and substance abuse; however, she is eager to expand her knowledge in all areas of pharmacy. Following her PGY-1 residency, she plans to pursue a PGY-2 residency in psychiatry or obtain a clinical pharmacist position.

Avani Desai, PharmD, a native of Houston, Texas, graduated with a Doctor of Pharmacy degree from the University of Houston College of Pharmacy (UHCOP). During pharmacy school, she served as the UHCOP liaison for the HOMES clinic and as president of SSHP. Her other professional affiliations include GCSHP, TSHP, ASHP, PLS, and APhA. Dr. Desai’s areas of interest are pharmacy administration, academia, ambulatory care, and infectious diseases. Upon completion of the PGY-1/PGY-2/MS in pharmacy administration, she plans to pursue a pharmacy management position.



Back row (left to right): Mallory Gessner, Sloan Regen, Reagan Kanne, Natalie Wilson
Front row (left to right): Jennifer T. Nguyen, Kasey Leggette, Christine Aguilar, Avani Desai, Mohamed Hersi

Jennifer T. Nguyen, PharmD, originally from New Jersey, received her Doctor of Pharmacy degree from The University of Connecticut School of Pharmacy (UConn). Her professional affiliations included ASCP, APhA, and ASHP. While at UConn, Dr. Nguyen was an undergraduate research assistant as well as a VALOR student at the VA Connecticut Healthcare System. Her areas of interest include primary care and geriatrics. Following her PGY-1 residency, she hopes to pursue a PGY-2 residency in primary care or begin her career as a clinical pharmacist within the VA system.

Mohamed Hersi, PharmD, raised in Houston, Texas, received his Doctor of Pharmacy from Texas Southern University College of Pharmacy & Health Sciences. During pharmacy school, his activities included African Pharmacist Student Association, SNPhA, LKS, PLS and Rho Chi. His areas of interest include ambulatory care, infectious diseases, and oncology. After completing his PGY-1 residency, he plans to pursue a PGY-2 residency in one of his areas of interest or obtain a clinical pharmacist position.

Sloan Regen, PharmD, from Atoka, Tennessee, received his Doctor of Pharmacy from the University of Tennessee College of Pharmacy in Memphis, Tennessee. His activities in pharmacy school included SNPhA, PLS, APhA-ASP, TSSP, and KΨ. His areas of interest are geriatrics, ambulatory care, infectious diseases, and cardiology. After completing his PGY-1 residency, he plans to pursue a PGY-2 residency in one of his interest areas or obtain a clinical pharmacist position.

Reagan Kanne, PharmD, from Rensselaer, Indiana, received her Doctor of Pharmacy from Purdue University College of Pharmacy. Her activities in pharmacy school included ASHP, APhA, PPA, Rho Chi, and Tomahawk National Honor Society. Dr. Kanne was also a lab teaching assistant for Anatomy/Physiology for three years. Dr. Kanne has numerous interests that include critical care, oncology, and internal medicine. Following her PGY-1 residency, she plans to pursue a PGY-2 residency in one of these areas of practice.

Natalie Wilson, PharmD, is from Orlando, Florida and received her Doctor of Pharmacy from the University of Florida College of Pharmacy. During pharmacy school, she served as president of the FSHP Gainesville Student Chapter and was a member of ASHP, APhA-ASP, and Rho Chi. Dr. Wilson’s areas of interest include critical care, infectious diseases, cardiology, and internal medicine, although she is eager to further explore a variety of clinical pharmacy areas. Following her PGY-1 residency, she plans to pursue a PGY-2 residency in one of her interest areas or obtain a clinical pharmacist position.

Suggested Empiric Antibiotic Regimens Based on Clinical Severity for Diabetic Foot Infections

Chris Henges, PharmD Candidate 2013

Infection Severity	Probable Pathogen(s)	Antibiotic Agent
Mild (usually treated with oral agents)	Methicillin-sensitive <i>Staphylococcus aureus</i> (MSSA) <i>Streptococcus sp.</i>	Dicloxacillin Clindamycin‡ Cephalexin Levofloxacin‡ Amoxicillin-clavulanate
	Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	Doxycycline‡ Trimethoprim/Sulfamethoxazole‡
Moderate (may be treated with oral or initial parenteral agents) or Severe (usually treated with parenteral agents)	MSSA <i>Streptococcus sp.</i> Enterobacteriaceae Obligate aerobes	Levofloxacin‡ Cefoxitin Ceftriaxone Ampicillin-sulbactam Moxifloxacin‡ Ertapenem Tigecycline Levofloxacin‡ or ciprofloxacin with clindamycin‡ Imipenem-cilastatin
	MRSA	Linezolid Daptomycin Vancomycin
	<i>Pseudomonas aeruginosa</i>	Piperacillin-tazobactam
	MRSA Enterobacteriaceae <i>Pseudomonas aeruginosa</i> Obligate anaerobes	Vancomycin Ceftazadime Cefepime Piperacillin-tazobactam Aztreonam Carbapenems

* Determine regimen based on results of culture and sensitivity tests from wound specimens, as well as clinical response to empiric regimen

^ Narrow spectrum agents (eg. vancomycin) should be combined with other agents if a polymicrobial infection is suspected

† Use an agent active against MRSA patients who have severe infections or suspicion or high risk factors, evidence of infection or colonization of MRSA elsewhere, or epidemiological risk factors for MRSA infection

‡ Agents effective against community acquired MRSA (CA-MRSA)

Lipsky BA, Berendt AR, et al. 2012 Infectious Diseases Society of America Clinical Practice Guideline for the Diagnosis and Treatment of Diabetic Foot Infections. *CID* 2012; 54: e151-152

Stevens DL, Bisno AL, Chambers HF, et al. 2005 Practice Guidelines for the Diagnosis and Management of Skin and Soft-Tissue Infections. *CID* 2005; 41: 1382

TheraDoc: A Web-Based Tool Used to Aid in Patient Safety and Infection Prevention

Matthew Zuzik, PharmD and Patricia Byers, RM, M(ASCP), CIC

TheraDoc is a decision support web application that has been utilized by the infection diseases (ID) department for several years and is now in the process of being implemented within the clinical pharmacy department as well as in other treatment specialties at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC).

TheraDoc's rosters, alerts, and rounding tools give clinicians real-time clinical information and robust data reporting capability. TheraDoc rosters can also be configured with rules that can populate and remove patients automatically and allow users to create their own rosters for patient management and share them with other clinicians or treatment teams. For example, the warfarin roster displays a real-time list of all inpatients currently on warfarin therapy which can then be shared with the team.

Another important feature of TheraDoc is the clinical alerts function. In addition to the pre-built alerts supplied by TheraDoc, clinical pharmacists have created customized alerts to identify user-defined events. These alerts allow pharmacists to quickly recognize potential adverse drug events, inappropriate antibiotics, abnormal drug or lab levels, and many other user-specified criteria. For example, alerts can be configured to flag patients who have been re-admitted within the past 30 days.

For antibiotic stewardship, TheraDoc alerts can rapidly display all

patients currently on a certain antibiotic, identify patients whose antibiotic therapy is sub-optimal with respect to the patient's susceptibility report, or spot duplicate antimicrobial coverage. TheraDoc's built in antibiogram is dynamic and can be built on demand, allowing ID clinicians to look at susceptibilities of isolates within specific units of the hospital during defined time ranges. ID rounding reports display all relevant ID data and give a visual representation of the course of an infection.

MEDVAMC Infection Prevention and Control uses TheraDoc to document infections and review cases for healthcare associated infections. TheraDoc alerts flag patients with key infections such as *C. difficile*, *Methicillin-resistant Staphylococcus aureus*, Extended-Spectrum Beta-Lactams, and Vancomycin-Resistant *Enterococcus*. The Infection Control tool within TheraDoc allows users to perform powerful data searches. TheraDoc is and will be a critical tool for the MEDVAMC moving forward because of the patient safety benefits and opportunities it provides to our clinicians. For more information and training, see your super-users in pharmacy, infectious diseases, or Infection Prevention and Control. Pharmacy super-users include Drs. Nicole McMaster, Richard Cadle, Regina Isaac, and Brian Fase. You may contact Patricia Byers, infection preventionist and MEDVAMC TheraDoc clinical site coordinator, at extension 5815 to obtain access and begin using TheraDoc.

Drug Monograph: Viibryd® (vilazodone HCl)

Mohamed Hersi, PharmD and Sloan Regen, PharmD

FDA Indication:

Treatment of major depressive disorder (MDD)

Pharmacology:

Not fully understood but thought to enhance serotonergic activity in the CNS through the selective inhibition of serotonin reuptake. Vilazodone is also a partial agonist at serotonergic 5-HT_{1A} receptors; however, the net result of this action on serotonergic activity and its antidepressant effect are unknown.

Pharmacokinetics:

Steady state concentration is achieved in ~3 days. Bioavailability is 72% when taken with food. Vilazodone undergoes extensive hepatic metabolism primarily by CYP3A4 with minor contributions from CYP2C19 and CYP2D6 with a terminal half-life of approximately 25 hours.

Efficacy Studies:

Type: Phase 3, randomized, double-blind, placebo controlled, 8 week study

Study Population: A total of 481 patients aged 18-70 with a diagnosis of MDD (single episode or recurrent) as defined in DSM-IV and a current major depressive episode with a duration of ≥ 4 weeks and < 2 weeks. Patients were required to have a 17-item Hamilton Depression Rating Scale (HDRS-17) score ≥ 22 and a HDRS item 1 score ≥ 2 at screening and baseline visits.

Methods: Patients received vilazodone (titrated to 40 mg/day) or placebo.

Primary efficacy endpoint was the change in Montgomery Asberg Depression (MADRS) total score from baseline to end of treatment. Secondary efficacy measures included MADRS and HDRS-17 response and change in HDRS-17, HDRS-21, Hamilton Anxiety Rating Scale (HARS), Clinical Global Impressions-Severity of Illness (CGI-S), and Clinical Global Impressions-Improvement (CGI-I) scores. The Changes in Sexual Functioning Questionnaire (CSFQ) was administered at week 8.

Results:

Vilazodone-treated patients had significantly greater improvement ($P = 0.009$) according to the MADRS than placebo patients. MADRS response rates were significantly higher with vilazodone than placebo (44% vs. 30%, $P = 0.002$). Remission rates for vilazodone were not significantly different based on the MADRS (vilazodone, 27.3% vs placebo, 20.3%; $P = 0.066$) or HDRS-17 (vilazodone, 24.2% vs placebo, 17.7%; $P = 0.088$). Vilazodone-treated patients had significantly greater improvements from baseline in HDRS-17 ($P = 0.026$), HDRS-21 ($P = 0.029$), HARS ($P = 0.037$), CGI-S ($P = 0.004$), and CGI-I ($P = 0.004$) scores than placebo patients. Sexual function side effects were similar compared to placebo as measured by CSFQ.

Contraindications:

Monoamine Oxidase Inhibitors: Do not use vilazodone with an MAOI or within 14 days of stopping or starting an MAOI due to the risk of serotonin syndrome.

Boxed Warnings:

Vilazodone has an increased risk of suicidal ideation and behavior in children, adolescents, and young adults < 24 years old taking antidepressants for MDD.

Warnings:

Clinical Worsening/Suicide Risk: All patients being treated with antidepressants should be monitored appropriately and observed closely for clinical worsening and suicidal thinking or behavior.

Serotonin Syndrome or Neuroleptic Malignant (NMS)-like Syndrome: The development of serotonin syndrome or NMS-like reactions has been reported with antidepressants alone, but particularly with concomitant use of serotonergic drugs with drugs that impair metabolism of serotonin, or with antipsychotics or other dopamine antagonists. Symptoms of serotonin syndrome were noted in 0.1% of patients treated with vilazodone. If reaction occurs, discontinue and initiate supportive symptomatic treatment.

Seizures: Vilazodone has been evaluated in patients with seizure disorders and should be prescribed with caution.

Abnormal Bleeding: Drugs that interfere with serotonin reuptake inhibition like vilazodone may increase the risk of bleeding events. Caution patients about bleeding risk and concomitant use of NSAIDs, ASA, or other drugs that affect coagulation or bleeding.

Activation of Mania/Hypomania: Symptoms of mania/hypomania were reported in 0.1% of patients treated with vilazodone in clinical studies. Use with caution in patients with a history or family history of bipolar disorder, mania, or hypomania.

Discontinuation of Vilazodone: Gradual reduction in dose is recommended rather than abrupt discontinuation to avoid withdrawal side effects. Monitor for symptoms.

Hyponatremia: Although no cases of hyponatremia were reported in the vilazodone clinical studies, hyponatremia has occurred as a result of treatment with SSRIs and SNRIs. This hyponatremia appears to be the result of the syndrome of inappropriate antidiuretic hormone secretion (SIADH). In patients with symptomatic hyponatremia, discontinue vilazodone and initiate appropriate medical interventions.

REMS/Medication Guide:

This medication requires REMS and a current approved medication guide be dispensed with each prescription.

Adverse Reactions:

Diarrhea (28%), nausea (23%), dizziness (9%), xerostomia (8%), insomnia (6%), vomiting (5%), dyspepsia (5%), abnormal dreams (4%), fatigue (4%), orgasm abnormal (2-4%), restlessness (3%), somnolence (3%), paresthesia (3%), arthralgia (3%), ejaculation delayed (2%), erectile dysfunction (2%), appetite increased (2%)

Key Drug Interactions:

Due to the potential risk and severity of serotonin syndrome vilazodone is contraindicated in patients receiving MAOIs. Use caution with amphetamines, buspirone, atypical antipsychotics, haloperidol, azoles and SSRIs. Concurrent use with anticoagulants, ASA, NSAIDs may increase the risk of bleeding.

Dosage and Administration:

Oral tablet(s) should be taken with food. Initiate on 10 mg once daily for 7 days, increase to 20 mg once daily for 7 days, then titrate to 40 mg once daily.

Hepatic and Renal Impairment:

No dosage adjustments are recommended.

Special Populations:

Breastfeeding: Excretion in breast milk is unknown

Pediatrics: Safety and efficacy have not been established

Pregnancy Category: C

How Supplied and Stored:

Oral tablets: 10mg, 20mg, 40mg in 30 count bottles
In original container at 77°F (room temperature)

Monitoring:

Mental status for depression, anxiety, suicidal ideation. Laboratory monitoring not required.

MEDVAMC Formulary Status:

Vilazodone is currently non-formulary and does not have established PBM criteria for use

Clinical Guidance/Drug monograph:

Available on PBM website (<http://www.pbm.va.gov/DrugMonograph.aspx>)
Product package insert for Viibryd® (March 2011)

For more information, please contact:

Mohamed Hersi at Mohamed.Hersi@va.gov
Sloan Regen at Sloan.Reggen2@va.gov

References:

Khan A, Cutler AJ, Kajdasz DK et al. A randomized, double-blind, placebo-controlled, 8-week study of vilazodone, a serotonergic agent for the treatment of major depressive disorder. *J Clin Psychiatry* 2011; 72(4):441-447.

Welcome To Our New Infectious Diseases Clinical Pharmacist: Dr. Andrew Hunter

Kasey Leggette, PharmD and Jennifer T. Nguyen, PharmD

The MEDVAMC staff is proud to welcome back Dr. Andrew Hunter who completed his PGY-1 Pharmacy Practice Residency training here at the MEDVAMC in 2010-2011. As the newest infectious diseases clinical pharmacist, Dr. Hunter is well trained. He recently completed a PGY-2 Infectious Diseases Pharmacy Residency at the Cleveland Clinic in Ohio. While training at the Cleveland Clinic, Dr. Hunter conducted research on topics including the "Treatment and Outcomes of *Stenotrophomonas maltophilia* Bloodstream Infections" as well as an "Assessment of a Pharmacy Vancomycin Dosing Service in a Neurologic Patient Population." His research on *Stenotrophomonas maltophilia* bloodstream infections has been accepted for a poster presentation at ID Week, a joint meeting of Infectious Diseases Society of America (IDSA), Society for Healthcare Epidemiology of America (SHEA), HIV Medicine Association (HIVMA), and Pediatric Infectious Diseases Society (PIDS), later this year in October in San Diego, California.

A 2010 graduate of The University of Texas at Austin College of Pharmacy, Dr. Hunter's clinical interests include antimicrobial stewardship and infections in immunocompromised patients. He currently holds membership with the American Society of Health-Systems Pharmacists (ASHP) and the Society of Infectious Diseases Pharmacists (SIDP). Outside of work, Dr. Hunter enjoys traveling, camping, cooking, and attending concerts.



Formulary Changes

Brain Fase, PharmD, Kasey Leggette, PharmD and Jennifer T. Nguyen, PharmD

Conversion for Testosterone Gel and Patch to Androgel 1.62% Pump			
Androgel 1.62%: 1 pump delivers 1.25g of gel containing 20.25mg Testosterone			
Testosterone Product	Dose per day	Androgel 1.62% Dose per day	Number of Androgel 1.62% pumps to dispense
Androgel 1% 2.5g Packet	1 packet	1 pump	1 per 60 days
Androgel 1% 5g Packet	1 packet	2 pumps	1 per 30 days
Androgel 1% 5g Packet	2 packets	4 pumps	2 per 30 days
Androderm 2mg patches	1 patch	1 pump	1 per 60 days
Androderm 4mg patches	1 patch	2 pumps	1 per 60 days

National:

- * Addition of Aflibercept (Eylea)

MEDVAMC:

- * **Vanicream Sunscreen Sport 35 SPF**
 - * Listed under CPRS and DHCP as "SUNSCREEN-35 PABA-FREE COMBINATION CREAM, TOP")
- * Conversion to **Androgel 1.62% Pumps** from Androgel 1% Gel Packets and Androderm Patches
 - * Patients on Androgel 1% Gel Packets will be converted first
 - * Hospitalized patients requiring testosterone will receive testosterone injections or Androgel 1% Gel Packets
- * As of August 13, 2012, outpatient pharmacy will switch from Hydrocodone/Acetaminophen 5mg/500mg to **Hydrocodone/Acetaminophen 5mg/325mg** to reduce risk of liver injury and allergic reactions

Employee News

Kasey Leggette, PharmD and Jennifer T. Nguyen, PharmD

- * Congratulations to Drs. Christine Aguilar, Avani Desai, Mohamed Hersi, Reagan Kanne, Kasey Leggette, Jennifer T. Nguyen, Sloan Regen, Natalie Wilson, and Cristina Villamor for passing the NAPLEX and MPJE and becoming licensed pharmacists.
- * Thank you to the following individuals for their many years of excellent service to our veterans:
 - * Elizabeth Hopkins (35 years), Wellesley Lee (35 years) Lynn Chesser (30 years), Tracy Turner (25 years), Lavon Smith (20 years), Tai Vu (20 years), Gloria Davis-Brackins (20 years)
- * Congratulations to Dr. Maggie Dinh on her recent July wedding!

Editorial Review Board: Linda Ratliff-Davis, RPh; Veronica Franklin, RPh; Elizabeth Hopkins, RPh, MS; Cheryl Mitchell, RPh; Traci Pitts, CPhT; Sonya Wilmer, PharmD; Jennifer Nguyen, PharmD (Thirty Third Edition Preceptor)

Rx-Press is also available on MEDVAMC computer L-drive, and Pharmacy's Y-drive in the Common Folder under Pharmacy Newsletter.

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We welcome all articles of interest to pharmacy. Please submit to any member of the Editorial Review Board via email in Outlook.

Submission deadline for the next Rx-Press is:

October 21, 2012