ARLG
Antibacterial Resistance Leadership Group

January 2022
Q1 Newsletter

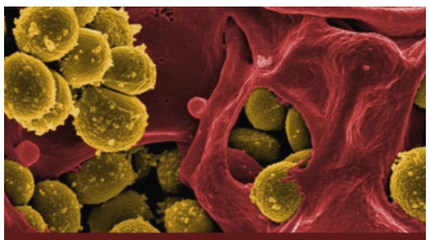
Welcome to the ARLG Newsletter! Here, you will receive important updates from ARLG regarding recent events, grants, publications, and the committees that help us work toward our mission: to prioritize, design, and execute clinical research that will impact the prevention, diagnosis, and treatment of infections caused by antibiotic-resistant bacteria.

Get Involved with ARLG

ARLG continuously accepts proposals for clinical studies designed to prevent, diagnose, treat, or eradicate antibiotic-resistant bacterial pathogens. We also award grants and fellowships to qualified investigators. If you are interested in getting involved with ARLG, apply now or contact us for more information.

Submit a Proposal **Contact Us**

ARLG at the AMR & Stewardship Conference



5th Annual Texas Medical Center AMR & Stewardship Conference

The 5th annual Texas Medical Center AMR & Stewardship Conference is set to take place online January 19 – 21.

ARLG thought leaders will discuss a variety of interesting topics, so be sure to plan your schedule and register to attend.

Learn more

ARLG Spotlight: Nick Turner

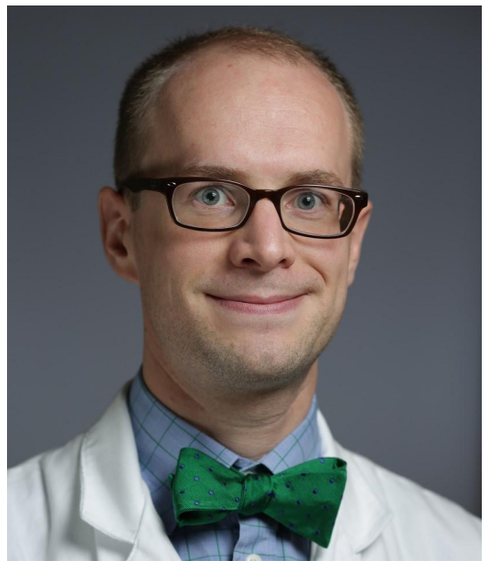
About my role in the ARLG

I began as an ARLG fellow and am now a clinical trialist in training. ARLG-supported opportunities have given me the chance to contribute to research in epidemiology and the prevention of drug-resistant infections. I've also gained experience in therapeutics by serving on clinical adjudications committees, drug safety

monitoring boards, and as a sub-investigator on clinical trials.

About my research

My research spans two broad areas: the epidemiology and prevention of drug-resistant infections (mainly *C. difficile*) and treatment of drug-resistant infections. I'm presently serving as a trialist in training with the **D**albavancin as an **O**ption for **T**reatment of ***S**taphylococcus aureus* bacteremia (DOTS) trial.



Nicholas A. Turner, MD MHSc
Assistant Professor, Duke University Health System
Hospital Epidemiologist, Duke Infection Control Outreach Network (DICON)

During my ARLG fellowship, I completed a master's degree in clinical research. For my thesis, I used mixed effects modeling methods to examine the shift in *C. difficile* from hospital-associated infection to community-onset infection. Using the same epidemiologic methods learned during my fellowship, I have continued to play an active role in analyzing epidemiologic trends both within the hospital (including time series regression to assess prevention efforts targeting *C. difficile* and catheter-associated UTIs) and community (including modeling geospatial inequities in COVID-19 infections and tuberculosis screening).

On the trials and therapeutics side, I conducted the microbiologic analysis for a unique trial assessing the effect of *C. difficile* treatment choice on contamination of the hospital environment. I am currently the site primary investigator for a multi-national trial assessing expedited methods for clearing penicillin allergies.

Impact of ARLG mentoring and funding on my career

ARLG supported my pursuit of a master's degree in clinical research, where I learned a variety of research methods that have helped me to become an active contributor on an array of exciting projects fighting drug resistance in the prevention and treatment stages. Most of my current research developed because of the training, mentorship, and collaboration provided through ARLG programs.

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ARLG Early Stage Investigator (ESI) Seed Grants

Apply for an ARLG ESI Grant

As part of our mission to mentor the next generation of researchers and foster diversity, ARLG offers grant opportunities to help early stage investigators (ESI) develop preliminary data and apply for additional external funding.

Individuals who are MD, PhD, or Pharm D students, graduate or post-graduate trainees, or those with a

faculty appointment of less than five years are all eligible to apply for ESI Seed or EVERYONE Grants:

- **ESI Seed Grants** offer up to $50,000 in direct costs for one year for research in areas related to antibacterial resistance within the ARLG scope.
- **Early Stage Investigator Program Promoting Diversity in Antibiotic Resistance Research (EVERYONE) Grants** aim to foster diversity in the field of antibacterial resistance by offering up to $50,000 in direct costs for one year for research in areas related to antibacterial resistance within the ARLG scope. EVERYONE investigators should be from underrepresented populations in the extramural scientific workforce as defined by the National Institutes of Health (NIH).

Infectious Disease fellows at the 4th or 5th year of fellowship as well as individuals with an MD or PhD in any discipline with a faculty appointment of less than five years are eligible to apply for the Early Faculty Seedling Award.

- **Early Faculty Seedling Award** provides 50% of current salary support per year to conduct protected research for up to two years and up to $25,000 in direct costs for research over the two years.

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News

New Protocol Proposal Submissions Process and Webpage

It is now easier than ever to submit your protocol proposal ideas to the ARLG thanks to a new webpage and a streamlined submission process. In order to help investigators submit proposals quickly and efficiently, the template for protocol concepts has been simplified to include only the most essential elements. The new protocol concept webpage also contains a drop down menu feature with additional information explaining each section of the template.

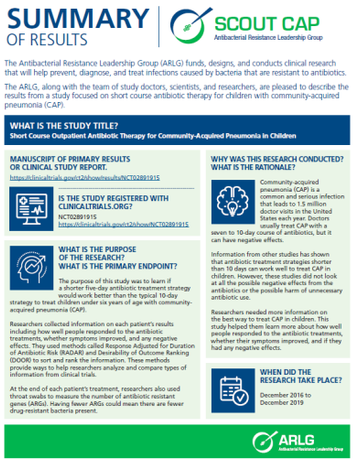
The page has been revamped to include additional information detailing the types of projects ARLG leaders are most interested in receiving. It includes guidelines for all three of the main priority subject areas: gram-negative infections, gram-positive infections, and diagnostics.

Read more

SCOUT-CAP Study Summary Now Available!

A lay summary of results has been posted for the Short Course Outpatient Antibiotic Therapy for Community-Acquired Pneumonia in Children (SCOUT-CAP) study.

Community-acquired pneumonia (CAP) is a common and serious infection that leads to 1.5 million doctor visits in the United States each year. Doctors usually treat CAP with a seven to 10-day course of antibiotics, but that can have adverse effects for patients and contribute to the spread of antimicrobial resistance. The purpose of the SCOUT-CAP study was to learn if a shorter five-day antibiotic treatment strategy would work better than the typical 10-day strategy to treat children under six years of age with community-acquired pneumonia (CAP).


SUMMARY OF RESULTS

SCOUT CAP
Antibacterial Resistance Leadership Group

The Antibacterial Resistance Leadership Group (ARLG) funds, designs, and conducts clinical research that will help prevent, diagnose, and treat infections caused by bacteria that are resistant to antibiotics.

The ARLG, along with the team of study doctors, scientists, and researchers, are pleased to describe the results from a study focused on short course antibiotic therapy for children with community-acquired pneumonia (CAP).

WHAT IS THE STUDY TITLE?
Short Course Outpatient Antibiotic Therapy for Community-Acquired Pneumonia in Children

MANUSCRIPT OF PRIMARY RESULTS OR CLINICAL STUDY REPORT.
https://clinicaltrials.gov/ct2/show/results/NCT02891915

IS THE STUDY REGISTERED WITH CLINICALTRIALS.ORG?
NCT02891915
https://clinicaltrials.gov/ct2/show/NCT02891915

WHAT IS THE PURPOSE OF THE RESEARCH? WHAT IS THE PRIMARY ENDPOINT?
The purpose of this study was to learn if a shorter five-day antibiotic treatment strategy would work better than the typical 10-day strategy to treat children under six years of age with community-acquired pneumonia (CAP).

Researchers collected information on each patient's results including how well people responded to the antibiotic treatments, whether symptoms improved, and any negative effects. They used methods called Response Adjusted for Duration of Antibiotic Risk (RADAR) and Desirability of Outcome Ranking (DOOR) to sort and rank the information. These methods provide ways to help researchers analyze and compare types of information from clinical trials.

At the end of each patient's treatment, researchers also used throat swabs to measure the number of antibiotic resistant genes (ARGs). Having fewer ARGs could mean there are fewer drug-resistant bacteria present.

WHY WAS THIS RESEARCH CONDUCTED? WHAT IS THE RATIONALE?
Community-acquired pneumonia (CAP) is a common and serious infection that leads to 1.5 million doctor visits in the United States each year. Doctors usually treat CAP with a seven to 10-day course of antibiotics, but it can have negative effects.

Information from other studies has shown that antibiotic treatment strategies shorter than 10 days can work well to treat CAP in children. However, these studies did not look at all the possible negative effects from the antibiotics or the possible harm of unnecessary antibiotic use.

Researchers needed more information on the best way to treat CAP in children. This study helped them learn more about how well people responded to the antibiotic treatments, whether their symptoms improved, and if they had any negative effects.

WHEN DID THE RESEARCH TAKE PLACE?
December 2016 to December 2019

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Study Milestones

View recent ARLG study updates.

DIFFR	*Clostridioides **DIFF**icile* **R**NA	Data Analysis
MeChaTeBla	Mechanistic and structural characterization of the interaction of a novel antibiotic with clinically relevant β-lactamases	Conduct
SCENE	**S**creening for **C**olonization with Resistant **E**nterobacterales in **N**eutropenic Patients with H**e**matologic Malignancies	Enrollment Complete
SCOUT-CAP	**S**hort **C**ourse **Ou**tpatient Antibiotic **T**herapy for **C**ommunity-**A**cquired **P**neumonia in Children	Published

Go to the ARLG Studies page for more milestones and updates!

Learn More

Recent Publications

View the following recent ARLG publications.

Tsalik EL, Henao R, Montgomery JL, Nawrocki JW, Aydin M, Lydon EC, Ko ER, Petzold E, Nicholson BP, Cairns CB, Glickman SW, Quackenbush E, Kingsmore SF, Jaehne AK, Rivers EP, Langley RJ, Fowler VG, McClain MT, Crisp RJ, Ginsburg GS, Burke T, Hemmert AC, Woods CW; and the Antibacterial Resistance Leadership Group. Discriminating Bacterial and Viral Infection Using a Rapid Host Gene Expression Test. Crit Care Med. 2021 Oct 1;49(10):1651-1663. doi: 10.1097/CCM.0000000000005085.

Wang M, Earley M, Chen L, Hanson B, Yu Y, Liu Z, Salcedo S, Cober E, Li L, Kanj S, Gao H, Munita J, Ordoñez K, Weston G, Satlin M, Valderrama S, Marimuthu K, Stryjewski ME, Komarow L, Luterbach C, Marshall S, Manca C, Paterson DL, Reyes J, Villegas MV, Evans S, Hill C, Arias R, Baum K, Fries BC, Doi Y, Patel R, Kreiswirth BN, Bonomo RA, Chambers HF, Fowler Jr VG, Arias C, van Duin D for the MDRO Investigators. Clinical Outcomes and Bacterial Characteristics of Carbapenem-Resistant Klebsiella pneumoniae complex among Patients from Different Global Regions (CRACKLE-2): a Prospective Cohort Study. Lancet Infect Dis. 2021 Nov 9;S1473-3099(21)00399-6. doi: 10.1016/S1473-3099(21)00399-6. Online ahead of print.

Howard-Anderson J, Davis M, page AM, Bower CW, Smith G, Jacob JT, Andersson DI, Weiss DS, Satola SW. Prevalence of Colistin Heteroresistance in Carbapenem-Resistant Pseudomonas aeruginosa and Association with Clinical Outcomes in Patients: An Observational Study.J Antimicrob Chemother. 2021 Dec 16;dkab461. doi: 10.1093/jac/dkab461. Online ahead of print.

Howard-Anderson J, Bower CW, Smith G, Satola SW, Jacob JT. Mortality in Patients with Carbapenem-Resistant Pseudomonas aeruginosa With and Without Susceptibility to Traditional Antipseudomonal β-lactams. JAC Antimicrob Resist. 2021 Dec 17;3(4):dlab187. doi: 10.1093/jacamr/dlab187. eCollection 2021 Dec.

Ross M, Henao R, Burke TW, Ko ER, McClain MT, Ginsburg GS, Woods CW, Tsalik EL. A Comparison of Host Response Strategies to Distinguish Bacterial and Viral Infection. PLoS One. 2021 Dec 14;16(12):e0261385. doi: 10.1371/journal.pone.0261385. eCollection 2021.

Tsalik EL, Fiorino C, Aqeel A, Liu Y, Henao R, Ko ER, Burke TW, Reller ME, Bodinayake CK, Nagahawatte A, Kodikaraarachchi W, Devasiri V, Kurukulasooriya R, MCClain MT, Woods CW, Ginsburg GS, Tillekeratne G, Schughart K. The host response to viral infections reveals common and virus-specific signatures in the peripheral blood. Front Immunol. 2021 Oct 27;12:741837. doi: 10.3389/fimmu.2021.741837. eCollection 2021.