Minnesota Hospital Association

MHA/OHA HIIN Antibiotic Stewardship/MDRO Collaborative

March 14, 2017

CENTERS FOR MEDICARE & MEDICAID SERVICES
PARTNERSHIP FOR PATIENTS

OHIO HOSPITAL ASSOCIATION

Reminders

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- Don’t put the call on hold
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Please note – this webinar is being recorded.

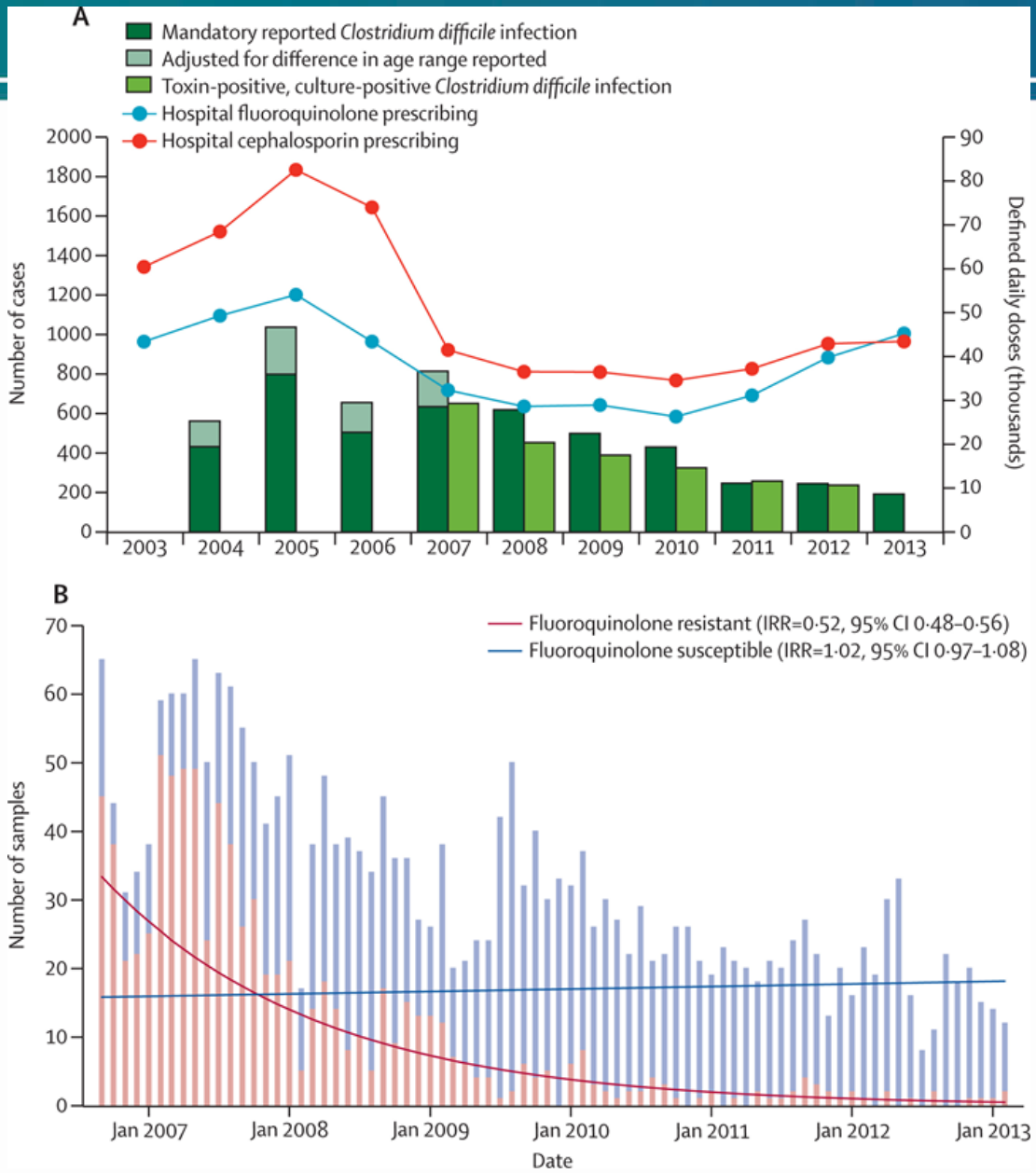
Housekeeping

- Education Credit
  - Nursing Education Credit – 1 hour
  - Pharmacy Education Credit – 0.1
    - Pharmacists, please list your license number on the sign-in sheet to receive credit

Agenda

- Welcome
- Brad Laible, PharmD, BCPS-AQ ID: Fluoroquinolone reduction
- Questions/discussion
- Wrap-up

Fluoroquinolone reduction & *C. Difficile*



Lancet Infect. Dis. 2017 DOI: http://dx.doi.org/10.1016/S1473-3099(16)30514-X

Welcome Brad Laible, PharmD, BCPS-AQ ID

Brad Laible is a Professor in the Department of Pharmacy Practice at the SDSU College of Pharmacy and serves as the lead pharmacist for Avera Health System Antimicrobial Stewardship Program. Dr. Laible is a Board Certified Pharmacotherapy Specialist with Added Qualifications in Infectious Diseases. Dr. Laible joined the faculty of the South Dakota State University College of Pharmacy in 2004 and has an active pharmacy practice site at Avera McKennan Hospital & University Health Center in Sioux Falls, SD.

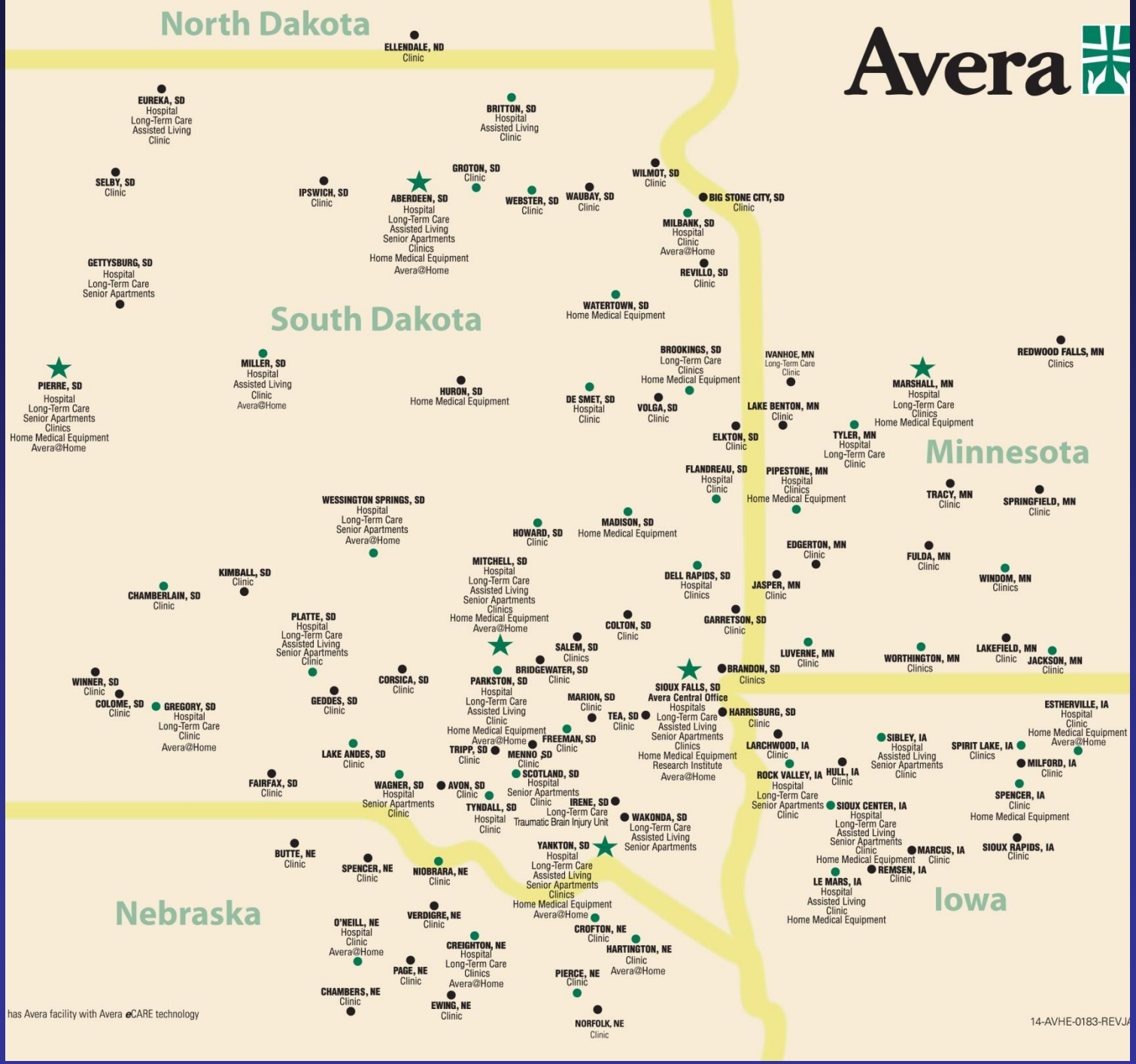
Avera Health Antimicrobial Stewardship Program

Brad Laible, PharmD, BCPS-AQ ID

Professor, Department of Pharmacy Practice, SDSU COP

Pharmacy Lead, Avera Health ASP

March 14th, 2017


North Dakota
Avera
ELLENDALE, ND
Clinic
EUREKA, SD
Hospital
Long-Term Care
Assisted Living
Clinic
BRITTON, SD
Hospital
Assisted Living
Clinic
SELBY, SD
Clinic
IPSWICH, SD
Clinic
GROTON, SD
Clinic
ABERDEEN, SD
Hospital
Long-Term Care
Assisted Living
Senior Apartments
Clinics
Home Medical Equipment
Avera@Home
WEBSTER, SD
Clinic
WAUBAY, SD
Clinic
WILMOT, SD
Clinic
BIG STONE CITY, SD
Clinic
MILBANK, SD
Hospital
Clinic
Avera@Home
REVILLO, SD
Clinic
GETTYSBURG, SD
Hospital
Long-Term Care
Senior Apartments
WATERTOWN, SD
Home Medical Equipment
South Dakota
BROOKINGS, SD
Long-Term Care
Clinics
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IVANHOE, MN
Long-Term Care
Clinic
REDWOOD FALLS, MN
Clinics
MILLER, SD
Hospital
Assisted Living
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Avera@Home
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Home Medical Equipment
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Clinic
VOLGA, SD
Clinic
LAKE BENTON, MN
Clinic
MARSHALL, MN
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TYLER, MN
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Long-Term Care
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Minnesota
FLANDREAU, SD
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PIPESTONE, MN
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Home Medical Equipment
TRACY, MN
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SPRINGFIELD, MN
Clinic
WESSINGTON SPRINGS, SD
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Senior Apartments
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MADISON, SD
Home Medical Equipment
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FULDA, MN
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KIMBALL, SD
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MITCHELL, SD
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JASPER, MN
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WINDOM, MN
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SALEM, SD
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WORTHINGTON, MN
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LAKEFIELD, MN
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JACKSON, MN
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Clinic
BRANDON, SD
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WINNER, SD
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COLOME, SD
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Clinic
GEDDES, SD
Clinic
PARKSTON, SD
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Assisted Living
Clinic
Home Medical Equipment
Avera@Home
MARION, SD
Clinic
SIOUX FALLS, SD
Avera Central Office
Hospitals
Long-Term Care
Assisted Living
Senior Apartments
Clinics
Home Medical Equipment
Research Institute
Avera@Home
TEA, SD
Clinic
HARRISBURG, SD
Clinic
ESTHERVILLE, IA
Hospital
Clinic
Home Medical Equipment
Avera@Home
FREEMAN, SD
Clinic
LARCHWOOD, IA
Clinic
SIBLEY, IA
Hospital
Assisted Living
Senior Apartments
Clinic
SPIRIT LAKE, IA
Clinics
MILFORD, IA
Clinic
TRIPP, SD
Clinic
MENNO, SD
Clinic
LAKE ANDES, SD
Clinic
ROCK VALLEY, IA
Hospital
Long-Term Care
Senior Apartments
Clinic
HULL, IA
Clinic
SPENCER, IA
Clinic
Home Medical Equipment
FAIRFAX, SD
Clinic
WAGNER, SD
Hospital
Senior Apartments
Clinic
AVON, SD
Clinic
SCOTLAND, SD
Hospital
Senior Apartments
Clinic
IRENE, SD
Long-Term Care
Traumatic Brain Injury Unit
TYNDALL, SD
Hospital
Clinic
WAKONDA, SD
Long-Term Care
Assisted Living
Senior Apartments
SIOUX CENTER, IA
Hospital
Long-Term Care
Assisted Living
Senior Apartments
Clinic
Home Medical Equipment
MARCUS, IA
Clinic
SIOUX RAPIDS, IA
Clinic
REMSEN, IA
Clinic
BUTTE, NE
Clinic
SPENCER, NE
Clinic
NIOBRARA, NE
Clinic
YANKTON, SD
Hospital
Long-Term Care
Assisted Living
Senior Apartments
Clinics
Home Medical Equipment
Avera@Home
LE MARS, IA
Hospital
Assisted Living
Clinic
Home Medical Equipment
Nebraska
Iowa
VERDIGRE, NE
Clinic
O'NEILL, NE
Hospital
Clinic
Avera@Home
CREIGHTON, NE
Hospital
Long-Term Care
Clinics
Avera@Home
CROFTON, NE
Clinic
HARTINGTON, NE
Clinic
Avera@Home
PAGE, NE
Clinic
PIERCE, NE
Clinic
CHAMBERS, NE
Clinic
EWING, NE
Clinic
NORFOLK, NE
Clinic
has Avera facility with Avera eCARE technology
14-AVHE-0183-REVJA

Avera McKennan Antimicrobial Stewardship Program (ASP): 2004 - 2011

- **Collaborative effort between:**
  - **Avera McKennan Pharmacy**
  - **SDSU College of Pharmacy Faculty/Students**
  - **Infectious Disease Specialists, PC**
- **Goal:**
  - **Proper Antimicrobial Stewardship**

Avera ASP: 2004 - 2011

- What did we provide?
  - Continuous antimicrobial regimen review, mostly by decentralized pharmacists, with meetings with ID three times per week to discuss cases
    - Unsolicited recommendations targeted at improving antimicrobial therapy
  - Antimicrobial restriction for certain antimicrobials (hospital-wide)

Results

Table 1. Acceptance by Type of Recommendation

	Accepted, n	Total, n	Acceptance, %
Dose changes	30	39	76.9
Agent changes	146	200	73
Discontinuation of antimicrobials	203	315	64.4
Total	379	554	68.4

Data from Jan 2006 – Dec 2007

Laible BR, et al. J Pharm Pract 2010

Results

Table 2. Acceptance Rates by Antimicrobial[a]

	Accepted, n	Total, n	Acceptance, %
Levofloxacin	141	220	64.1
Metronidazole	53	73	72.6
Piperacillin/tazobactam	54	67	80.6
Cefazolin	33	55	60
Ceftriaxone	37	42	88.1
Ampicillin/ sulbactam	26	35	74.3
Vancomycin	28	39	71.8
Ertapenem	14	23	60.9
Ciprofloxacin	12	20	60
Clindamycin	11	20	55
Fluconazole	13	17	76.5
Imipenem/cilastatin	9	11	81.8
Azithromycin	6	11	54.5
Ceftazidime	8	10	80

[a] Minimum of 10 total recommendations.

What Happened?

- Acceptance rates started to drop (2009 – 2010)
  - Picked all of the “low hanging fruit”?
  - Utilized one method too much?
  - Couldn’t maintain the effort?
  - Lack of focus?

- ASP chose go another direction…

Focused Stewardship

- Wong-Beringer, et al. 2009
- ASP with a focus on reducing fluoroquinolone overuse
- 565 bed, acute care, teaching hospital
- Used multiple methods of stewardship
  - Monitoring and reporting of antibiogram data
  - Audit and feedback
  - IV to PO conversion
  - Empiric guidelines
  - Prescriber education

Results

- 30% decrease in fluoroquinolone utilization as empiric therapy for *P. aeruginosa* infections
- 10% improvement in susceptibility of *P. aeruginosa* to antipseudomonal agents (both ciprofloxacin and structurally unrelated agents)
- 2-fold reduction in mortality associated with Pseudomonal infections
- Stable level of fluoroquinolone-resistant *E. coli* (~20%)

Wong-Beringer, et al. *Pharmacother* 2009

Fluoroquinolone Susceptibility Trends: Avera McKennan

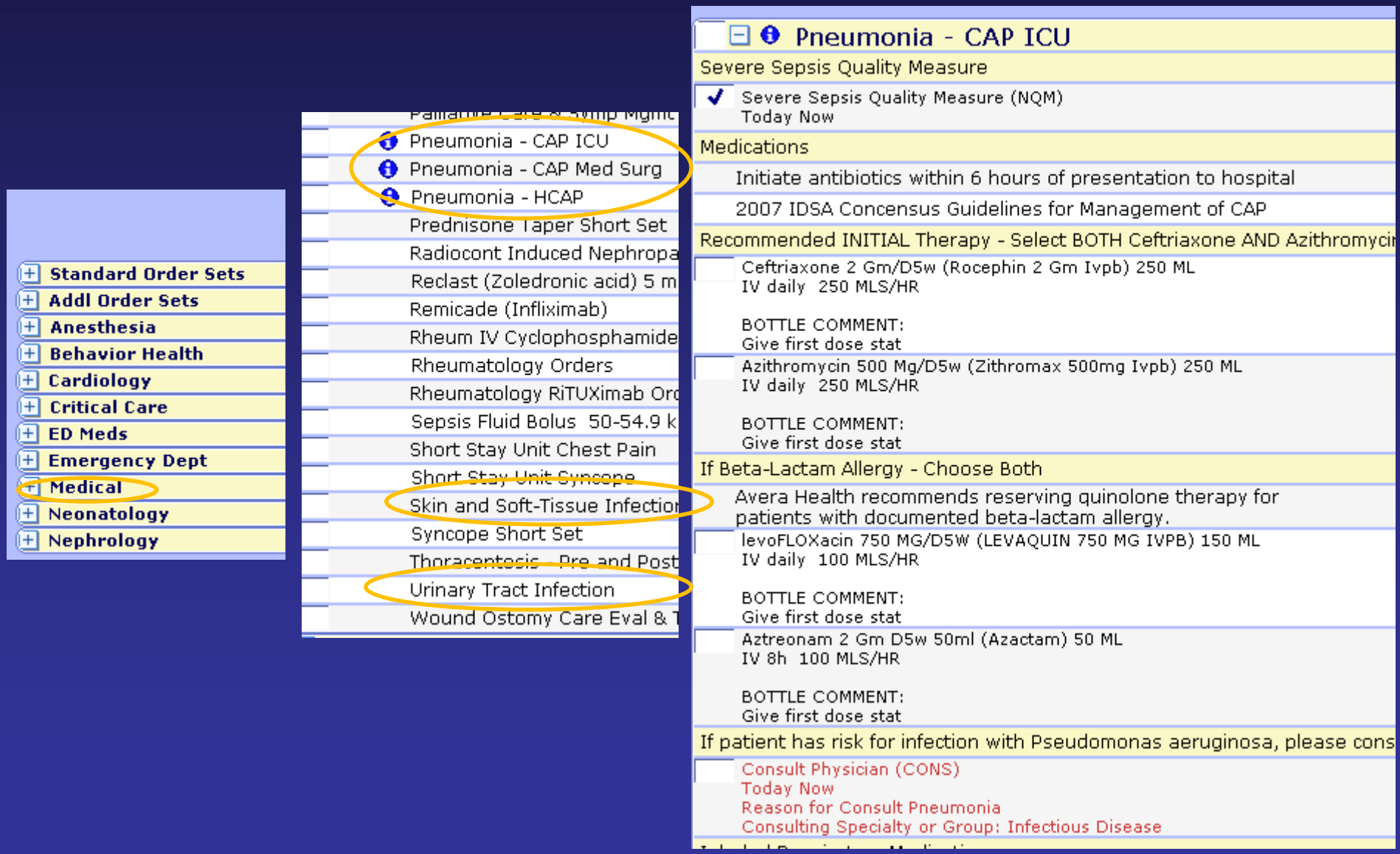
	2006	*2007*	*2008*	*2009*	*2010*	*2011*
E. coli						
Levofloxacin	87	79	80	80	77	75
Ciprofloxacin	-	-	-	-	-	75

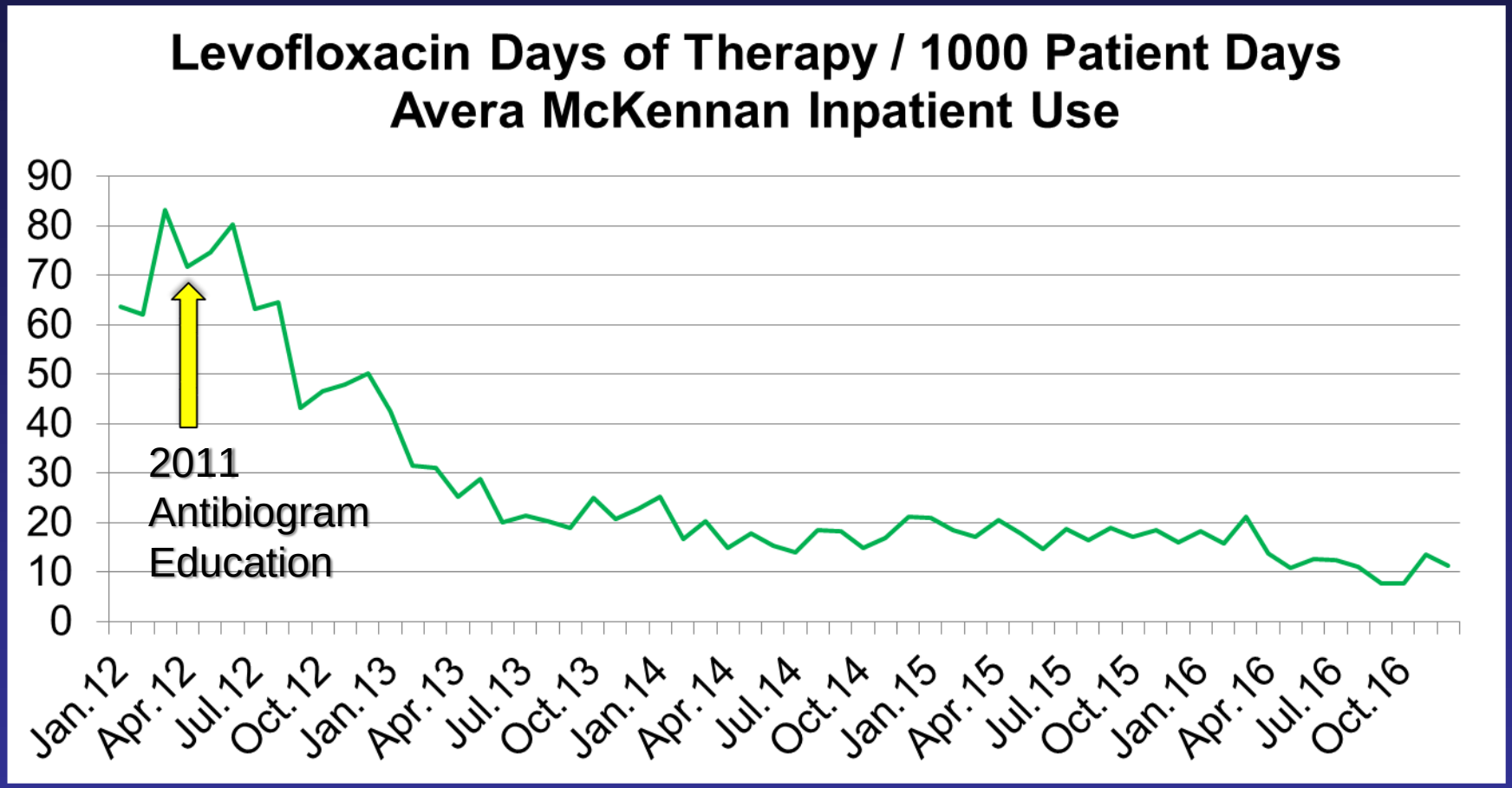
	2006	*2007*	*2008*	*2009*	*2010*	*2011*
P. aeruginosa						
Levofloxacin	75	72	75	57	70	64
Ciprofloxacin	-	-	-	-	-	70

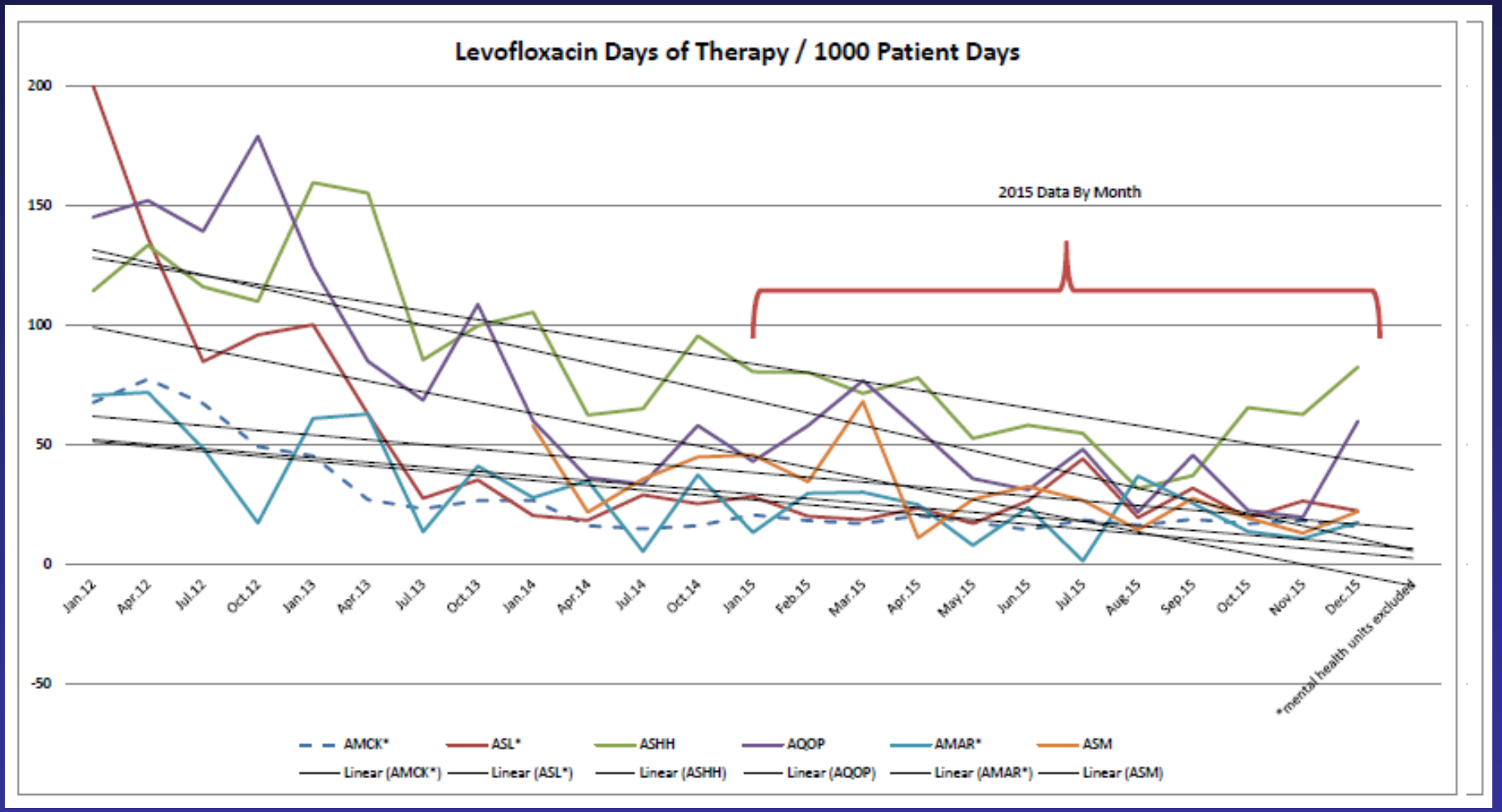
Fluoroquinolone Avoidance Project 2011 - Current

- Avera Stewardship Workgroup
- Lead to ASP program for entire health-system
- Focus on reduction of fluoroquinolone overuse
- Multiple approaches to the effort:
  - Provider education
  - Electronic Order Set Revisions
    - Started with Pneumonia
  - Decentralized pharmacists providing audit and feedback

Infection-Related Order Sets: Avera System




Levofloxacin Days of Therapy / 1000 Patient Days
Avera McKennan Inpatient Use
90
80
70
60
50
40
30
20
10
0
2011
Antibiogram
Education
Jan.12
Apr.12
Jul.12
Oct.12
Jan.13
Apr.13
Jul.13
Oct.13
Jan.14
Apr.14
Jul.14
Oct.14
Jan.15
Apr.15
Jul.15
Oct.15
Jan.16
Apr.16
Jul.16
Oct.16


Levofloxacin Days of Therapy / 1000 Patient Days
200
150
100
50
0
-50
2015 Data By Month
Jan.12
Apr.12
Jul.12
Oct.12
Jan.13
Apr.13
Jul.13
Oct.13
Jan.14
Apr.14
Jul.14
Oct.14
Jan.15
Feb.15
Mar.15
Apr.15
May.15
Jun.15
Jul.15
Aug.15
Sep.15
Oct.15
Nov.15
Dec.15
*mental health units excluded
AMCK*
ASL*
ASHH
AQOP
AMAR*
ASM
Linear (AMCK*)
Linear (ASL*)
Linear (ASHH)
Linear (AQOP)
Linear (AMAR*)
Linear (ASM)

Fluoroquinolone Susceptibility Trends: Avera McKennan

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
E. coli										
Levofloxacin	87	79	80	80	77	75	82	84	85	85
Ciprofloxacin	-	-	-	-	-	75	82	84	85	85

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
P. aeruginosa										
Levofloxacin	75	72	75	57	70	64	64	79	80	79
Ciprofloxacin	-	-	-	-	-	70	70	82	82	82

Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America

Tamar F. Barlam,[1] Sara E. Cosgrove,[2] Lilian M. Abbo,[3] Conan MacDougall,[4] Audrey N. Schuetz,[5] Edward J. Septimus,[6] Arjun Srinivasan,[7] Timothy
Yngve T. Falck-Ytter,[9] Neil O. Fishman,[10] Cindy W. Hamilton,[11] Timothy C. Jenkins,[12] Pamela A. Lipsett,[13] Preeti N. Malani,[14] Larissa S. May,[15]
Gregory J. Moran,[16] Melinda M. Neuhauser,[17] Jason G. Newland,[18] Christopher A. Ohl,[19] Matthew H. Samore,[20] Susan K. Seo,[21] and Kavita K. Tr

[1]Section of Infectious Diseases, Boston University School of Medicine, Boston, Massachusetts; [2]Division of Infectious Diseases, Johns Hopkins University School of Medicine, Baltimor
[3]Division of Infectious Diseases, University of Miami Miller School of Medicine, Miami, Florida; [4]Department of Clinical Pharmacy, School of Pharmacy, University of California, San
[5]Department of Medicine, Weill Cornell Medical Center/New York–Presbyterian Hospital, New York, New York; [6]Department of Internal Medicine, Texas A&M Health Science Cente
Medicine, Houston; [7]Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia; [8]Division of Allergy and Infectious Diseases, University of
School of Medicine, Seattle; [9]Department of Medicine, Case Western Reserve University and Veterans Affairs Medical Center, Cleveland, Ohio; [10]Department of Medicine, University of
Health System, Philadelphia; [11]Hamilton House, Virginia Beach, Virginia; [12]Division of Infectious Diseases, Denver Health, Denver, Colorado; [13]Department of Anesthesiology and Crit
Medicine, Johns Hopkins University Schools of Medicine and Nursing, Baltimore, Maryland; [14]Division of Infectious Diseases, University of Michigan Health System, Ann Arbor; [15]De
Emergency Medicine, University of California, Davis; [16]Department of Emergency Medicine, David Geffen School of Medicine, University of California, Los Angeles Medical Center,
[17]Department of Veterans Affairs, Hines, Illinois; [18]Department of Pediatrics, Washington University School of Medicine in St. Louis, Missouri; [19]Section on Infectious Diseases, Wake Fore
School of Medicine, Winston-Salem, North Carolina; [20]Department of Veterans Affairs and University of Utah, Salt Lake City; [21]Infectious Diseases, Memorial Sloan Kettering Cancer Cente
New York; and [22]Trivedi Consults, LLC, Berkeley, California

Evidence-based guidelines for implementation and measurement of antibiotic stewardship interventions in inpatient popula
cluding long-term care were prepared by a multidisciplinary expert panel of the Infectious Diseases Society of America and th
for Healthcare Epidemiology of America. The panel included clinicians and investigators representing internal medicine, en
medicine, microbiology, critical care, surgery, epidemiology, pharmacy, and adult and pediatric infectious diseases specialti
recommendations address the best approaches for antibiotic stewardship programs to influence the optimal use of antibiotic

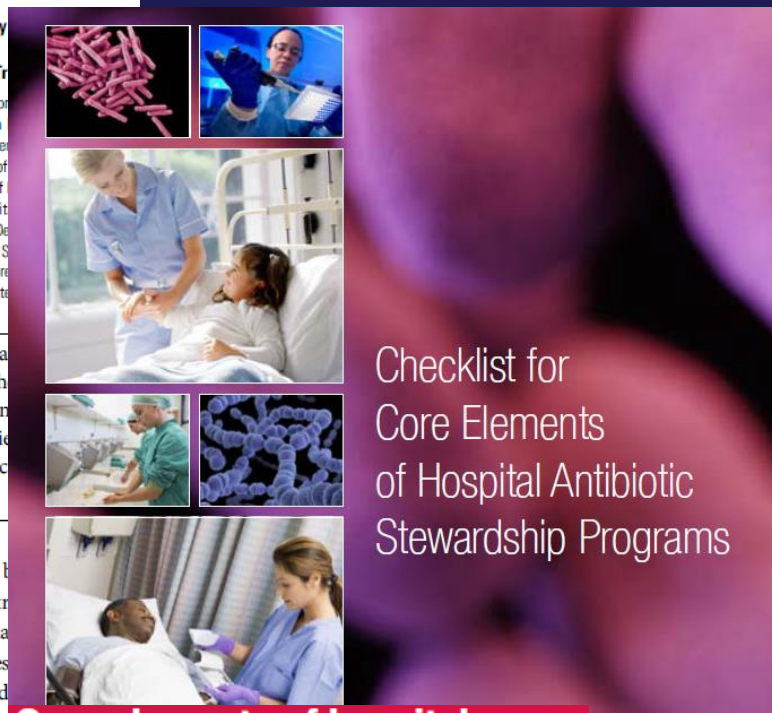
Keywords. antibiotic stewardship; antibiotic stewardship programs; antibiotics; implementation.

EXECUTIVE SUMMARY

Antibiotic stewardship has been defined in a consensus statement from the Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA), and the Pediatric Infectious Diseases Society (PIDS) as "coordinated interventions designed to improve and measure the ap-

antibiotic stewardship programs (ASPs) are best led b
tious disease physicians with additional stewardship tr

Summarized below are the IDSA/SHEA recommenda
implementing an ASP. The expert panel followed a proces
the development of other IDSA guidelines, which includ
tematic weighting of the strength of recommendation an



Barlam TF, *et al*. *Clin Infect Dis* 2016

The Joint Commission

Prepublication Requirements

• Issued June 22, 2016 •

The Joint Commission has approved the following revisions for prepublication. While revised requirements are published in the semiannual updates to the print manuals (as well as in the online E-dition®), accredited organizations and paid subscribers can also view them in the monthly periodical *The Joint Commission Perspectives®*. To begin your subscription, call 877-223-6866 or visit http://www.jcrinc.com.

Joint Commission Requirement

New Antimicrobial Stewardship Standard

APPLICABLE TO HOSPITALS AND CRITICAL ACCESS HOSPITALS

Effective January 1, 2017

Medication Management (MM)

Standard MM.09.01.01
The [critical access] hospital has an antimicrobial stewardship program based on current scientific literature.

Elements of Performance for MM.09.01.01

1. Leaders establish antimicrobial stewardship as an organizational priority. (*See also* LD.01.03.01, EP 5)

   Note: *Examples of leadership commitment to an antimicrobial stewardship program are as follows:*

Note: *for pat Contro or Bac getsm*

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Note 1 *memb plinar*

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

42 CFR Parts 482 and 485

[CMS-3295-P]

RIN 0938-AS21

Medicare and Medicaid Programs; Hospital and Critical Access Hospital (CAH) Changes to Promote Innovation, Flexibility, and Improvement in Patient Care

AGENCY: Centers for Medicare & Medicaid Services (CMS), HHS.

ACTION: Proposed rule.

SUMMARY: This proposed rule would update the requirements that hospitals and critical access hospitals (CAHs) must meet to participate in the Medicare and Medicaid programs.

Avera Health Antimicrobial Stewardship Program (ASP)

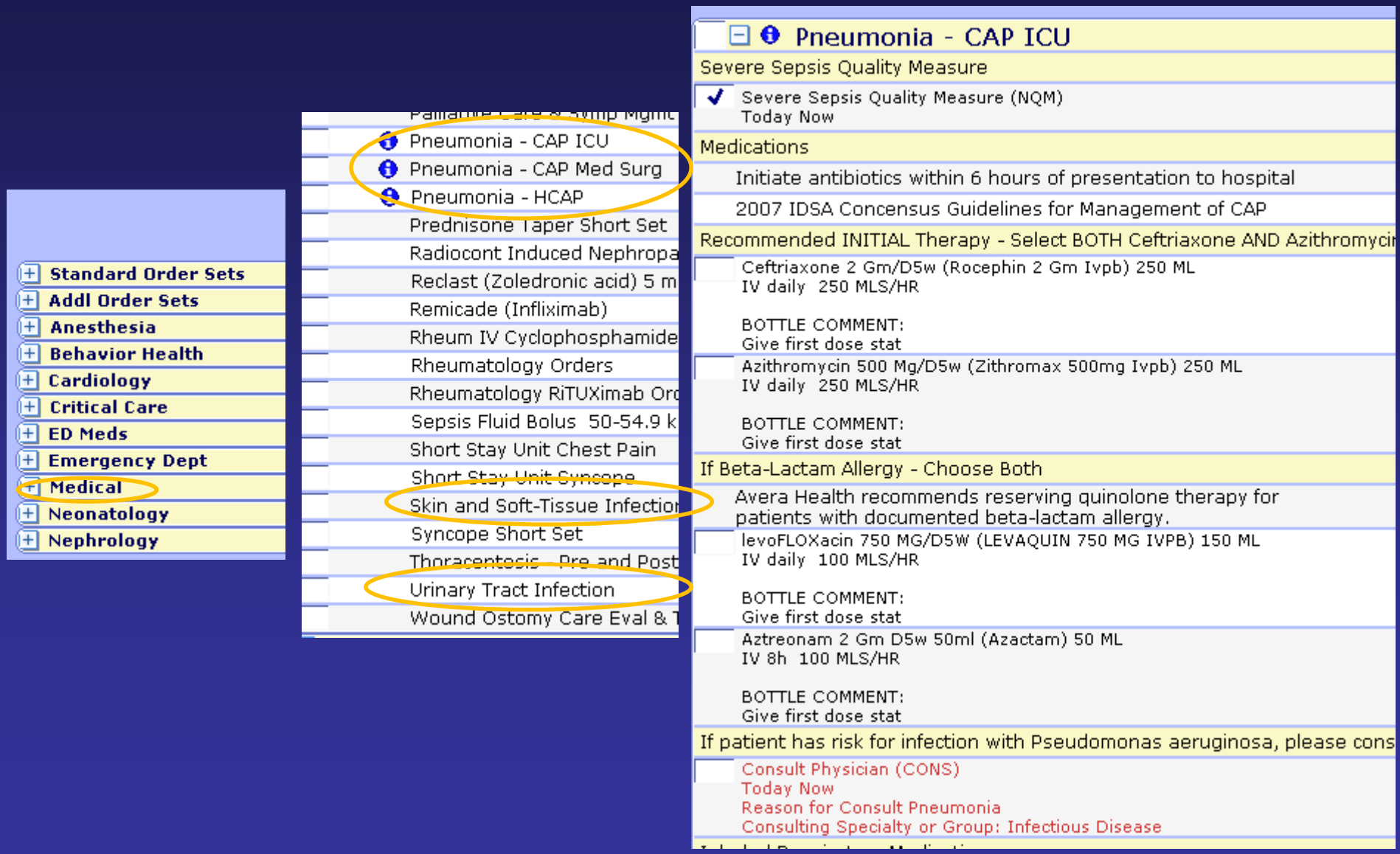
- **Scope:**
  - Review antimicrobials for formulary / antimicrobial restrictions
  - Review/approval of infectious disease-related order sets and treatment algorithms
  - Adjustment/conversion policies (e.g. renal, IV to PO)
  - Review of antibiogram and antimicrobial utilization data
  - Provide education to providers and other staff
  - Conduct the “ASP Daily Call”

Antimicrobial Formulary

- **Beta-lactams**
  - PCN, aminopenicillins, Piperacillin-tazobactam
  - Cephalosporins (limited)
  - Meropenem, Ertapenem
- **Fluoroquinolones**
  - Levofloxacin, ciprofloxacin
- **Aminoglycosides**
- **Antifungals**
  - Fluconazole
  - Micafungin
  - Voriconazole, Posaconazole, Isavuconazole*
  - Amphotericin B products*
- **MRSA+/- VRE active**
  - Vancomycin
  - Trimethoprim-sulfam.
  - Clindamycin
  - Daptomycin*
  - Linezolid*
  - Tigecycline*
  - Ceftaroline*
  - Telavancin*
- **Others***
  - Fidaxomicin
  - Fosfomycin
  - Colistin

*ID restricted at MCK

Infection-Related Order Sets: Avera System



Antimicrobial Renal Dosing Policy: Avera System

Avera Health System Antimicrobial Dosing Guideline for Patients with Impaired Renal Function
Avera ID Subcommittee **Update March 2016**
Weight Key: TBW = Total Body Weight, IBW = Ideal Body Weight

NOTE: THIS IS A RENAL DOSING GUIDELINE ONLY. THIS GUIDELINE IS NOT INTENDED TO GUIDE AGENT SELECTION. ANY LISTING OF POSSIBLE INDICATIONS IS NOT ALL INCLUSIVE, AND CLINICAL JUDGMENT IS NECESSARY WHEN SELECTING THE BASE DOSE FOR THE SUSPECTED INFECTION. DISCUSSION WITH THE ANTIMICROBIAL STEWARDSHIP TEAM / ID CONSULT MAY BE WARRANTED TO ENSURE SELECTION OF THE APPROPRIATE BASE DOSE AND SUBSEQUENT RENAL ADJUSTMENTS.

Drug	Route	Typical Base Doses	CrCl (mL/min)	HD
Acyclovir	IV	**Use lesser of TBW vs IBW** 5 – 10 mg/kg q8h	25-50: 100% of dose q12h 10-24: 100% of dose q24h < 10: 50% of dose q24h	Dose for CrCl <10, dose after HD on dialysis days
Ampicillin	IV	2 gm q4h (Suggested for CNS infections, Endocarditis, Osteomyelitis)	If base dose 2 gm q4h : 30-50 : 2 gm q6h 10 – 29 : 2 gm q8h < 10 : 2 gm q12h	Dose for CrCl < 10, give one of the doses after HD on dialysis days
		2gm q6h	If base dose 2 gm q6h : 30-50 : 2 gm q6h 10 – 29 : 2 gm q8h < 10 : 2 gm q12h	Dose for CrCl < 10, give one of the doses after HD on dialysis days
		1gm q6h	If base dose 1 gm q6h : 30-50 : 1 gm q6h 10 – 29 : 1 gm q8h < 10 : 1 gm q12h	Dose for CrCl < 10, give one of the doses after HD on dialysis days
Ampicillin-Sulbactam	IV	3 gm q6h	If base dose 3 gm q6h : 30-50 : 3 gm q8h 10 – 29 : 3 gm q12h < 10 : 3 gm q24h	Dose for CrCl < 10, dose after HD on dialysis days
		1.5 gm q6h	If base dose 1.5 gm q6h : 30-50 : 1.5 gm q8h 10 – 29 : 1.5 gm q12h < 10 : 1.5 gm q24h	

Annual Antibiogram Review

Avera Queen of Peace Hospital

2015 Cumulative Antimicrobial Susceptibility Summary

Values Represent % Susceptible

	Ampicillin/Sulbactam	Ampicillin	Cefazolin	Cefepime	Cefoxitin	Cefotaxime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Doxycycline	Ertapenem	Erythromycin	Gentamicin	High Level Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Metronidazole (Flagyl)	Nitrofurantoin[2]	Oxacillin (Methacillin)	Penicillin-G	Pip/tazo	Rifampin[3]	Tetracycline	Tobramycin	Trimeth/Sulfa	Vancomycin
Gram-negatives:																														
Citrobacter freundii (31)[1]	-	-	0	94	0	-	65	65	94	-	-	-	100	-	84	-	94	94	-	-	-	93	-	-	-	-	-	84	-	-
Enterobacter cloacae (41)	-	-	0	100	0	-	85	85	98	-	-	-	100	-	98	-	100	98	-	-	-	33	-	-	-	-	-	98	83	-
Escherichia coli - not ESBL (914)	63	57	95	100	90	-	99	99	83	-	-	-	100	-	94	-	100	83	-	-	-	96	-	-	95	-	-	95	76	-
Escherichia coli - ESBL (25)[1]	25	0	0	0	64	-	0	0	8	-	-	-	100	-	68	-	100	8	-	-	-	83	-	-	88	-	-	72	40	-
Klebsiella pneumoniae - not CRE (113)	90	0	99	100	93	-	100	100	100	-	-	-	100	-	100	-	99	100	-	-	-	37	-	-	99	-	-	100	95	-
Proteus mirabilis (63)	94	94	100	100	87	-	100	100	73	-	-	-	100	-	90	-	5	79	-	-	-	0	-	-	100	-	-	90	86	-
Pseudomonas aeruginosa (93)	-	-	-	97	-	-	96	-	82	-	-	-	-	-	98	-	89	81	-	-	-	-	-	-	97	-	-	99	-	-
Haemophilus influenza** (81)	-	75	-	-	-	-	-	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-
Anaerobes:																														
Bacteroides fragilis grp.* (832-3981)	82	-	-	-	65	-	-	-	-	48	-	-	98	-	-	-	99	-	-	98	98	-	-	-	87	-	-	-	-	-
Fusobacterium nucleatum/necrophorum* (15	100	-	-	-	100	-	-	-	-	100	-	-	100	-	-	-	-	-	-	100	100	-	-	-	100	-	-	-	-	-
Prevotella sp.* (196-806)	99	-	-	-	97	-	-	-	-	72	-	-	100	-	-	-	-	-	-	100	97	-	-	-	100	-	-	-	-	-
Gram-positives:																														
Enterococcus faecalis (127)	-	100	-	-	-	-	-	-	68	-	-	-	-	-	-	65	-	68	96	-	-	99	-	-	-	-	25	-	-	100
Enterococcus faecium (32)[1]	-	28	-	-	-	-	-	-	17	-	-	-	-	-	-	97	-	17	100	-	-	4	-	-	-	-	20	-	-	38
Staphylococcus aureus (226)	-	-	-	-	-	-	-	-	90	81	100	99	-	65	99	-	-	90	100	-	-	100	100	-	-	100	93	-	98	100
Staphylococcus aureus, MRSA (189)	-	-	-	-	-	-	-	-	27	73	100	99	-	16	99	-	-	27	100	-	-	100	0	-	-	100	98	-	98	100
Streptococcus pneumoniae, not invasive (12	-	-	-	-	-	100	-	100	-	-	-	-	-	42	-	-	-	92	100	-	-	-	-	100	-	-	75	-	75	100
Streptococcus pneumoniae, invasive (7)[1]	-	-	-	-	-	100	-	100	-	-	-	-	-	14	-	-	-	100	100	-	-	-	-	100	-	-	100	-	71	100
Anaerobes:																														
Anaerobic Gram pos cocci* (148-614)	88	-	-	-	94	-	-	-	-	79	-	-	83	-	-	-	-	-	-	98	96	-	-	-	99	-	-	-	-	-
Clostridium perfringens* (69-348)	100	-	-	-	99	-	-	-	-	86	-	-	100	-	-	-	-	-	-	100	100	-	-	-	100	-	-	-	-	-
Clostridium difficile* (24-494)	100	-	-	-	3	-	-	-	-	38	-	-	100	-	-	-	-	-	-	93	100	-	-	-	99	-	-	-	-	-
Other Clostridium sp.* (20-266)	100	-	-	-	70	-	-	-	-	66	-	-	100	-	-	-	-	-	-	99	98	-	-	-	98	-	-	-	-	-
	>10% decrease in %S															>10% increase in %S														

( ) Denotes number of Isolates tested In vitro activity does not necessarily correlate with clinical results.

[1]Data with <30 isolates tested are statistically less valid

[2]Tested on urine isolates only

[3]Rifampin should not be used alone for antimicrobial therapy

*Anaerobe data collected 2010-2012 / Reported in 2015 CLSI Performance Standards for Antimicrobial Susceptibility Testing document

** Haemophilus influenza data obtained from Avera McKennan for 2014; AQOP tested isolates → Beta-lactamase positive = 35%

Avera Health Antimicrobial Stewardship Program (ASP):

Provider Education

Jawad Nazir, MD, FACP

Brad Laible, PharmD, BCPS-AQ ID

ASP Daily Call: Avera System

- **Conference call utilizing screen sharing**
- **Conducted Monday – Friday, 11 AM**
- **ID physicians and pharmacists review patient cases for potential stewardship interventions**
  - **Cultures/labs/diagnostics/chart notes reviewed**
  - **Broad spectrum antimicrobial use is targeted**
    - **Piperacillin-tazobactam, cefepime, meropenem, fluoroquinolones**
    - **Vancomycin**
- **Pharmacists relay the ASP recommendations to providers**

ASP Daily Call

Patient Identification Tips

Top priorities:

Any patient in which the patient's provider requests the review

Agent – organism mismatches with complex resistance patterns based on culture report

Any patient with *Staphylococcu aureus* bacteremia (MSSA or MSSA) without an ID consult

Any patient receiving an antipseudomonal carbapenem without an ID consult

Any patient receiving daptomycin, linezolid, ceftaroline, tigecycline, micafungin or amphotericin B without an ID consult (these agents are ID restricted at Avera McKennan)

High priorities:

Patients on antibiotics > 72 hours with negative cultures

Patients with positive cultures for highly susceptible organisms but still on broad spectrum therapy

Patients on piperacillin-tazobactam, cefepime, or ceftazidime >72 hours without positive cultures for *Pseudomonas aeruginosa*

Patients on Vancomycin > 72 hours without positive cultures for MRSA

Patients on levofloxacin without a beta-lactam allergy

Avera Health System Antimicrobial Stewardship Program (ASP) Rounds

Suggested Script for Presentation

Pharmacy Presentation of Patient to Infectious Disease (ID) Physician During ASP Rounds

This is a *(age)* year old male/female admitted for *(chief complaint)*. *Discuss suspected infection, for example*: We are suspecting urinary tract infection. *Discuss current antimicrobial therapy*, *for example:* The patient is currently receiving Zosyn, day 3. *Discuss culture results if applicable, for example:* Urine culture from *(date)* is positive for *E. coli*. *Discuss resistance of organisms identified (if applicable), for example:* The *E. coli* is only resistant to ampicillin. *Discuss potential recommendation (if known), for example*: I thought perhaps we could suggest de-escalation to ceftriaxone or an oral agent. I wanted to get your thoughts.

Pharmacy Presentation of ASP Recommendations to Provider:

First-Time Recommendation to a Specific Provider:

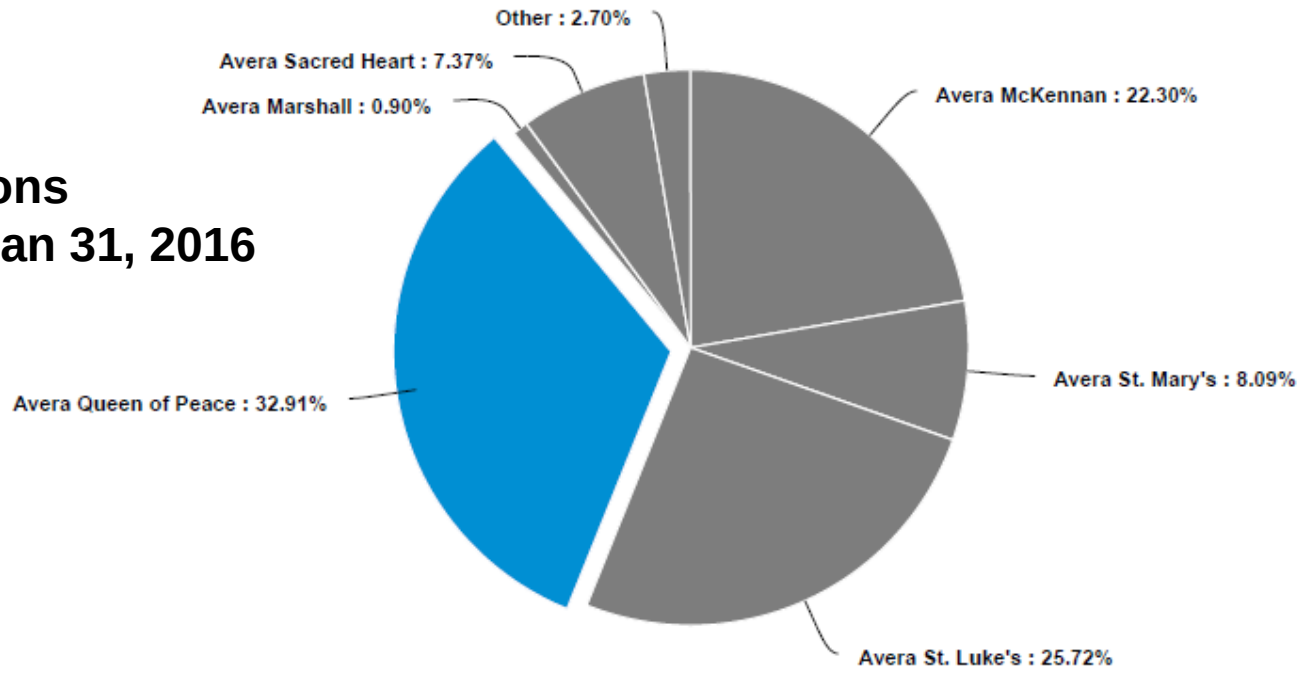
For the first time you make an ASP recommendation to a provider, we suggest you start with the following statement:

I am not sure if you are aware Avera Health has developed an Antimicrobial Stewardship Program in hopes of improving antimicrobial use and limiting resistance across the system. As part of this effort, we have the opportunity to review patient cases with an ID physician through a conference call each day.

Recommendation Presentation:

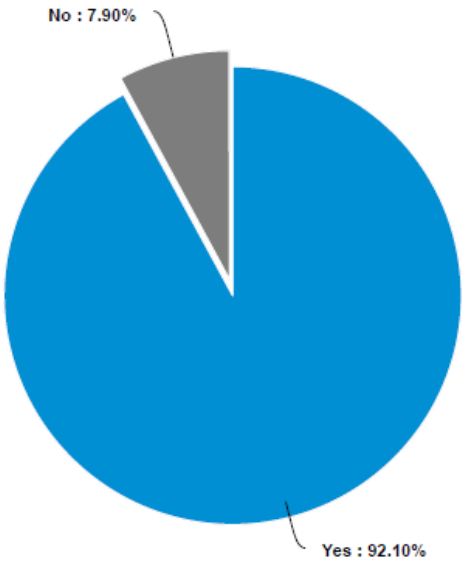
Your patient *(name)* was discussed at ASP rounds. Based on review of the patient's chart, including documentation and culture results (if applicable), our antimicrobial stewardship physician *(Name)* is suggesting *(recommendation). For example: Dr. Nazir suggests changing Zosyn to ceftriaxone (or an oral agent that could be specified) for this patient to complete 7 days of therapy.*

Recommendations
Oct 16, 2015 – Jan 31, 2016
All Facilities



Answer	Count	Percent	20% 40%
Avera McKennan	124	22.3%	
Avera St. Mary's	45	8.09%	
Avera St. Luke's	143	25.72%	
Avera Queen of Peace	183	32.91%	
Avera Marshall	5	0.9%	
Avera Sacred Heart	41	7.37%	
Other	15	2.7%	
Total	556	100 %	

Recommendation Accepted?



Answer	Count	Percent	20% 40% 60% 80% 100%
Yes	513	92.1%	
No	44	7.9%	
Total	557	100 %	

How much time does this really take?

- **July 1st – August 31st, 2016**
- **Averaged 1 ID physician and 5 Pharmacists per call**
- **90 patients presented / 33 call days (2.7 patients per call)**
- **23 minutes per call**

Sharing of Knowledge

- Examples of Educational Topics Discussed
  - The Joint Commission ASP standard
  - New HAP/VAP guidelines
  - Fluoroquinolone resistance trends locally and nationally
  - Clostridium bacteremia treatment
  - Evaluation of Pseudomonal susceptibility trends locally
  - Enterobacter and drugs of choice
  - Asymptomatic bacteruria treatment
  - Cefazolin and MSSA susceptibility testing
  - HCAP in nursing home patients
- Literature commonly distributed for further education

Avera Pharmacies

Avera Health | Avera Pharmacy | Avera Health Antimicrobial Stewardship | Avera Health Formulary Committee | Avera Heath Pain Mgmt Program

Search this sit

me
eting Minutes
wsletters
e Contents
cent
Antibiograms
Resource Hyperlinks

Avera Health Antimicrobial Stewardship Program

3900 West Avera Drive
Sioux Falls, SD 57108 | MAP
Phone: 322-4700 Fax: 322-4798
Outlook Group: AIDSubCom@avera.org

Procedures

Type	Name	Modified
	Avera Health Antimicrobial Stewardship Program	1/27/2017 4:22 PM
	Avera Health Formulary Committee Procedure	1/8/2016 11:13 AM

Add document

Antibiograms

Type	Name	Modified
	Avera Holy Family Antibiogram Jun 15 to Jun 16	1/10/2017 12:00 PM
	Avera MCK Antibiogram 2015	1/10/2017 12:00 PM
	Avera QOP Antibiogram 2015	1/10/2017 12:00 PM
	Avera Sacred Heart Antibiogram 2015	1/10/2017 12:00 PM
	Avera St Lukes Antibiogram 2015	1/10/2017 12:00 PM
	Avera St Marys Antibiogram 2015	1/10/2017 12:00 PM

Resources

Type	Name	Hyperlink	Modified
	ASP Guidance Documents		2/1/2017 5:02 PM
	ASP Daily Call Patient Selection Tip Sheet		2/10/2017 4:07 PM
	Avera ASP Renal Dosing Guidelines		12/1/2016 11:35 AM

>> Contacts

Brad Laible, PharmD 605
Glenn Voss, PharmD 605
Jerry Drees, PharmD 605

Resource Hyperlinks

Edit	URL
	Viruses or Bacteria Education Chart
	Order Marketing Materials

Add new link

AH ASP Meeting Calendar

2/24/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
2/27/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
2/28/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/1/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/2/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/3/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/6/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/7/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/8/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co
3/9/2017 11:00 AM Antimicrobial Stewardship Daily C
Audio: 605-322-6304 | Access Co

(More Events...)

Avera ASP: Ongoing Efforts

- Expansion of the inpatient program beyond Regional facilities
  - All 33 facilities have been invited
- Formation of outpatient ASP group
- Continue to support LTC ASP group

Questions?

MHA/OHA HIIN Contacts

- OHA
  - James Guliano, Vice President Quality Programs
  - Rosalie Weakland, Senior Director Quality Programs
  - Subcontractor – HSAG
    - Christine Bailey, Director, Quality Improvement and Patient Safety
- MHA
  - Tania Daniels, Vice President, Quality and Patient Safety
  - Lali Silva, Senior Director Quality and Process Improvement
  - Susan Klammer, Quality/Safety Project Coordinator

Thank you for joining us!

Next Webinar:

Tuesday, April 11

11:30 AM CT / 12:30 PM ET

Ohio Hospital Association
EVALUATION- G

Leveraging Resources for Antimicrobial Stewardship
March 14, 2017
Webinar
OLN-0017-P

Please complete this questionnaire and return to 614-241-2933. Thank you.

Attending 80% of the program and turning in completed evaluation forms is required to receive CE certificate.

The speaker for today's program has indicated no conflict of interest related to this presentation.

I was able to achieve the following outcomes:

Cite ways in which existing resources might be used to enhance patient-level stewardship across the health system.

YES NO

DID THE SPEAKER:

Brad Laible, Pharm.D., BCPS

Utilize effective teaching strategies	YES	NO
Presented material in clear & non-biased manner	YES	NO
The audio visuals were effective.	YES	NO

SUGGESTIONS FOR FUTURE PROGRAMS

COMMENTS

Thank you

PARTICIPANT SIGN-IN SHEET

Program Title: Leveraging Resources for Antimicrobial Stewardship March 14, 2017

Please fax this form AND all evaluations to 614-241-2933, or to sherric@ohanet.org. No other versions of sign-in sheets will be accepted.

HOSPITAL:_____ **CONTACT PERSON:**_____

ADDRESS:_____ **TITLE:**_____

CITY:_____ **STATE:**_____ **ZIP CODE:**_____ **EMAIL:**_____

TELEPHONE:_____ **FAX:**_____ **(Please Print Clearly so we can send your certificate)**

IF NAME IS NOT PRINTED A CERTIFICATE WILL NOT BE ISSUED

NAME (PLEASE PRINT)		TITLE	LICENSE NUMBER * Pharmacists Only *	SIGNATURE
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9.		☐ Comp. Off. ☐ Atty. ☐ Risk Mgs. ☐ Emerg. Dept ☐ Nursing Mgrs. ☐ Safety/Sec. Personnel ☐ Other		
10.		☐ Comp. Off. ☐ Atty. ☐ Risk Mgs. ☐ Emerg. Dept ☐ Nursing Mgrs. ☐ Safety/Sec. Personnel ☐ Other		
11.		☐ Comp. Off. ☐ Atty. ☐ Risk Mgs. ☐ Emerg. Dept ☐ Nursing Mgrs. ☐ Safety/Sec. Personnel ☐ Other		

12.		☐ **Comp. Off.** ☐ **Atty.** ☐ **Risk Mgs.** ☐ **Emerg. Dept** ☐ **Nursing Mgrs.** ☐ **Safety/Sec. Personnel** ☐ **Other**		

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