

Antimicrobial
Stewardship/Antimicrobial
Resistance Subcommittee Report

HAI-AC Meeting
Sacramento, California
February 11, 2016

Subcommittee Members

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- Mike Butera, MD
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- Laura Elliot, PharmD, CGP
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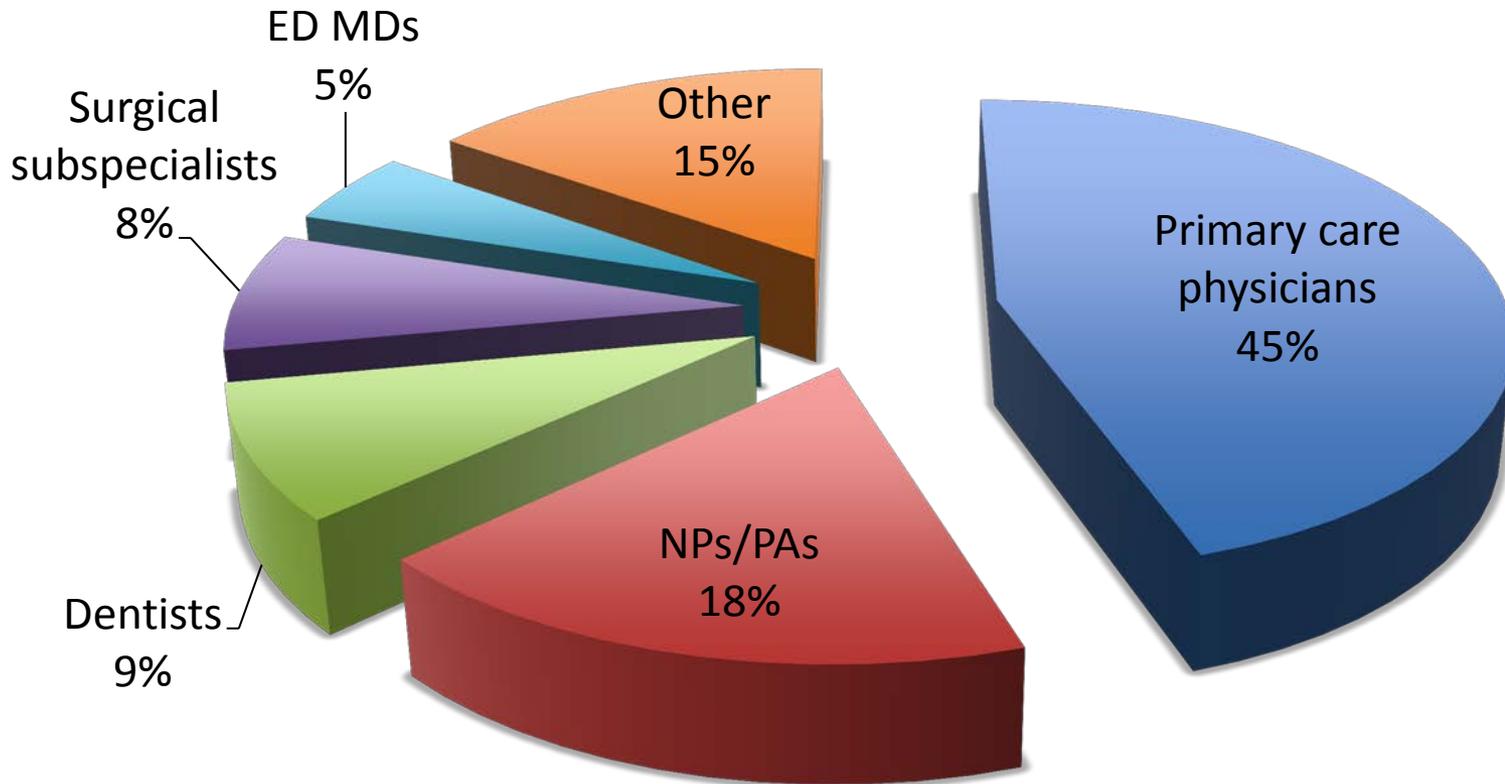
AS/AR Subcommittee Discussion Items

- CRE Reporting
- Antimicrobial stewardship in the outpatient setting
- Antimicrobial stewardship in skilled nursing facilities (SB361)
 - Development of 3-tier definition
 - Development of an ASP toolkit based on the components of the 3 tiers

Antimicrobial Stewardship in the Outpatient Setting

- Antibiotic use is the most important modifiable driver of antibiotic resistance
- Antibiotic-resistant infections lead to poor health outcomes, more toxic treatments, and higher healthcare costs
- According to CDC, >260 million antibiotic courses prescribed in the outpatient setting annually (>5 prescriptions for every 6 people in the US)
- An estimated 50% of outpatient antibiotic prescriptions are unnecessary

Who are the major outpatient prescribers?



Early health science /clinical training

- Little or no emphasis on antimicrobial stewardship in health professional schools
- In a survey of medical students at 3 US medical schools:
 - 97% recognized that inappropriate use of antimicrobials causes antimicrobial resistance and can harm patients
 - Yet only 40% were familiar with the term “antimicrobial stewardship”
 - 98% felt that medical schools should spend more time teaching students about the appropriate use of antimicrobials

Continuing education

- No requirement for additional education on appropriate antibiotic use for practitioners
- Practitioners often prescribe based on what they've seen others do/what they're use to

Apprenticeship Culture Perpetuates Poor Prescribing Habits

Clinical Mentor

Teach one

To make a meaningful impact
on outpatient antibiotic prescribing,
this culture needs to be changed and
this cycle needs to be broken...

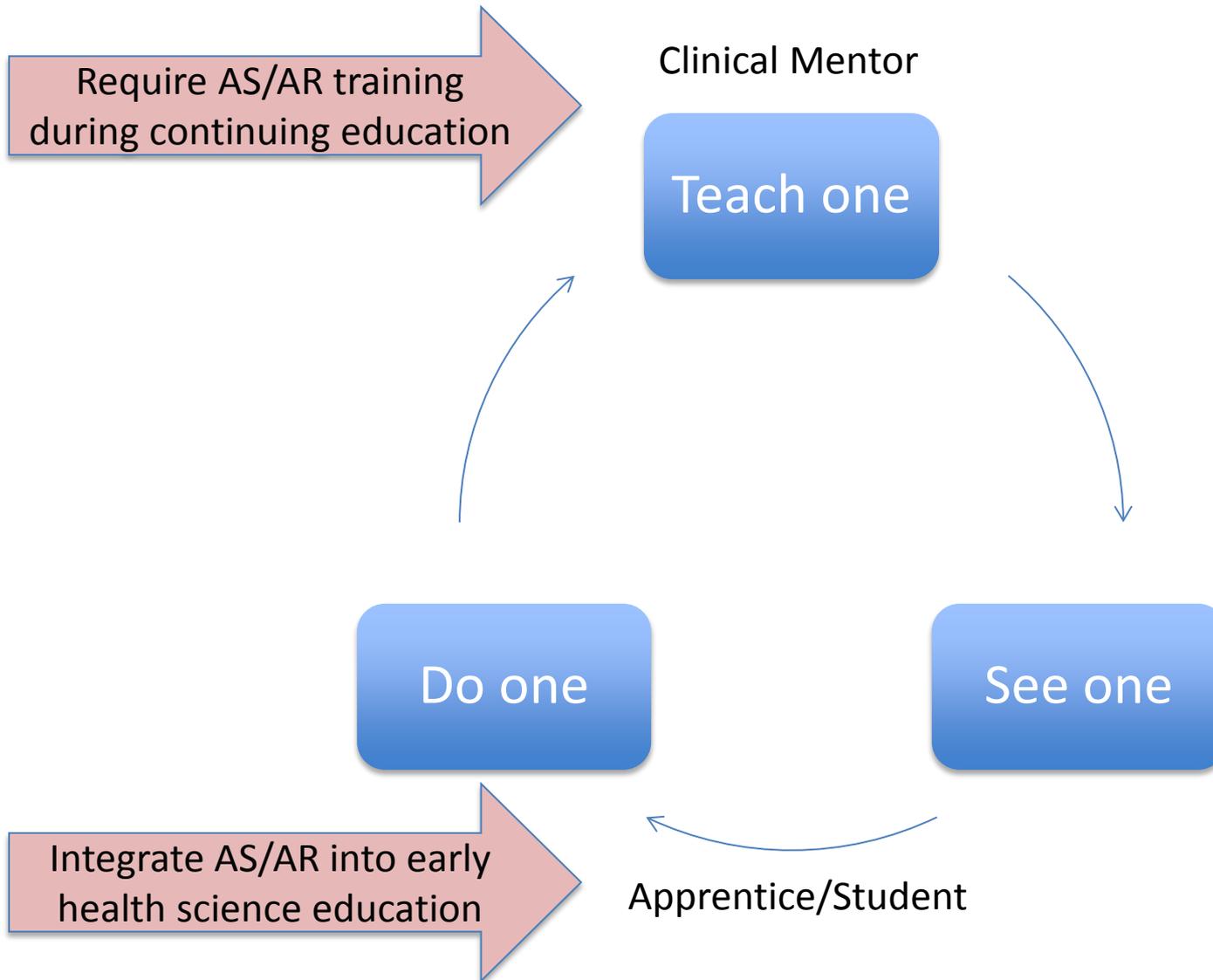
Do one

See one

Apprentice/Student



AS/AR Subcommittee agreed that an emphasis on AS/AR education is fundamental



Motion #1

CDPH survey all health professional schools in California (medical, dental, pharmacy, nursing, physician assistant, and veterinary) to assess their current curriculum on antimicrobial stewardship and antimicrobial resistance.

Motion #2

CDPH send an advisory to (and/or support legislation that requires) all health professional schools in California (medical, dental, pharmacy, nursing, and veterinary) to develop and implement an integrated antimicrobial stewardship/resistance curriculum and to submit a progress report within 2 years and every 5 years thereafter describing their progress in antimicrobial stewardship/resistance training and related initiatives at each school.

Motion #3

CDPH request that the Medical, Dental, Pharmacy, Physician Assistant, and Registered Nursing Boards of California (and/or support legislation to) require that all licensed prescribers (including physicians, dentists, pharmacists, nurse practitioners, and physician assistants) complete at least 10 percent of all mandatory continuing education hours in a course in the field of antimicrobial stewardship and/or antimicrobial resistance.

Proposed Recommendations to CDPH

Antibiotic use is the most important modifiable driver of antibiotic resistance. Antibiotic-resistant infections lead to poor health outcomes, more toxic treatments, and higher healthcare costs. In addition, antibiotic use is a common cause of adverse drug events (ADEs), accounting for 7 of the top 15 drugs leading to ADE-related emergency room (ER) visits in children and 1 out of 5 ADE-related visits to the ER in adults.^{1,2} These harms can be reduced by improving antibiotic prescribing through an emphasis on antimicrobial stewardship.

The prescribing of antibiotics in outpatient health care facilities represents a large proportion of antibiotic use in the United States. According to the Centers for Disease Control and Prevention³, over 260 million antibiotic courses are prescribed in the outpatient setting annually, which equates to more than 5 prescriptions for every 6 people in the US. Primary care physicians account for 45% of all outpatient antibiotic prescriptions, followed by nurse practitioners and physician assistants at 18%, dentists at 9%, surgical specialists at 8%, and emergency medicine physicians at 5%. It is estimated that 50% of all outpatient antibiotic prescriptions are unnecessary.

Historically, there has been a dearth or absence of antimicrobial stewardship education provided to future prescribers during their early health science and clinical training. In a survey of medical students at 3 US medical schools⁴, 97% of respondents recognized that inappropriate use of antimicrobials causes antimicrobial resistance and can harm patients, yet only 40% were familiar with the term “antimicrobial stewardship.” Ninety-eight percent of respondents felt that medical schools should spend more time teaching students about the appropriate use of antimicrobials.

Without the benefit of a specific curriculum on antimicrobial stewardship, future prescribers must often learn how to prescribe antibiotics from clinical mentors who themselves have had little, if any, prior or ongoing training in the appropriate use of these drugs. This cycle has resulted in the perpetuation of poor antimicrobial prescribing habits from one generation of prescribers to the next. To break this cycle and to change this culture, a much greater emphasis on antimicrobial stewardship and antimicrobial resistance is required during both early health science education as well as ongoing continuing education. To this end, the Healthcare Associated Infections Advisory Committee recommends the following:

1. CDPH survey all health professional schools in California (medical, dental, pharmacy, nursing, physician assistant, and veterinary) to assess their current curriculum on antimicrobial stewardship and antimicrobial resistance.
2. CDPH send an advisory to (and/or support legislation that requires) all health professional schools in California (medical, dental, pharmacy, nursing, and veterinary) to develop and implement an integrated antimicrobial stewardship/resistance curriculum and to submit a progress report within 2 years and every 5 years thereafter describing their progress in antimicrobial stewardship/resistance training and related initiatives at each school.
3. CDPH request that the Medical, Dental, Pharmacy, Physician Assistant, and Registered Nursing Boards of California (and/or support legislation to) require that all licensed prescribers (including physicians, dentists, pharmacists, nurse practitioners, and physician assistants) complete at least 10

percent of all mandatory continuing education hours in a course in the field of antimicrobial stewardship and/or antimicrobial resistance.

References:

¹ Bourgeois FT et al. *Pediatrics* 2009;124:e744-50.

² Budnitz, DS et al. *JAMA* 2006;296:1858-66.

³ <http://www.cdc.gov/getsmart/community/programs-measurement/measuring-antibiotic-prescribing.html>

⁴ Abbo LM et al. *CID* 2013;57:631-8.