



# The Transition

4th Year Pharmacy Students Entering the Real World of Pharmacy

The Transition, Volume II, Issue II

November 2014

## Special points of

### Interest:

- Preceptor Highlight
- Rotation Highlight
- Clinical Pearls
- Remember the Math?
- After Graduation
- Upcoming Events
- Just for Fun

### Inside this issue:

Highlight on Dr. Deanna McEwen	1
Antimicrobial Stewardship at Candler Hospital	1-2
Clinical Pearl: Metformin Use in Renal Impairment	2
Aliquots	2
Applying for Residency?	3
Upcoming Events	3
Keeping up with Columbus	3
Practice Problem Answer	4

## Preceptor Highlight

Dr. Deanna McEwen is a 1999 Pharm.D. graduate from the University of Georgia (UGA) College of Pharmacy. She began her career as a pharmacy manager with CVS and later with Kroger Pharmacy. Dr. McEwen returned to the College of Pharmacy in 2005 when she became a preceptor for the community residency program partnered with the college. In 2009, she became a full-time faculty member. She has since become the director of Introductory Pharmacy Practice Experiences (IPPE) for 2<sup>nd</sup> and 3<sup>rd</sup> Year PharmD candidates. She was selected as one of two UGA Faculty members in 2012 to receive the Service-Learning Teaching Excellence award. This award recognizes faculty members for developing, implementing and sustaining service-learning opportunities for UGA students. In 2013, she was awarded board certification as a Pharmacotherapy Specialist.

Dr. McEwen currently serves on several committees within the College, as well as the University. She is chair of the Human Resources Committee of the University Council and a member of the College's Curriculum Task Force Committee. Despite her various commitments, Dr. McEwen also serves as a preceptor for Advanced Pharmacy Practice Experiences (APPE) students.



Dr. Deanna McEwen, Pharm.D., BCPS

Dr. McEwen encourages students to take an active role in their pharmacy education by prompting them with guidance as they search for answers to their questions. Through this guided learning approach, students gain confidence and independence in knowing where to look for answers. She believes directed, hands on education engages students and prepares them for pharmacy practice. Her dedication to her students impacts their experience at the College of Pharmacy in a unique and meaningful way.

Her passion for the experience programs at the College is summed up nicely by one of her favorite quotes about education: "Tell me and I forget, teach me and I may remember, involve me and I may learn" – Benjamin Franklin.

Written by: Leah Stowers, Athens  
 Edited by: Kathryn Maples, Augusta  
 Pharm.D. Candidates, 2015

## Antimicrobial Stewardship at Candler Hospital

I was fortunate enough to have an infectious disease (ID) rotation at Candler Hospital with Bruce Jones, Pharm.D, as my preceptor. This ID rotation was unique because Candler Hospital has a very progressive antimicrobial stewardship program (AMP) due to the active involvement of pharmacy, meticulous monitoring of patients on antimicrobials, and daily meetings with an AMP physician. Some of the main goals of the AMP are to decrease resistance by strictly monitoring certain antibiotics, ensuring proper therapy for a given disease state, and promoting cost-effectiveness by using appropriate regimens with correct durations. The following description is a typical day during this rotation.

Each morning began with updating patient

follow-up sheets. The AMP program followed patients that were on antibiotics such as meropenem, fidaxomicin, ceftaroline, or 3-day vancomycin intravenous therapy. The follow-up sheets included the number of days on therapy, white blood cell and platelet count, temperature, kidney function via serum creatinine, microbiology data, and radiology reports. Once completed, students read over patient charts for up-to-date notes on the physician's plan for antibiotic therapy. Then, Dr. Jones would sit down with the students to review each patient by discussing optimal antibiotic therapy and duration.

After reviewing patients, we worked on IV to oral (PO) antibiotic conversions. At Candler, the Pharmacy and Therapeutics Committee has given pharmacists the authority to make conversions under

Continued on Page 2

## Clinical Pearls: Metformin Use in Renal Impairment

Metformin is considered first-line therapy for patients with type 2 diabetes due its efficacy, low price, favorable safety profile, and potential cardiovascular benefits. However, metformin is contraindicated in patients with renal impairment (men and women with serum creatinine concentrations of  $\geq 1.5$  mg/dL and  $\geq 1.4$  mg/dL, respectively) due to an increased risk of lactic acidosis. Since renal impairment and diabetes are often comorbid conditions, the decision of when to discontinue metformin use in previously stable patients is a difficult one. Clinical practice guidelines in the UK, Australia and Canada now use eGFR (estimated glomerular filtration rate) as the preferred method of measuring renal function. While neither American Association of Clinical Endocrinologist nor American Diabetes Association have officially adopted these guidelines, the following table provides sound guidance.

References on page 4

eGFR (mL/min per 1.73m <sup>2</sup> )	Action
$\geq 60$	No renal contraindication; Monitor renal function annually
$<60$ and $\geq 45$	Continue use; Increase renal function monitoring to every 3-6 months
$<45$ and $\geq 30$	Use with caution; Use lower doses (50% or half maximal dose); Monitor renal function every 3 months; Do not start new patients on metformin
$<30$	Stop metformin

Written by: Anthony Shropshire  
 Edited by: Sarah Peake  
 Athens  
 Pharm.D. Candidates, 2015

Approved by:  
 Robin Southwood,  
 Pharm.D., BSCP

### Practice Problem:

See Answer on  
Page 4

Compound the  
following:

Atropine sulfate 0.3mg  
Lactose qs ad 200mg  
DTD capsules #40

Sig: take 1 - 2 capsules  
PO Q6 hours PRN  
diarrhea



## Aliquots

Aliquots are used when the desired mass or volume of an ingredient is less than the least amount measurable (LAM). Remember, mass  $< 120$  mg on a Class A torsion balance and volume  $< 20\%$  total container volume cannot be accurately measured. Therefore it is required to dilute the ingredient and measure a larger amount of the mixture. Here's how:

1. Pick a multiplier. This number multiplied by the desired amount of ingredient should be  $\geq$  the LAM.
2. Pick the amount of mixture that will be measured to obtain the desired amount of ingredient. This amount is the aliquot and should also be greater than or equal to the LAM.
3. Determine the amounts of ingredient and diluent needed to make the mixture.

A. Aliquot \* multiplier = total amount of mixture

B. Desired amount of ingredient \* multiplier = total amount of ingredient needed in the mixture

C. Value calculated in 3A minus value calculated in 3B = total amount of diluent needed in the mixture

Now that the dilution is made, simply measure out the aliquot defined in step 2 to obtain the desired amount of ingredient.

Written by: Whitney Reed & Maggie Guinta  
Pharm.D. Candidates, 2015  
Savannah

Approved by: Ken Duke, B.S., M.B.A.

Continued from page 1



Sarah Williford  
Pharm.D. Candidate 2015

## Antimicrobial Stewardship at Candler Hospital

a protocol agreement if patients meet the set criteria. In the afternoons, the pharmacy team met with the AMP physician to discuss specific patients and possible pharmacy interventions. Based on the AMP physician's recommendation, pharmacy could proceed with contacting the attending physician about a possible change in therapy.

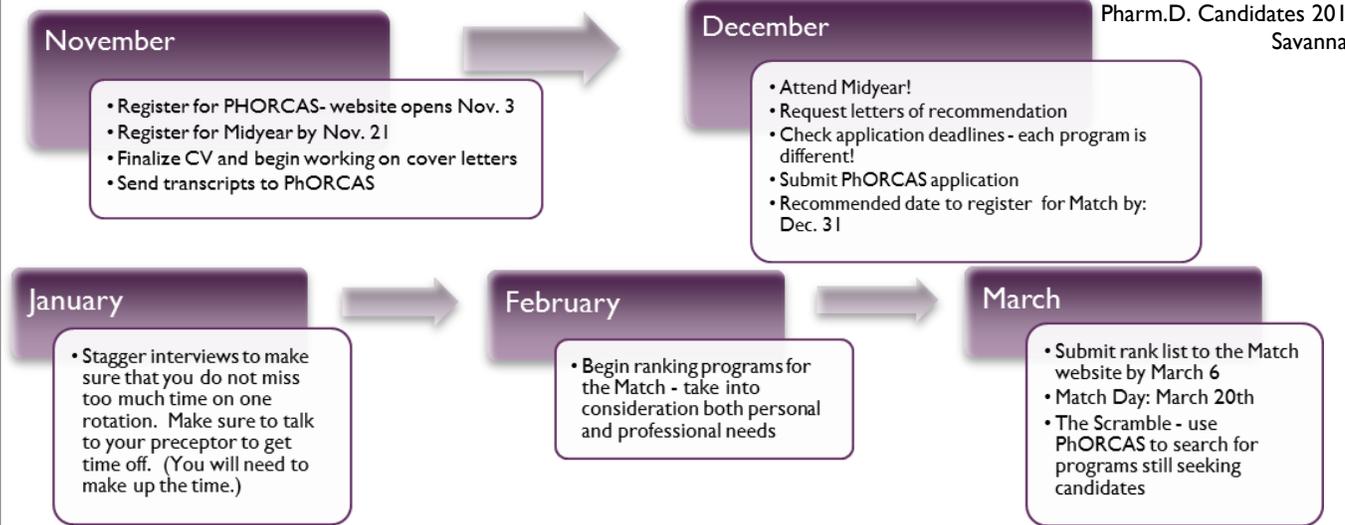
Every hospital should implement an antimicrobial stewardship program. Pharmacists can play a significant role by making sure patients are on an effective treatment regimen for an appropriate

duration. Patients are often started on broad-spectrum empiric antibiotics, so pharmacists should be proactive in making recommendations on targeted antimicrobial therapy once cultures return. Antimicrobial stewardship programs with pharmacist involvement will not only save money but will drastically improve patient care and outcomes.

Written by: Sarah Williford, Savannah  
 Edited by: Adam Brown & Michael Saxon, Atlanta  
 Pharm.D. Candidates, 2015

# Applying for Residency? Here's what you should be doing!

Written by: Kristin Bradley & Ian Dunne  
Pharm.D. Candidates 2015  
Savannah



## Upcoming Events

### ASHP Midyear Clinical Meeting

December 7-11, 2014  
Anaheim, California

### GPhA VIP Day

February 5, 2015  
Georgia Capitol  
Atlanta, GA

### Commencement

Saturday, May 2, 2015  
2:00 PM  
Performing Arts Center at UGA

### Don't forget...

Get the forms from our last class meeting to Ms. Dobbs by December 1! She needs the Graduation Order Form, Cap & Gown Order Form, Ballot for the RC Wilson Award, and the Senior Student Information Form.

Book your hotel rooms for commencement weekend now!

Written by: Kristin Horton  
Pharm.D. Candidate 2015  
Atlanta



## Keeping up with Columbus

Columbus is a riverfront town, nestled alongside the Chattahoochee River. It is the perfect place for white-water rafting, kayaking and taking a stroll on the Riverwalk. Ideal for riding your bike or walking your dog, the Riverwalk has also just opened a zip-line attraction that sends riders flying over the Chattahoochee River.

On Saturday mornings from April through November, uptown Columbus transforms into a market. You'll find over 150 local vendors selling anything from fresh produce and

baked goods to homemade jewelry and furniture. There are also plenty of concerts and musical events going on each weekend, as well as free outdoor movies-on-the-lawn. Columbus is home to the Columbus Symphony



Orchestra, the RiverCenter for Performing Arts and the Springer Opera House. Columbus also has many historic attractions in-

cluding the Coca Cola Space Science Center, the Civil War Naval Museum at Port Columbus and Fort Benning.

There are a lot of great restaurants to grab a bite to eat and plenty of places to go shopping. Whether you're looking for a way to relax or for an adventure, Columbus has a lot to offer for anyone!

Written by: Nirali Naik, Columbus  
Edited by: Cary Anne Smith, Athens  
Pharm.D. Candidates 2015



University of Georgia  
Georgia Regents University  
UGA/Clinical Pharmacy Program  
HM-1200, 1120 15th Street  
Augusta, GA 30912-2450  
Phone 706-721-4915  
FAX 706-721-3994  
Email: jjones16@uga.edu,  
kyley@uga.edu

## EDITORIAL BOARD

### Chief Editors

Julianne Jones, Pharm.D. Candidate, 2015 (Augusta)  
Kyley Makanani, Pharm.D. Candidate, 2015 (Augusta)

### Regional editors:

Adam Brown, Pharm.D. Candidate, 2015 (Atlanta)  
Kathryn Maples, Pharm.D. Candidate, 2015 (Augusta)  
Maggie Guinta, Pharm.D. Candidate, 2015 (Savannah)  
Sarah Peake, Pharm.D. Candidate, 2015 (Athens)  
Kristin Horton, Pharm.D. Candidate, 2015 (Atlanta)  
Cary Anne Smith, Pharm.D. Candidate, 2015 (Athens)  
Kristin Bradley, Pharm.D. Candidate, 2015 (Savannah)

### Faculty Advisor:

Dianne May, Pharm.D., BCPS  
Clinical Associate Professor, UGA College of Pharmacy

### Clinical Pearl References:

I. Lipska KJ, M.D., Bailey, Clifford J,P.H.D., F.R.C.P., Inzucchi SE, M.D. Use of metformin in the setting of mild-to-moderate renal insufficiency. *Diabetes Care*. 2011;34(6):1431-7.

## PRACTICE PROBLEM ANSWER (SEE PAGE 2)

### Answer:

$0.3 \text{ mg atropine} * 40 \text{ capsules} = 12 \text{ mg atropine needed}$

Multiplier = 10 ( $12 * 10 = 120$ , which is LAM)

Aliquot = 120 mg atropine/lactulose mixture for 12 mg needed of atropine

A-  $120 \text{ mg aliquot} * 10 = 1200 \text{ mg total mixture}$

B-  $12 \text{ mg atropine needed} * 10 = 120 \text{ mg atropine component in mixture}$

C-  $1200 \text{ mg mixture} - 120 \text{ mg atropine} = 1080 \text{ mg lactose component in mixture}$

\*Mix 120 mg atropine and 1080 mg lactose. Then measure 120 mg of this mixture to obtain the 12 mg total atropine needed for this prescription.

\*Mix this aliquot with 7880 mg (8000 mg—120 mg) of lactose for total mixture mass of 8000 mg. (Total mixture mass =  $200 \text{ mg/capsule} * 40 \text{ capsules} = 8000 \text{ mg}$ .) Divide evenly into 40 capsules so that each capsule is 200 mg.

### Aliquot References:

1. Trituration method. The Pharmaceutics and Compounding Laboratory Web site. <http://pharmlabs.unc.edu/labs/triturations/method.htm>. Accessed September 27, 2014.
2. Liquid aliquot method. The Pharmaceutics and Compounding Laboratory Web site. <http://pharmlabs.unc.edu/labs/triturations/aliquot.htm>. Accessed September 27, 2014.