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Antibiogram Could Improve Antibiotic Effectiveness and Help Address Antibiotic Resistance

Oregon State University College of Pharmacy

Use of “antibiograms” in skilled nursing facilities could improve antibiotic effectiveness and help address problems with antibiotic resistance that are becoming a national crisis, researchers conclude in a new study.

Antibiograms are tools that aid health care practitioners in prescribing antibiotics in local populations, such as a hospital, nursing home or the community. They are based on information from microbiology laboratory tests and provide information on how likely a certain antibiotic is to effectively treat a particular infection.

The recent research, published by researchers from Oregon State University in Infection Control and Hospital Epidemiology, pointed out that 85 percent of antibiotic prescriptions in the skilled nursing facility residents who were studied were made “empirically,” or without culture data to help determine what drug, if any, would be effective.

Of those prescriptions, 65 percent were found to be inappropriate, in that they were unlikely to effectively treat the target infection.

By contrast, use of antibiograms in one facility improved appropriate prescribing by 40 percent, although due to small sample sizes the improvement was not statistically significant.

“When we’re only prescribing an appropriate antibiotic 35 percent of the time, that’s clearly a problem,” said Jon

Furuno, lead author on the study and an associate professor in the Oregon State University/Oregon Health & Science University College of Pharmacy.

“Wider use of antibiograms won’t solve this problem, but in combination with other approaches, such as better dose and therapy monitoring, and limiting use of certain drugs, we should be able to be more effective,” Furuno said.

“And it’s essential we do more to address the issues of antibiotic resistance,” he said. “We’re not keeping up with this problem. Pretty soon, there won’t be anything left in the medical cabinet that works for certain infections.”

In September, President Obama called antibiotic resistant infections “a serious threat to public health and the economy,” and outlined a new national initiative to address the issue. The Centers for Disease Control and Prevention has concluded that the problem is associated with an additional 23,000 deaths and 2 million illnesses each year in the U.S., as well as up to \$55 billion in direct health care costs and lost productivity.

Antibiograms may literally be pocket-sized documents that outline which antibiotics in a local setting are most likely to be effective. They are often used in hospitals but less so in other health care settings, researchers say. There are opportunities to increase their

use in nursing homes but also in large medical clinics and other local health care facilities for outpatient treatment. The recent study was based on analysis of 839 resident and patient records from skilled nursing and acute care facilities.

“Antibiograms help support appropriate and prudent antibiotic use,” said Jessina McGregor, also an associate professor in the OSU/OHSU College of Pharmacy, and lead author on another recent publication on evaluating antimicrobial programs.

“Improved antimicrobial prescriptions can help save lives, but they also benefit more than just an individual patient,” McGregor said. “The judicious use of antibiotics helps everyone in a community by slowing the spread of drug-resistant genes. It’s an issue that each person should be aware of and consider.”

Multi-drug resistant organisms, such as methicillin-resistant *Staphylococcus aureus*, or MRSA, and other bacterial attacks that are being called “superinfections” have become a major issue.

Improved antibiotic treatment using a range of tactics, researchers say, could ultimately reduce morbidity, save money and lives, and improve patients’ quality of life.

The research led by Furuno was supported by the U.S. Department of Health and Human Services. Collaborators include researchers from the University of Maryland School of Medicine, Denver Health and Hospital Authority, University of Colorado Health Sciences Center, and Agency for Healthcare Research and Quality in Maryland.

Contents

Difficult Conversation: Tips for Starting a Hospice Conversation.....	2
New Year, New Outlook, New Habits: Welcome 2015!.....	2
Breaking News: National Pressure Ulcer Advisory Panel (NPUAP):...	3
New “Hand Check” White Paper Hot off the Press!.....	3
Promoted to Position of Director of Pharmacy.....	4

Difficult Conversation: Tips for Starting a Hospice Conversation

Irene Sours, RN, WCC, ICP, Inc. Nurse Consultant

For many health care providers working in assisted living facilities or nursing homes, beginning a conversation about hospice care with a resident or family member can be extremely difficult. However, as a trusted source of information, you can play an important role in ensuring residents are informed and receive the most appropriate care available to them.

Hospice care focuses on the chronically and terminally ill or seriously ill patient's pain and symptoms, while attending to their emotional and spiritual needs.

When should I talk about hospice care? There are a number of circumstances that may lead you to consider talking about hospice care with the resident, family member and/or the resident primary physician:

- Following diagnosis of terminal illness
- After repeated hospitalizations or trips to the emergency room
- When resident express interest or you see consistent decline
- When resident and/or family is requesting no further treatment or doctor visits

It is important to educate STNA's, housekeeping, volunteers who may have the most contact with residents

How do I start the conversation?

- Choose a private, relaxed time when you can have a one-on-one discussion with the resident or their family member without distractions. Be sure that the resident or family member is comfortable.
- Looking for an opening in the conversation will make the discussion easier; such as when the resident refers to his or her condition, or perhaps talks about "giving up" on treatment.
- Most importantly, remember to ask and then listen. Ask open ended questions (those without a "yes" or "no") answers to get the conversation going. Let the resident respond; your silence is OK.
- Don't wait to start talking about the disease process of the diagnoses such as congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), kidney failure, Alzheimer's, Parkinson's, Amyotrophic Lateral Sclerosis (ALS), etc. Use terminology that is simple and easy to understand. Education is so important for an informed medical decision. Discuss the disease progression utilizing resident test results (x-rays, labs, etc.)
- Discuss the benefits of the hospice team combined with your facility team and the resident's doctors to provide an extra layer of support. Focusing on providing the resident with relief from symptoms, pain, and stress of a serious illness-whatever the diagnosis. The goal is to improve quality of life for both the resident and the family.
- Educate the resident and family that choosing hospice care does not indicate that all treatment is withdrawn. Chronic illnesses are treated, as well as acute issues, such as infections, fractures, etc.

Just remember talking about hospice care does not mean you can't do anything else for the resident. It doesn't mean there is no hope. It can actually be comforting to know there is another source to help and support.

Reference: National Hospice and Palliative Organization. <http://www.nhpo.org/>

New Year, New Outlook, New Habits: Welcome 2015!

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With 2014 coming to an end, and the holiday season in full force, its time to make 2015 a priority, and why not kick off the new year with a new outlook, instilling new habits. With organizations promoting healthy lifestyles including; ChooseMyPlate.gov and Healthy People 2020, kicking off a healthy lifestyle is easier than it has ever been. After all, who doesn't like easy, and having evidence-based information available makes it a win-win situation for all whether you are a healthcare worker or consumer.

Let's take a closer look at ChooseMyPlate.gov. On June 2, 2011, First Lady Michelle Obama and the USDA Secretary Tom Vilsack released the federal government's new food icon, MyPlate, which serves as a reminder to help consumers make healthier food choice. It's intent is to encourage use of the website to build healthy plates at meal times, providing educational materials to promote this habit. ChooseMyPlate.gov provides easy, useful information to individuals, healthcare professionals, nutrition educations and the food industry. The website is easy to navigate, offering a wide array of educational information for all. One of my favorite handouts is titled: Choose My Plate: 10 tips to a great plate. This colorful handout is found under the Healthy Eating Tips tab, found to the right of the top toolbar. The link to this document is:

<http://www.choosemyplate.gov/food-groups/downloads/TenTips/DGTipsheet1ChooseMyPlate.pdf>

Highlights include:

1. Balance Calories
2. Enjoy your food, but eat less (I throw in something catchy in addition... "Savor Flavor!")
3. Avoid oversized portions
4. Foods to eat more often
5. Make half your plate fruits and vegetables
6. Switch to fat free or low fat (1%) milk
7. Make half your grains whole grains
8. Foods to eat less often
9. Compare sodium in foods
10. Drink water instead of sugary drinks

Under each heading, there are several tips which are extremely educational and aid in making healthy decisions. Thumbs up to ChooseMyPlate.gov!

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For the past 3 decades, Healthy People has established benchmarks and monitored progress over time in order to:

- Encourage collaborations across communities and sectors.
- Empower individuals toward making informed health decisions.
- Measure the impact of prevention activities.

Breaking News: National Pressure Ulcer Advisory Panel (NPUAP): New “Hand Check” White Paper Hot off the Press!

Erin McClure, BSN, RN, WCC, Nurse Consultant, ICP, Inc., emcclure@icppharm.com

On November 21, 2014, the NPUAP sent out in email introducing the newest addition to their white paper library which is titled, “Hand checks: Are They an Effective Method to Monitor Support Surfaces for Bottoming Out?” To view this white paper, along with other publications, please visit the NPUAP website at: <http://www.npuap.org/resources/white-papers/>

The overall objective of this article and published white paper is to determine whether the long practiced “hand check”, which determines adequate pressure redistribution, is a valid bedside testing tool. Below are reasons listed why hand checks should not be performed, as stated by the NPUAP consensus panel:

- Hand checks create the potential for infection risks for both the patient and the caregiver.
- Hand checks could create shearing injury of fragile or moisture compromised skin.
- Safe hand checks for bariatric individuals require multiple

staff members, and the resultant repositioning alters the immersion making the hand check invalid.

- Hand check characteristics vary with the elevation of the head of the bed and patient positioning.
- Hand checks are subjective and not reliable.
- Certain therapeutic support surfaces are designed so that hand checks for bottoming out cannot be properly performed
- Visual observation combined with surface compression may be useful to provide indicators of surface immersion failure.

The conclusion in the NPUAP White paper states:

“Hand checks” have been historically used to assess bottoming out of mattress overlays at the bedside. No evidenced-based research exists to support the practice of using hand checks. With advances in therapeutic support surfaces and mattress replacement systems, hand checks are not an effective or

safe assessment technique to monitor these newer technologies. The use of hand checks was removed from the International Pressure Ulcers Guidelines in 2014. Additional research is needed to provide a bedside method to determine when a support surface has bottomed out. “

In conclusion, please be aware of this new practice information. Sign up for updates from the NPUAP, and other reliable resources which set forth the standards of practice for pressure ulcer management. Be vigilant and use strong observation skills to determine if a support surface is adequately redistributing pressure with prevention being the key to success.

Works Cited

Hand checks: Are They an Effective Method to Monitor Support Surfaces for Bottoming Out? A White Paper from the National Pressure Ulcer Advisory Panel. (October , 2014). Retrieved from The National Pressure Advisory Panel: <http://www.npuap.org/resources/white-papers/>

In December 2010, Healthy People 2020 launched its 10 year plan for national health improvement, utilizing input from a diverse group of organizations and individuals.

The Ohio Department of Health monitors trends in the Healthy People objectives in its many prevention programs and collaborates with local health departments and other organizations to measure the prevention effort outcomes in Ohio.

Let's look at an objective titled: Nutrition and Weight Status. The goal of this objective as outlined by Healthy People 2020 is to promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights. It also goes into an overview exploring why nutrition and weight status are important including the following areas in which we can reduce the risk; Heart Disease, Overweight and Obesity, Type 2 Diabetes, High Blood Pressure, Dyslipidemia, etc... It goes on to diets, looking at the social and physical demands, and gives several links to further learn helpful tips. One of the links of great value is the Centers for Disease Control and Prevention Division of Nutrition, Physical Activity, and Obesity, found at: <http://www.cdc.gov/nccdphp/dnpao/index.html>. This website is very user friendly, colorful, and has a lot of valuable information, and you can find yourself absorbed in a wealth of resources. One of the topics is Nutrition, so if you click on that link, you will be directed to a list of topics, and one of great value to assist with your new outlook for 2015, is titled, “Nutrition for Everyone”. On this page it explores nutrition basics, including a list of the basic food groups, which includes; vegetables, fruits, grains, dairy, and proteins. It gives examples, and defines each. It then goes into recommended daily intake and ends with food plans. It is a great resource for all, and I encourage you to explore this area, along with all the other great information this site has to offer.

ChooseMyPlate.gov and Healthy People 2020 are two great starting points to help ring in 2015 healthy and happy. Take advantage of the free resources around you to focus on being healthy, and creating new habits to reduce the risk of multiple co-morbid conditions, including diabetes, and heart disease. Bring on 2015 and here's to a happy, healthy, you. Happy New Year.

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During the Holiday
Season more than
ever, our thoughts turn
gratefully to those who
have made our progress
possible.

And in this spirit we say,
simply but sincerely,

Thank You and

Best Wishes

for the Holiday

Season and a

Happy New Year.

Promoted to Position of Director of Pharmacy

ICP is pleased to announce the promotion of Chad Orr, RPh to Director of Pharmacy for ICP's Tiffin division, where he will manage the daily pharmacy operations. Chad graduated from Ohio Northern University with a Bachelor of Science in Pharmacy degree in 2001. Chad began his career at ICP in 2004 and was promoted to Coordinator of Pharmacy Operations in 2010. Chad serves on ICP's Quality Improvement Committee, and he has managed the implementation of several key technology projects in recent years.

Chad's excellent record in customer relations and problem solving abilities have been influential in ICP's growth and are integral to our success in the future. Please join us in welcoming Chad to his new role as Director of Pharmacy.

