

IDWeek 2017 Highlights

[IDWeek 2017](#), the annual meeting of the Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA), the HIV Medicine Association (HIVMA), and the Pediatric Infectious Diseases Society (PIDS) was held Oct 4 through Oct 8, 2017, in San Diego. With the theme "Advancing Science, Improving Care," IDWeek 2017 brought together more than 6,000 researchers, clinicians, and epidemiologists to present, discuss, and listen to the latest in prevention, diagnosis, treatment, and epidemiology of infectious diseases.



The meeting began with a special plenary session titled "**Evolution and Revolution: Infectious Disease Promise and Challenges in the 21st Century.**" The session consisted of two lectures, "The Challenge of Pandemic Preparedness," by Anthony Fauci, MD, director of the National Institute of Allergy and Infectious Diseases, and "A New Strategy to Stop Future Epidemics: Role of CEPI in New Vaccine Development" by Margaret Hamburg, MD, foreign secretary of the National Academy of Medicine.

Additionally, on the opening day, a special late-breaker session was held that included a presentation of the **ongoing outbreak of hepatitis A among the homeless and intravenous drug users in San Diego**. The speakers included Monique Foster, MD, MPH, of the Division of Viral Hepatitis at the US Centers for Disease Control and Prevention (CDC) and Eric McDonald, MD, MPH, from the Epidemiology and Immunization Services Branch at the San Diego County Health and Human Services Agency.

A significant portion of the scientific program was devoted to antibiotic resistance and **antimicrobial stewardship**. A highly attended session co-organized by the Society of Infectious Diseases Pharmacists was "**Controversies in Antimicrobial Stewardship Programs: Pros and Cons.**" The discussion included the advantages and disadvantages of mandating hospital data for the CDC's Standardized Antimicrobial Administration Ratio; comparing electronic versus sociobehavioral interventions during implementation; and the benefits and drawbacks of expanding stewardship programs into intensive care units (ICU). Other sessions on antimicrobial stewardship included specific settings (eg, ICU, non-acute care) and patient populations (eg, pediatrics, oncology).

New Research and Surveillance Approaches. New Research Methodologies and Results in Antimicrobial Resistance Research were presented by the Antibacterial Resistance Leadership Group and moderated by Henry Chambers III, MD, University of California, San Francisco. Marion Kainer, MD, MPH, Tennessee Department of Health and Jean Patel, PhD, of the CDC moderated a session on new efforts to survey for

antimicrobial resistant infections that included electronic reporting of laboratory data, the Antibiotic Resistance Laboratory Network, and strategies for detecting resistance in an era of culture-independent diagnostics.

Fungal resistance was highlighted with a significant focus on ***Candida auris*** (an emerging multidrug-resistant fungal pathogen). Epidemiologic findings were presented by Tom Chiller, MD, MPH, of the CDC, both in a symposium and late-breaker session. In addition, Emily Spivak, MD, MHS, of the University of Utah covered best practices in **antifungal stewardship**, and Jeniel Nett, MD, PhD, of the University of Wisconsin explored emerging therapeutics for *Candida* infections.

One of the highest-attended sessions was a symposium on "**New Antibiotics: What's in the Pipeline**," which detailed **10 new antibiotics** that have completed or are completing phase 3 studies for the treatment of infections caused by multidrug-resistant gram-positive and gram-negative organisms. These antibiotics are delafloxacin (a fluoroquinolone), fosfomycin (intravenous), cefiderocol (a new injectable siderophore cephalosporin antibiotic), plazomicin (a next-generation aminoglycoside), omadacycline (a new aminomethylcycline antibiotic designed to combat tetracycline resistance), lefamulin (a pleuromutilin antibiotic), iclaprim (a diaminopyrimidine antibiotic that inhibits dihydrofolate reductase), meropenem-vaborbactam (vaborbactam is a potent inhibitor of class A carbapenemases such as *Klebsiella pneumoniae* carbapenemase and other class A (eg, CTX-M, SHV, TEM) and class C (eg, P99, MIR, FOX) beta-lactamases), imipenem-relebactam (relebactam is a potent inhibitor of beta-lactamases, including class A [carbapenemases] and class C), and eravacycline (a synthetic fluorocycline antibiotic).

Review the CIDRAP-ASP selected abstracts below for more specific information from the meeting.

-Marnie L. Peterson, PharmD, PhD

Some IDWeek 2017 Abstract Highlights

from Chris Dall, CIDRAP News reporter

Widespread MDRO carriage found in nursing homes, long-term care

Two point-prevalence studies conducted in southern California suggest that multidrug-resistant organisms (MDROs) are prevalent in the region's nursing homes and long-term care facilities.

In a study conducted as part of the US Centers for Disease Control and Prevention's (CDC's) SHIELD (Shared Healthcare Intervention to Eliminate Life-threatening Dissemination of MDROs) Orange County project, investigators performed point-prevalence screening on adult patients in 38 facilities (17 hospitals, 18 nursing homes, and 3 long-term acute care facilities) from September 2016 through April 2017.

They screened for methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), extended-spectrum beta-lactamase (ESBL), and carbapenem-resistant Enterobacteriaceae (CRE) using nares, skin, and peri-rectal swabs. All hospital patients were under contact precautions.

The overall prevalence of any MDRO among patients was 64% in nursing homes, 80% in long-term acute care facilities, and 64% in hospitals. MRSA infections were most common in nursing homes (42%) and hospitals (37%), while VRE infections were most common in long-term acute-care facilities (55%). Known MDRO patients also harbored another MDRO 49%, 63%, and 34% of the time in nursing homes, long-term acute care facilities, and hospitals, respectively. In the long-term acute care facilities, MDRO point prevalence was 38% higher than the usual admission prevalence.

Oct 6 IDWeek [abstract 1712](#)

In the other study, investigators conducted a baseline point-prevalence study in fall 2016 of MDRO colonization in residents of 28 southern California nursing homes participating in a decolonization trial. A total of 2,797 swabs were obtained from 1,400 residents. Nasal swabs were processed for MRSA, and skin swabs were processed for MRSA, VRE, ESBL, and CRE. In addition, environmental swabs were collected from high-touch objects in resident rooms and common areas.

Overall, 48.6% of residents harbored MDROs, mainly MRSA (37%) and ESBL (16%). Resident MDRO status, however, was known for only 11% of MRSA and 18% of ESBL carriers, while only 4% of VRE and none of the CRE carriers were known to harbor the organisms. Bedbound residents were more likely to be MDRO colonized than ambulatory residents (58.7% vs. 45.7%). Environmental swabbing revealed that 93% of common area objects (nursing stations, hand rails, and drinking fountains) and 74% of resident room objects (bedside tables, bedrails, and door knobs) harbored an MDRO.

The authors of the two studies, which were presented at IDWeek 2017 in San Diego late last week, say the findings indicate that MDROs are as widespread in highly interconnected nursing homes and long-term acute care facilities as they are in hospitals, and that strategies to reduce MDRO colonization and transmission in these settings should be part of regional MDRO prevention efforts.

Oct 6 IDWeek [abstract 1696](#)

CDC's core stewardship elements help cut antibiotic use, *C diff* rates

A study of antimicrobial stewardship programs (ASPs) in acute care hospitals belonging to a large health system found that implementing the CDC's core stewardship elements led to both an improvement in total systemic and targeted antibiotic use and a reduction in *Clostridium difficile* infections.

The study looked at defined daily doses (DDDs) and *C difficile* infections at 89 hospitals belonging to Ascension, the largest nonprofit health system in the United States. Ascension has established a system-wide ASP structure based on four of the CDC's seven core elements: (1) making antimicrobial stewardship a system priority with full leadership support, (2) creating an infrastructure to promote and disseminate best practices, (3) standardizing indications for the use of different antimicrobial classes to promote most narrow-spectrum agents, and (4) building capacity for hospitals to achieve their goals, from local leadership buy-in to infrastructure.

In the 89 hospitals, overall DDDs fell from 3.3 million in fiscal year (FY)15 to 2.9 million in FY16 and 2.8 million in FY17. There was a drop in systemic antimicrobial use (defined as DDDs per 1,000 patient-days) from 877 in FY15 to 809 in FY16 and 804 in FY17. There were also significant reductions in all anti-gram-positive agents except vancomycin and a 45% drop in quinolone use over the 2-year period. In addition, hospital-onset *C difficile* lab ID event standardized infection ratios dropped from 0.89 in FY15 to 0.84 in FY16 and 0.75 in FY17.

The authors of the study say a key driver of success was the synergistic work between Ascension leadership and local ASP teams.

Oct 6 IDWeek [abstract 1544](#)

Study finds reduced HAIs in US hospitals, but more work is needed

A 2015 survey of US hospitals shows that the prevalence of healthcare-associated infections (HAIs) is lower than it was in 2011, driven mainly by reductions in surgical-site infections (SSIs) and urinary tract infections (UTIs).

The study examined data from 143 hospitals that had participated in a 2011 survey by the CDC's Emerging Infections Program (EIP). That survey found that 1 in 25 hospital patients had one or more HAIs. For the new survey, the hospitals selected 1 day from May through September 2015 on which a random patient sample was identified, and

EIP-trained staff reviewed medical records of patients using comparable methods and the same National Healthcare Safety Network HAI definitions used in the 2011 survey. Data from 8,954 patients in the 2011 survey were compared with preliminary data from 8,833 patients in the 2015 survey.

The results showed that the proportion of patients with HAIs was lower in 2015 (284/8833, 3.2%) than in 2011 (362/8954, 4.0%); also, urinary catheter prevalence was lower in 2015 (1589/8833, 18.0%) compared with 2011 (2052/8954, 22.9%), as was central line prevalence (2015: 1539/8833, 17.4%, vs. 2011: 1687/8954, 18.8%). A lower proportion of patients had SSI and/or UTI in 2015 (77/8833, 0.9%) vs. 2011 (136/8954, 1.5%). Of 309 HAIs in 2015, pneumonia and *C difficile* infections (CDIs) were most common; proportions of patients with pneumonia and/or CDI were similar in 2015 (130/8833, 1.5%) and 2011 (133/8954, 1.5%).

The authors say the findings suggest that national efforts to prevent SSI, reduce catheter use, and improve UTI diagnosis are succeeding. But the lack of progress on pneumonia and CDI indicates a need for increased prevention efforts for those infections.

Oct 7 IDWeek [abstract 1768](#)

Foodborne *E coli* may be causing most UTIs

An examination of clinical urine samples and retail poultry products suggests that foodborne transmission may account for a substantial proportion of community-associated UTIs (CA-UTIs).

Escherichia coli causes approximately 80% of CA-UTIs, but the sources of uropathogenic *E coli* (UPEC) are not well-established. From September 2016 to May 2017, investigators with the CDC, the Food and Drug Administration (FDA), and the University of California at Berkeley School of Public Health isolated *E coli* from urine samples of patients with UTIs and from retail meat products (chicken breast, ground turkey, ground beef, and pork chops) collected as part of the National Antimicrobial Resistance Monitoring System (NARMS) FDA retail meat sampling program. Their aim was to compare the *E coli* isolates from patients and meat samples to determine the frequency of shared genotypes.

Of 1,020 urine samples, *E coli* was isolated from 210 (21%). Five pandemic multilocus sequence typing (MLST) genotypes (ST95, ST127, ST69, ST73, and ST131) accounted for 126 isolates (60%). Of 200 meat samples, *E coli* was isolated from 76 (38%)—29 of 40 ground turkey samples (73%), 34 of 80 chicken breast sample (43%), 7 of 40 ground beef samples (18%), and 6 of 40 pork chop samples (15%). ST69 and ST131 were isolated from 3 chicken samples. Other genotypes of *E coli* isolates from meat samples and CA-UTI included ST10 (3), ST38 (2), ST88 (1), ST117 (5), ST906 (1), and ST1844 (1).

Overall, nearly a quarter of the retail poultry products tested—11 (32%) of the 34 chicken breast samples and 4 (14%) of 29 ground turkey samples—contained UPEC strains with the same MLST genotypes found in the CA-UTI patients, compared with 1 (17%) of 6 pork chop samples; no beef samples contained UPEC strains.

The study, however, does not establish a direct link between foodborne *E coli* and CA-UTI. "Additional studies are needed to demonstrate transmission of these genotypes from poultry to patients and to target possible prevention measures," the authors write.

Oct 6 IDWeek [abstract 955](#)

Inappropriate antibiotic use found in 1 of 5 hospitalized children

A study of US children's hospitals found that approximately 1 in 3 hospitalized children is receiving an antibiotic at a given time, and that nearly 20% of these children are receiving inappropriate therapy.

The study was a cross-sectional analysis of antimicrobial prescribing at 30 children's hospitals participating in the Sharing Antimicrobial Reports for Pediatric Stewardship (SHARPS) collaborative. Subjects were children 0 to 17 years old who had received an active antibiotic order on a single day during three consecutive calendar quarters (Q3 2016 through Q1 2017). Each hospital's ASP used a standardized survey to collect data on antibiotic orders and evaluate appropriateness, and data were pooled from the three surveys.

Of the 19,598 children hospitalized on survey days, 6,922 (35%) had at least one active antibiotic order. Sulfamethoxazole and trimethoprim (11%), ceftriaxone (9%), and vancomycin (9%) were the most commonly prescribed antibiotics. Lower respiratory tract infections (18%), medical prophylaxis (15%), and suspected or proven sepsis (12%) were the most common indications for antibiotic therapy.

Of all antibiotic orders, 1,514 (15%) were classified as inappropriate, and 19% of patients with antibiotic orders had at least one inappropriate order. The most common reasons for inappropriate use were bug-drug mismatch (26%), surgical prophylaxis greater than 24 hours (18%), and unnecessary duplicate therapy (12%).

The researchers also found that 50% of all the orders would not have been routinely reviewed under hospital ASPs, a finding that indicates current antimicrobial review strategies at these hospitals do not address a substantial proportion of inappropriate use.

Oct 6 IDWeek [abstract 1592](#)

MRSA recolonization linked to household, pet contamination

A study led by researchers from Johns Hopkins Bloomberg School of Public Health found that patients who had been treated for MRSA skin infections were more likely to be re-colonized if their homes, and their pets, were contaminated with the bug.

In this sub-study, 88 index patients with MRSA skin and other soft-tissue infections who were taking part in a randomized controlled trial on household-wide decolonization strategies provided skin swabs every 2 weeks for 3 months. In addition, the researchers also sampled multiple sites in each patient's home and all household pets at baseline and after 3 months.

A total of 41 households (64%) were found to be MRSA contaminated, and 6 of those homes (9%) had MRSA-positive pets. Pets testing positive for MRSA always came from MRSA-contaminated homes. Fifty-three of the index patients had two consecutive negative swabs, which indicated they were decolonized. But 43% of those patients were later found to be MRSA positive, and 9% were persistently colonized. Patients with home contamination were about 4.3 times more likely to become recolonized than those whose homes cultured negative, and persistent colonization was associated with identification of matching *spa*-types in environmental and human MRSA isolates. Having a MRSA-positive pet increased risk of recolonization slightly.

"Many of these homes were contaminated with a classic community strain," lead author Meghan Frost Davis, DVM, PhD, MPH, said during an oral abstract session, according to IDPractitioner. "We need to think about interventions in the home environment to improve our ability to achieve successful decolonization."

Oct 5 IDWeek [abstract 93](#)

Oct 8 IDPractitioner [story](#)

Studies describe MCR-1 cases, prevalence in US

Three studies presented at IDWeek 2017 in San Diego last week focused on the emerging colistin-resistance gene MCR-1 in the United States.

Two of the abstracts were case reports. In one, investigators from the CDC and the Connecticut Department of Health reported that MCR-1 was isolated from two Connecticut residents—an adult and an unrelated child—who had diarrhea. The gene was identified in an *Escherichia coli* isolate from the child and a *Salmonella* Enteritidis isolate from the adult, and the plasmids containing the gene were identical by DNA sequencing. Both patients reported recent travel to the Dominican Republic.

In the other case report, researchers from the University of Michigan Medical School and the Michigan Department of Health and Human Services described three patients from a single health system who had travel-associated colistin-resistant *E coli*. The presence of the MCR-1 gene in the patients' urine was confirmed by polymerase chain reaction testing. All isolates were carbapenem susceptible. No healthcare-associated epidemiologic links were identified, but all three patients had travelled internationally

within the prior 6 months—one to Kenya and China, one to Lebanon, and one to Mexico.

The authors of the case reports conclude that increased surveillance is needed to understand the scope and risk factors associated with MCR-1–mediated resistance, with a particular focus on the role of international travel.

In the third abstract, investigators from the CDC and state health departments in Virginia, Tennessee, Minnesota, and Connecticut screened 70,000 nontyphoidal *Salmonella* isolates from humans, retail meat, and food animals for the presence of MCR-1. No *Salmonella* isolates with MCR-1 were found in retail meat and food animals, but four human cases of *Salmonella* with MCR-1 were identified: *Salmonella* Corvallis in an 18-year-old man from Tennessee, *Salmonella* Enteritidis in a 55-year-old woman from Connecticut and a 47-year-old man from Minnesota, and *Salmonella* Typhimurium in a 57-year-old woman from Virginia. All patients had traveled internationally in the 10 days prior to illness onset.

The researchers say the absence of MCR-1 in the retail meat and food animals is likely because colistin has not been used in food animal production in the United States.

MCR-1 was first identified in *E coli* samples from pigs, pork products, and humans in China in 2015. Since then, it has been detected in human, animal, food, and environmental samples in more than 30 countries.

Oct 5 IDWeek [abstract 383](#)

Oct 5 IDWeek [abstract 384](#)

Oct 5 IDWeek [abstract 324](#)

ID consults in patients with candidemia can improve outcomes

New research from Washington University in St. Louis indicates infectious disease (ID) consultation can improve outcomes in patients with culture-positive candidemia.

For the study, the researchers assembled a retrospective cohort of 1,873 cases of candidemia in patients hospitalized at the Washington University Medical Center from 2002 through 2015. They collected data on comorbidities, predisposing factors, antifungal therapy, survival, and ID consult. Survival analysis was performed via univariate and multivariate cox analysis.

Overall, 913 (49%) of the candidemic patients received an ID consult, and 960 (51%) did not. Underlying comorbidities were evenly distributed between patients with and without an ID consult, although patients with an ID consult more frequently had a central line (39% vs 26%), were on mechanical ventilation (4% vs 2%), or were receiving extracorporeal membrane oxygenation (2.2% vs 0.5%). The ID consult group had lower 90-day mortality compared to patients without an ID consult (34% vs 49%), with an adjusted hazard ratio of mortality for those patients receiving an ID consult of 0.55.

ID consult also affected patient management, as the ID consult group was more likely to receive an echinocandin (29% vs 21%) or amphotericin B (3.4% vs 1.4%) than those without ID consult.

The authors of the study say the findings suggest ID consultation should be an integral part of clinical care of patients who have candidemia.

Oct 7 IDWeek [abstract 1775](#)

Long sleeves may enhance pathogen transmission

Can a "bare below the elbows" dress code policy reduce the likelihood of pathogen transmission in hospitals? That's the question investigators from the Louis Stokes Cleveland VA Medical Center and Case Western Reserve University tried to answer in a randomized crossover trial involving simulated patient care interactions.

UK health department guidelines have recommended a "bare below the elbows" policy, including a recommendation that personnel wear short sleeves, for several years, based in part on the theory that the absence of clothing around the wrists facilitates more effective hand hygiene. Some US hospitals have adopted the policy as well, but there has been little evidence to support the policy.

In the study, healthcare personnel were randomized to wear either long- or short-sleeved white coats while examining a mannequin contaminated with cauliflower mosaic virus DNA. That was followed by examination of an uncontaminated mannequin. The investigators then compared the frequency of the transfer of the DNA marker to the sleeves and/or wrists of the healthcare personnel and to the uncontaminated mannequin. They also observed how often the sleeves of white coats contacted patients or the environment.

During work rounds and simulated examinations, the investigators observed that the sleeve cuff of long-sleeved coats frequently contacted the patient/mannequin or environment. In addition, contamination with the DNA marker was detected only on personnel wearing long-sleeved coats (5 of 20, 25%) and not at all on those wearing short-sleeved coats (0 of 20). In 1 of 5 (20%) instances of sleeve and/or wrist contamination, the DNA marker was transferred to the second mannequin. It was also observed that healthcare personnel were less likely to include their wrist in handwashing between simulations if they were wearing long-sleeved coats.

The authors say the results provide support for the recommendation that healthcare personnel wear short sleeves to reduce the risk for pathogen transmission.

Oct 6 IDWeek [abstract 996](#)

New antibiotic proves safe, effective in patients with bacterial pneumonia

The results of a multinational, phase 3 clinical trial demonstrated that the combination therapy ceftazidime-avibactam is safe and effective for treating patients who have hospital-acquired and ventilator-associated bacterial pneumonia (HABP/VABP).

Ceftazidime-avibactam is a cephalosporin/beta-lactamase inhibitor combination that was developed in response to the need for new antibiotics to treat serious infections caused by gram-negative pathogens and was recently approved by the FDA for treatment of complicated urinary tract and intra-abdominal infections. In the phase 3 REPROVE trial, it was being compared with meropenem in the treatment of adults with HABP/VABP.

The primary objective was to demonstrate the noninferiority of ceftazidime-avibactam with respect to all-cause mortality at day 28 in the intent-to-treat (ITT) population. Key secondary end points included clinical cure in the ITT and microbiological-ITT populations.

In the randomized, double-blind noninferiority trial, 879 patients in 23 countries were randomized 1:1 to receive intravenous ceftazidime-avibactam or intravenous meropenem. The predominant gram-negative pathogens in the ITT population were *Klebsiella pneumoniae* (36.6%) and *Pseudomonas aeruginosa* (30.1%), and 28.3% of patients had infections caused by ceftazidime-avibactam nonsusceptible pathogens.

The results showed that ceftazidime-avibactam was noninferior to meropenem with respect to all-cause mortality at day 28 (9.6% vs. 8.3%) and with respect to clinical cure at TOC (67.2% vs. 69.1%). Results in the subgroups were consistent, including those with ceftazidime-avibactam nonsusceptible pathogens. The incidence and type of adverse events was balanced between treatment groups and consistent with established safety profiles for both drugs.

Oct 7 IDWeek [abstract 1864](#)

Faster molecular test tied to fewer antibiotics, timely flu treatment in kids

In a comparison of highly multiplexed respiratory molecular assays, researchers at a children's hospital in Kansas City found that the test that produced faster results was associated with reduced antibiotic use, timely flu antiviral therapy, and decreased length of hospitalization.

The aim of the study was to compare the clinical impact of the Luminex respiratory viral panel (RVP) and the Biofire respiratory panel (RP) on the management of hospitalized children under 24 months of age. RVP detects 12 respiratory viruses, while RP detects 20 respiratory pathogens (17 viruses, 3 bacteria). To make the comparison, the researchers looked at retrospective data on 2,905 patients who tested positive for at least one respiratory virus; 810 patients were in the RVP group and 2,095 patients were in the RP group.

The median turnaround time for the RVP and RP assays was 29 hours and 4 hours, respectively. A significantly higher proportion of children in the RVP group (44%, 357/810) received empiric antibiotic therapy compared with the RP group (28%, 595/2,095). Following test reporting, the rate of antibiotic discontinuation was higher in the RP group (23%, 135/595) than in the RVP group (16%, 56/357). Following positive

influenza test results, more children received timely oseltamivir (Tamiflu) in the RP group (85%, 48/56) than in the RVP group (17%, 7/41). In addition, the median length of hospitalization was shorter in the RP group (48 hours) compared with the RVP group (54 hours).

The authors conclude, "The implementation of a more comprehensive respiratory multiplex molecular assay with rapid reporting of test results has the potential to improve management of hospitalized children, decrease unnecessary antibiotic therapy and reduce overall costs."

Oct 6 IDWeek [abstract 990](#)

High rate of inappropriate antibiotic use in ICUs noted

A national assessment of antibiotic use in US intensive care units (ICUs) identified nearly a third of antibiotic regimens as inappropriate.

In the study, an expert panel from the Partnership for Quality Care, a coalition dedicated to high-quality care in US hospitals, used a CDC tool to validate appropriate antibiotic use measurement via a point-prevalence survey on a single day. A total of 47 ICUs from 12 hospitals participated (4 in New York, 3 in Massachusetts, 2 in California, 2 in Florida, and 1 in Minnesota). Data were collected by ASP personnel and submitted for benchmarking, and hospitals identified reasons for inappropriate antibiotic use by category and antibiotics misused.

On Mar 1, 2017, 362 (54%) of 667 patients in participating ICUs were on antibiotics (range, 8 to 81 patients); 1 patient was not assessed. Of the remaining 361 antibiotic regimens, 112 (31%) were identified as inappropriate from among all 12 hospitals, with inappropriate use ranging from 9% to 82%. The reasons for inappropriate use included unnecessarily broad spectrum of activity (29%), duration longer than necessary (21%), and treatment of a non-infectious syndrome (19%). The antibiotic most commonly misused was vancomycin, in 7 hospitals (58%).

The authors of the study say the findings underscore the need for ASP interventions, standardized assessment tools, and benchmarking. "Strategies should focus on de-escalation of broad spectrum antibiotics and reducing duration of therapy," they write.

Oct 5 IDWeek [abstract 685](#)