Looking ahead: Science and Data Needs

2018 NIAA Antibiotics Symposium

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Question #1a

- Does this patient need an antibiotic?
Question #1b

- Do the benefits of antibiotic therapy outweigh the risks of antibiotic exposure or risk of not treating (by an acceptable margin) in this particular patient?
Science and Data Needs

- **DEFINED ACCEPTABLE RISK**
  - Promotion of antibiotic resistance
    - Risk to individual
    - Risk to society
  - Serious drug adverse events
  - Negative outcomes from withholding therapy
- **Improved (better, faster, less invasive & cheaper) diagnostics**
  - Detection of underlying resistance
  - Disease confirmation
- **Effective adjunct / alternative therapies**
- **Optimal dosing regimens**
Question #2

• What is the dosing regimen with the greatest chance for clinical efficacy and lowest probability of resistance selection?

“Hostage to history: The duration of antimicrobial treatment for acute streptococcal pharyngitis”
Radetsky, M.
Pediatric Infectious Disease Journal May 2017
Percent Clinical Success

- Durward: Perioperative (colic)
- Tone: Diabetic osteomyelitis
- Sawyer: Intra-abdominal infections
- Drekonja: Urinary tract infections
- Munoz: Endocarditis
- Iskander: Intra-abdominal infections (murine)

- ▤ Short duration
- □ Long duration
Science and Data Needs

• Balance clinical outcome with resistance consequences of specific exposures
  – Drug
  – Dose
  – Duration
  – Frequency
Thank You!