Washington State Department of Health

Education • Quality • Infection Prevention
EQuIP for LTC
Training and Professional Development Program

WELCOME!

Please MUTE your phones!

EQuIP for LTC webinar will begin at 10:00 AM PST

Today's topic is
"Stewardship to Reduce CDI in Nursing Homes"
8/23/17

PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND HEALTHIER COMMUNITY

Housekeeping

Please…

- Mute your phone if you are not speaking
- Do not put the phone line on hold
- Use the chat box to ask questions during the presentation

ROCHESTER
Nursing Home
Collaborative

Reducing *C. difficile* Infections Through Antimicrobial Stewardship In Nursing Homes

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August 23, 2017

PROJECT FUNDING

Project funded by New York State Department of Health

No Conflict of Interest to Declare

OUTLINE

- Review our experience in implementing antimicrobial stewardship through Hospital-Nursing Home collaboration
- Describe our successes and challenges
- Share antimicrobial stewardship tools
- Discuss options to sustain an antimicrobial stewardship program (ASP)

IMPLEMENTING ANTIMICROBIAL STEWARDSHIP IN NURSING HOMES

Project objectives:

1. Implement antimicrobial stewardship programs in Nursing homes (NH)
2. Reduce the use of quinolones for the treatment of UTI and pneumonia
3. Reduce the overall incidence of C. *difficile* infections (CDI)

PROJECT IMPLEMENTATION

Setting

- Rochester, NY
  33 NH
- Initially recruited 6 NH-expanded to 9
- Size: 120-500 beds
- Project started in 2014

ASP Implementation

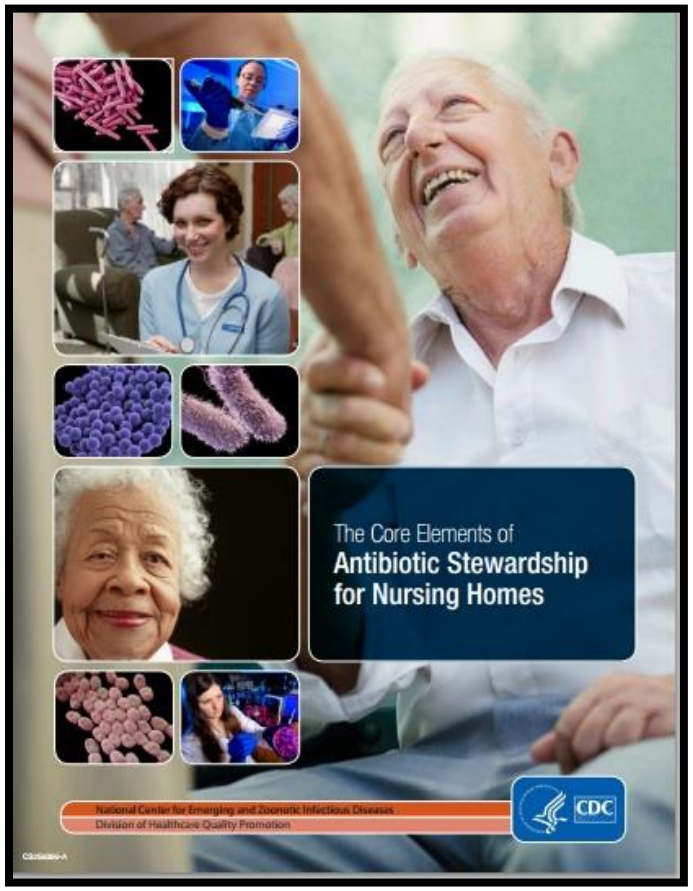
- ASP implemented successively moving from one NH to another
- Tools and approach tailored depending on NH context and needs

Dissemination

- Through Medical Directors Advisory Group
- Regional workshops
- Website

CORE ELEMENTS OF ANTIMICROBIAL STEWARDSHIP IN NURSING HOMES-SEPT 2015

1. Leadership support
2. Accountability
3. Drug expertise
4. Actions to improve use
5. Tracking
6. Reporting info to staff
7. Education



http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html

I. LEADERSHIP, ACCOUNTABILITY AND DRUG EXPERTISE

ANTIMICROBIAL STEWARDSHIP IS A TEAM EFFORT

- Nursing Home Administrator
- Medical Director
- Director of Nursing
- Director of Quality

Nursing Home Leadership

- Infection Preventionist
- Nursing Educator
- NP/PA
- In house Dispensing Pharmacist
- Consultant Pharmacist

Nursing ASP Team Members

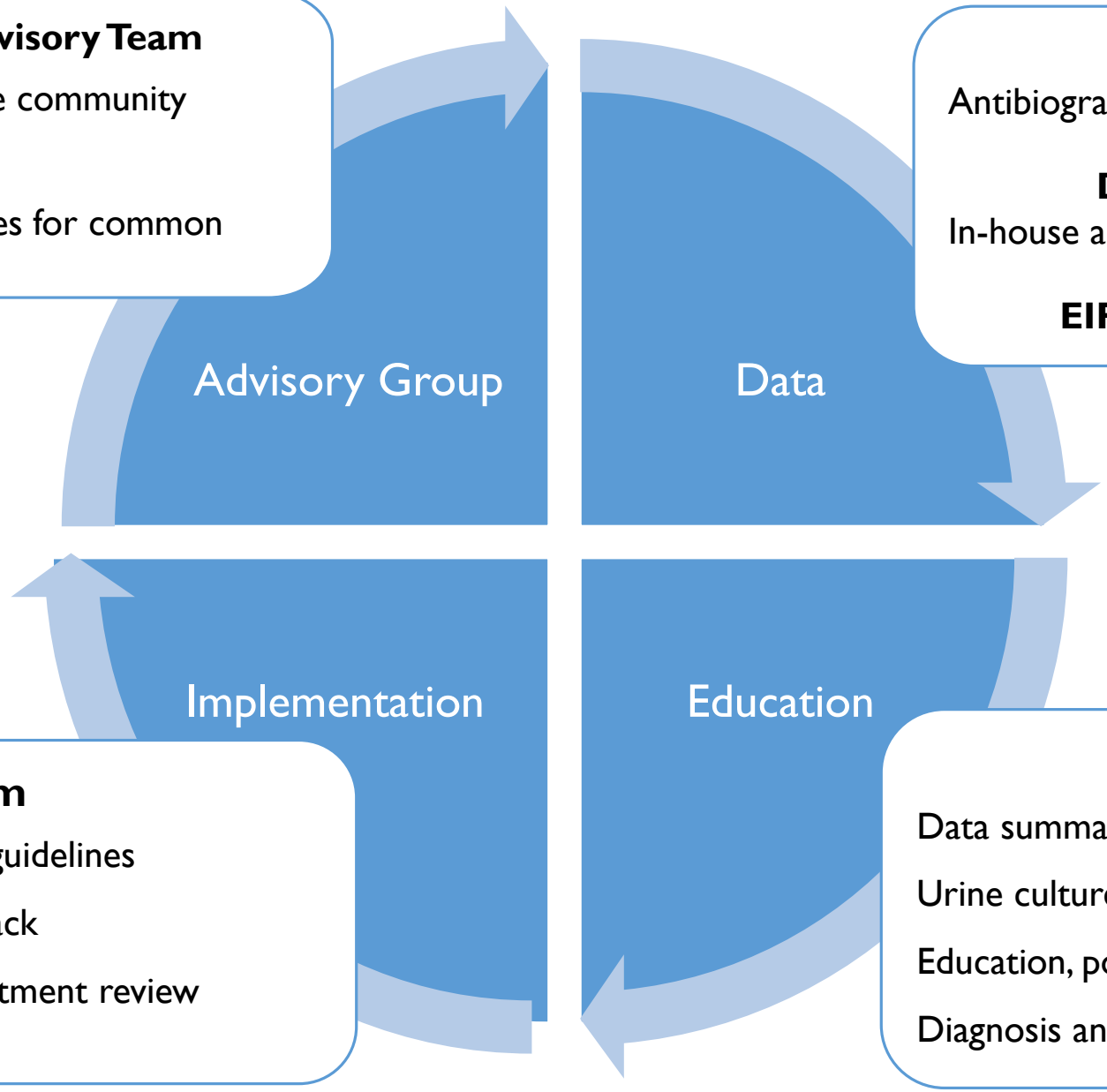
- Hospital Infectious Diseases physician
- Hospital Antimicrobial Stewardship Pharmacist
- Project Infection Preventionist and coordinator

Hospital AS Expert Team

Medical Director Advisory Team

Directors of several NH in the community and Hospital Team members

Developed treatment guidelines for common infections



Microbiology lab

Antibiogram and list of urine cultures

Dispensing pharmacy

In-house and a large dispensing pharmacy

EIP CDI surveillance data

NH Team

Implementation of tools and guidelines

Antibiotic Reviews and feedback

Urine culture testing and treatment review

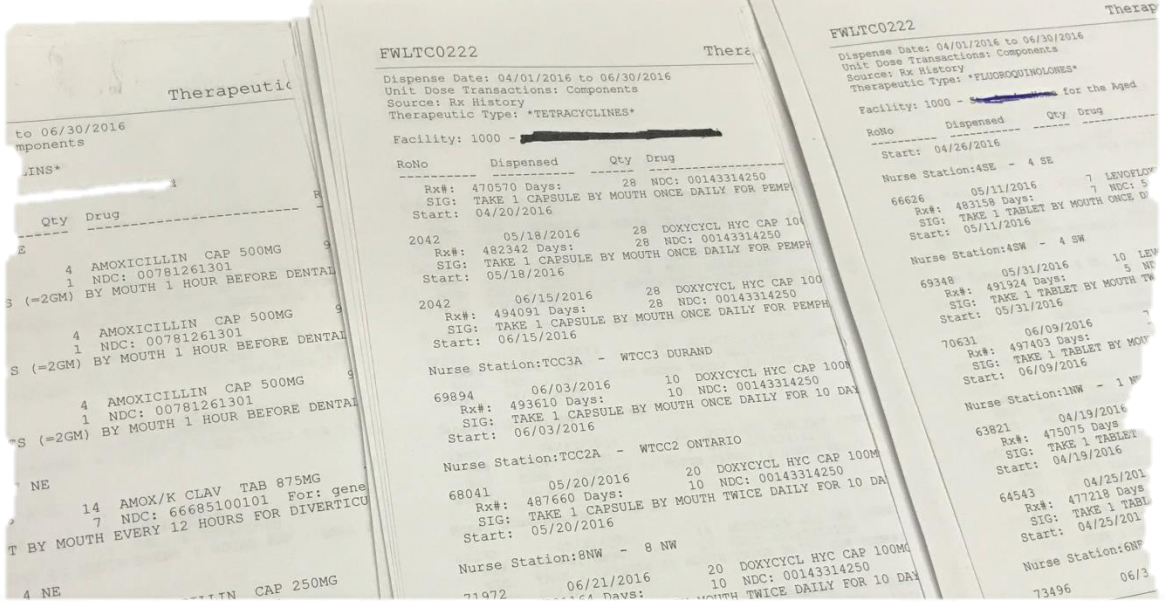
Hospital Team

Data summaries

Urine culture testing and treatment review

Education, pocket cards, posters

Diagnosis and treatment guidelines



DRUG NAME	SIG			DATE WRITTEN	QTY AUTH	QTY DISP
DOXYCYCLINE 100 MG CAPSULE	TAKE ONE CAPSULE PO TWICE	DAILY X 7 DAYS	(BRONCHITIS/COPD)	27-Jan-16	14	14
CIPROFLOXACIN 500MG TABS(*)	ONE TABLET PO TWICE	DAILY. (OSTEOMYELITIS)	(DC 2/8/16)	4-Jan-16	70	55
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12	HOURS OVER 60-90 MINUTES	(*Activate before use*)	12-Jan-16	60	8
VANCOMYCIN 1 GM ADD-VAN VIA	INFUSE 1GM I.V. EVERY 12	HOURS OVER 60-90 MINUTES	(*Activate before use*)	25-Jan-16	28	8
SULFAMETHOXAZOLE/TMP DS TAB	TAKE 1 TABLET BY MOUTH	TWICE DAILY X 14 DAYS.	(PYELONEPHRITIS)	11-Jan-16	28	2
EFPODOXIME 200 MG TABLET	TAKE ONE TABLET PO EVERY	12 HOURS FOR 10 DAYS	(PYELONEPHRITIS)	12-Jan-16	20	

II. TRACKING: MEASURING ANTIBIOTIC USE

METHODS FOR MEASURING FACILITY-WIDE ANTIBIOTIC DATA

Medication Administration data

- Often not available electronically

Purchasing data

- Different from hospital as medications purchased in bulk
- Can be difficult for dispensing from a central pharmacy location to many facilities

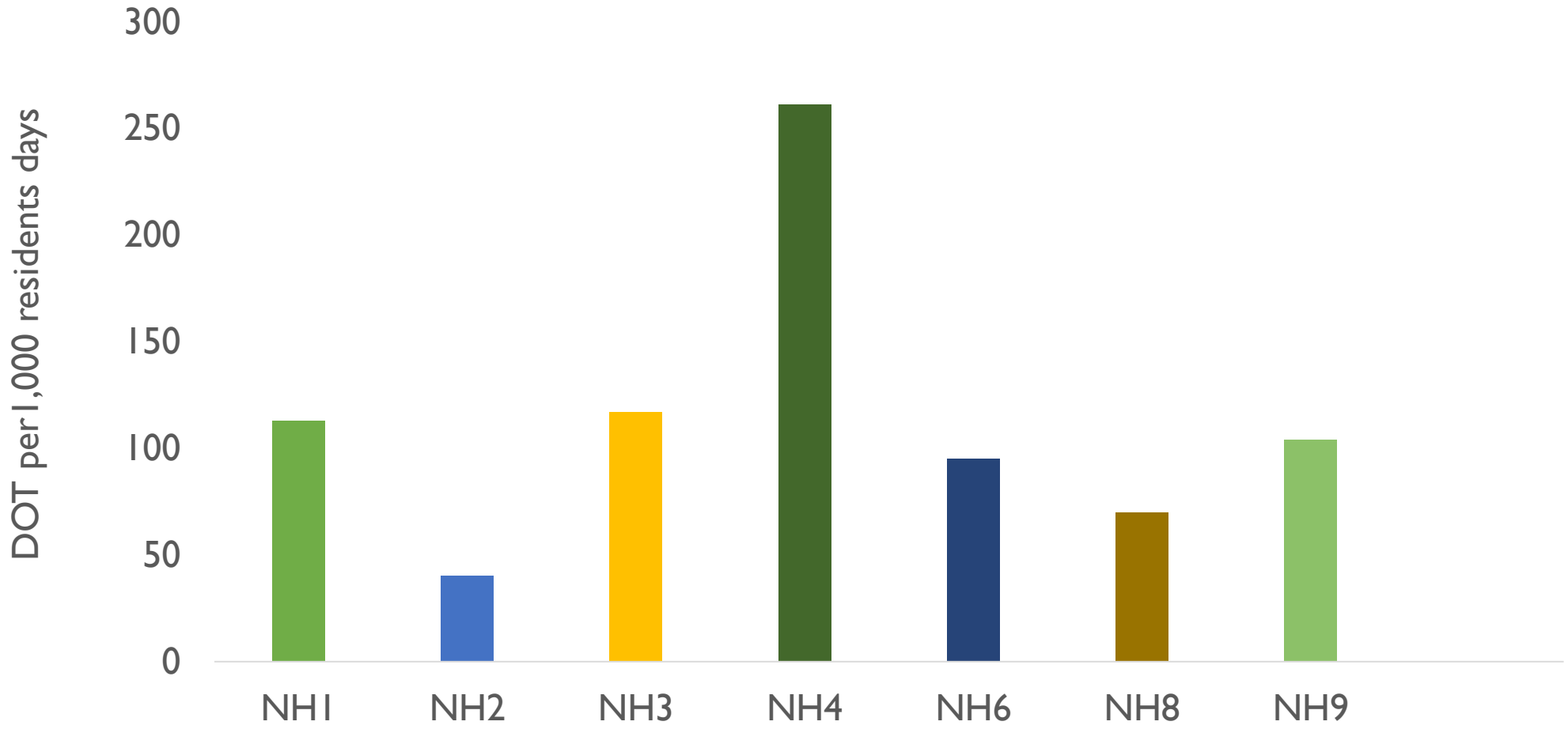
Dispensing data

- Does not insure the antibiotic was administered
- Often the dispensing pharmacy is outside the facility

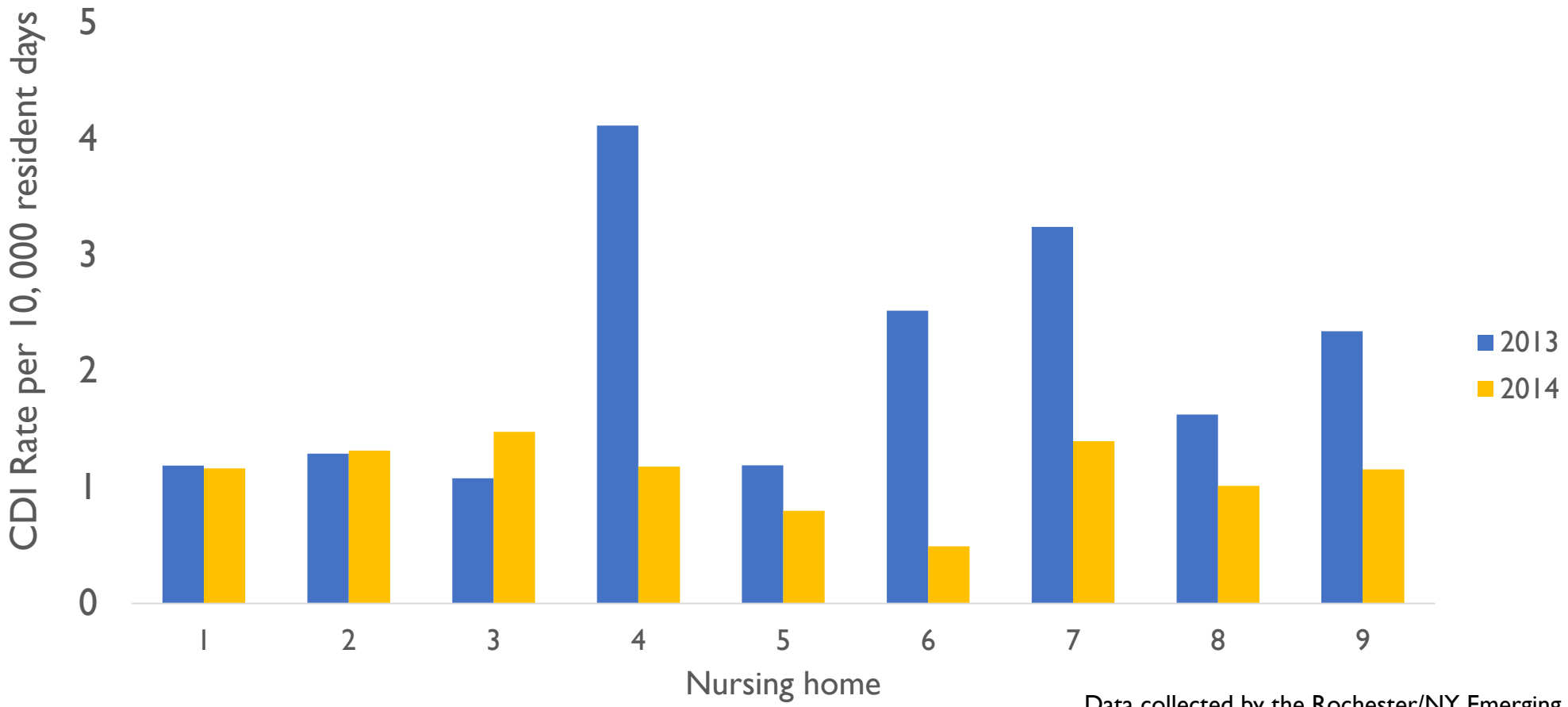
Manual collection

- Point prevalence
- Antibiotic starts

VARIATION IN ANTIBIOTIC USE

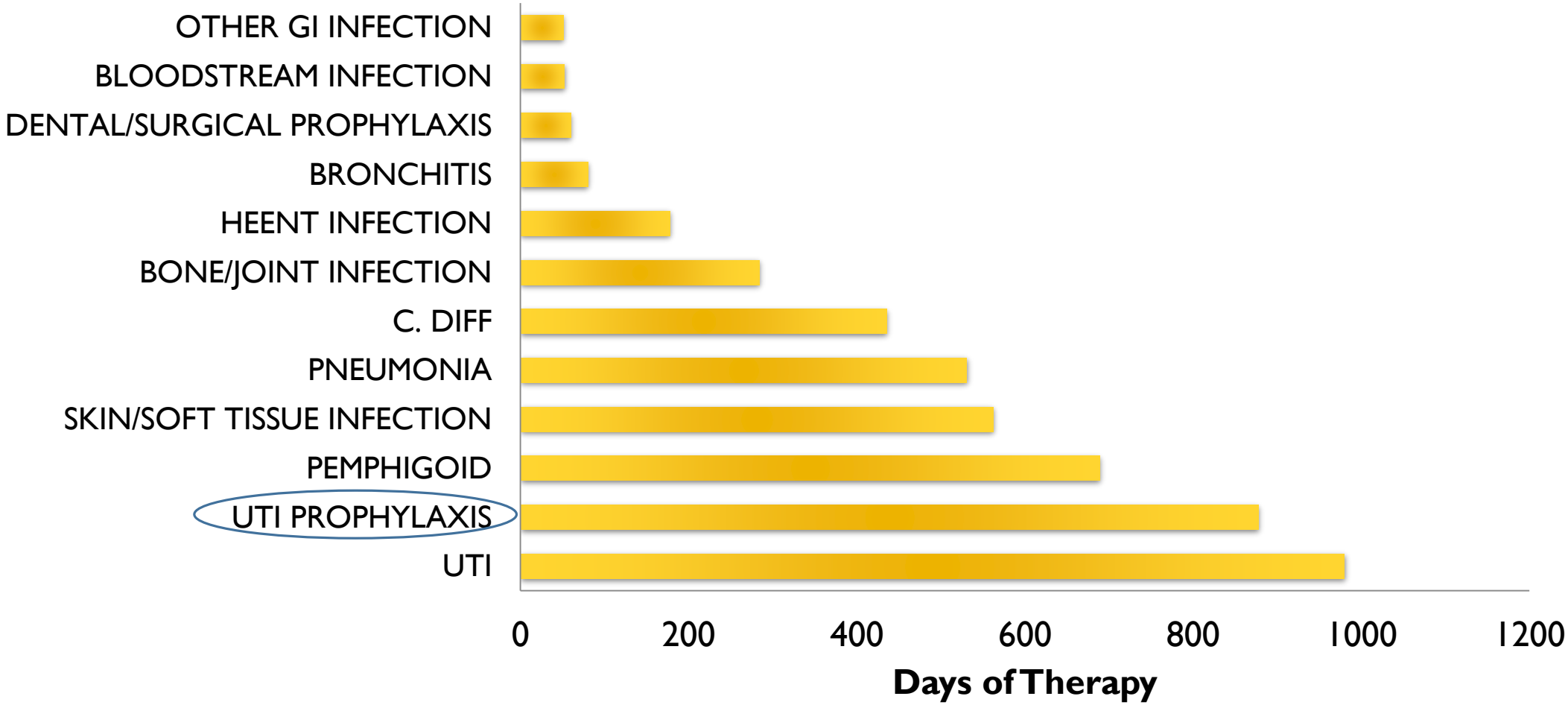


CDI INCIDENCE VARIED

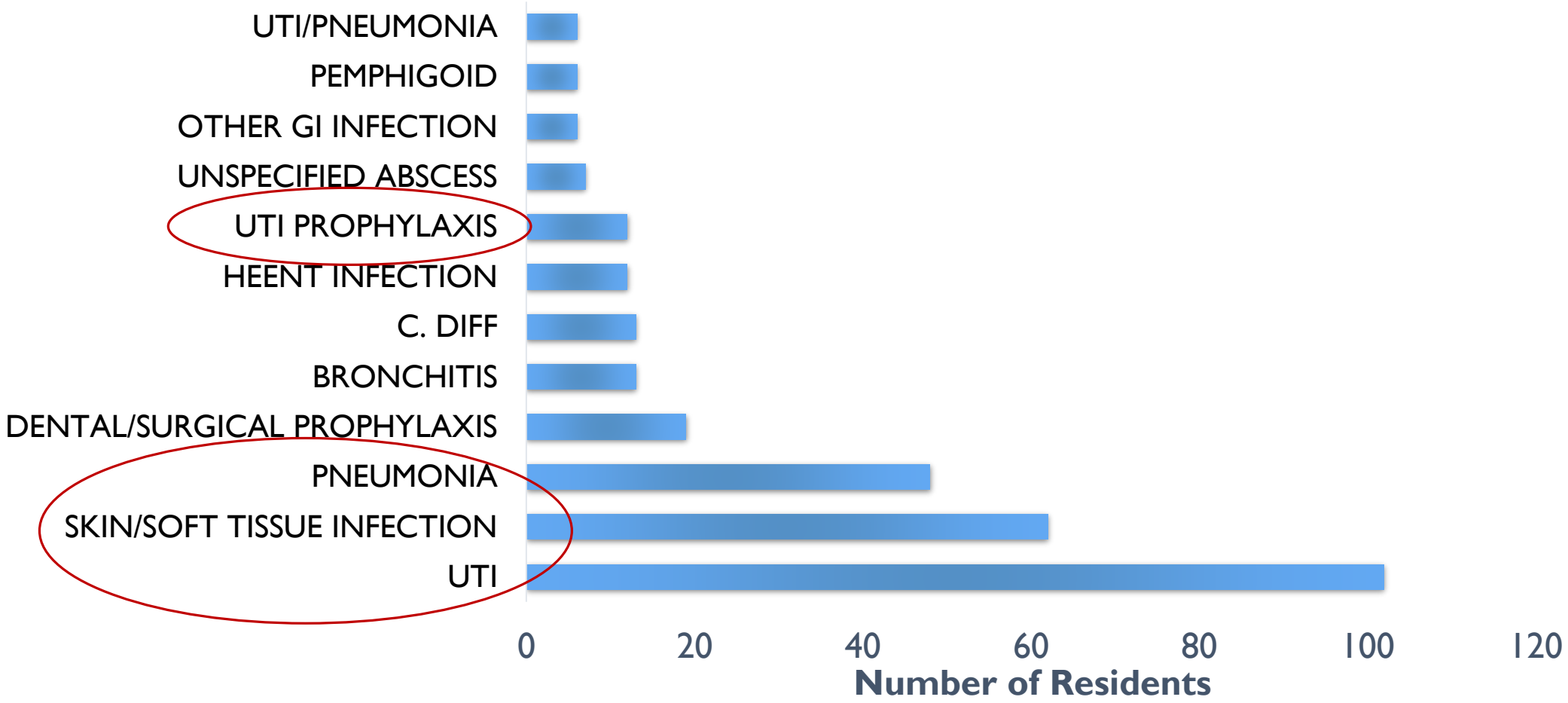


Data collected by the Rochester/NY Emerging Infection Program

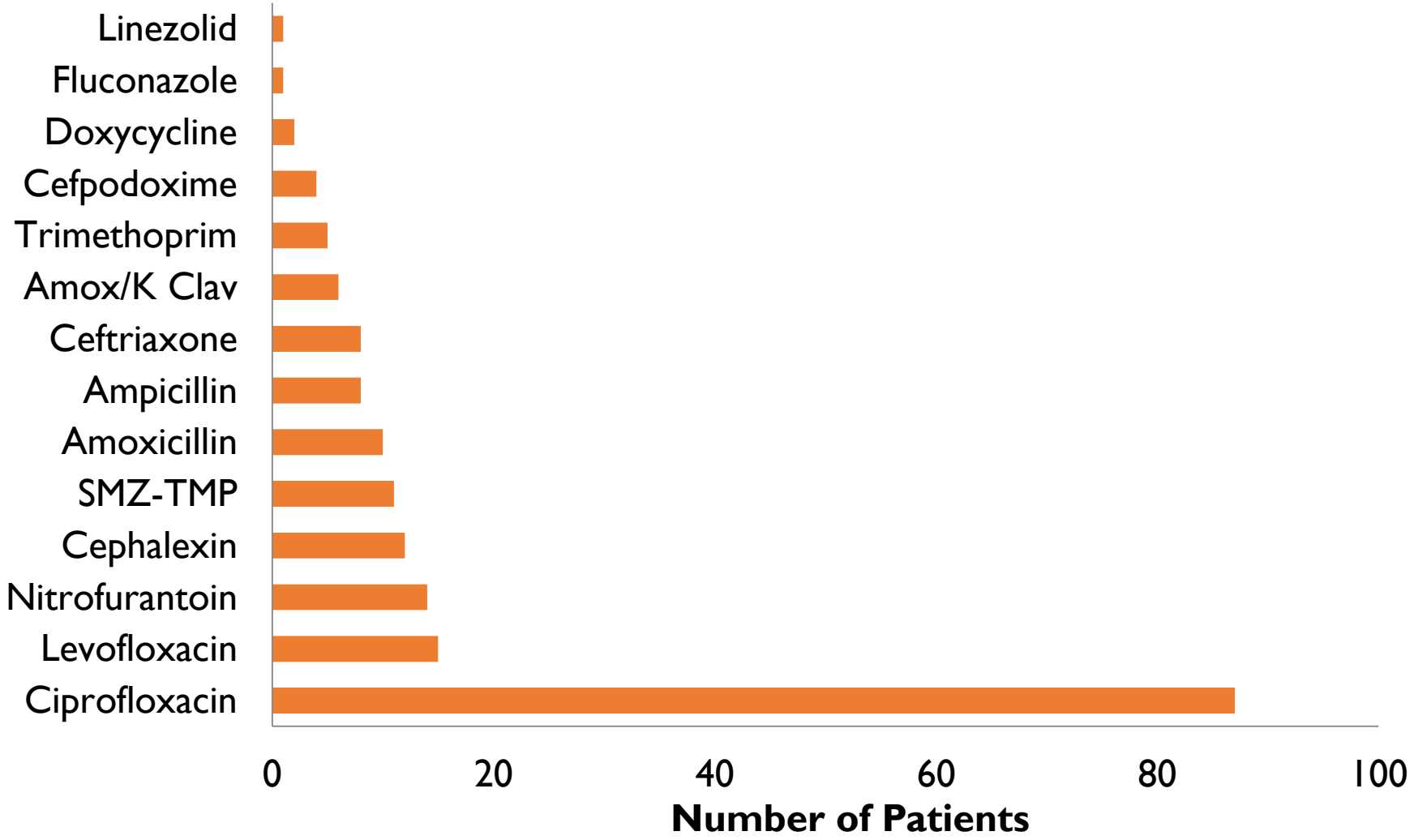
TOP 12 INDICATIONS BY DAYS OF THERAPY (DOT)



12 TOP INDICATIONS BY NUMBER OF RESIDENTS



MOST COMMON AGENTS USED FOR UTI



COLLABORATION WITH MICROBIOLOGY LAB

- Generate an antibiogram
- Number of urine cultures per month
- Improve the process:
  - of obtaining microbiology data and
  - the review and feedback of the results

URINE ANTIBIOGRAM

Organism	# of Isolates	Ampicillin	Amoxicillin/Clav	Ampicillin/sulbactam	Aztreonam	Cefazolin	Ceftazidime	Ceftriaxone	Cefepime	Ciprofloxacin	Gentamicin	Imipenem	Levofloxacin	Piperacillin/tazobactam	Tobramycin	Trimethoprim/sulfa	Nitrofurantoin	Linezolid	Daptomycin	Vancomycin	Doxycycline	Tetracycline
Gram Negative Organisms																						
Escherichia coli	**87**	62	90	72		92	94	94	94	62	89	100	50	99	90	86	97					
Klebsiella pneumonia *	**19**	0	100	100		100	100	100	100	100	100	100	100	100	100	100	47					
Proteus mirabilis *	**25**	84	96	92		88	100	100	100	88	92	92	88	100	96	88	0					
Gram Positive Organisms																						
Enterococcus faecalis *	**12**	100								75			75				100	100	100	100	42	42

**Differences in the % susceptible for an organism represented by <30 isolates may not be statistically significant from year to year.*

MULTI-FACILITIES ANTIBIOGRAM

Nursing Home Antibiotic Susceptibility Profile

(Data Collected 7/1/2015 - 6/30/2016)

Percent of Non-Duplicate Patient Isolates Susceptible to Achievable Serum Levels

Antibiogram is a Compilation of Data from 12 Area Nursing Homes Each Having <=200 Patient Beds

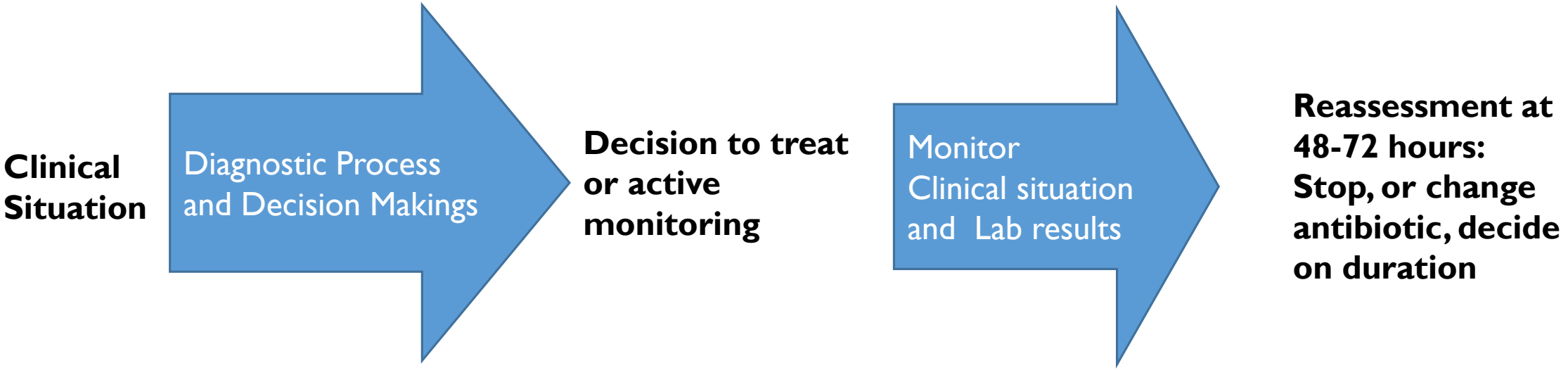
ORGANISM	No. of Non-duplicate Isolates	Amikacin	Gentamicin	Tobramycin	Ampicillin	Amoxicillin-Clavulanate	Ampicillin-Sulbactam	Penicillin	Piperacillin/Tazobactam	Oxacillin	Imipenem	Meropenem	Ertapenem	Aztreonam	Cefazolin	Cefepime	Ceftriaxone	Vancomycin	Linezolid	Erythromycin	Clindamycin	TMP-SMZ	Ciprofloxacin	Levofloxacin	Moxifloxacin	Nitrofurantoin[a]	Tetracycline	Doxycycline	Tigecycline	Fosfomycin[a]
E. coli	336	100	91	98	50		77		99		100	100	100	93	87	99	91					80	67	72	72	97			100	
Kleb. pneumoniae	113	99	91	95	0		90		100			100	100	93	93	98	92					85	95			77			100	
Proteus mirabilis	150	100	95	100	83		98		100			100	100	99	97	100	100					80	75			0				
Ps. aeruginosa	100	99	90	96					87		83	94		87		95							78							
Staph aureus	51		96			34		9		34					34			100	98	25	49	94		25	61	100	94			
Enterococcus species	108				81			81										87	100					54		92	12			
Urine Isolates Only																														
E. coli	50					66									84							72	70			96		74		100
Enterococcus species	50				92																		24			90		26		84

[a]Susceptible to achievable levels in urine only.

Prepared by CDwight J. Hardy, Ph.D.
Director, Clinical Microbiology Laboratories
URMC August 1, 2016

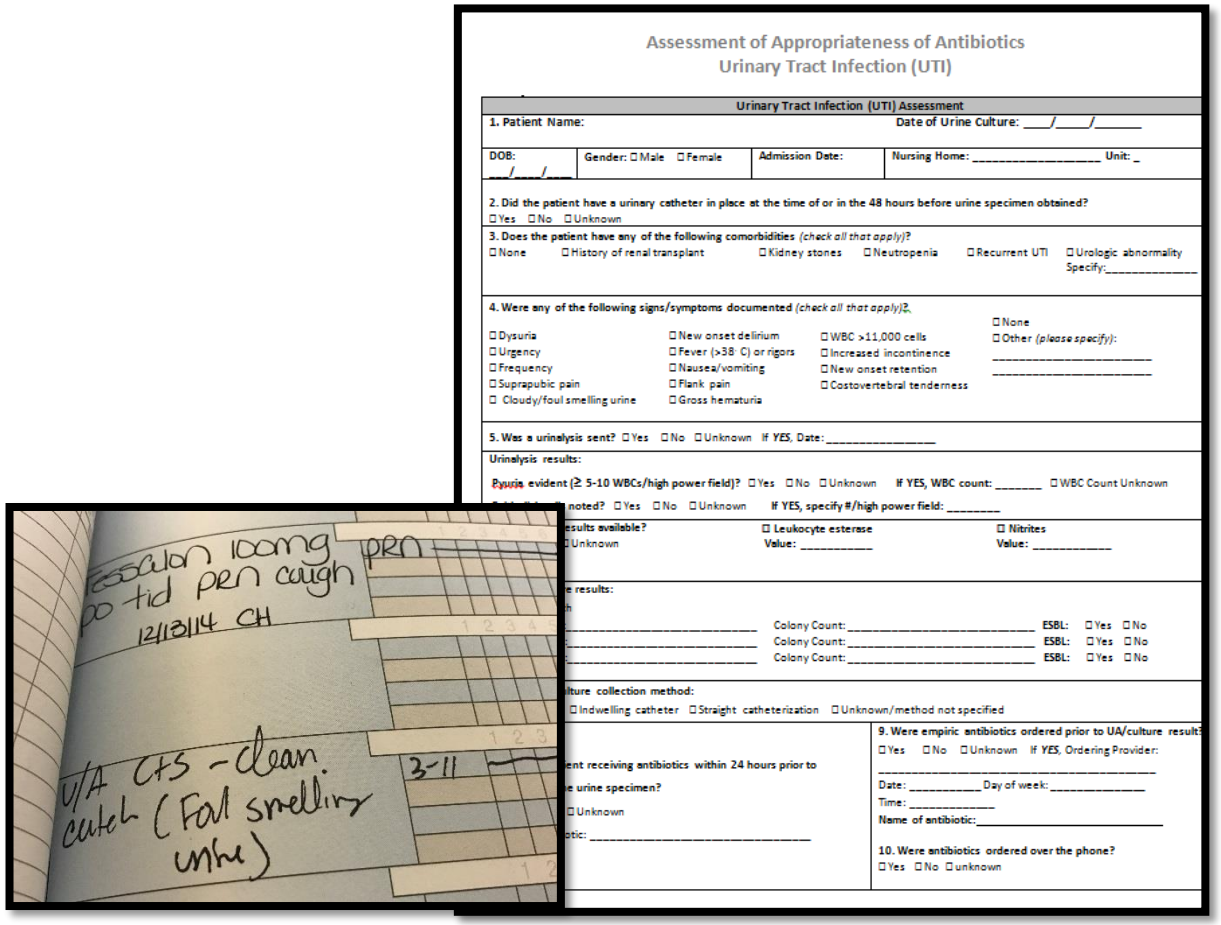
III. ACTION TO IMPROVE ANTIBIOTIC USE FOR UTI

THE PROCESS OF ANTIBIOTIC PRESCRIBING DECISIONS



Adapted from Philip D. Sloane et al. North Carolina Medical Journal 2016;77:324-329

UNDERSTANDING THE ANTIBIOTIC USE PATTERNS FOR URINARY TRACT INFECTIONS



Assessment of Appropriateness of Antibiotics
Urinary Tract Infection (UTI)

Urinary Tract Infection (UTI) Assessment

1. Patient Name: Date of Urine Culture: ___/___/_____

DOB: ___/___/___ | Gender: ☐ Male ☐ Female | Admission Date: | Nursing Home: _____ Unit: _

2. Did the patient have a urinary catheter in place at the time of or in the 48 hours before urine specimen obtained?
☐ Yes ☐ No ☐ Unknown

3. Does the patient have any of the following comorbidities *(check all that apply)*?
☐ None ☐ History of renal transplant ☐ Kidney stones ☐ Neutropenia ☐ Recurrent UTI ☐ Urologic abnormality
Specify:_____

4. Were any of the following signs/symptoms documented *(check all that apply)*?

☐ Dysuria
☐ Urgency
☐ Frequency
☐ Suprapubic pain
☐ Cloudy/foul smelling urine
☐ New onset delirium
☐ Fever (>38 C) or rigors
☐ Nausea/vomiting
☐ Flank pain
☐ Gross hematuria
☐ WBC >11,000 cells
☐ Increased incontinence
☐ New onset retention
☐ Costovertebral tenderness
☐ None
☐ Other *(please specify)*:
_____
_____

5. Was a urinalysis sent? ☐ Yes ☐ No ☐ Unknown If *YES*, Date: _____

Urinalysis results:

Pyuria evident (≥ 5-10 WBCs/high power field)? ☐ Yes ☐ No ☐ Unknown If YES, WBC count: _____ ☐ WBC Count Unknown

noted? ☐ Yes ☐ No ☐ Unknown If YES, specify #/high power field: _____

esults available? ☐ Unknown ☐ Leukocyte esterase Value: _____ ☐ Nitrites Value: _____

e results:

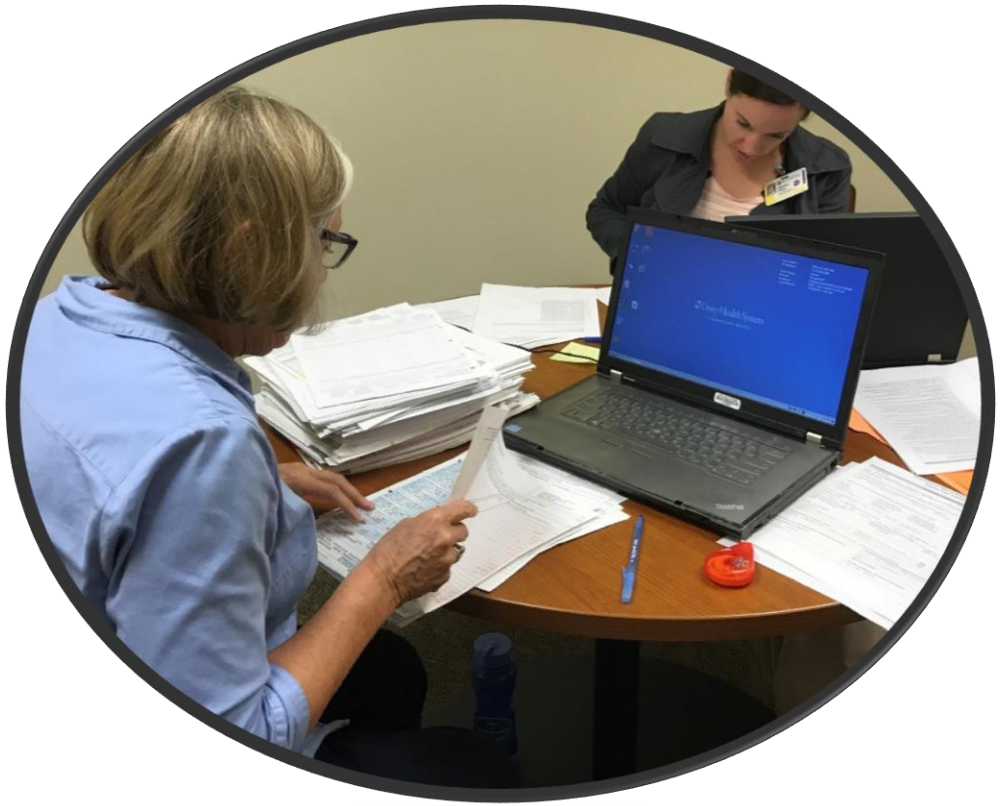
_____ Colony Count: _____ ESBL: ☐ Yes ☐ No
_____ Colony Count: _____ ESBL: ☐ Yes ☐ No
_____ Colony Count: _____ ESBL: ☐ Yes ☐ No

lture collection method:
☐ Indwelling catheter ☐ Straight catheterization ☐ Unknown/method not specified

ent receiving antibiotics within 24 hours prior to
e urine specimen?
☐ Unknown
otic: _____

9. Were empiric antibiotics ordered prior to UA/culture result?
☐ Yes ☐ No ☐ Unknown If *YES*, Ordering Provider:
_____
Date: _____ Day of week: _____
Time: _____
Name of antibiotic:_____

10. Were antibiotics ordered over the phone?
☐ Yes ☐ No ☐ unknown



Modified CDC assessment of appropriateness of antibiotics for UTI form: http://www.cdc.gov/getsmart/healthcare/implementation.html

IDSA GUIDELINES

Clinical Practice Guideline for the Evaluation of Fever and Infection in Older Adult Residents of Long-Term Care Facilities: 2008 Update by the Infectious Diseases Society of America

Kevin P. High,[1] Suzanne F. Bradley,[2,3,4] Stefan Gravenstein,[5,6,7,8] David R. Mehr,[9] Vincent J. Quagliarello,[10] Chesley Richards,[11,12] and Thomas T. Yoshikawa[13,14]

[1]Section on Infectious Diseases, Wake Forest University Health Sciences, Winston Salem, North Carolina; Divisions of [2]Infectious Diseases and [3]Geriatrics, Geriatric Research Education and Clinical Center (GRECC), Veterans Affairs Ann Arbor Healthcare System, and [4]University of Michigan School of Medicine, Ann Arbor, Michiga and [8]Department of Medicine, Alpert M Family and Community Medicine, Unive

CHICAGO JOURNALS

SHEA
The Society for Healthcare Epidemiology of America

FINDINGS OF MEDICAL RECORD REVIEW-3NH

1. **Documentation** of signs and symptoms of UTI was poor
2. **Reasons for Testing:** UTI testing was common for non urinary symptoms such as fall, confusion, foul smelling urine and weakness. Family concerns trigger a urine culture
3. **Appropriateness of UTI testing & treatment**:
    1. 74% didn't meet criteria for testing
    2. 76% didn't meet criteria for treatment
    3. 78% didn't meet the revised McGeer surveillance criteria
4. **Treatment:** Often started after culture results (53%)
5. **"Antibiotic time out":** No 48-72 hours review

A POSITIVE CULTURE DRIVES TREATMENT

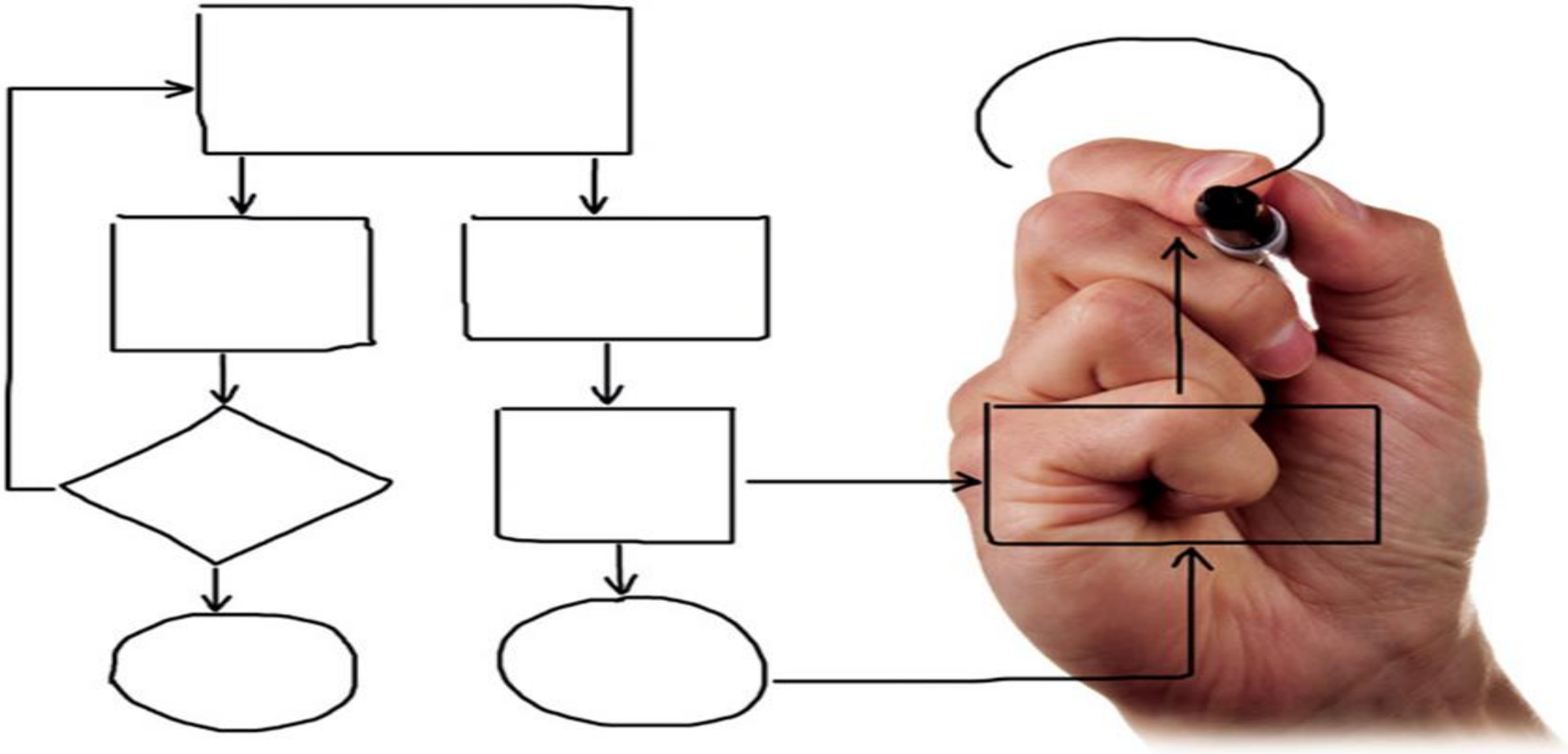
Name: Test Patient
Admission Date: 3/19/14
Med. Record No. 0000
Visit No. 00000000
Attending Physician: Dr. Doctor
Allergies: NKDA

DOB: 1/1/1906
Age: 107
Gender: Female
Location: OP
Room/bed: N/A

MICROBIOLOGY
Collected: 03/19/14 @ 17:43

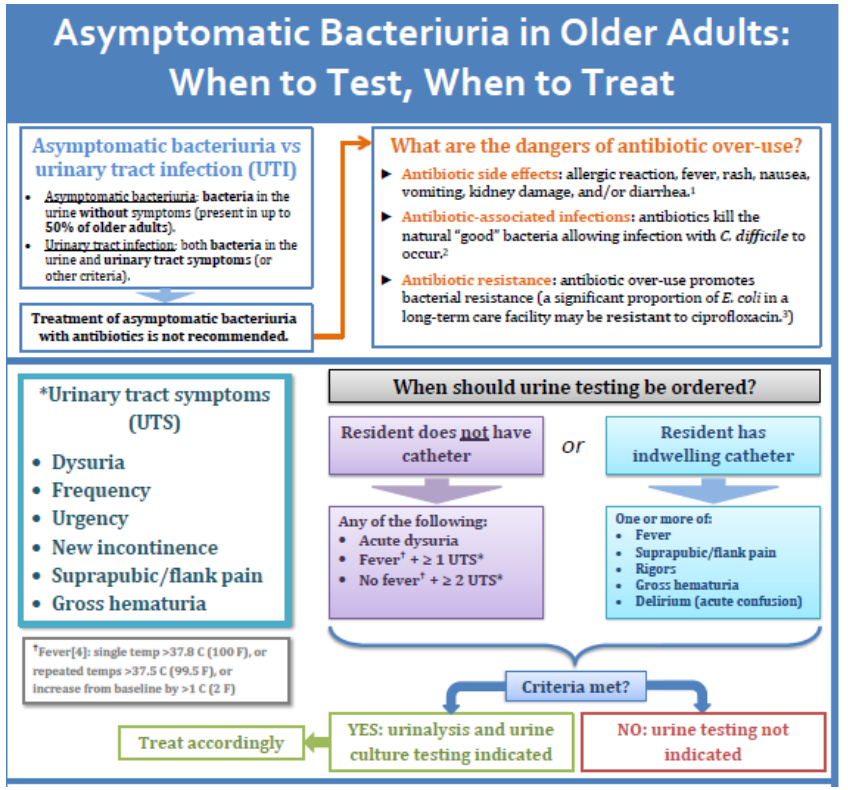
. Source Urine
Cult Urine
. Preliminary 1
.
3/20/2014: >100,000 col/mL gram negative rods.
Identification and MIC to fo
. Organism 1 Escherichia coli
. Final Results
3/21/14: Urine colony count: >100,000 cfu/mL. Please refer to
. ID and MIC tests for results.

	Organism 1	
	E. coli	
Antibiotics	SYS MIC	
Amox/K Clav	<=8/4	S
Amp/Sub	16/8	I
Ampicillin	>16	R
Cefazolin	<=8	S
Cefepime	<=8	S
Ceftriaxone	<=8	S (IB)
Cefuroxime	<=4	S
Ciprofloxacin	<=1	S
ESBL A	>4	EBL?
ESBL B	>1	EBL?
Gentamicin	<=1	S
Imipenem	<=4	S
Levofloxacin	<=2	S
Nitrofurantoin	<=32	S
Piper/Taz	<=16	S
Tetracycline	<=4	S
Trimeth/Sulfa	<=2/38	S



IV. DEVELOP UTI TESTING AND TREATMENT PROTOCOLS

V. EDUCATING NURSING STAFF



- A free online training for nurses offered by Dr. Robin Jump. https://robinjump.coursesites.com/
- Improve communication through use of SBAR: https://www.ahrq.gov/nhguide/toolkits/determine-whether-to-treat/toolkit1-suspected-uti-sbar.html

V. EDUCATION- MEDICAL PROVIDERS

Small group sessions

- Presentation of facility antibiotic use, CDI and UTI review data
- Review appropriate testing and treatment of UTI
- Review antibiogram
- Review locally created treatment guidelines
- Provided pocket treatment cards
- **Recommended**
  - Improvement of the documentation of signs and symptoms
  - Clinical evaluation for every antibiotic prescription and at 48 hours, i.e. antibiotic "time out"

MEDICAL STAFF POCKET CARD

Table 1. When to TEST for UTI:

Does resident have an indwelling catheter?

NO

One or more of:

- ☐ **Acute dysuria** or acute pain, swelling, or tenderness of the testes, epididymis, or prostate
- ☐ **Fever* AND at least 1 of the following:**
  - New worsening urgency
  - New or worsening frequency
  - New or worsening urinary incontinence
  - Gross hematuria
  - Suprapubic pain or costovertebral angle tenderness
- ☐ **No Fever + 2 or more of the above symptoms**

Criteria met?

☐ YES, Test indicated ☐ NO, Test not indicated

YES

One or more of:

- ☐ Fever*
- ☐ Rigors
- ☐ **New** onset hypotension
- ☐ **New** onset confusion/functional decline w/ no other diagnosis
- ☐ Suprapubic/flank pain
- ☐ **New** pain, swelling, or tenderness in testicles or prostate
- ☐ Pus around catheter

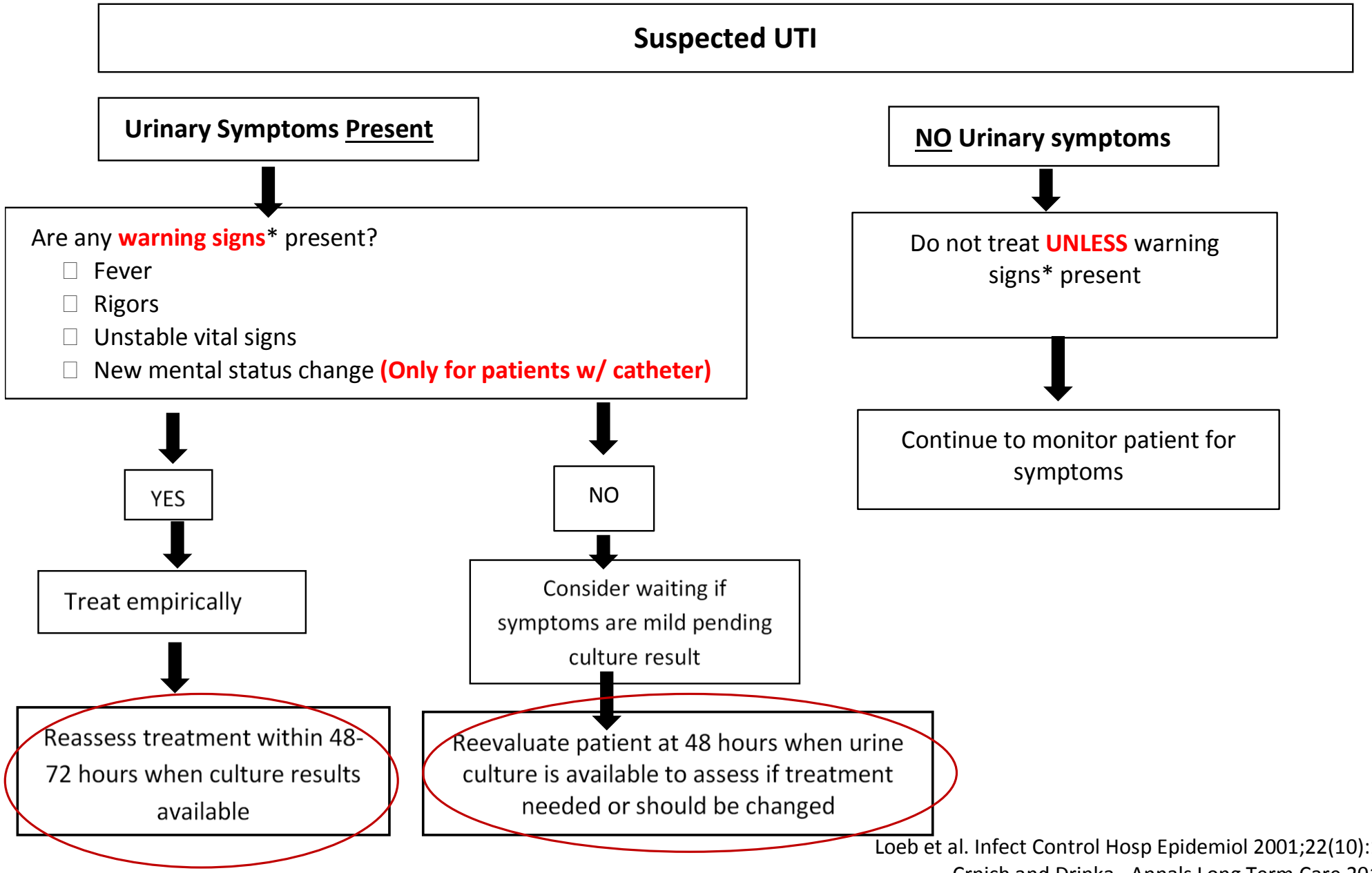
Criteria met?

☐ YES, Test indicated ☐ NO, Test not indicated

Stone et al. Infect Control Hosp Epidemiol 2012;33(10):965-977

*Fever: Single oral temp >37.8°C (100°F), or repeat oral temps >37.2°C (99°F) or rectal temps >37.5°C (99.5°F), or single temp >1.1°C (2°F) over baseline from any site (oral, tympanic, axillary)

Table 2. When to TREAT for UTI:



Loeb et al. Infect Control Hosp Epidemiol 2001;22(10):120-124
Crnich and Drinka. Annals Long Term Care 2014;22(9)

V. EDUCATION- FAMILY

Antibiotics:
Balancing Benefit and Harm

Common myths

Sometimes, other symptoms that older adults experience can be confused with a UTI. The following symptoms **do not** necessarily indicate a UTI especially if there are no other urinary symptoms or fever:

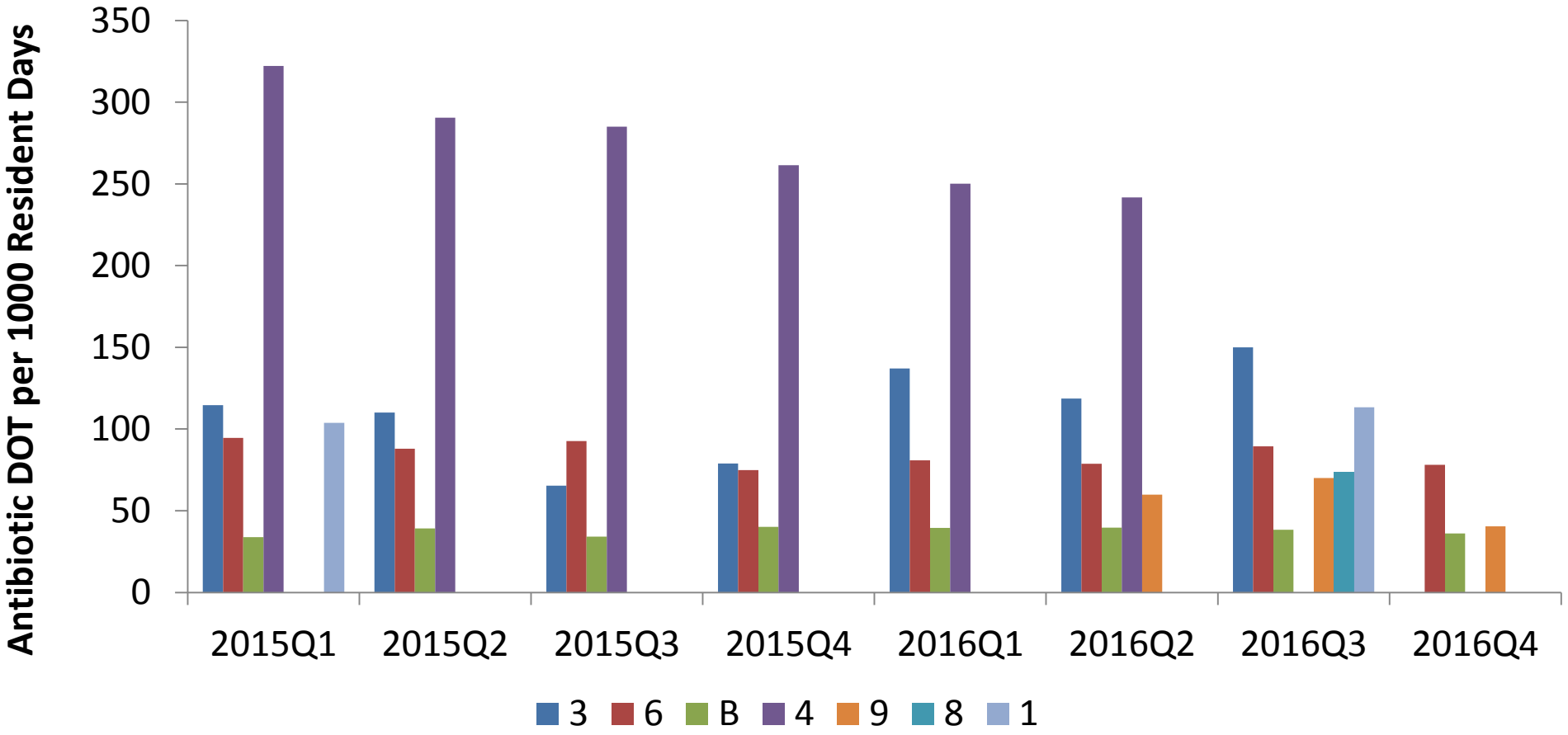
- Confusion
- Falling
- Cloudy/foul-smelling urine
- Muscle weakness

Doctors and other practitioners are not always sure what may be causing the symptoms in a patient, and sometimes the best option for the patient is observation and monitoring.

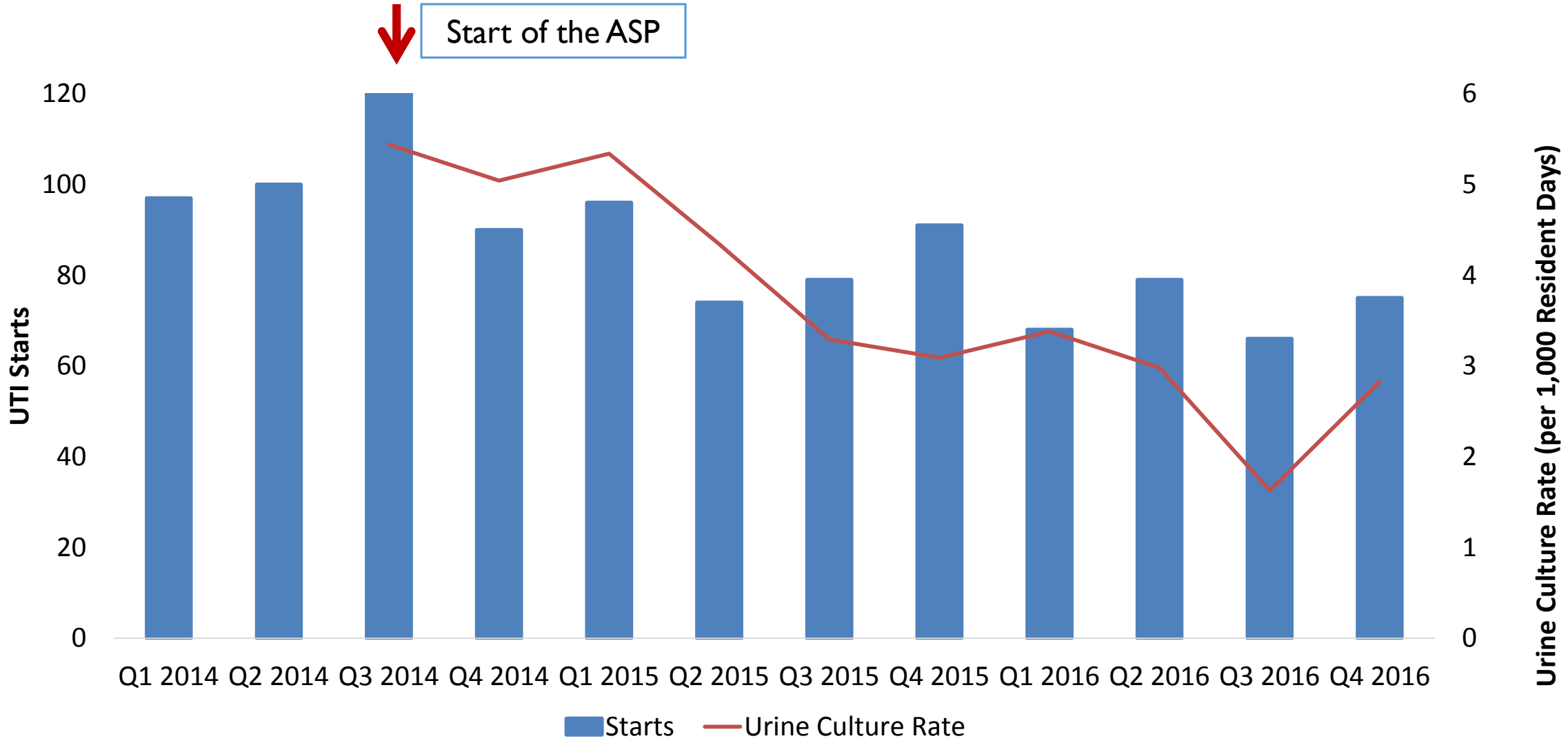
https://www.ahrq.gov/nhguide/toolkits/educate-and-engage/index.html

VI. REPORTING ON ANTIBIOTIC USE DATA

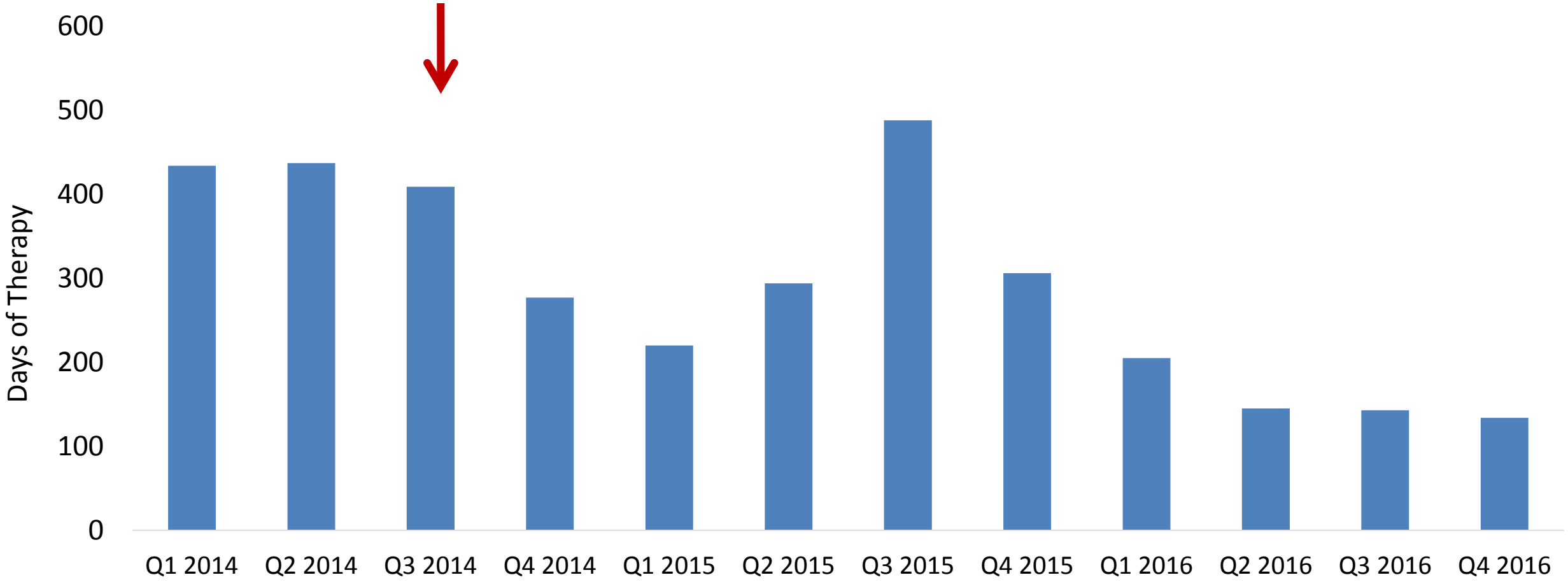
FEEDBACK OF ANTIBIOTIC USE DATA



NUMBER OF ANTIBIOTIC STARTS FOR UTI AND URINE CULTURE RATE



CIPROFLOXACIN USE



INFECTION PREVENTIONIST CHAMPION

Goal to capture all urine cultures and UTI treatments

- Worked with micro lab to get list of tested residents
- Worked with pharmacy to get new antibiotic starts for UTI

Uncovered some of the limitation of the 24 hour report

Performed monthly assessments of tested and treated residents for signs and symptoms of UTI

<u>Feedback</u> to nurses and in house medical providers on the appropriateness of testing and treatment

Line list of Urines Obtained

Month/Year 12/2016

Name	Room	Date/Symptoms	U/A results	Culture results	Met Criteria	Treated
	134	12/14 Cough, falls (afebrile)	(+)	12/14 >10^5 E. Coli	No	12/14 Azithromycin for Bronchitis
	116	12/20 Worsening CKD (afebrile)	(+)	12/22 >10^5 Mixed Colonies	No	None
	206	12/7 D's mental Status weakness, low grade T. (100.2)	(+)	12/12 >10^5 E. Coli	No	12/13 Cipro x 7 days
	218	12/13 Emesis, ↓ B/P, ↑ WBC urinary retention (afebrile)	(+)	12/13 >10^5 E. Coli	No	12/15 Cipro x 3 days
	236	12/23 ↑ WBC c "Hx of UTI's" (afebrile)	(+)	12/23 >10^5 E. Coli	No	12/27 Ampicillin x 2 days
	211	12/7 fall, ↑ confusion (afebrile)	(-)	12/8 No Growth	No	None
	336	12/7 foul odor, ↑ incontinence (afebrile)	(-)	12/7 >10^5 E. Coli	No	12/9 Keflex x 5 days
	326	12/8 Fall c C/O (L) sided pain (afebrile)	(-)	12/18 None done	No	None
	429	12/23 ↑ T, Lethargy, physical decline	(+)	12/23 >10^5 Proteus mirabilis	No	12/27 Cipro x 3 days
	415	12/19 rigors, wheezing, crackles	(+)	12/20 51-100,000		12/20

Antibiotic Name and Days of Therapy

Revised McGeer Criteria: Signs and Symptoms

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Antibiotic start date	Days of therapy (DOT)	Resident code (no names)	Unit/floor	Prescriber code (no names)	Antibiotic name (enter one ABX per row)	Indication	Fever (Y/N)	Leukocytosis ((14 x 10^3 cells/L) or left shift > (6% or 1.5 x 10^9 bands/L)) (Y/N)	Rigors (Y/N)	New onset hypotension (Y/N)	Acute costo-vertebral angle pain (Y/N)	Suprapubic pain (Y/N)	Gross hematuria (Y/N)	Incontinence (new/marked increase) (Y/N)	Urgency (new/marked increase) (Y/N)	Frequency (new/marked increase) (Y/N)	Acute change in mental status/funct. decline,	Purulent discharge @ catheter (Y/N)	Acute dysuria (Y/N)	Acute pain, swelling, or tendnerness of testes,	Indwelling catheter
2	5/1/2017	7	GD	2 North	xx	trimethoprim/sulfamethoxazole	UTI	Y	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N
3	5/5/2017	14	RV	2 South	YY	ciprofloxacin	UTI	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4	5/6/2017	10	RR	3 North	VV	levofloxacin	UTI	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
5	5/9/2017	17	VV	2 South	BB	ciprofloxacin	UTI	Y	Y	Y	N	Y	Y	Y	N	Y	Y	N	N	N	N	N
6	5/11/2017	14	VX	2 South	YY	ciprofloxacin	UTI	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7	5/25/2017	10	YD	3 North	VV	levofloxacin	UTI	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
8	6/1/2017	17	FR	2 South	BB	ciprofloxacin	UTI	Y	Y	Y	N	Y	Y	Y	N	Y	Y	N	N	N	N	N
9	6/3/2017	10	BB	3 South	BB	nitrofurantoin	UTI	N	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N
10	6/5/2017	7	NY	4 South	VV	cefepime	UTI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N
11	6/6/2017	0	NX	2 North				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Data collection template created by Dallas Nelson, MD, Timothy Holahan, MD. Modified by NYSDOH Project Team for the CLASP Project

Urine Culture Results

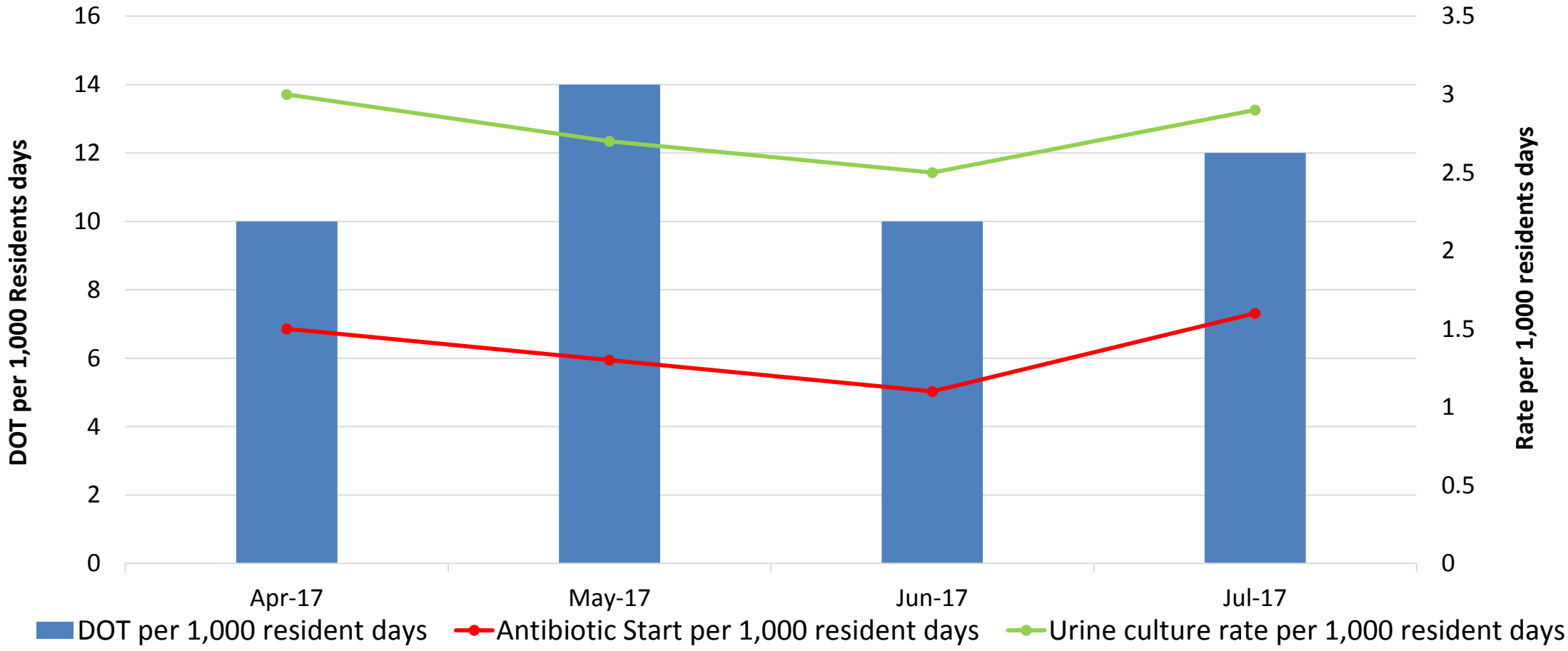
48-72 hrs reassessment

Meets McGeer Criteria

X	Y	Z	AA	AB	AC	AD	AE	AH	AI	AJ
Date of Urine Culture	Urine culture source	Culture Result #1	colony counts (CFU/mL) #1	Culture Result #2	colony counts (CFU/mL) #2	Re-Assessment within 48-72 hours of antibiotic start	Meets microbiologic criteria	Meets Revised Criteria A (no catheter)	Meets Revised Criteria B (has catheter)	Meets Revised McGeer Criteria
6/21/2017	in/out straight	Klebsiella pneumoniae	100,000			N	YES	YES	NO	YES
6/23/2017	clean catch	Proteus mirabilis	100,000			N	YES	NO	NO	NO
6/26/2017	indwelling	Mixed flora	50,000			N	NO	NO	NO	NO
6/22/2017	clean catch	Escherichia coli	100,000			Y	YES	YES	NO	YES
5/1/2017	clean catch	Proteus mirabilis	100,000			N	YES	NO	NO	NO
5/3/2017	indwelling	Mixed flora	30,000			N	NO	NO	NO	NO
5/5/2017	clean catch	Escherichia coli	100,000			Y	YES	YES	NO	YES
6/3/2017	clean catch	Escherichia coli	100,000	Methicillin Resist	50,000	Y	YES	YES	NO	YES
6/5/2017	clean catch	Klebsiella pneumoniae	100,000			Y	YES	YES	NO	YES
6/6/2017	clean catch	No growth	0			N	NO	NO	NO	NO
6/7/2017	clean catch	Klebsiella pneumoniae	50,000			N	NO	NO	NO	NO

B	C	D	E	F	G	H	I	J	K	L	M
month	total resident days	# ABX starts	ABX starts per 1000 resident days	# days of therapy	days of therapy per 1000 resident days	# ABX starts that met criteria	% of ABX starts that met criteria	reassessed within 48-72 hours	% of ABX starts reassessed within 48-72 hrs	# urine cultures	urine cultures per 1000 resident days
5/1/2017	2000	8	4	96	48	2	25.0%	1	12.5%	3	2
6/1/2017	2000	12	6	88	44	3	25.0%	3	25.0%	8	4
7/1/2017	1900	7	3.7	55	28.9	0	0.0%	0	0.0%	3	2

UTI TESTING AND TREATMENT SUMMARY



ANOTHER CHAMPION

- IP worked with **IT** to create a daily report on antibiotic and culture orders from electronic medical records
- Obtained from **dispensing pharmacy** daily list of residents on antibiotics
- Generated Antibiotic DOT and Rate of UTI Treatment
- Educating staff across the facility on asymptomatic bacteriuria and antibiotics harm

PHARMACIST CHAMPIONS

1. Review of every order for quinolones for appropriateness
   - Suggest alternative
2. Review urine culture results and apply the revised McGeer criteria
   - Provide written feedback
3. Collaboration between consultant pharmacist and IP

EXAMPLE

- Red fields filled out by IP; blue fields by consultant pharmacist

Residents without a catheter

Date	Patient Name	Medication	DOT	Indication	Positive UA (Y/N)	Culture Sensitive	Dysuria (Y/N)	Fever (Y/N)	Other Symptoms (Urinary urgency, frequency, pain, hematuria, incontinence)	Allergies	Appropriate abx?	Appropriate DOT?	Appropriate Dose?

Residents with catheter

Date	Patient Name	Medication	DOT	Indication	Positive UA (Y/N)	Culture Sensitive	Symptoms (Fever, rigors, delirium,	Allergies	Appropriate abx?	Appropriate DOT?	Appropriate Dose
							flank pain, hematuria,				
							pelvic discomfort, lethargy,				
							CVA tenderness)				

Courtesy of Brandi Van Valkenburg Pharm D, BCGP

ACTION: IMPROVE DOCUMENTATION OF ANTIBIOTIC INDICATION

ANTIBIOTIC ORDERING AND TRACKING FORM

Resident information (can use sticker): Date:_____

Patient Name: Unit: Height:

Date of Birth: Weight:

Allergies:

Medication:

Drug:

Dose:

Frequency & Route:

Duration: Dispense as Written

Indication:

Prescriber signature/Date/Time: _____

Nurses' s Signature/Date

_____

_____

_____

Optional Symptom/HPI Documentation:

Fever	Y	N	Cough	Y	N	Urinary Catheter	Y	N	
Dysuria	Y	N	Sputum	Y	N	Central Line	Y	N	
Abdominal pain	Y	N	Diarrhea	Y	N	Ventilator	Y	N	

Other symptoms/Risk Factors: _____

Exam Documentation

Vitals:

Exam:

Diagnostic Testing Results

No cultures

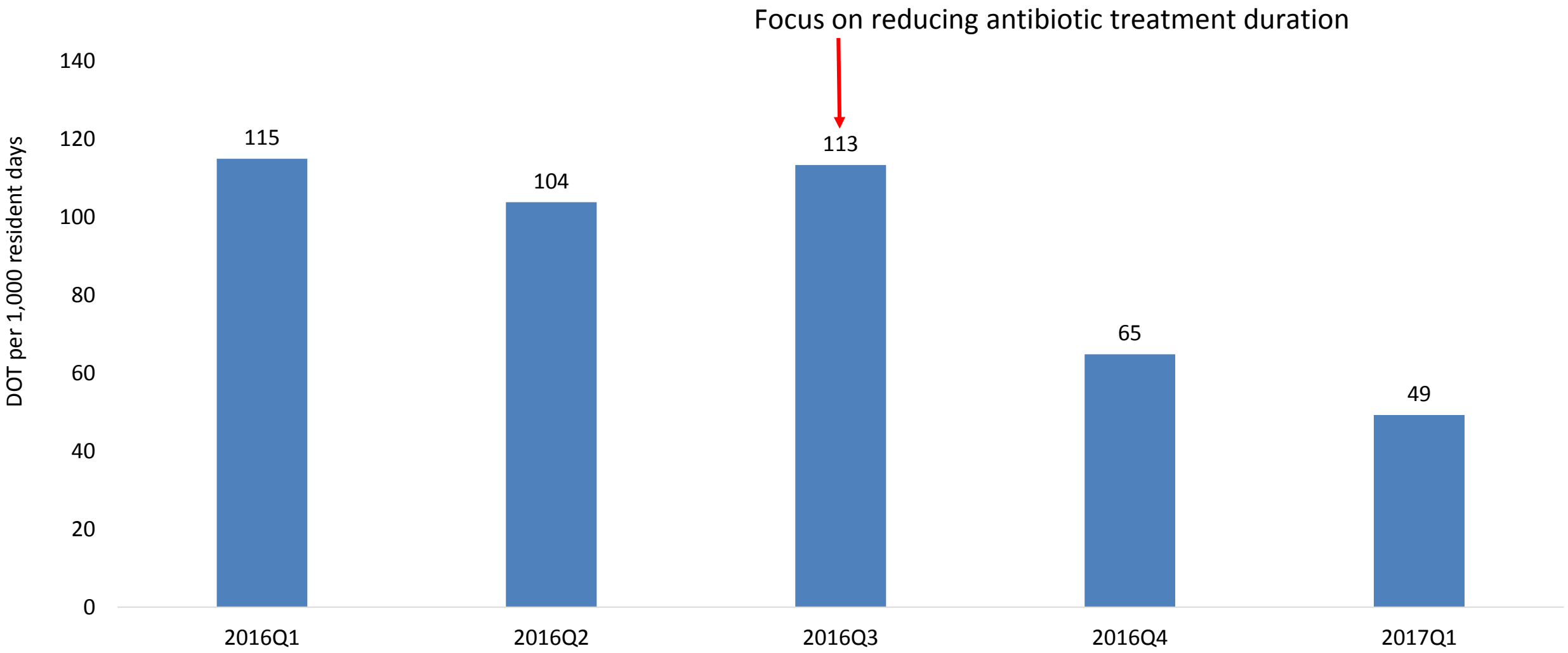
Tx based on prior lab data

Impression Plan

Signature: Date/Time:

I make sure all the antibiotic orders have an indication

ANTIBIOTIC DOT



ACTION: IMPLEMENT A PROCESS FOR ANTIBIOTIC "TIME OUT"

Resident Name

Nursing Reevaluation of Antibiotic Initiation

RN assessment to be completed between 48 and 72 hours

This is not necessary if the antibiotic order states "per hospital plan"

Current Antibiotic Order

Vital Signs (please include range for the past 48 – 72 hours)

Observations:

Available Lab Data:

___Resident is stable and showing signs of improvement - **no action necessary**

___Symptoms have resolved - **notify provider** for potential adjustment in course of antibiotic therapy

___New lab data available - **notify provider and review**

___Sensitivities show resistance to the antibiotic that the resident is receiving **-** **notify provider**

Date / Time:

Signature:

SUCCESSES

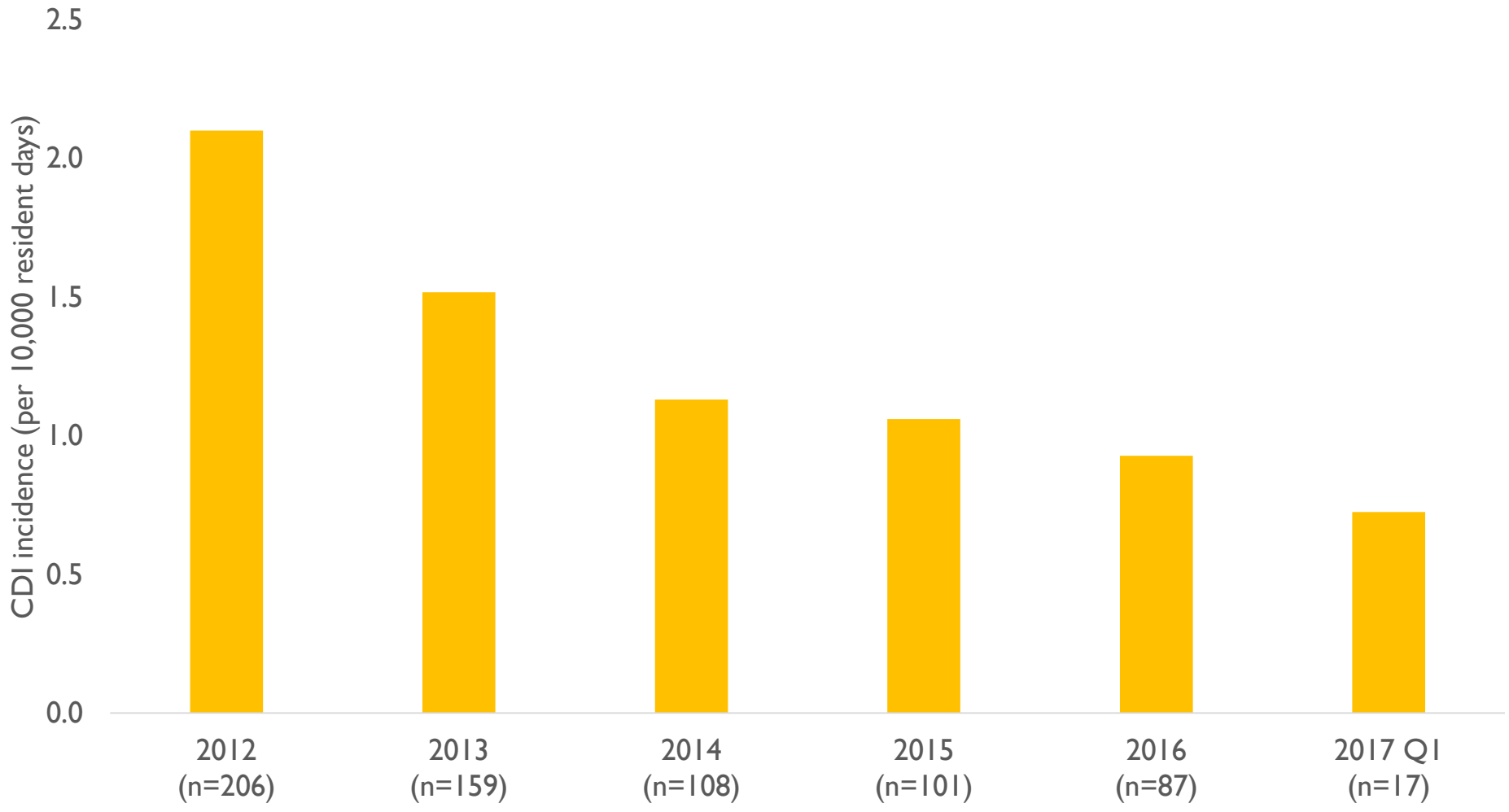
Citywide Spread of Tools and Guidelines

- Recognition of the importance of implementing an ASP
- Many of the nursing homes are "taking ownership" of their ASP

Collaboration between different disciplines in and across NH

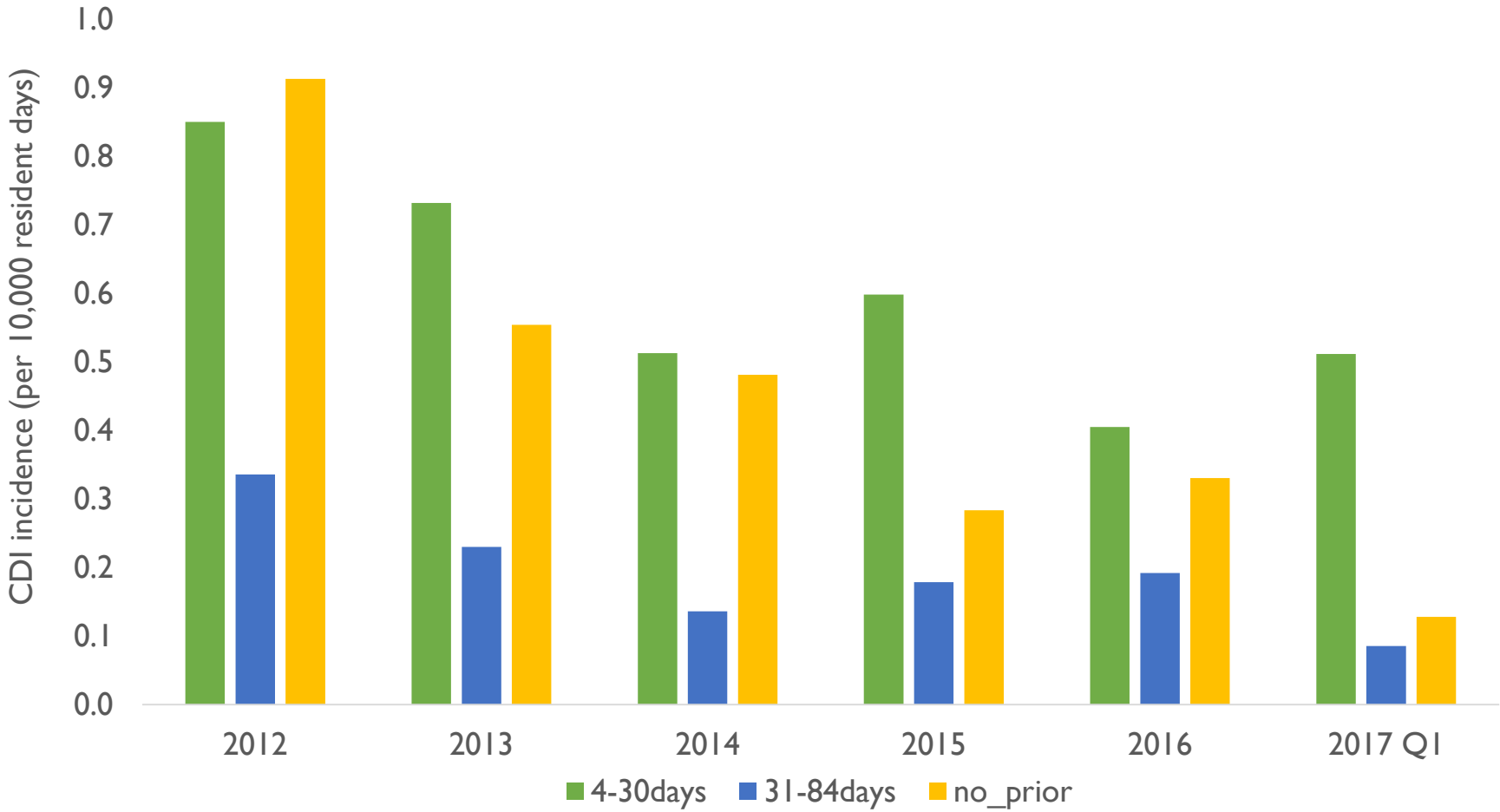
- NH-dispensing pharmacies
- NH-Microbiology labs
- Nursing home facilities IP staff
- Nursing home Medical Directors

CDI RATE FOR COLLABORATIVE NH



Data collected by the Rochester/NY Emerging Infections Program

CDI RATE-
IN RELATION TO RECENT HOSPITAL DISCHARGE



CHALLENGES

- Lack of infrastructure to independently implement an ASP (dedicated personnel, expertise, easily retrievable data)
- Interest does not always translate into action because of competing priorities and lack of dedicated time
- High staff turnover rate
- IP wears many hats, limited infection control training
- Difficult to adapt to new systems (e.g. NHSN reporting, use of Excel program)
- Pressure to avoid re-hospitalization

SOLUTIONS/SUSTAINABILITY

- Obtain assistance by experts outside the NH to help initiate the ASP
- Need a NH champion (physician, nurse, IP, NP, PA, consultant/dispensing pharmacist) with dedicated time to lead/assist with the ASP
- Requires leadership buy-in and a job description that includes antimicrobial stewardship
- Involve multiple team members to provide resilience and flexibility in case of personnel change (ASP is a TEAM Effort)
- Antimicrobial stewardship needs to be integrated into the daily work flow and NH quality and performance improvement (QAPI)

ACKNOWLEDGMENTS

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Brandi Van Valkenburg, Pharm D , Health Direct Pharmacy

Nursing Homes

All the Medical Directors

All the Nursing Home Staff

***C. difficile* surveillance team**

Rebecca Tsay, MPH

Deb Nelson, RN

Trupti Hatwar, MPH

ADDITIONAL RESOURCES

Our website: www.Rochesterpatientsafety.com

Nursing Home Antimicrobial Stewardship Guide: https://www.ahrq.gov/nhguide/index.html

Do Bugs Need Drugs, Antimicrobial Stewardship in Long Term Care Facilities: http://www.dobugsneeddrugs.org/health-care-professionals/antimicrobial-stewardship-in-ltcf/

Improving Evaluation of Urinary Tract Infections in the Elderly: Massachusetts coalition: http://www.macoalition.org/evaluation-and-treatment-uti-in-elderly.shtml

Promoting Wise Antibiotic Use In Nursing Homes: https://nursinghomeinfections.unc.edu/

Minnesota Antimicrobial Stewardship Program Toolkit for Long-term Care Facilities: http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/