

# Antimicrobial Stewardship in Dentistry

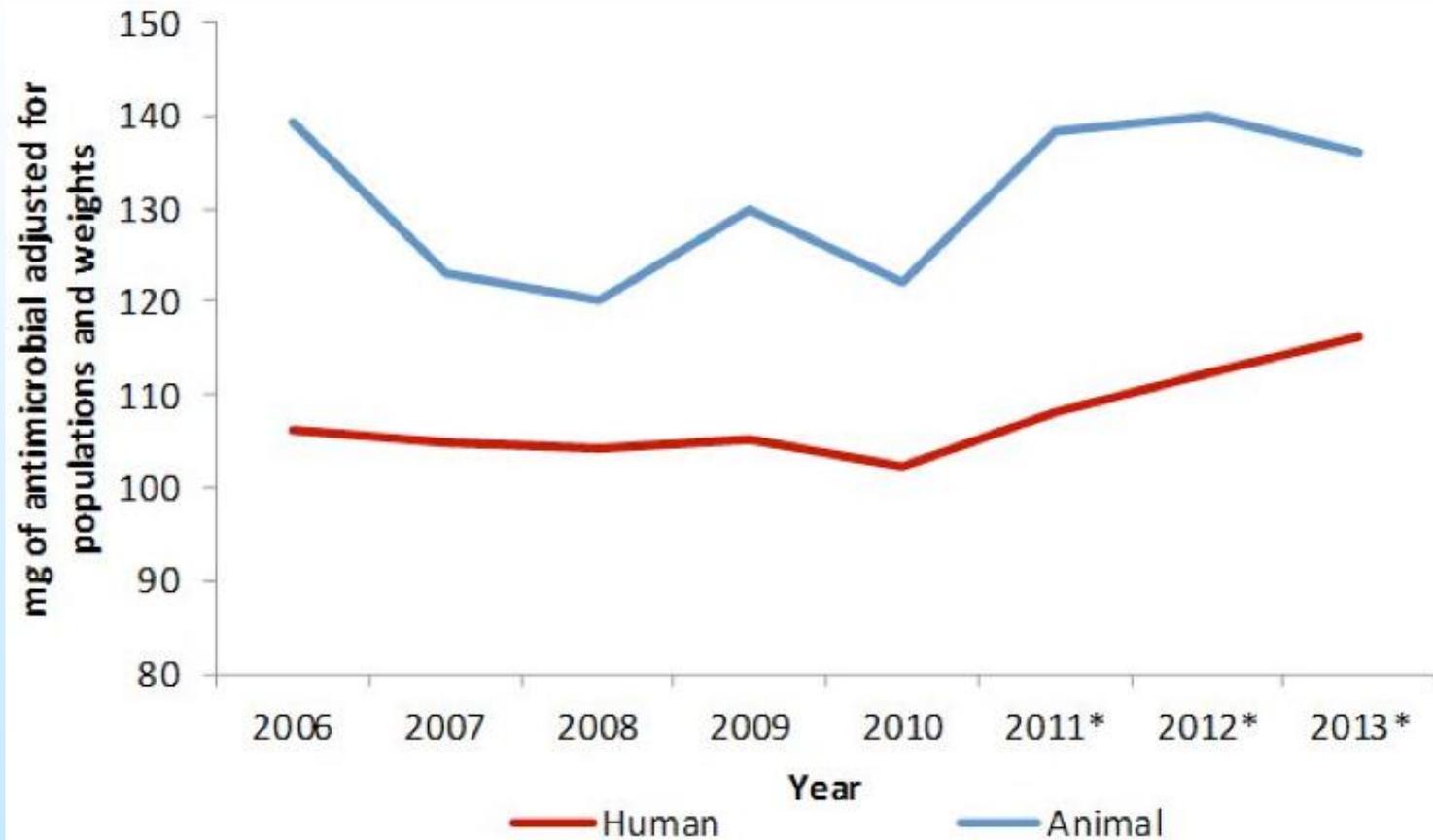
ONTARIO DENTAL ASSOCIATION

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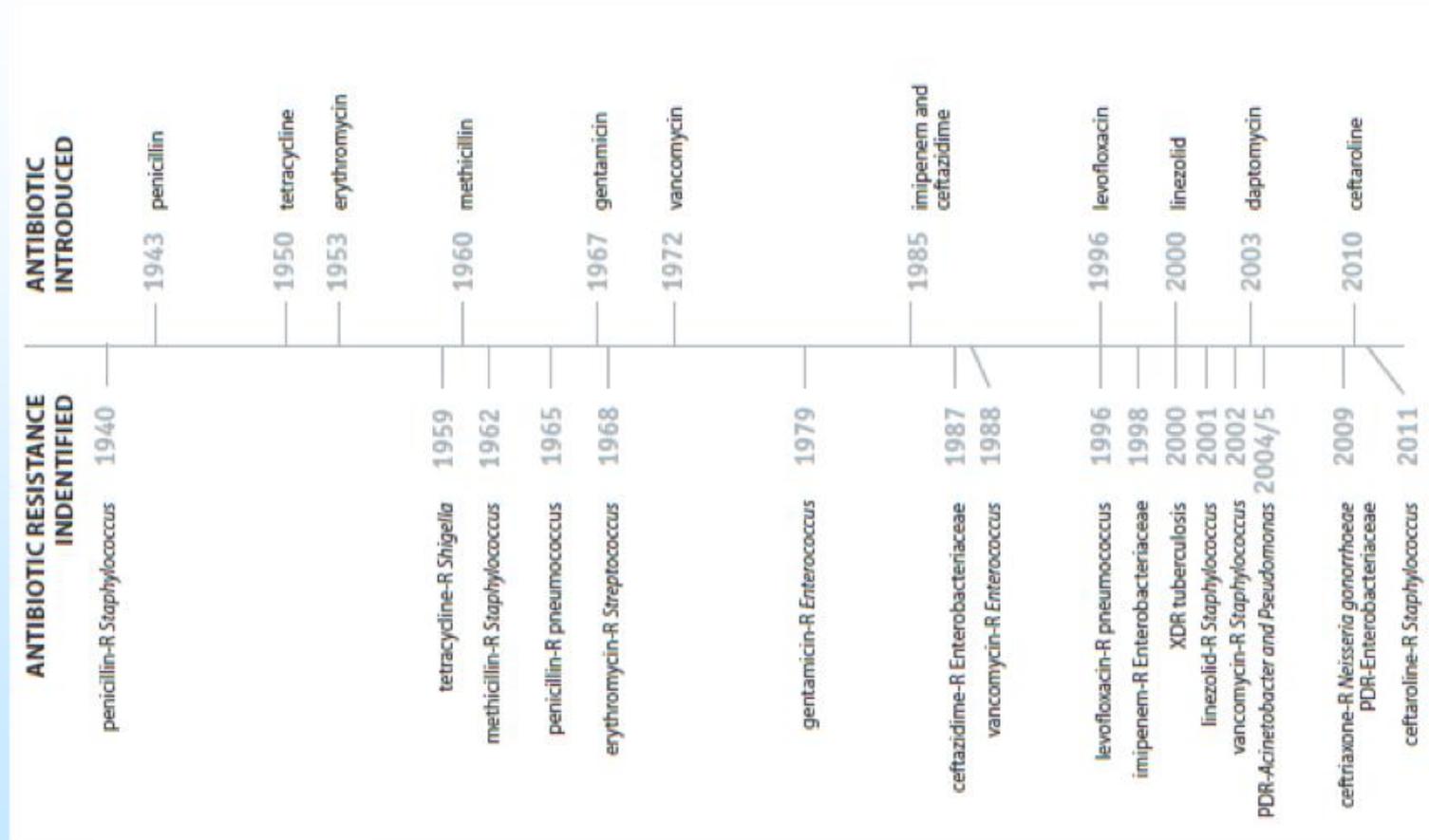
VIDEO SHOWN - <https://www.youtube.com/watch?v=-G4cEYQBVu4>

# Quantity of antimicrobials distributed and/or sold for use in animals and humans, accounting for pop<sup>n</sup> and wt. (2006-2013)



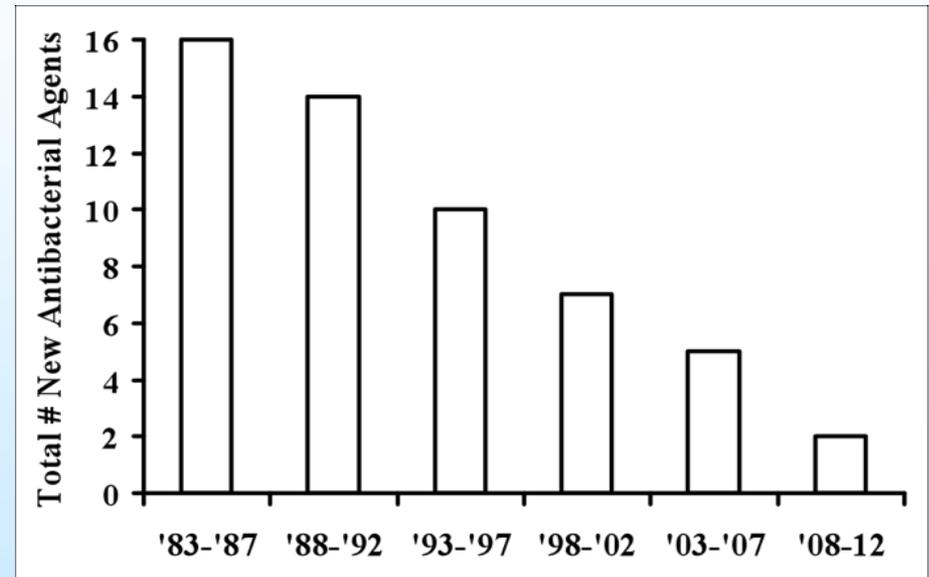
Public Health Agency of Canada Canadian Antimicrobial Resistance Surveillance System - Report 2015.

# The Rise in Antimicrobial Resistance



Centers for Disease Control and Prevention Antibiotic Resistance Threats in the US, 2013

# Quantity of antimicrobials distributed and/or sold for use in animals and humans, accounting for pop<sup>n</sup> and wt. (2006-2013)



*Nature*. 2011;**472**:32. doi: 10.1038/472032a

# Dangers of Antimicrobials

- + antibiotics are responsible for 1 out of every 5 ER visits for adverse drug reactions
- + drug interactions:
  - antibiotics interact with the metabolism and/or binding of many drugs (esp. warfarin (Coumadin®))
- + *C. difficile*:
  - looking at dental prophylaxis over 10 years in the UK
    - 2.23 NON-FATAL REACTIONS/100 000 AMOXICILLIN PRESCRIPTIONS
    - 1.3 FATAL AND 15 NON-FATAL REACTIONS/100 000 CLINDAMYCIN PRESCRIPTIONS (MOST DUE TO *C. DIFFICILE*)

*J Antimicrob Chemother.* 2015 pii: dkv115 doi: 10.1093/jac/dkv115

# Dangers of Antimicrobials

- ✦ using some back-of-the-napkin calculations from David Patrick's data
  - assumptions: remainder of dentists like BC dentists, danger of clindamycin similar in Canada as in UK
- ✦ 35 million people and 0.12 clindamycin prescriptions/1000 population/day
  - 4200 clindamycin prescriptions/day
  - 1 533 000 clindamycin prescriptions/year
  - dentists in Canada can be expected to kill roughly 20 patients/year from clindamycin prophylaxis

*JADA* 2016;147:320-7. doi:10.1016/j.ada.2015.12.014

# My First Antibiotic Love

*When I first met you, it was incredible. I never really thought I could feel this way about anything. Everything good. Nothing bad. You always seem to be there when I need you. I know you aren't all good, but I can't help telling myself that you are perfect. It is like I am addicted to you. You make me (and everyone around me) feel so good. And every time I reach for you, I get to have you. I probably shouldn't say this publicly (or even to you) but I sometimes feel that I am greedy because I want more of you than I even deserve. It is like I want a bigger, stronger version of you, thinking that it will make me feel better, more potent.*

# Emotional attachment to antimicrobials

- ✦ we are taught from a very early age how important it is to “finish all our antibiotics” (and vegetables, etc.)
- ✦ when we have a viral infection, and we get better after being given antibiotics, we pair the getting better with receiving antibiotics
- ✦ as prescribers, we also get this kind of reinforcement: few physicians know what happens to a cellulitis, a COPD exacerbation, or an otitis media WITHOUT antibiotics
- ✦ you learn that iv antibiotics are “stronger”
- ✦ you learn that sicker patients should get broader-spectrum antibiotics

# What do I want you to know?

- ✦ antimicrobials are not benign
- ✦ most of the time, you are not prescribing antibiotics for scientific reasons, but for emotional reasons
- ✦ prescribing by dentists may not have huge direct implications for resistance, but it is part of the messaging to the public that antibiotics are a safe alternative