Missouri Society of Health-System Pharmacists Bi-Monthly Newsletter

OCTOBER 2014

Diane's Musings

by Diane McClaskey, RPh, BCPS

Zucchini overload! I think I have made zucchini in 100 different ways this summer! I like to tease my friend Mary about 'Leave a Zucchini on the Neighbors Front Porch Day' every year (it's just like it sounds – when you have a bumper crop of zucchini, leave one at your neighbors!). So be thankful that most of you do not live within a short driving distance as I would have left one on your front porch!

Every fall, I like to revisit how the gardening season went – what varieties produced, what types of vegetables didn't do well either with bugs or production, what not to plant again (or not so much of anyway!!), what Tim and the girls really enjoyed and how easy it was to freeze or can the harvest. The green beans were exceptional this year, dill and oregano are coming along nicely, and the tomatoes, albeit slow, have done well. After the garden is put to bed in the fall, I like to take notes and plan for next year.

I like to think of the garden as similar to strategic planning for MSHP. Every year, during our planning session, we sit down and review the previous year. We look at what went well, what needs improvement, and how successful we were at completing last years' initiatives. As you know, a group met in late June, reviewed our plan from last year, and worked on a new plan for this year. I am excited to share with you the results of our plan, which our fabulous secretary Laura Butkievich has put together for us.

Just like last year, three strategic priorities were selected for MSHP. Patient Care is the first, Membership second, and Organization and Performance was next. I'd like to break each of these down a little bit for you. For the Patient Care priority, the goal is to advance patient centered care in the state of Missouri. Objectives the team identified to achieve this goal includes: Legislative Performance, Professional Development and Communication.

For the next priority of Membership, the goal is to grow a diverse and engaged membership. What objectives did the team identify? Growth of membership, increase diversity of membership (technicians, rural, practice sites), and engaging members were the recipients of the top votes.

With Organization and Performance, the goal of establishing MSHP as a high performance organization was selected. Methods to achieve this goal include: evaluating board performance, ensuring financial performance, developing and strengthening external collaborations and relationships and ensuring internal operational performance.

Many, many thanks go out to the following strategic planning members: Andy Smith, Sarah Boyd, Davina Dell-Steinbeck, Laura Butkievich, Tony Huke, Steve Calloway, Cassie Heffern, Bert McClary, Diana Hoelscher, Bill Yanek, Sara Neiswanger, and Erin Roberts. I so appreciate you taking the time to revisit the garden from last year to help us plan for next year!

2014/2015 MSHP Strategic Plan

On a separate note, my email address will be changing after Sept. 30. I'll be leaving my wonderful friends at CoxHealth, and moving to a new position with the UMKC School of Pharmacy satellite campus in Springfield. As always, feel free to contact me at todimcc54@sbcglobal.net.

Table of Contents:

Hospital Pharmacy Regulatory Update

by Bert McClary, RPh

Senate Bill 808, passed during the recent legislative session, became effective August 28, providing the Board of Pharmacy certain authorities related to hospital pharmacy practice and providing hospital pharmacists relief from certain Board of Pharmacy requirements. Implementation of the law will require an explanation of the benefits and requirements through policy statements and rules.

During the Board of Pharmacy meeting in July the Board members agreed to review the proposed changes for the Department of Health and Senior Services pharmacy services and medication management rule. DHSS and MSHP requested that the Board re-convene the Hospital Pharmacy Working Group that had assisted in developing the legislation, and the Board agreed.

The Board review of the proposed DHSS rule was scheduled to occur during the public session of the Board's August 19 telephone conference, with a telephone meeting of the Working Group prior to that call. However, the DHSS rule discussion was displaced due to emergency priority topics, and the Working Group meeting was also postponed. It is possible that the Board will review the rule during a September conference call, but no date or agenda for a September call has been released by the deadline for this article.

The recently published BOP newsletter includes a discussion of several provisions included in SB 808. The most significant provisions currently for hospital pharmacy are the revisions to the Class B Hospital Pharmacy license, the Drug Distributor license for hospitals, and MTS protocols.

It is important to review the BOP newsletter information carefully, as it describes the procedures for hospitals currently holding Class B Hospital Outpatient Pharmacy licenses and those wishing to obtain a Class B Hospital license. Some of the topics addressed are:

- A current Class B license holder is not required to do anything to convert to the new license.
- A hospital wishing to convert another license to a Class B may do so prior to January 15 without a fee.
- A Class B license is not required if the only services provided are under the jurisdiction of DHSS.
- Hospitals that hold a Class B license may distribute medications to other locations that are owned or operated by the same health system without a Drug Distributor license.
- A Class B pharmacy may dispense medications based on prescriptions or medication orders to clinic patients or other outpatients.
- Prescriptions may be identified with a unique identifier rather than a sequential number.

The newsletter also describes medication therapy services provisions of the law:

- Pharmacists providing MTS are required to obtain a MT certificate
- Hospital pharmacists may provide MTS through a protocol with a medical staff committee
- Medical staff committee protocols may be used only for patients of a hospital or a hospital clinic or facility.

A BOP hospital pharmacy committee had been requested by DHSS, MSHP and others for years, and was authorized in 2012 as the Hospital Pharmacy Working Group. The Working Group was composed of approximately 20 persons representing BOP, DHSS, Department of Mental Health, the Missouri Hospital Association, the Missouri Pharmacists Association, and hospitals of various sizes from across the state. In early 2013 the Working Group met and proposed discussion of a number of topics important to our specialized practice. It first focused on developing the legislation that would essentially set aside the old lawsuit that has been the basis of distrust and misunderstanding for over 25 years, and provides a mechanism for BOP to be directly involved with hospital practice, with the attendant

benefits of such a relationship. The Working Group has not met since the legislative proposal was finalized in 2013. It is important for the Working Group to continue, and some important topics for review include:

- The appointment and function of the new statutory BOP Hospital Pharmacy Advisory Committee (not the same as the Hospital Pharmacy Working Group).
- Currently proposed DHSS rules and potential joint DHSS/BOP rules.
- MTS protocol relationships with physicians, medical staff committees and other licensed practitioners, and clarification of when a MT certificate is required.
- The relationship between hospital-licensed premises and other health system locations.
- A pharmacist for BOP staff with specific hospital expertise to facilitate the relationship between BOP, DHSS and hospitals.
- Technician scope of practice.
- Medication administration by pharmacists.

The MSHP Public Policy Committee has discussed and/or been involved with all of the issues addressed in this article, and will continue to monitor implementation of SB 808. The Committee also recently reviewed the MSHP Strategic Plan for the coming year. The Plan continues the three Strategic Priorities from last year: Patient Care, Membership and Organization and Performance. Action Steps related to regulatory issues that are assigned to the Public Policy Committee include:

- Offer guidance to DHSS to implement regulations
- Offer guidance to Board of Pharmacy to implement regulations
- Reconvene hospital working group
- Establish technician training program (this would support a proposal to BOP and DHSS to allow expanded technician scope of practice)
- Increase communication on legislative matters and practice issues to Missouri pharmacists

Another Action Step not specifically assigned to Public Policy, but that our committee is actively involved with, is Establish and/or continue collaborations with other pharmacy organizations and other non-pharmacy health care organizations. Public Policy Committee members have developed strong relationships especially with the Missouri Pharmacists Association, the Missouri Hospital Association and the Missouri Pharmacy Coalition.

The Public Policy Committee meets monthly by telephone conference at 4:00 PM on the first Thursday of each month.

MSHP R&E Foundation News

by Matt Baker, PharmD, BCPS

The 2015 MSHP Annual Meeting is Just around the Corner

There is no time like the present to begin planning for the 2015 MSHP Annual Meeting to be held March 20-21 in St. Charles. Few local opportunities of this magnitude exist to network with colleagues, showcase your research, and pick up a few CE credits along the way.

Best Practice Award

The Best Practice Award program recognizes innovation and outstanding performance in a pharmacy directed initiative. Recipients will present their project and be honored at the R&E Foundation breakfast during the 2014 Annual Meeting. Additionally, recipients will receive a plaque and honorarium. Full details regarding theme will be made available in the coming months.

Poster Presentations

Each year, MSHP holds a poster session at its annual Spring Meeting. This is a great opportunity to share innovative ideas with others and likewise learn about up and coming trends in Missouri health systems pharmacies. The MSHP Research and Education Foundation sponsors the poster session at the MSHP Spring Meeting and presents cash awards to students and pharmacists for best original posters

Request for Donations
Wondering how the R&E Foundation can support the monetary responsibility that goes along with awards/recognition for the annual meeting? A portion comes from the generosity of members such as you! Contributions to the R&E Foundation are considered charitable contributions and can be deducted from your taxes. Please consider utilizing the online donation form (http://www.centrichq.com/join/mshpre-od/) on the MSHP website to assist the R&E Foundation in continuing to offer these types of recognition.

Publish or Present Something Recently?
The R&E Foundation would like to highlight the contributions that members of MSHP are making to their respective field. Please forward any publication citations or notification of presentations at national meetings to Paul Juang (paul.juang@stlcop.edu) to be included in the Research Corner on the website.

MSHP R&E Foundation Research Corner

by Andrew Smith, PharmD, BCPS (AQ Cardiology)

MSHP Research and Education Foundation Best Practice Spotlight
MSHP R&E Foundation is happy to highlight Sayo Sudo, PharmD, MBA, BCPS and her medication refill service at Truman Medical Center (TMC) in this edition of the best practice spotlight. It was identified that there was a high level of patient dissatisfaction with the medication refill process in the TMC outpatient clinics. Patients typically had to wait 7-10 days for a prescription refill request to be processed. Dr. Sudo and her colleagues worked to establish a pharmacist driven protocol to authorize refills as well as ordering required labs and scheduling clinic visits if needed. This high level pharmacy practice has been well received by both patients and providers. Below Dr. Sudo has responded to questions detailing her experience establishing this service including successes and challenges. We hope this info will provide a spark in our institution to continue advancing the practice of pharmacy in Missouri. Dr. Sudo has graciously offered to respond directly to readers that would like additional information; you may contact her (sayo.sudo@tmcmed.org).

Please describe the program you started at your institution?
The Pharmacy Medication Refill service is a new program implemented at Truman Medical Centers (TMC) in July 2013 to improve outpatient medication refill process. This program enabled pharmacists to authorize refills on behalf of our prescribers by following the protocol implemented by TMC Pharmacy and Therapeutics committee. The program's goal is improve quality of care and patient satisfaction by ensuring timely access to patient's medications for chronic disease state.

How do you (pharmacists) in your program provide care to patients and ensure safe and effective medication therapy?
Pharmacists are responsible to authorize requested refills by following Pharmacy Medication Refill Protocol, which specifies criteria for how each medication class can be refilled including monitoring lab requirements, adherence assessment and adverse effect monitoring. Pharmacists review patient's medical records, labs and medication list for each mediation refill. This enabled additional pharmacist review of patient's mediation list in between ambulatory clinic visits which promotes medication safety. Additionally, pharmacists recommend changes to the provider in cases when issues such as drug interactions, dose outside of recommended dose, and renal adjustments are discovered during the pharmacist review. This program also encourages effective medication therapy by ensuring timely access to refills for

patient's chronic disease states and avoiding one of possible reason for non-adherence.

What services have you determined to be essential to support your programs?
One of the most important functions that support this program is the comprehensive electronic medical records at TMC. The protocol requires pharmacists to review each patient's chart extensively in order to determine if a refill would be appropriate for each medication. Electronic medical records enables pharmacists to review clinic notes, labs, medication list and any other pertinent information through any computer at TMC.

How did you gain support of hospital administrators, physicians, and nursing to implement your program?
This program originated from the outside consultant report that reviewed the future outlook for the TMC. These report identified ambulatory care clinics are one of the possible growth area for TMC. However, one of the issues raised by this report was that patients were dissatisfied with the method in which prescriptions are refilled. The report stated that the appropriate prescription refill will have "a significant positive impact on patient throughput, patient satisfaction and most importantly quality of care".

When an idea came from the pharmacy director regarding a new process for refill authorization, I decided to take this as part of my residency project at TMC. I created Pharmacy Medication Refill Protocol during my residency, and the program along with the protocol was approved by the P&T committee and Medical Executive committee. It was helpful that there were already high interest in the refill process from hospital administrators, physicians and nursing staff before the program was presented for approval. This was due the outside consultant report and as it pointed out, the turnaround time for a refill authorization process prior to the program implementation was around 7-10 business days, with about 5000 back log of faxes.

What are key barriers that needed to be overcame to start your program?
Key barrier that needed to be addressed were provider support of the program. Support from each sub-specialty was crucial to get the protocol approved by P&T committee and Med Exec committee. Many sub specialties were very supportive, but I worked very closely with each sub specialties to make sure they were comfortable with the protocol for pharmacists to refill medications. Of note, there was one sub-specialty clinic that opted out from the protocol in the beginning. However, this subspecialty area was added back to the protocol few months after the program was implemented with the clinic approval.

Another barrier that I have identified is patient's ability to pay for clinic visits. In order to provide effective and safe care, regular clinic checkup is a crucial part of the care. However, many patients are barred from coming back to the regular clinic appointment due to lack of payer source or lack of fund for the co-pay. In these cases, refills cannot be authorized if patients are not seen at least once a year according to the TMC policy.

What are some key considerations to gain employee acceptance and buy-in for your program?
One of the key elements in gaining employee acceptance has been increasing visibility of the program. A new program doesn't always get the most attention from your peers, and I found it much easier to work with providers and staff once I was able to introduce myself face-to-face to the clinic staff and explained the program content.

I also believe another element that promoted buy-in for the programs were reducing workloads for key stakeholders. Prior to the launch of this program, refill faxes were process by the TMC Call Center staff and were distributed through electronic medical record messaging to each clinic. However as discussed previously, this process was a large burden for the Call Center. Additionally, Call Center staff did not screen faxed requests, so clinics received many

unnecessary refill requests. This program absorbed this workload from the Call Center and nursing staff at the clinic, and the program was supported with overwhelming positivity.

What benefits have you been able to show with your program?
The turnaround time improved from 7-10 days to now 1-2 days. Currently, pharmacists' recommendations are accepted at the rate of 95%. Pharmacists communicates about 400-500 messages each month with prescribers regarding any recommendation or scripts that cannot be authorized by pharmacists. Pharmacists authorize approximately 400 to 500 refills a month in addition to approximately 500-600 communication back to the community pharmacies on any scripts that require clarification. Satisfaction scores from patients and community pharmacies are currently being collected every 6 months in order to show impact of this program over time.

What are lessons learned while implementing your program that you would like to share with other pharmacists?

When new programs are implemented, it is important to be flexible and listen to what are the needs of the hospital and staff. Although it has been an incremental change, we had some changes such as how the notes are written to accommodate better communication with the staff through electronic medical records.

When implementing this program, we learned that any scheduled substances are never included in the protocol from other existing programs. Another issue that should be included in the protocol is the limit for how long a refill can be extended to. For example in our protocol, no refill can be authorized if a patient has not been seen at TMC for more than a year.

Lastly, if you have an innovative practice you feel others in the state would benefit from reading about please contact me Andrew Smith, PharmD, BCPS Chair of the R&E Foundation (smithandr@umkc.edu) or Paul Juang, PharmD executive director of the R&E foundation (paul.juang@stlcop.edu).

Member Spotlights

Congratulations to the following members whose work and experiences were recently published:

More Pharmacists in ER Mean Better Patient Care

ASHP InterSections magazine. Aug 28, 2014.

Megan Musselman

Supporting Research Efforts of Residents through annual Resident Research Day. Am J Health-Syst Pharm. 2014; 71(17): 1434-36.

Kim Day, PharmD
Diana Hoelscher, PharmD, BCPS, BCOP
Tony Huke, PharmD, BCPS
Andrew Smith, PharmD, BCPS (AQ-Cardiology)

Effects of a Hospitalwide Pharmacy Practice Model Change on Readmission and Return to Emergency Department Rates. Am J Health-Syst Pharm. 2014; 71(17): 1480-4.

Sammuel Anderegg, PharmD, MS, BCPS
Samaneh Wilkinson, PharmD, MS
Rick Couldry, BSPharm, MS, FASHP
Dennis Grauer, MS, PhD
Eric Howser

Pharmacy School Update: STLCOP

by St. Louis College of Pharmacy Dean's Office

As the new academic year begins, St. Louis College of Pharmacy is starting a new chapter in its 150-year history with many new and exciting initiatives underway.

On August 1, the College welcomed Dr. Bruce Canaday to campus to serve as the College's 15th Dean of Pharmacy. Currently a fellow of the American Society of Health-System Pharmacists (ASHP), Canaday served on the ASHP board of directors from 1994-2000, and was elected to serve as ASHP president and chairman of the board in 1998-1999. In 2010, he was appointed by the APhA board to serve a six-year term on the board of directors of the Accreditation Council for Pharmacy Education (ACPE). He was recently elected to serve as vice-president of the board.

On August 18, we welcomed 198 incoming freshman students to campus. St. Louis College of Pharmacy students entering the pre-professional program in fall 2014 will be the first to enroll in the College's new seven-year curriculum. After four years, they will receive a bachelor's degree and at the conclusion of three more years, a Doctor of Pharmacy degree. The new program builds on our past history of integrating basic sciences, liberal arts, and pharmacy to provide the necessary components of both a humanistic and pharmacy education. Students will have more flexibility to customize their education through elective tracks, joint degrees with local educational institutions (e.g., MBA), and increased community outreach, advocacy, and co-curricular opportunities.

On August 22, we honored more than 250 student pharmacists at our White Coat Ceremony – this marks an important step in their career! They join 668 other students in the professional program.

To support the new curriculum and expanded research agenda, construction on the new, $50 million, 213,000-square-foot academic and research building and library is well underway. The project is on schedule to be completed and ready for occupancy in Summer 2015!

Throughout the fall, the College will be celebrating its 150th Anniversary! We hope that you will join in one or more of the festivities!

Featured Articles:

What kind of preceptors do our students and residents want?

Cassie Heffern, PharmD, BCACP – CoxHealth/St. Louis College of Pharmacy

In preparation of this issue, I sent out a survey to the final year students and PGY1 and PGY2 residents in our state. I received 75 responses with a majority being from students (chart 1). I had the students on rotation with me and the CoxHealth PGY1 residents help me come up with a list of descriptions they prefer in their preceptors. I then had the responders choose their top three preferences. The results are listed in chart 2. The most popular descriptions are approachable, doesn't belittle (for not knowing all answers), and knowledgeable. Provides effective feedback comes as a close fourth place. I don't think any of the responses were a surprise but it's always nice to know what students and residents prefer to help improve our precepting skills.

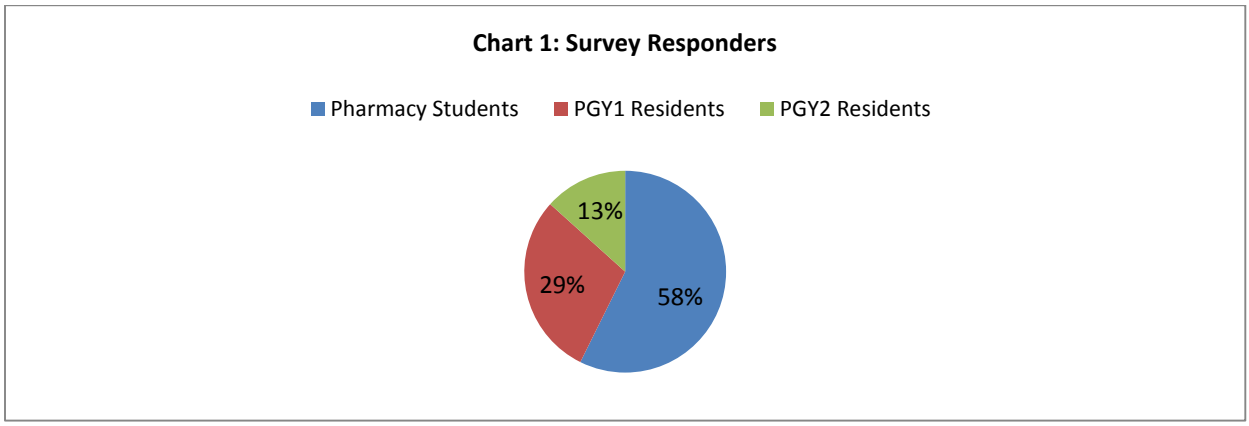
Chart 1: Survey Responders
Pharmacy Students
PGY1 Residents
PGY2 Residents
13%
29%
58%

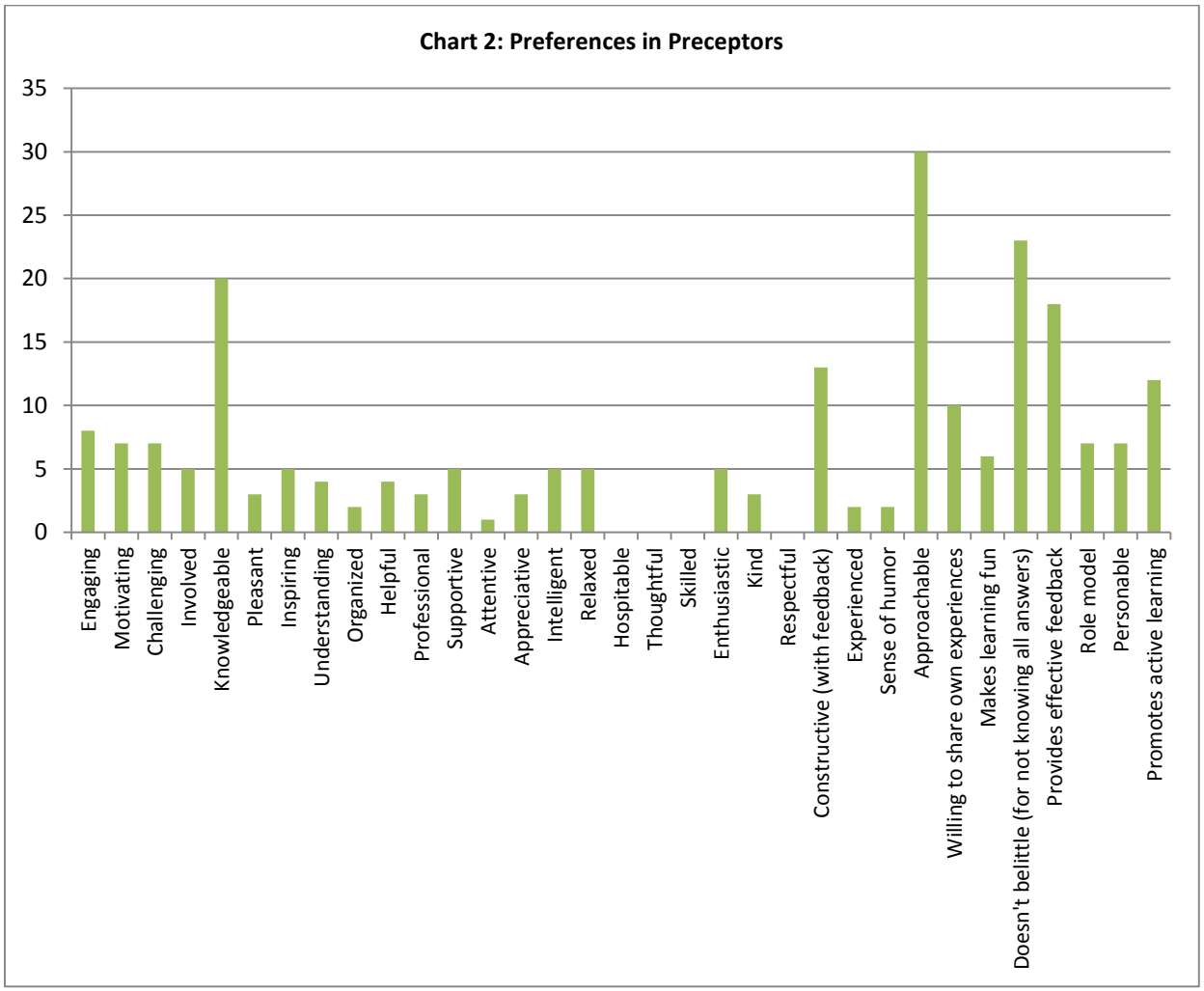
Chart 2: Preferences in Preceptors
35
30
25
20
15
10
5
0
Engaging
Motivating
Challenging
Involved
Knowledgeable
Pleasant
Inspiring
Understanding
Organized
Helpful
Professional
Supportive
Attentive
Appreciative
Intelligent
Relaxed
Hospitable
Thoughtful
Skilled
Enthusiastic
Kind
Respectful
Constructive (with feedback)
Experienced
Sense of humor
Approachable
Willing to share own experiences
Makes learning fun
Doesn't belittle (for not knowing all answers)
Provides effective feedback
Role model
Personable
Promotes active learning

Management Updates: Carbapenem Resistant *Enterobacteriaceae*

Alannah Yoder, PharmD Candidate – UMKC School of Pharmacy
Eric Wombwell, PharmD, BCPS – UMKC School of Pharmacy

Bacterial formation of extended spectrum beta-lactamases with carbapenem-hydrolyzing activity (carbapenemase) has led to the emergence of carbapenem resistance *Enterobacteriaceae* (CRE).[1] According to The Centers for Disease Control and Prevention, 3.9% of short-stay hospitals and 17.8% of long-term acute-care hospitals reported at least one CRE health-care-associated infection in 2012.[2] Mortality rates associated with CRE are thought to be as high as 30-70%, depending on the severity of the infection. [3] Unfortunately, in addition to exhibiting resistance against carbapenems, CRE may also confer resistance to other beta-lactam antibiotics, fluoroquinolones, aminoglycosides, macrolides, or rifampin.[4,5] The increasing incidence of CRE in the last decade has resulted in negative clinical outcomes for patients and difficult challenges relative to treatment determination for practitioners. In this article, we will review the continually progressing updates in regards to the management of CRE.

Two carbapenemase strains are primarily responsible for the increase in CRE in United States within the last decade: *Klebsiella pneumoniae* carbapenemase (KPC) and metallo-β-lactamase.[6] These CRE enzymes cause concern due to associations with significant increased mortality, evidence of rapid spread in health-care facilities, and possession of additional mechanisms to confer resistance to non-carbapenem antibiotics.[2] Carbapenemase genes may be easily transferred between bacteria, as carbapenemase-encoding genes exist on bacterial plasmids and mobile genetic components. Furthermore, the genetic components also allow the bacteria to attain genes that may confer resistance to other antibiotics.[3] The ease of bacterial acquisition of carbapenemases plays a vital role in the emergence of CRE.

Unfortunately, optimal treatment for CRE continues to remain uncertain. Limited evidence is currently available on how to treat different patient populations, different sites of infections, and different pathogens. Large, randomized controlled clinical trials are needed to address specific populations in order to determine best treatment options. Current literature supports the following treatment regimens and outcomes:

Urinary Tract Infections (UTI): Fosfomycin monotherapy or Gentamicin monotherapy

Monotherapy	Study Data / Considerations
Fosfomycin	- Achieves high urine concentrations; therefore, usually effective treatment option for uncomplicated UTI.[5] - In vitro testing indicates high susceptibility rates against KPC (25/29 [86%]).[7] - High clinical response still seen.[8]
Gentamicin	- In small retrospective study of patients with UTI due to KPC, 7/7 patients who were treated with gentamicin had microbiologic and clinical response.[7]

Severe Infections (including bacteremia): Combination therapy

Current studies suggest that combination therapy results in lower mortality than monotherapy in critically ill patients with bacteremia due to carbapenemase-producing *Klebsiella* species.[8] Data also indicates that treatment failure is more common with monotherapy for infections due to KPC.[8] While data specifically reviewing combination regimens is limited, various combination therapies have been described in case reports; comparative data is limited to animal studies. The following combinations have been compared in murine models:

Combination Therapy	Study Data / Considerations
Tigecycline + Rifampin	- In murine thigh infection studies, this combination showed superior synergistic effect compared to tigecycline in combination with colistin or meropenem in 88.9% and 100% of strains, respectively.[9]
Tigecycline + Gentamicin	- In murine thigh infection studies, this combination showed superior synergistic effect compared to tigecycline in combination with colistin or meropenem in 88.9% of strains.[9]
Tigecycline + Colistin	- Less emergence of colistin resistance when compared to colistin monotherapy [10] - Studies show increase survival of patient when carbapenem added as third agent, regardless of MIC. [11,12,13] Consider addition if critically ill or deep-seated infections.[14] - In murine thigh infection studies, colistin did not enhance and may even antagonize activity of tigecycline. Antagonism was observed in 33.3-44.4% of stains when colistin was added to tigecycline.[9]

Because reliable antimicrobial therapy is limited, prevention of CRE is key. Core prevention measures indicated by the CDC include hand hygiene, contact precautions, healthcare personnel education, appropriate use of devices, private rooms as applicable, rapid notification from laboratory, antimicrobial stewardship, and CRE screenings.[6] Pharmacists can assist in the fight against resistance development through antimicrobial stewardship activities ensuring appropriate antimicrobial use, confirming the narrowest antimicrobial spectrum is used for the appropriate indication and appropriate duration.

References

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If you have any questions or comments about MSHP Newsletter, please don't hesitate to contact the Newsletter Chair, Cassie Heffern, PharmD, BCACP (cassie.heffern@coxhealth.com) or any other newsletter committee member.

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