



## Council on Microbial Sciences (COMS) Antimicrobial Agents and Resistance Community Retreat

December 17, 2019

**Organizers:** David Hooper, Peggy McNult, Maria Mojica, Silvia Munoz-Price and Jonathan Stevens-Garcia.

**Participants:** David Andes, Cesar Arias, Stefano Bertuzzi, Robert Bonomo, Jack Brothers, Karen Bush, Erin Dalder-Alpher, Yohei Doi, David Hooper, Nathan Ledebauer, Amy Mathers, Peggy McNult, Maria Mojica, Silvia Munoz-Price, Catherine Ort-Mabry, Nguyen Nguyen, Robin Patel, Keith Rodvold, Michael Schmidt, Dan Smith (Facilitator), Jonathan Stevens-Garcia, Fred Tenover, and Mary Lee Watts.

ASM COMS leaders convened Antimicrobial Agents and Resistance (AAR) community representatives and world leaders for a one-day retreat to identify strategic initiatives for how to advance and promote AAR and to discuss how to accomplish these initiatives. A survey was conducted pre-retreat to solicit feedback from members who affiliate with AAR, attended ICAAC or the ASM-ESCMID Drug Discovery meeting. The responses shaped the agenda; five challenges were identified and discussed at the retreat.

1. Limited funding for antibiotic resistance research
2. Low economic return on antibiotic development for big and small pharma
3. Incomplete antibiotic stewardship guidance to decrease the emergence of AAR
4. Antibiotic use in agriculture and food animals
5. Control of transmission of resistant pathogens in healthcare settings (including long-term care)

All agreed that ASM could affect challenges one, three and five and then three and five were combined since there was overlap. Participants were divided into groups for an in-depth conversation and to brainstorm suggestions.

**Challenge 1:** Limited funding for antibiotic resistance research.

Participants agreed that funds are needed for drug and diagnostics' research.

**Recommendation:** Create a realistic plan to raise awareness of the need for increased funding with the public and policy makers. Its focus should be specific and not a broad AAR overview.

**Recommendation:** A white paper in "plain English" to elucidate the AAR crisis and to advocate for increased funding. It should represent infectious disease physicians, academic researchers, pharmacists, infection preventionists, clinical microbiologists, public health officials, veterinarians, and industry (pharma and BIO). ASM should enlist the support of the nurses as they are on the frontline of this public health crisis. This one voice will illustrate the magnitude of the challenge; identify a champion to promote.

**Recommendation:** Host on the ASM website grant funding opportunities and offer to mentor early-career scientists on grant writing.

**Challenges 3 & 5.** Incomplete antibiotic stewardship guidance to decrease the emergence of AAR *and* control of transmission of resistant pathogens in healthcare settings.

Antibiotic stewardship has become commonplace for inpatients in large tertiary care medical centers and academic medical centers. However, in community care settings and in the outpatient settings antimicrobial stewardship (AMS) may be very limited. Further, successful antimicrobial stewardship programs require an integral relationship with the clinical laboratory. Recognizing that ASM is a leader in the clinical laboratory environment and in drug development, ASM should develop robust antibiotic stewardship guidance and provide a forum to facilitate the discussion. Some areas where ASM can lead in AMS is evaluation and implementation of novel diagnostic approaches for rapid identification of pathogens and antimicrobial resistance. Specifically,

**Recommendation:** Be the leader in antibiotic stewardship and infection control standards around strain typing involving genomics, data analytics, and nomenclature.

**Recommendation:** Develop antibiotic stewardship competencies for the clinical laboratory.

**Recommendation:** Define infection control activities and minimum competencies for healthcare delivery points outside of hospital.

**Recommendation:** Establish virtual study groups to address these issues.

**Recommendation:** Convene a novel meeting on antimicrobial and diagnostic stewardship with a multi-discipline approach to include infectious disease, clinical microbiology, and pharmacy.

**Recommendation:** Own new drug discovery at Microbe by actively soliciting proposals from industry.

**Recommendation:** Provide a home for Pharmacokinetic-Pharmacodynamic (PKPD) scientists, who currently do not seem to have one, this may be an opportunity for ASM.

In closing, participants emphasized collaboration and engagement with members, other professional societies, disciplines, agencies, and industry that are involved in AAR as critical to success. Specific suggestions included approaching the Society for Healthcare Epidemiology of America and requesting an ASM AAR section in their journal, *Infection Control & Hospital Epidemiology*, and submitting AAR session proposals to pharmacy, epidemiology and infection control meetings to educate the non-microbiologists on this evolving crisis. In closing, ASM should reexamine the journals' scope to ensure AAR, including the science of stewardship and infection control, has a home.