Putting Stewardship Where Your Mouth Is.

Dr. Katie J. Suda, PharmD, M.S., FCCP
Professor of Medicine
University of Pittsburgh School of Medicine
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Target Audience

• The overarching goal of PCSS is to train healthcare professionals in evidence-based practices for the prevention and treatment of opioid use disorders, particularly in prescribing medications, as well for the prevention and treatment of substance use disorders.
To interact during the webinar:

- Send a message to the moderators
- Send a question to the speaker
Putting Stewardship Where Your Mouth Is.

Katie J. Suda, PharmD, M.S., FCCP
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Disclosures

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• Opinions expressed today are those of the presenter and do not represent positions or views of the Department of Veterans Affairs or the U.S. Government.
Objectives

• Describe antibiotic and opioid prescribing by dentists.

• Determine the extent to which antibiotic and opioids prescribed by dentists lead to adverse outcomes.

• Identify effective stewardship interventions in dentistry.
Multiple datasets will be described.

- Medicare Part D prescription data
- IQVIA population-level prescription data
  - 92% of outpatient prescriptions dispensed
  - Does NOT include VA or DOD data
- IBM Health (Truven) Marketscan claims data
  - Persons with commercial or Medicare insurance AND commercial dental insurance
- VA Corporate Data Warehouse
  - Largest oral health care provider in the U.S.
  - ~500,000 Veterans receive 1.9 million dental visits annually
My focus today is prescribing by dentists... but...

- Dentists are not the cause of the opioid epidemic and bacterial resistance...

- The majority of dental practice is:
  - Treating pain and infection
  - Preventing infection (have you flossed?!?)
  - Causing pain to treat/prevent infection

- Dentists have largely been left out of the conversation
Why Antibiotics *and* Opioids?

- Dentists are the top specialty prescriber of antibiotics *and* opioids in the U.S.

- National Action Plans:
  - Combating Antibiotic-Resistant Bacteria
  - Adverse Drug Event Prevention

- Few public health interventions have focused on dentist prescribing
What do dentists prescribe?

Medications prescribed by dentists to Medicare Part D beneficiaries.

- Antibiotic: 60% (highest)
- Opioid: 20%
- Eye, Ear, Nose, Throat: 10%
- Non-opioid analgesic: 5%
- Other: 5%

The oral cavity is exposed to the external environment and from a very young age is colonized by infectious agents. Under certain circumstances including poor oral hygiene, dry mouth, trauma, and the use of antibiotics, oral infections can occur. They can result in damage to the oral cavity including teeth and their support structures. Oral infections can also lead to the extension of infection into surrounding tissues and to systemic infections. Chronic oral infection is a recognized risk factor for heart disease. Older adults are at high risk for oral infections and associated complications. Tooth loss, for which infection is the most significant cause, leads to cosmetic changes and a decreased ability to masochistic certain foods that can lead to malnutrition. Chronic oral infections and the manipulation of teeth and supporting structures can lead to the hematogenous spread of infection including the infection of artificial joints and endocardial implants. Good oral hygiene, the use of fluoride, regular dental care, and the appropriate use of antibiotics can all reduce oral infections and their associated complications. J Am Geriatr Soc 68:411-416, 2020.

relationship was found between increasing age and the presence of dental caries. Data from the National Center for Health Statistics in the United States showed that the prevalence of root caries was more than twice as high in older adults (36%) when compared with younger adults. The prevalence of periodontitis also increases with increasing age, with as many as 64% of older adults in the United States with moderate or severe periodontitis, compared with less than 38% for those who are younger. Both dental caries and periodontitis contribute to tooth loss. Although complete loss of all teeth (edentulism) is less common in most high-income countries than in the past, it is more common with increasing age. Tooth loss affects a person's ability to chew, with a possible negative impact on nutrition. Poor oral health, dental infections, tooth loss, and socioeconomic status are strongly correlated. Inadequate dental insurance coverage for dental hygiene and dental care is a major contributor to poor oral hygiene, dental infections, and tooth loss with increasing age.

Poor oral hygiene including periodontitis was demonstrated to be associated with a variety of medical conditions.
Opioid Prescribing
Dentists prescribe 1 out of 8 short-acting opioids in the U.S.

How do dentists compare?

VA MEDICAL CLINICIANS
- Higher opioid prescribing rates

VA DENTAL PROVIDERS
- Lower opioid prescribing rates

VA facilities with high prescribing dentists ≠
VA facilities with high prescribing medical clinicians

University of Pittsburgh
U.S. guidelines for the treatment of oral pain are lacking.

- CDC guidelines recommend limiting opioids to 3 days for most acute pain
- Recommend hydrocodone 10mg every 6 hours x 2-3 days or 120 MME/Rx
- New VA guidelines
- Coming soon: ADA guideline panel

3 DAYS OR LESS IS BEST!
Dentists overprescribe opioids to patients with commercial insurance.

29% exceeded recommended morphine equivalents increased over the study period

Patients most likely to be overprescribed:
- Southern U.S.
- Men
- Received oxycodone
- Young adults

53% exceeded recommended days' supply (≤ 3 days) consistent over the study period

U.S. dentists prescribe opioids more frequently than English dentists.

With similar oral health and dentist use.

What is the impact of opioids prescribed to older adults?

“The Beers Criteria” is endorsed by the American Geriatric Society (AGS) for potentially inappropriate medication (PIM) use in older adults.

Why is the Beers Criteria needed?

• Polypharmacy is prevalent in older adults
• 40% take 5 to 9 medications
• Polypharmacy is associated with adverse drug events (ADEs)
AGS Beers® Criteria includes PIMs in older adults.

• Drugs that should be used with caution
• Drugs that should be avoided
• Notable drug-drug interactions
• Drugs that should be renally adjusted
• Drugs where there is evidence of harm

• Is a *guide* meant to be combined with clinical judgement, not meant to be punitive
Beers highlights for dentists.*

General PIM in Older Adults.

- Benzodiazepines – AVOID
  - Increased cognitive impairment, falls
- NSAIDs – AVOID Chronic use
  - Increased risk of PUD / GI bleeding
- Muscle relaxants – AVOID
  - Increased risk of sedation, falls
- Tramadol – USE WITH CAUTION
  - Hyponatremia

Beers highlights for dentists.*
Disease- & Drug-Interactions PIM in Older Adults.

• Avoid NSAIDs
  • History of GI ulcers, chronic kidney disease
• Avoid opioids & BZD
  • History of falls/fractures, dementia, cognitive impairment
• Opioids + Benzodiazepines
• Opioids + Gabapentin/Pregabalin
• Opioids + 2 central nerve system-active drugs

1 in 10 older adults received PIM with opioids.

- 23% increase in 30-day all-cause ER visits and hospitalizations
- Increasing MME was associated with increased all-cause ED visit and hospitalization risks in patients
- 22% were dispensed the day before the dental visit

Pharmacists have an opportunity to serve as moderators for hazardous co-prescribing

Opioid implementation strategies in dentistry.

• Embedding a pharmacist in a dental clinic
• Mandating query of the state PDMP
• Educational intervention prior to tooth extraction
• FDA up-scheduling of hydrocodone in 2014

What is the impact of regulatory changes on dental opioids?

Antibiotic Prescribing
Outpatient antibiotic prescribing in the U.S. has decreased...a little.

• Outpatient antibiotic prescribing by non-physician providers have **increased**

• Dentists:
  • Overall prescribing rates have **increased**
  • Prescribing rates have increased for clindamycin
  • Days’ supply have **increased** for amoxicillin and clindamycin

Dentists prescribe 1 out of every 10 antibiotics in the U.S.

How do dentists compare?

VA MEDICAL CLINICIANS

Lower antibiotic prescribing rates

VA DENTAL PROVIDERS

Higher antibiotic prescribing rates

VA facilities with high prescribing dentists ≠
VA facilities with high prescribing medical providers

Geographic discordance.

Antibiotic Rx/100 persons (dentists only)

CDC - Antibiotic Rx/1000 persons (all prescribers)

Dentists prescribe differently...

- As compared to other medical clinicians, dentists prescribe:
  - Penicillins most frequently
  - Fewer broad spectrum antibiotics
  - Clindamycin more frequently
  - More antibiotics for preventative reasons

- Are pressured to prescribe antibiotics by patients and medical clinicians
Dentists primarily prescribe two antibiotics.

AHA/ADA Guidelines for Prophylaxis.

Dentists overprescribe antibiotics.

90.7% of dental visits had gingival manipulation

20.9% of visits had patients with cardiac conditions

81% of Antibiotic Prophylaxis was unnecessary

Prescribing for extractions and implants.

Evidence supports antibiotic prophylaxis prior to tooth extractions or tooth implant placement.

- 85.3% of Veterans with tooth extractions or implants received antibiotic prophylaxis.
- 72.7% received post-procedure antibiotics for 7 days when only one dose pre-procedure was indicated.


Unnecessary antibiotic prophylaxis can result in adverse events.

81% of Antibiotic Prophylaxis with days supply <3 days was unnecessary

1.4% had a Serious Adverse Event within 14 days of the Dental Visit

- Antibiotic allergy
- ED visit
- C. difficile

C. difficile has been associated with antibiotics prescribed by dentists.

- 8-30% of community associated CDI

- Single doses of clindamycin are associated with fatal and non-fatal adverse drug reactions
  - C. difficile infections most frequently

➢ Dentists are generally not aware when their patients experience adverse events.

U.S. dentists prescribed antibiotics most frequently...

33.2 Rx/1000 pop

53.5 Rx/1000 pop

65.0 Rx/1000 pop

72.6 Rx/1000 pop

* p<0.0001

....with similar oral health.

Teoh L, et al. Comparison of dental antibiotic prescribing between Australia, England, the United States and British Columbia in 2017. IDWeek
We need to improve outpatient antibiotic prescribing.
Antibiotic Stewardship... Like Pulling Teeth!
Stewardship is feasible in dentistry.

Commitment
Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety.

Education and expertise
Provide educational resources to clinicians and patients on antibiotic prescribing, and ensure access to needed expertise on optimizing antibiotic prescribing.

Action for policy and practice
Implement at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed.

Tracking and reporting
Monitor antibiotic prescribing practices and offer regular feedback to clinicians, or have clinicians assess their own antibiotic prescribing practices themselves.
Commitment.

• Leadership Commitment
  • Associate Dean of Clinical Affairs
  • Director, Urgent Care Dental Clinic
  • Co-Directors, Antimicrobial Stewardship Program
• Identified a stewardship leader
• Included in the strategic plan

Education and expertise.

• **Expertise**
  - Endodontist, oral surgeon
  - Antimicrobial stewardship program

• **Education**
  - “Monday minute”
  - Continuing education sessions
  - Educational posters in staff areas and chair-side
    - “Checklist for antibiotic prescribing in dentistry”
    - “Seven ways dentists can act against antibiotic resistance”
    - “Antibiotic Do’s and Don’ts at the dentist”

Action for policy and practice.

- Implemented local guidelines and a clinical decision support tool
  - Treatment of oral infections
  - Use of antibiotics for infection prophylaxis
- Engaging primary medical providers on prophylaxis decisions
- Planning for future strategies
Tracking and reporting.

• Review of all systemic antibiotics
• Grouped by clinic
  ➢ Urgent care dental clinic
• Identified areas for improvement
• Antibiotic prescribing report presented during staff meeting
  • Peer comparison
• Program results shared during clinic staff meetings

Stewardship works in dentistry!

Visit-based antibiotic prescribing rate decreased by 73%!

Antibiotic implementation strategies in dentistry.

- “Town hall” with dentists and orthopedic surgeons
- Antibiotic stewardship toolkits and posters
- Statements from professional organizations
- Free education from CDC and BSAC/FDI
Take-aways: Antibiotic and opioid stewardship in dentistry

• Significant area of opportunity

• Challenges in the dental setting include:
  • Data access
  • Limited evidence base and resources
  • Prophylaxis decisions may be driven by surgery colleagues

• Initiating the conversation, opportunities for collaboration and improvement
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Questions

ksuda@pitt.edu
PCSS Mentoring Program

- PCSS Mentor Program is designed to offer general information to clinicians about evidence-based clinical practices in prescribing medications for opioid use disorder.

- PCSS Mentors are a national network of providers with expertise in addictions, pain, evidence-based treatment including medications for addiction treatment.
  
  • 3-tiered approach allows every mentor/mentee relationship to be unique and catered to the specific needs of the mentee.

  • No cost.

For more information visit:  
https://pcssNOW.org/mentoring/
PCSS Discussion Forum

Have a clinical question?

Ask a Colleague

A simple and direct way to receive an answer related to medication-assisted treatment. Designed to provide a prompt response to simple practice-related questions.

Ask Now

http://pcss.invisionzone.com/register
PCSS is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with:

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On behalf of the ADA, thank you!