

SMALL INTERVENTIONS, BIG RESULTS

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CONFLICTS OF INTEREST

- I do not have any conflicts of interest to disclose!

OUTLINE

- Microbiology interventions
- Order sets/pathways
- Nursing interventions

COMMUNICATION IS KEY

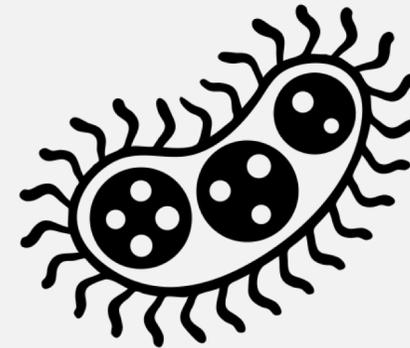
- Clear communication of microbiology results is essential for antimicrobial stewardship
- First step: meet with your microbiology laboratory partners!

COMMUNICATION IS KEY: CULTURES

- Do the culture results **effectively** communicate the intended message to providers?



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COMMUNICATION IS KEY: CULTURES

“Commensal
respiratory flora”



“Commensal
respiratory flora: no
methicillin-resistant *S.*
aureus or *P. aeruginosa*”

COMMUNICATION IS KEY: CULTURES



De-escalation by
34%



DOT by 2 days
AKI by 17%

COMMUNICATION IS KEY: CULTURES

MSSA

Enterococcus in
urine cultures

Haemophilus spp.
susceptibilities

Quantitative
respiratory/urinary
culture

Candida spp. in
respiratory
cultures

COMMUNICATION IS KEY: CULTURES



COMMUNICATION IS KEY: CULTURES

Group A

Physician given
gram stain
results

Group B

Group A +
written
recommendation
based on clinical
assessment

Group C

Group A and B
+ physician to
physician
conversation

PROPORTION OF DAYS WITH APPROPRIATE THERAPY

Group A

66.3%

Group B

92.1%

Group C

91.2%

COMMUNICATION IS KEY: CULTURES

S. aureus

- “This organism is never considered a contaminant in the blood and therapy should be started with consideration of an ID consult”

CSF

- “Organisms isolated from the CSF are never considered a contaminant. Therapy should be started with consideration of an ID consult”

Candida spp.

- “This organism is never considered a contaminant in the blood and therapy should be started with consideration of an ID consult”

CoNS

- CoNS isolated from blood cultures without repeat positives are likely contaminants and discontinuation of therapy should be considered. Microbiology interpretation should not preclude clinical judgement.

SUSCEPTIBILITY REPORTING

COMMUNICATION IS KEY: SELECTIVE AND CASCADE REPORTING

CDC CORE ELEMENTS

- Considered a stewardship activity able to be performed at most hospitals to meet the “action” requirement of the Core Elements

CLSI

- “Each laboratory should decide which agent to report routinely and which might be reported only selectively, in consultation with the infectious diseases practitioners, the pharmacy, and the pharmacy and therapeutics and infection control committees of the healthcare institution. Selective reporting should improve the clinical relevance of test reports and help minimize the selection of multi-drug resistant, healthcare associated strains by over use of broad spectrum antibiotics”

COMMUNICATION IS KEY: SELECTIVE AND CASCADE REPORTING

SELECTIVE

- Labs report a limited number of antibiotics for susceptibility results as opposed to all antibiotics tested

CASCADE

- Lab reports susceptibility testing to second line/ expensive antibiotics are only if an organism susceptibility testing meets certain criteria (e.g. resistant to first line antibiotics)

COMMUNICATION IS KEY: SELECTIVE AND CASCADE REPORTING

SELECTIVE – S.AUREUS BCX

	Susceptible	Reported
Oxacillin	Y	Y
Vancomycin	Y	Y
Linezolid	Y	N
Doxycycline	Y	N
Clindamycin	N	N
Daptomycin	Y	N
Rifampin	Y	N

CASCADE – S.AUREUS BCX

	Susceptible	Reported
Oxacillin	N	Y
Vancomycin	Y	Y
Linezolid	Y	N
Doxycycline	Y	N
Clindamycin	N	N
Daptomycin	Y	Y
Rifampin	Y	N

COMMUNICATION IS KEY: SELECTIVE
AND CASCADE REPORTING

S. aureus

Gram
negatives

CSF

Pediatrics

UTI

COMMUNICATION IS KEY:
SELECTIVE REPORTING

25 antibiotics
reported



2 – 4
antibiotics
reported

COMMUNICATION IS KEY:
SELECTIVE REPORTING



Appropriate
antibiotic
prescription
7 – 41%

COMMUNICATION IS KEY: SELECTIVE REPORTING

Target: ciprofloxacin use

Cultures: all *Enterobacteriaceae* from all sites of infection when other antimicrobials susceptible

Outcome evaluated: defined daily doses (DDD) per 1000 inpatient days; secondary: ciprofloxacin susceptibility

COMMUNICATION IS KEY:
SELECTIVE REPORTING

DDD

Cipro susceptibility

Before: 87

Before: 53%

After: 39

After: 65%

COMMUNICATION IS KEY: SELECTIVE
AND CASCADE REPORTING

Need to know is the way to go

ORDER SETS AND PATHWAYS

ORDER SETS AND PATHWAYS

- CDC core elements recommend development of evidence-based facility specific guidelines for diagnosing and treating infections
- Target community-acquired pneumonia, urinary tract infections, intrabdominal infections, skin and soft tissue infections, and surgical prophylaxis

ORDER SETS AND PATHWAYS

Example order set (inpatient)

- Preferred medication
- Alternative medication
- Alternative medication

Laboratory

- Diagnostic markers
- Bacterial antigens
- Clinical tests

Cultures

- Sputum culture
- Blood culture
- CSF culture

ORDER SETS AND PATHWAYS: PNEUMONIA



Compliance of Core Measures



Length of stay



Readmissions



Mortality

ORDER SETS AND PATHWAYS: PNEUMONIA

Community Acquired Pneumonia order set (inpatient)

- Ceftriaxone 1 g q24h
- Azithromycin 500 mg PO q24h x 3 doses
- Doxycycline 100 mg PO BID x 7 days

Laboratory

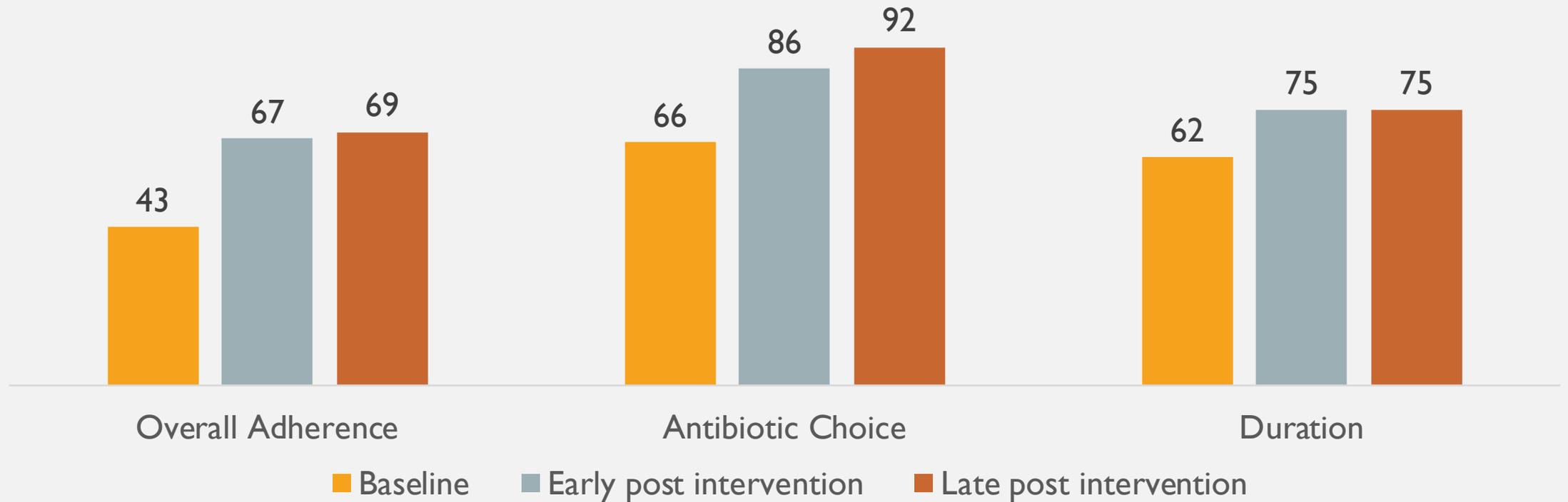
- Respiratory virus film array
- Procalcitonin
- MRSA nares PCR
- Legionella antigen

Cultures

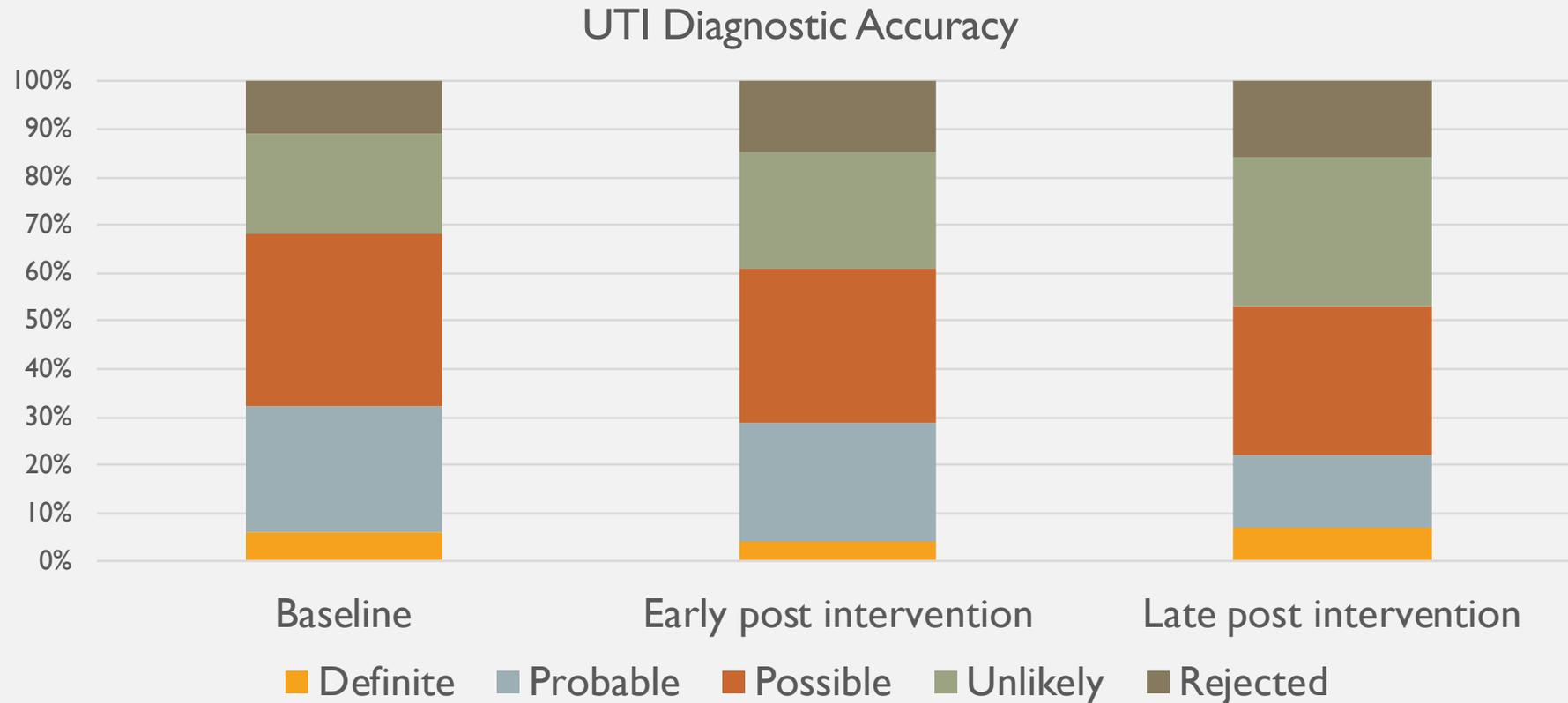
- Sputum culture
- Blood culture x 2
- Gram stain

ORDER SETS AND PATHWAYS: UTI

Proportion of Patients Receiving Guideline Recommended Therapy



ORDER SETS AND PATHWAYS: UTI



ORDER SETS AND PATHWAYS: UTI



Beta-lactam therapy



Fluoroquinolones



Urine cultures



C. difficile infections

ORDER SETS AND PATHWAYS: UTI

Urinary tract infection order set (inpatient)

- Does your patient have symptoms?

ORDER SETS AND PATHWAYS: UTI

Urinary tract infection order set (inpatient)

- Ceftriaxone 1 gram q24h
- Cephalexin 500 mg PO q6h x 7 days
- Nitrofurantoin 100 mg PO q12h x 5 days (avoid CrCl < 30 mL/min)
- Trimethoprim/sulfamethoxazole 1 DS tab q12h x 3 days

Laboratory

- Urinalysis

Cultures

- Urine culture
- Blood culture x 2

ORDER SETS AND PATHWAYS: SSTI

One

- Education

Two

- Lanyard cards

Three

- Order set modification

Four

- Identification/mitigation

ORDER SETS AND PATHWAYS: SSTI



Short course therapy 23% to 74%



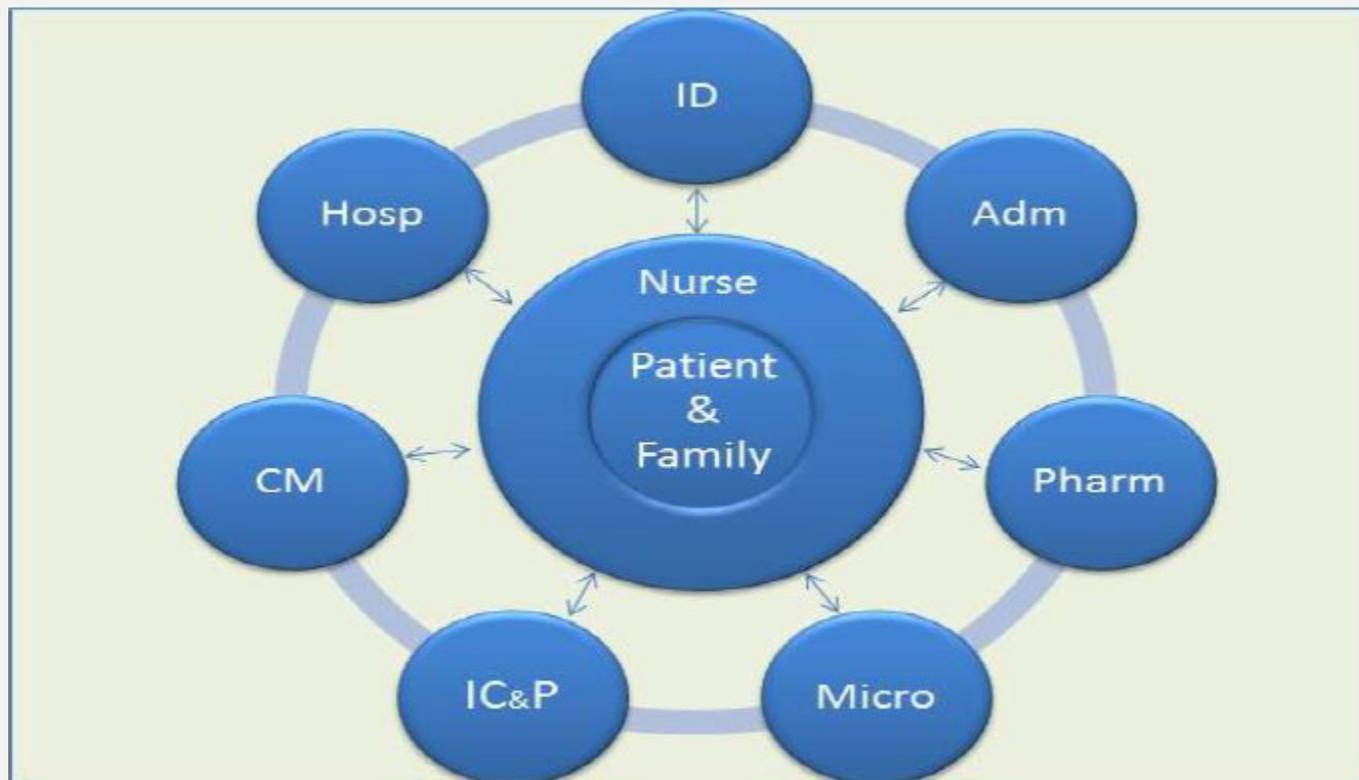
No difference in readmissions

ORDER SETS AND PATHWAYS: BIGGEST
BARRIER

COMPLIANCE

NURSING INTERVENTIONS

NURSING INTERVENTIONS



CDC CORE ELEMENTS

Leadership commitment

Accountability

Drug expertise

Action

Tracking

Reporting

Education

CDC CORE ELEMENTS

Accountability

Drug expertise

Action

Tracking

Education

NURSING INTERVENTIONS: ALLERGY

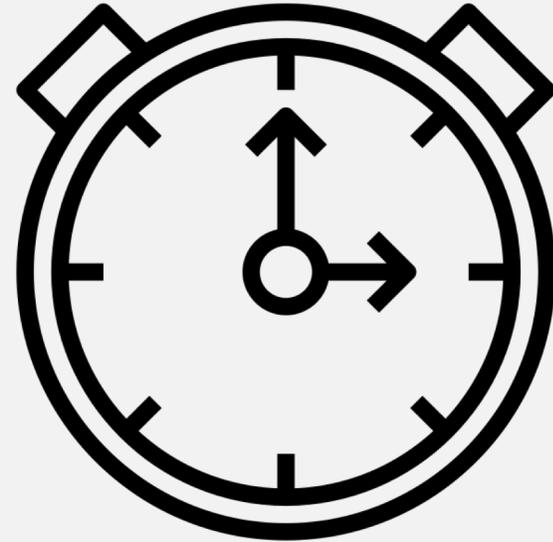
- CDC Core Element:
 - Accountability
 - Drug expertise
 - Education



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NURSING INTERVENTIONS: CULTURE

- CDC Core Element:
 - Accountability
 - Drug expertise
 - Tracking



Created by Templet
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NURSING INTERVENTIONS: IV TO PO

- CDC Core Element:
 - Drug expertise
 - Action
 - Tracking
 - Education



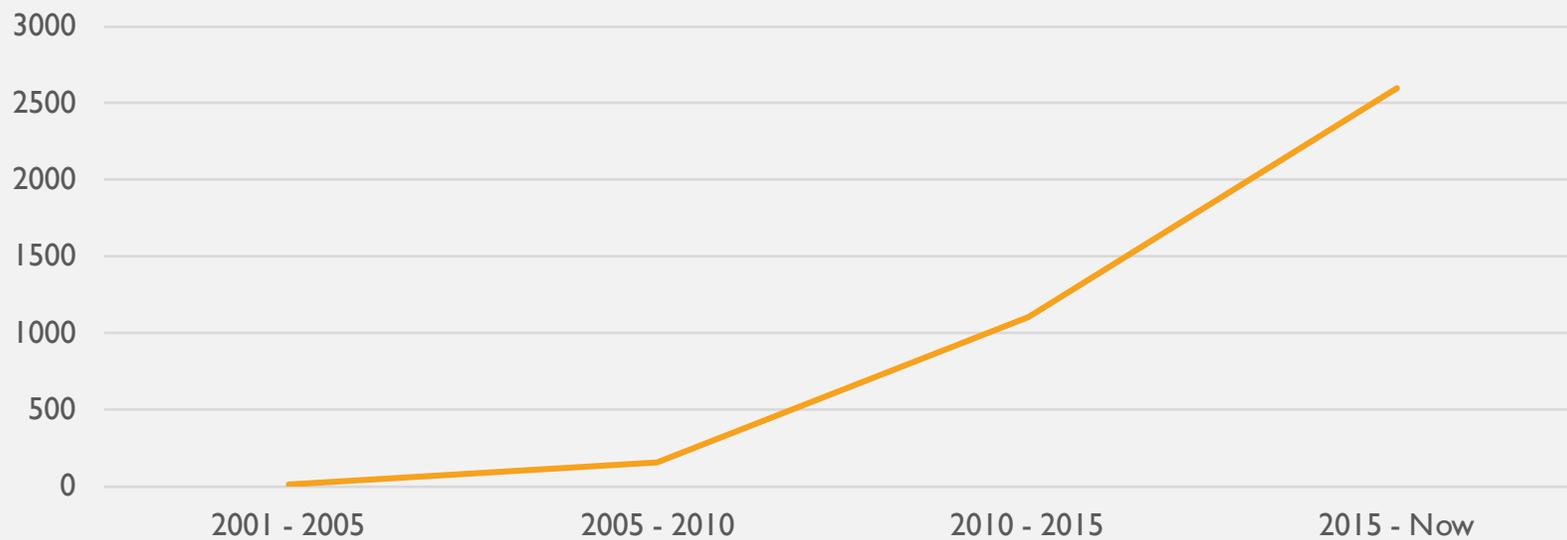
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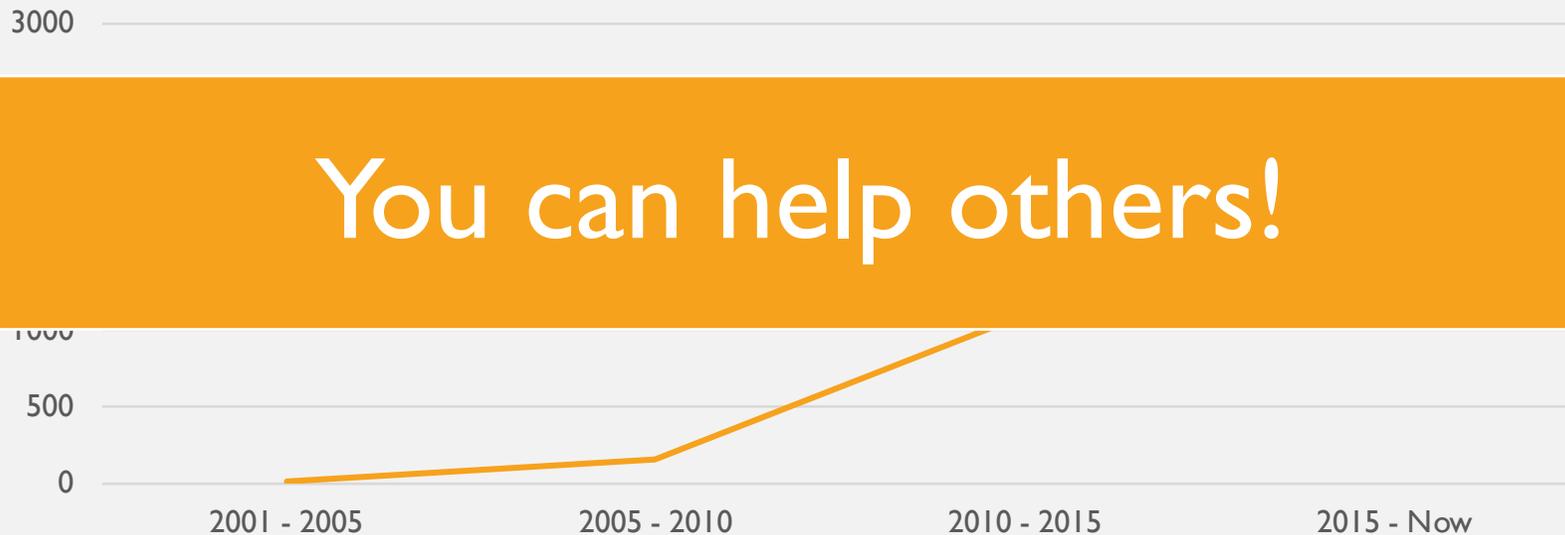
REPORTING

Antimicrobial Stewardship Articles on Pubmed



REPORTING

Antimicrobial Stewardship Articles on Pubmed



You can help others!

SMALL INTERVENTIONS, BIG RESULTS

QUESTIONS

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