Otto Dettmer

Antibiotic Stewardship Takes A Village

JENNIFER LUBELL

Less than a year from now, long term and post-acute care centers have an important deadline to meet.

Federal requirements in November 2017 call on long term care centers to have a program in place. Will providers be ready?

As part of the federal government's aggressive agenda to combat antibiotic resistance, skilled nursing and nursing centers on Nov. 28, 2017, must incorporate an antibiotic stewardship component into their infection control programs. This was one of a series of provisions the Centers for Medicare and Medicaid Services (CMS) issued last October to revise its conditions of participation in Medicare and Medicaid for long term care facilities.

In another important part of this rulemaking, CMS is calling on facilities to designate an infection preventionist by Nov. 28, 2019. This individual will be responsible for a center's infection prevention and control program.

CMS issued the changes to address recent health care safety and service delivery improvements, and to further advance the quality of care and safety in federal health programs. "Since the current requirements were developed, significant innovations in resident care and quality assessment practices have emerged. In addition, the population of [long term care] facilities has changed, and has become more diverse and more clinically complex," the agency explained in its final rule.

To comply with the antibiotic stewardship provision, a facility's infection prevention and control program should incorporate strategies to track antibiotic use and record incidents and corrective actions it takes on the use of these drugs.

MAINE FACILITIES SAY THEY'RE READY

James McQuaid, RPH, MBA FASCP, chief pharmacy officer of Maine Veterans' Homes-MVH Pharmacies, says his team of centers "will be more than ready."

Maine Veterans' Homes (MVH) has six centers across the state that include skilled, long term, and assisted living/residential care. Crafting a stewardship program meant collaborating with clinician pharmacists and other specialists who practice across the MVH system.

The pharmacists "provide the first evaluative step: what antibiotic has been prescribed, its appropriateness given diagnosis and laboratory values, and engendering a collegial discussion with our care center medical directors and post-acute prescribers" during a patient's stay in the skilled nursing care center, McQuaid says.

To assist in the design of its stewardship program, MVH contracted with a doctor of pharmacy, who did an early data analysis on the root causes of urinary tract infections (UTIs), a condition that is often misdiagnosed and leads to unnecessary catheter use, subsequent infections, and overuse of antibiotics. The centers eventually broadened this research to include other types of infections.

MVH is also seeking educational initiatives and recommendations with its prescriber cohorts to ensure that the correct antibiotic was used for individual diagnoses.

FEDERAL GOALS ADVANCE NEW APPROACHES

A clear direction for antibiotic stewardship has emerged, as antibiotic resistance has grown as a global threat and has become a national concern over the past few years, says Holly Harmon, RN, MBA, LNHA, the American Health Care Association's senior director of clinical services.

In the United States alone, the Centers for Disease Control and Prevention (CDC) estimates that nearly 2 million people contract bacteria-resistant infections on an annual basis. About 23,000 die as a result.

Provider in 2015 reported on the Obama administration's multifaceted efforts to address overuse of antibiotics in health care centers and the rise of antibiotic resistance. The White House set goals for 2020 to reduce inappropriate antibiotic use by 50 percent and 20 percent in out- and inpatient centers, respectively, and for all 50 states to develop antibiotic-resistance prevention programs.

CDC issued a checklist for nursing centers on handling antibiotic use and once a year holds its "Get Smart about Antibiotics Week" to promote appropriate use of antibiotics. Harmon says these initiatives, including the stewardship requirement, underscore a new recognition about the overuse of antibiotics and the harms associated with the practice.

Health care institutions as a whole have had to rethink their approaches.

In the interest of responding quickly to an illness or infection, sometimes the ordering physician is too quick to prescribe an antibiotic before seeing diagnostic test results that justify its use, according to Harmon.

Using antibiotics for viral infections, using them for too long a time period, or not having the right dose or duration of the drug are other practices that run the risk of increasing antibiotic resistance, she says.

The health care profession "needed to make a paradigm shift—to recognize that antibiotics don't always bring value," she says. Centers, in the course of their practices and in the infection control programs they have instituted, have identified antibiotic use as a priority, "and now have more sophisticated processes for antibiotic use. They are well prepared for this requirement," Harmon says.

TARGETED THERAPIES REDUCE INFECTIONS

Deb Fournier, MVH's chief operating officer, says that "in the past, literature and best practice have supported initiating therapy empirically—particularly in the frail elderly—depending on the clinical presentation."

Change in medication may be warranted from an initial antibiotic choice as a result of diagnostic tests, including chest X-ray, culture and sensitivity, and other lab work, she says. "This change in therapy affords a more targeted treatment and a more advantageous clinical outcome."

Some centers say they've managed to cut down on infections like UTIs while reducing antibiotic use. James Michael Keegan, MD, an infectious disease specialist who leads the antibiotic stewardship team at Knoxville, Tenn.-based health care management consulting firm, PYA, recalls the successes of one nursing center his team worked with a year ago.

Harmon

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The center, through various stewardship measures, was able to reduce antibiotic use by 60 percent, with the cost savings going straight to the nursing center.

"This was a smaller community, and we were able to show communitywide that we were able to reduce the incidence of resistant bacteria, particularly methicillin-resistant *Staphylococcus aureus*," Keegan says. This infection has been linked to

Case Study: Targeted Therapies Combine With Teamwork

Even in instances where an infection is potentially challenging and life-threatening, thoughtful and judicious use of antibiotics and collaborative partnerships among staff can save a life and lead to better care.

James Gonzalez, MPH, FACHE, LNHA, president and chief executive officer of Broadway House for Continuing Care in Newark, N.J., recalls the time a resident had acquired a fungal infection following an orthopedic surgical procedure.

"What was unique about this case was his infection was not from the surgery, but from his drug addiction. He was shooting heroin in one of the veins in his neck, and that became a very challenging infection."

The location of the infection was particularly dangerous, as it had the potential to impact neurological function and lead to other adverse physiological reactions.

Treating the patient required some intensive monitoring, taking cultures every seven to 10 days, and trying to give the minimal amount of antibiotics.

"We started with a lower intensity, rather than going up to the highest intensity," he says. The consulting pharmacist worked in conjunction with the center's infectious disease specialists and nurses to monitor this particular patient, whose infection resolved within three to four weeks.

This case underscores the fact that stewardship takes a team effort: understanding what the infection is and the impact of the antibiotic that's being used, Gonzalez says, and, finally, continuously monitoring blood cultures.

antibiotic use and, according to CDC estimates, causes 80,000 infections and more than 11,000 deaths annually.

But for other long term care centers, the bandwidth isn't always available to institute controls for judiciously monitoring and administering these medications.

Crafting an antibiotic stewardship program is no simple task. Strong partnerships are just one aspect: Training staff on the science and philosophy behind targeted antibiotic use is another important element.

Sometimes, it takes the assistance of outside experts—or collaborating with other providers—to get centers on the right track with a stewardship program.

CENTERS SLOW TO ADOPT PROGRAMS

Keegan has mostly worked with hospitals to develop antibiotic stewardship programs over the years, although in his dealings with long term care centers, he's noticed that they've been slower to adopt them. Many weren't aware that the 2017 federal requirement was imminent.

Optimizing a stewardship program at these facilities means that everyone has to familiarize themselves and get on board with strategies for keeping patients safe from resistant bacteria and *clostridium difficile* (*C. difficile*), Keegan stresses. "In order to do that there does need to be specific, tailored education provided for all staff, as well as ideally residents and their families, to achieve a total community understanding."

Long term care centers, however, might not have the in-house expertise or resources to support the development of such a program, experts say. According to Keegan, "they run on very tight financial margins and often have staff that wear many hats. They have a lot of patients and regulatory requirements they're responsible for."

Keeping up with everyday business is enough of a challenge, but as far as establishing a stewardship program is concerned, there are just not many people in long term care centers that are trained in infectious disease, infection control, or antibiotic stewardship, he says.

Skilled nursing centers also face pushback from their residents, or at times the family members of those residents who are expecting treatment with an antibiotic, Harmon says.

Tracking the antibiotic-prescribing activities of multiple doctors is another challenge. Harmon, who has worked in a variety of health care settings including long term care, says that in her own experience, it's common to have many physicians covering multiple residents in a nursing center.

"The challenge with that is how to influence and hold accountable and communicate effectively with the multitude of physicians that practice in a home, so their care of residents is consistent with the practice standards," she says.

A CULTURAL SHIFT

Stewardship requires an internal shift in culture. Centers need to rethink how they handle antibiotics and report on processes and outcome measures, Harmon says. This involves "upping the sophistication" of reports, so that centers can acquire the detailed information they need to more effectively monitor and use antibiotics.

"The report will help the center track and trend use over time," she says. It should include information such as the name and type of antibiotic, how the medication compared to lab results received for a specific patient, as well as physician or prescriber patterns.

"Is there a certain physician that's always prescribing an antibiotic for an illness that isn't the justified treatment for that

illness? And is this contributing to antibiotic resistance?" If so, it points to a need for the center to make a practice change, Harmon says.

A shift in prescribing approaches may involve the use of targeted, specific antibiotics, and even then, only when needed, Keegan says. Ideally, it's best not to use any if you don't have to. "In the past, we have used [broad-spectrum] antibiotics for insurance, but what we now understand is what the downside risk is in their effects on protective bacteria in the intestines."

Keegan says he meets with the prescribers and goes over the science and the strategy of antibiotic stewardship. "We've not met a doctor, physician's assistant, or nurse practitioner who doesn't want to do what's best for their patient, so they're very receptive to treating the patients while decreasing risk," he says.

FACILITY LEADERS A KEY FACTOR

Getting leadership on board with the necessary principles and operations of an antibiotic stewardship program is crucial. "There needs to be real collaboration and active relationships with three key leaders of a center: the director of nursing, the medical director, and the consultant pharmacist," Harmon says.

Consultant pharmacists often work for the pharmacy the nursing center contracts with. They're seen as the experts on medication management, who review medication regimens and provide reports to the center on medication use, which can include antibiotics. "A lot of centers that do have effective stewardship programs or are working toward them are really enhancing the engagement of the pharmacist," Harmon says.

The center's medical director plays a key role in educating staff on the basics of antibiotic use.

This individual needs to emphasize that the vast majority of infections are viral infections, and antibiotics are just not appropriate in these instances. Prescribing them adds risk and reduces the effectiveness of the antibiotics patients may need in the future, Harmon says.

Keegan

'Once it's a requirement, people have to decide how to be effectively compliant with the letter of the law.'

SUCCESS DOESN'T COME OVERNIGHT

At Holly Heights Care Center, a nursing care center in Denver, training for antibiotic stewardship involved a collaborative

effort among multiple staff: doctors, nurses, certified nurse assistants, therapy staff, families, and residents.

Janet Snipes, Holly Heights administrator, is a champion of infection prevention and control improvements, and her team's work in antibiotic stewardship has earned national recognition. But it took a while to get there.

"For the first six months of our program, we trained and re-trained on a monthly basis. And just when we thought we had all parties on board, we would identify a break in our system that required re-training," Snipes recalls.

Although it was more work than initially anticipated, at this point, "all of our partners understand the culture and are our champions when explaining it to new residents, families, and physicians," says Snipes, who expects to expand upon and improve the program. She is confident that her team is ready to meet the antibiotic stewardship requirement this coming November.

EMPLOYING A 'SECOND APPROVAL' PROCESS

Keegan says he plans to work with additional long term care centers in the future to get them up to speed. "Once it's a requirement, people have to decide how to be effectively compliant with the letter of the law," he says. While it's true that long term care centers haven't been as aware of the new requirement as they could have been, it doesn't mean they haven't been working on infection control measures, he says.

The actual requirements tie antibiotic stewardship in to full infection control programs. "It's largely to monitor use of antibiotics, and to make sure that the appropriate antibiotics are being used when necessary, and to decrease use when they're not necessary." Keegan wants to help centers achieve these goals by instituting a monitoring program and setting

AHCA, CDC Team Up On Antibiotic Stewardship

The American Health Care Association (AHCA) strongly supports antibiotic stewardship as a national priority. Since 2015's White House Forum on Antibiotic Stewardship, the association has been partnering with the Centers for Disease Control and Prevention (CDC) to promote stewardship activities, according to Nimalie Stone, MD, medical epidemiologist for long term care in CDC's Division of Healthcare Quality Promotion.

AHCA has been working very closely with CDC on several fronts to educate its members on antibiotic stewardship.

■ **AHCA Quality Initiative.** Now in its second phase, the initiative calls on AHCA members to pursue quality improvement measures to reduce unintended health care outcomes and unnecessary rehospitalizations. Those goals closely link with antibiotic stewardship efforts, says Holly Harmon, RN, MBA, LNHA, AHCA's senior director of clinical services.

"An inappropriate use of an antibiotic, which then leads to antibiotic resistance in a resident who develops *Clostridium difficile (C. difficile)* infection—that would be considered an unintended health care outcome, and a key priority that needs to be identified," she says. And the unnecessary use of an antibiotic that results in an unintended health outcome can lead to a rehospitalization.

■ **Contribution to CDC Core Elements.** AHCA has also been working closely with CDC to contribute to its Core Elements for antibiotic stewardship in nursing centers, which was released in 2015. "We provided member education on that, and resources to direct members looking to implement a stewardship program or how to evaluate their program," says Harmon.

Recently, CDC awarded the Center for Long term Care Quality and Innovation, a joint partnership between AHCA and Brown University, with a contract to assess the feasibility of implementing the Core Elements within a network of nursing centers.

Stone

■ **Infection preventionist training program.** This will align with another forthcoming requirement that will take effect in a few years for nursing centers. Under this provision, centers must have an infection preventionist with specialized training.

To help its members prepare, AHCA has been working on developing a certificate program to provide specialized training for this role.

"One thing we really want to recognize and appreciate is when the federal agencies take a collaborative relationship approach with stakeholders, there are much better outcomes. We see that happening with CDC's long term care division in particular," Harmon says.

She strongly believes that efforts at the federal level and with individual providers are contributing to progress on stewardship. While some long term care centers have been slower to adopt these programs than other provider groups like hospitals, "trying to move a nation as a whole takes time. I think we need to be patient," she says.

The Core Elements, along with its companion checklist for nursing centers on handling antibiotic use, "has made the concept of antibiotic stewardship more concrete in terms of policies and practice changes," Stone says. However, she believes that the forthcoming stewardship requirements issued by the Centers for Medicare & Medicaid Services "will likely be the driver of adoption of these programs" in long term care facilities.

CDC is seeking to encourage more nursing centers to report antibiotic-resistant bacteria and *C. difficile* infections to the National Healthcare Safety Network. This public health system could help generate estimates of the incidence of these cases in long term care settings, Stone says.

up reserve antibiotics that can be used with a "second approval process."

This means that someone on the antibiotic stewardship team has to approve certain select antibiotics with the potential to cause complications before they can be used by patients. The goal is to get centers to rely on antibiotics less frequently.

"Antibiotics are absorbed into the costs of running a long term care center, so if we can decrease use when appropriate, we can also decrease costs," Keegan says. In some of the centers he's worked with so far, "we've seen some dramatic reductions."

NEW COLLABORATIVE APPROACHES

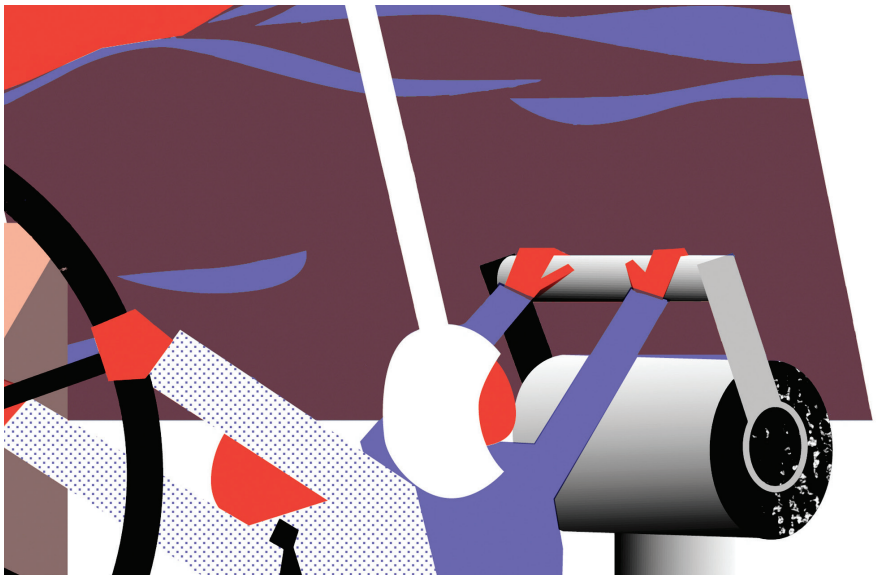
Some long term centers are exploring partnerships with other providers to strengthen their antibiotic stewardship programs.

Keegan has been working with a group of hospitals to collaborate with a group of long term care centers "to bring them into the mix" and create scenarios where everyone benefits

from the reduced use of antibiotics. For example, the Agency for Healthcare Research and Quality (AHRQ) recommends that long term care centers employ the use of a profile of antimicrobial susceptibility drug testing results, or antibiogram, something that may be difficult for them to achieve.

"If they partner with a hospital that does have [an antibiogram,] they can find out what the bacteriology of their community is and help set up an antibiotic use strategy," Keegan says.

MVH has sought the help of local accountable care organizations (ACOs) to help gather important data on antibiotic use. These are the discharging hospitals that direct their patients to MVH centers for skilled care. "As we all know, it is a time for new and improved relationships as we all navigate through uncharted waters," McQuaid says. MVH's goals in partnering with the ACOs are to:



- Develop a mechanism for MVH pharmacists and geriatric physicians to obtain real-time culture and sensitivity data for the purposes of antibiotic de-escalation and appropriate use;
- Develop center and network-based antibiograms to track antibiotic resistance trends and improve empiric therapy selection; and
- Utilize local susceptibility data to guide development of evidence-based treatment algorithms for common disease states such as UTIs, pneumonia, and skin and soft tissue infections.

"Going forward, we strongly believe there is also potential to share susceptibility information between long term care and inpatient centers, so all practitioners in a particular region have a better understanding of what antibiotic options are available for patients that receive care in both settings," McQuaid says.

CENTERS SPEAK TO IMPROVEMENTS

MVH has yet to issue any formal statistics that show its stewardship program has led to a reduction in antibiotic overuse and fewer antibiotic-resistant infections among residents. Yet, anecdotal evidence suggests that practices are changing for the better.

Kelly Burden, staff development coordinator with MVH South Paris, credits her center's frontline nurses for making improvements. "They're much more aware of what efforts are pushing forward, and they're taking all of this to heart and realize they can be a voice for their residents. And they have the confidence to say: 'The chest X-ray was negative; how do you feel about discontinuing the antibiotics?' They're really showing a lot of initiative at this point."

'WE'VE BEEN A LITTLE AHEAD OF THE CURVE'

A nursing staff well-versed on the ins and outs of antibiotics is a critical part of any successful program, says James Gonzalez, MPH, FACHE, LNHA, president and chief executive officer of New Jersey-based Broadway House for Continuing Care. This doesn't just involve the day nurses—it's a 24-hour project in terms of monitoring the care of the individual patient, he says. And in his view, it's a quality initiative that all centers should invest in.

Due to its unique status and the HIV patient population it cares for, Gonzalez says that Broadway House has been on top of antibiotic stewardship for many years.

The infectious disease nature of HIV lends itself to a cautious, sensitive approach toward appropriate use of antibiotics. This philosophy is driven by the fact that Gonzalez' entire staff consists of infectious disease specialists. All of the physicians are board-certified in infectious diseases, and the center also utilizes a nurse consultant who is a certified infection control practitioner.

"They were at the cutting edge seven or eight years ago and saw this trend where infections were not being addressed effectively," he says. "So, we've been a little ahead of the curve of other long term care centers."

The big challenge Broadway House faces with respect to stewardship is the interaction between HIV drugs and antibiotics, Gonzalez says. It means that physicians and advance practice nurses have had to sit down and talk about these interactions and determine what's more important in terms of the patient's care. Is it the elimination of HIV or reversal of the infection? These patients are often on psychotropic drugs as well, "so it's like a triple whammy effect," he says.

Balancing these three classes of drugs becomes more of an art than a science when trying to figure out what works best for the individual condition of each patient.

Broadway House does a monthly review of antibiotics that are prescribed for residents and tracks antibiotics prescribed for infections. According to Gonzalez, this review takes place at a team conference for all of its units. "So, the key aspect is monitoring the usage of each antibiotic."

These controls, along with educating staff on preventing infections, have paid off in dividends for the center, which recently joined forces with other nursing centers in the state to look at reducing the incidence of catheter-associated UTIs (CAUTI). The center ended up receiving two AHRQ awards for reducing the CAUTI rate for six months and 10 months, respectively.

Broadway House achieved these reductions by not overusing catheters. "At the end of the day, if the patients don't need a catheter, you don't insert one," Gonzalez says. "If the patient is coming from an acute care hospital, the first question we ask is whether the patient has a catheter. If there's no medical indicator that the patient needs one, we remove it. By doing so, you're removing the likelihood of infection at that particular site."

Gonzalez

'If the patient is coming from a hosptial, the first questions we ask is whether the patient has a catheter.'

TACKLING THE UTI PROBLEM

Other experts agree that revising past approaches to common infections such as UTIs is a key aspect of stewardship.

As Keegan explains, a staff person in a nursing center may see a resident suffering from some type of mental confusion and tests show that her urine has become more concentrated.

"In the past, this may have been interpreted as a urinary tract infection and treated with antibiotics," Keegan says. "Now it's our understanding that it's more of a matter of dehydration, and you can treat that with fluids."

The premise that confusion doesn't always mean infection calls for a more aggressive use of diagnostic tests to rule out bacterial infections, which helps reduce the risk of unnecessary antibiotics, he says.

"We've worked with smaller communities, long term care centers that incorporated newer rapid diagnostic tests where you can pick up 25 respiratory pathogens within an hour. It's become cost-effective and not too technically sophisticated that a small hospital or center can't do it," Keegan says. "Once you pin that down, the patient might not need an antibiotic at all."

If the patient has a virus, the center can take preventive measures to protect other residents, he adds.

Holly Heights ended up adopting new criteria for managing asymptomatic bacteriuria after noticing the frequency in which it was treating UTIs. Staff received tutorials on properly analyzing urinalysis and culture results, watching for changes in patient behaviors, and discussing the possibility of using non-pharmacological interventions.

Preventive measures included routine implementation of cranberry juice, encouraging fluids of 240 cubic centimeters per shift. "Then if indicated, we would implement cranberry tablets and/or estrogen cream," Snipes says.

The center saw its UTI statistics improve dramatically under these new criteria. In 2014-2015, use of antibiotics for UTIs dropped by nearly 70 percent, and in 2015 alone, the center experienced no *C. difficile* infections. In 2016, four consecutive months went by with no UTIs. In addition, quality measures for UTIs decreased from 4.2 percent to 0 percent over a period of 30 months.

Staff at Holly Heights also gained new perspective on the use of urinalysis tests—that they weren't always necessary and, when obtained, that they were often negative due to the implementation of the new preventive measures. These measures were often the key to good outcomes, Snipes says.

THE ROAD AHEAD

Without a strong program in place, Gonzalez cautions that long term care centers could experience financial consequences down the road. "Because if they don't, that's going to create a health care product that's not what it should be, in terms of quality for the center."

Gonzalez has seen a trend of patients going into a center, not doing well, and then a red flag is raised. "And, boom—they have to transfer them back to the hospital." And that's not good for either the hospital or the nursing center.

The hospital is going to be monitoring transfers very carefully in light of the fact that the federal government is going to penalize both the hospital and the nursing center financially for preventable readmissions, he says.

CMS' Hospital Readmissions Reduction Program currently reduces pay if too many Medicare fee-for-service patients with certain conditions are readmitted to the hospital within 30 days of discharge. SNFs will experience similar penalties under a federal value-based purchasing program that begins in 2018.

At the end of the day, Gonzalez says, it's not the best care for the patients. ■

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