Table 1.

	Pre *n* (%)	Post *n* (%)
CMV viremia	26 (13.3)	12 (5.9)
CMV syndrome	13 (6.6) 7 D+/R– 4 D+/R+ 2 D–/R+	1 (0.05) 1 D+/R–
CMV disease	5 (2.5) 4 D+/R+ 1 D+/R–	5 (2.5) 4 D+/R+ 1 D–/R–
# treated for CMV	21 (10.7)	11 (5.4)
Lymphocyte depleting immune suppression	91 (46.4)	46 (22.5)

Disclosures. **L. Strasfeld**, Merck: Independent Contractor, Salary

136. SYN-004 (ribaxamase) prevents New Onset *Clostridium difficile* Infection by Protecting the Integrity Gut Microbiome in a Phase 2b Study

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Background. *Clostridium difficile* infections (CDI) are an "urgent threat," but there are no approved drugs or vaccines to prevent new onset CDI. SYN-004 (ribaxamase) is a β-lactamase designed to be orally administered with IV β-lactam antibiotics and remain localized in the intestine to degrade antibiotics excreted into the intestine. This is expected to protect the gut microbiome from disruption thus preventing deleterious effects including CDI, colonization by opportunistic pathogens, and emergence of antibiotic resistance in the gut microbiome. Ribaxamase was well tolerated and not systemically absorbed in Phase 1 studies and efficiently degraded ceftriaxone excreted into the human intestine while not altering the plasma pharmacokinetics of ceftriaxone in Phase 2a studies.

Methods. A multinational Phase 2b, double-blind, placebo-controlled, study was conducted to determine whether ribaxamase could prevent new onset CDI with additional endpoints for non-CDI antibiotic-associated diarrhea, colonization by opportunistic pathogens, changes in the gut microbiome and emergence of antibiotic resistance. The 412 patient mITT population, enriched for higher risk for CDI, were admitted to the hospital for ≥5 days of IV ceftriaxone for the treatment of a lower respiratory tract infection. Patients were randomized 1:1 to receive ribaxamase or placebo during treatment and for 72 h after. Fecal samples were collected at prespecified points for determination of colonization by opportunistic pathogens and to examine changes in the gut microbiome. Patients were monitored for 6 weeks for CDI (diarrhea plus the presence of *C. difficile* toxin). The study was powered at 80% for the reduction in CDI with 1-sided $\alpha = 0.05$.

Results. The study met its primary endpoint with a 71% relative risk reduction in CDI (1-sided $p = 0.045$) and had a statistically significant 44% relative risk reduction in new colonization by vancomycin-resistant enterococci (1-sided $p = 0.0002$). Ribaxamase also protected the diversity of the gut microbiome and reduced the emergence of antibiotic resistance in ceftriaxone-treated patients.

Conclusion. These data support that ribaxamase can maintain the balance of the gut microbiome and thereby prevent opportunistic infections like CDI during IV β-lactam treatment.

Disclosures. **J. Kokai-Kun**, Synthetic Biologics, Inc.: Employee, Salary; **T. Roberts**, Synthetic Biologics, Inc.: Employee, Salary; **O. Coughlin**, Synthetic Biologics, Inc.: Employee, Salary; **H. Whalen**, Synthetic Biologics, Inc.: Employee, Salary; **C. Le**, Synthetic Biologics, Inc.: Employee, Salary; **C. Da Costa**, Synthetic Biologics, Inc.: Employee, Salary; **J. Sliman**, Synthetic Biologics, Inc.: Employee, Salary.

137. Collaborative Use Repurposing Engine (CURE): FDA-NCATS/NIH Effort to Capture the Global Clinical Experience of Drug Repurposing to Facilitate Development of New Treatments for Neglected and Emerging Infectious Diseases

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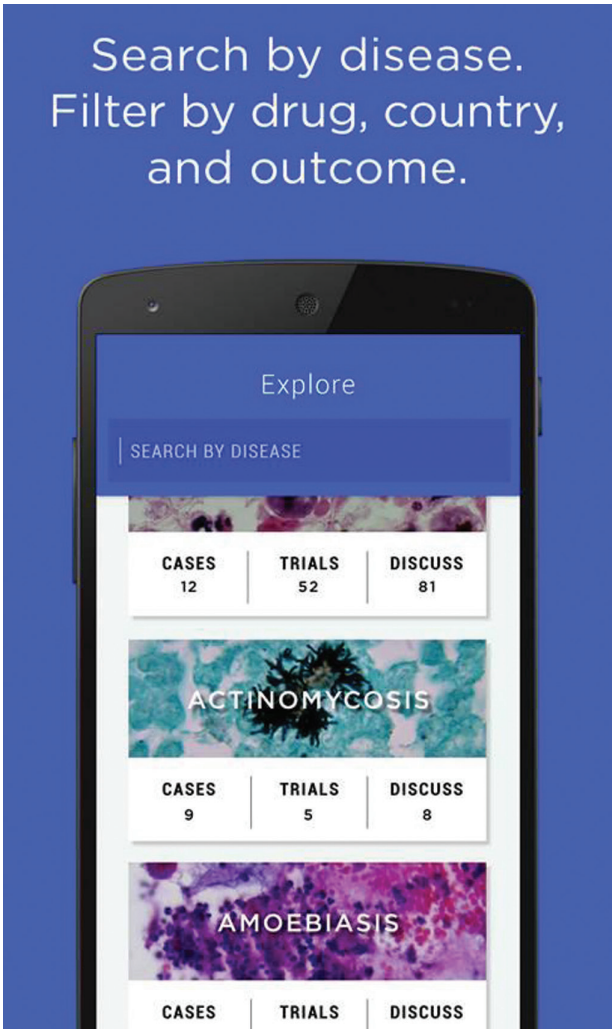
Background. Repurposing approved products has proven a critical strategy to serve unmet medical needs. Historically, 40% of drugs approved for treatment of tropical diseases were repurposed, including albendazole for echinococcosis and neurocysticercosis, and azithromycin for trachoma. Advantages of repurposing include that approved drugs are well characterized, do not require expensive development programs needed for new drugs, and are frequently active against multiple diseases. Owing to the limited number of drugs approved to treat neglected tropical diseases (NTDs) and emerging or drug-resistant infections, healthcare practitioners use existing drugs in novel ways to treat patients with these conditions. This clinical experience, regardless of whether the outcomes are positive or negative, often is not reported or shared, and the knowledge is therefore lost.

Methods. FDA and NCATS/NIH have built a pilot program called Collaborative Use Repurposing Engine (CURE) to capture and centralize the global experience of new uses of approved medical products to treat emerging threats, NTDs, and multidrug-resistant organisms. CURE includes a website (https://cure.ncats.io/) and a mobile app (download "PROJECT CURE" at Google Play Store). CURE provides a simple case report form for health care providers to report their experiences, and a collection of cases that have already been reported (including successful and unsuccessful treatments) which they can browse. Healthcare providers who register can also participate in a Treatment Discussion Forum, allowing for engagement with fellow clinicians. CURE could be a global network connecting major treatment centers, academics, private practitioners, government facilities, and other clinicians serving as a means of rapid communication of treatment outcomes between providers treating patients with these conditions.

Results. See attached screen shots.

Conclusion. Although this evidence may be insufficient to establish the safety or effectiveness of a new use for an existing product, this clinical experience may provide signals and generate hypotheses for future clinical study. It may allow for rapid identification of promising treatment approaches in urgent situations such as during outbreaks of emerging infectious threats.



Disclosures. **All authors:** No reported disclosures.

138. Cefazolin plus Clavulanic Acid Overcomes the Inoculum Effect in a Methicillin-Susceptible *Staphylococcus aureus* (MSSA) Rat Endocarditis Model

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Session: 42. The Cutting Edge in Antimicrobial Resistance Emergence Therapy
Thursday, October 5, 2017: 10:30 AM

Background. The inoculum effect (InE) refers to an increase in the MIC of an antibiotic when a large burden of bacteria is present. MSSA producing type A or C β-lactamase (β-lac) that display this effect may be at risk of clinical failure when treated with cefazolin (CFZ) for a deep-seated infection. We have previously shown that CFZ plus