

Roundtable Discussion

Addressing Antimicrobial Resistance

Resistance A Patient-Safety Issue

Antibiotic resistance is a natural phenomenon in infectious organisms, but humankind can — and *does* — affect its rate of progression. We see this daily in the healthcare setting, and in the community, where such agents as MRSA (methicillin-resistant *Staphylococcus aureus*), multidrug-resistant (MDR) *Acinetobacter*, and *Clostridium difficile* — often designated as “super-bugs” — make headlines and challenge control efforts.

An interagency task force has developed a *federal* action plan for tackling antimicrobial resistance (cdc.gov/drugresistance/actionplan/) but budgetary constraints hinder its ability to keep pace with a growing list of worrisome trends. Various professional associations also have created special programs focused on resistance, and congressional interest in the problem appears to be growing.

To see how these efforts might be better coordinated and might use their resources more effectively, the nonprofit U.S. Medicine Institute for Health Studies convened a roundtable discussion bringing together key representatives of federal agencies, professional organizations, academia, industry, and congressional staff.

A significant message that emerged from the discussion: Antibiotic-resistance should be treated as a patient-safety issue and monitored via post-marketing surveil-

lance once an antimicrobial is approved by the Food and Drug Administration. Proper use of antibiotics should be regularly updated in drug labeling — current usage statements do not keep pace with the development of resistance, potentially leading to the wrong strength or the wrong agent being administered.

Other suggestions and observations emerging from the discussion:

- *Improving the level and types of communication about resistant organisms.* Efforts should be made to reach the public and healthcare workers in the “do’s” and “don’ts” of infection control. Current attempts to do this are sporadic and unfocused.
- *Blitzing a resistant organism as soon as resistance first appears.* Pouring on resources and control efforts such as isolation to stop a resistant organism before it can become entrenched would be expensive, but would prove cost-effective and prevent morbidity and mortality. This will require coordination among the various healthcare sectors.
- *Conducting studies to better define resistance and determine the best appropriate conditions for use of a drug.* It would be extremely valuable to be able to link



Other Highlights

- **For resistant *Staph aureus*, there is potential to return to the “pre-antibiotic” era within the next decade.**
- **Dealing with resistance needs to be made a national priority.**
- **Resistance is a global phenomenon that also requires diplomatic coordination, as has been accomplished for pandemic influenza through the G-7 group.**
- **Rapid diagnostics are needed to determine who is infected, what strain of the organism is at issue, and its susceptibility patterns.**
- **Vaccines remain the best hope for halting resistant organisms, but there is none on the immediate horizon.**

susceptibility testing in the laboratory to outcomes in patients — to develop a dose-response curve and use it to tailor therapy.

Currently, a “one size fits all” approach characterizes antibiotic use, and this in itself likely contributes to the development of resistance. Focus should not be on the organism involved, but rather on the individual patient and the particular disease and severity of infection.

Incomplete understanding of resistance can lead to use of ineffective agents, cost-shifting to more expensive therapies than actually

needed, or unnecessary use of more toxic alternatives.

• *Remaining aware that progress is possible — that is, not conceding the battle.*

For example, the Pittsburgh VA Medical Center has cut MRSA infection rates by 70 per cent through screening all patients via nasal swabs, isolating those who prove positive, requiring gowns and gloves for those who treat positive patients, disinfecting equipment used for these patients, and implementing stringent policies requiring hand-washing.

The system used at Pittsburgh has been given sanction at the highest levels in the VA and now will be implemented systemwide. These basic control and behavior modification measures should be useful for other resistant organisms as well.

An Issue of Leadership

Surveillance by CDC through its National Healthcare Safety Network shows MRSA to be well-established. Sixty to 65 per cent of all Staph infections in intensive care units are now methicillin-resistant.

Community-acquired methicillin-resistance increasingly is being cultured in healthcare settings, confounding the treatment profile,

MDR *Acinetobacter* also appears to be increasing. Alarming, at Walter Reed Army Medical Center, 4 per cent of isolates were resistant to all antibiotics tested.

The essential ingredient in dealing with these rising rates of resistance is leadership. Often, however, hospital leadership, which faces competing demands for resources, must be shown that efforts to control resistance make good business sense, and that the costs of prevention through such measures as good hy-

giene are less than the costs of treatment, which often are not fully covered by third-party insurers.

While the military mandates accountability throughout its chain of command to enforce control efforts, the civilian sector has no such mechanism available. Any approach taken in civilian healthcare facilities should involve incentives rather than punitive measures, which serve only to encourage coverup of resistance rates.

Further, determining where resistance originates is complex and difficult — was it brought into the hospital, or did it emerge there?

Standardization Needed

It is difficult to mount a coordinated approach to antibiotic resistance or to develop a strategic plan for addressing it — as has been done for pandemic influenza — when there is no standardized nomenclature or standardized way to enter data on resistance into medical records.

Just who would lead such an effort at coordination remains problematic. Appointing a “resistance czar” is one possibility, but that individual would need to be given sufficient resources to do the job. While there was concern within the roundtable group that efforts to coordinate approaches to resistance could become “political,” others said that is exactly what should happen. It is the political structure that can authorize the support and resources needed. Without political traction, the effort would not succeed.

The group also urged increased resources for the interagency task force, currently up for reauthorization by Congress.

Participants in this roundtable: Cynthia Bascetta of GAO; Jennifer Bryning of the Senate Health, Education, Labor and Pensions (HELP) Committee; David Dorsey of the Senate HELP Committee; Barry Eisenstein of Cubist Pharmaceuticals; Ralph L. Erickson of DoD-GEIS (Global Emerging Infections Surveillance and Response System); Dennis Faix of the Naval Health Research Center; Michael Feldgarden of the Alliance for the Prudent Use of Antibiotics (APUA); Neil Fishman of the Infectious Diseases Society of America (IDSA); Joel Gaydos of DoD-GEIS; Robert Guidos of IDSA; Vanessa Harpin of Ibis Biosciences; Rajiv Jain of the Pittsburgh VA Healthcare System; John Jernigan of CDC; Lynn Kitchen of the Army Medical Research and Materiel Command; Luther Lindler of DoD-GEIS; Victor MacIntosh of DoD-GEIS; Arnaud Nicogossian of the International Society of Microbial Research/George Mason University Office of International Medical Policy; Thomas O’Brien of APUA; N. Kent Peters of NIAID; John Powers 3d of NIAID; David Schmickel of the Senate HELP Committee; Litjen Tan of the American Medical Association; David Tribble of the Uniformed Services University of the Health Sciences; J. Todd Weber of CDC; Glen Wortmann of Walter Reed Army Medical Center; and Tom Zimmerman of ISMR.

The roundtable was moderated by Donald Poretz of IDSA.

USMI Managing Director is Nancy Tomich (www.usminstitute.org).

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