

# Outpatient Antibiotic Stewardship: Interventions that Work

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## Outpatient Antibiotic Prescribing (per 1000 inhabitants)

	<b>US</b>	<b>Sweden</b>
<b>All</b>	<b>833</b>	<b>388</b>
quinolones	105	25
macrolides	185	12
cephalosporins	117	12

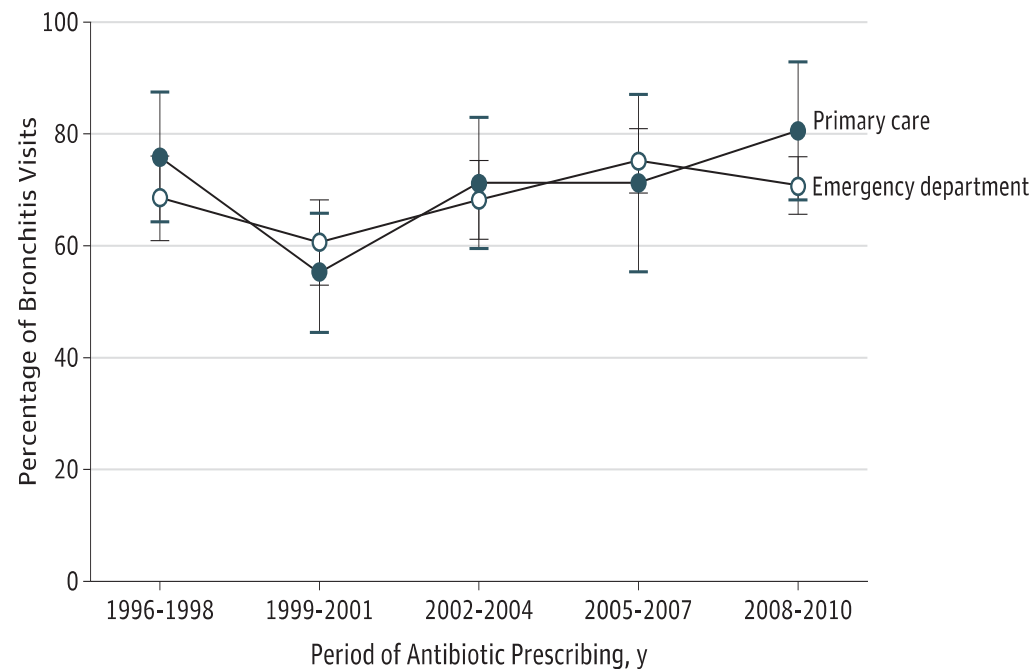
Ternhag A. NEJM 2013;369:1175-1176.  
Hicks LA et al. NEJM 2010;368:1461-2

# Antibiotic Prescribing for Acute Bronchitis

## RESEARCH LETTER

### Antibiotic Prescribing for Adults With Acute Bronchitis in the United States, 1996-2010

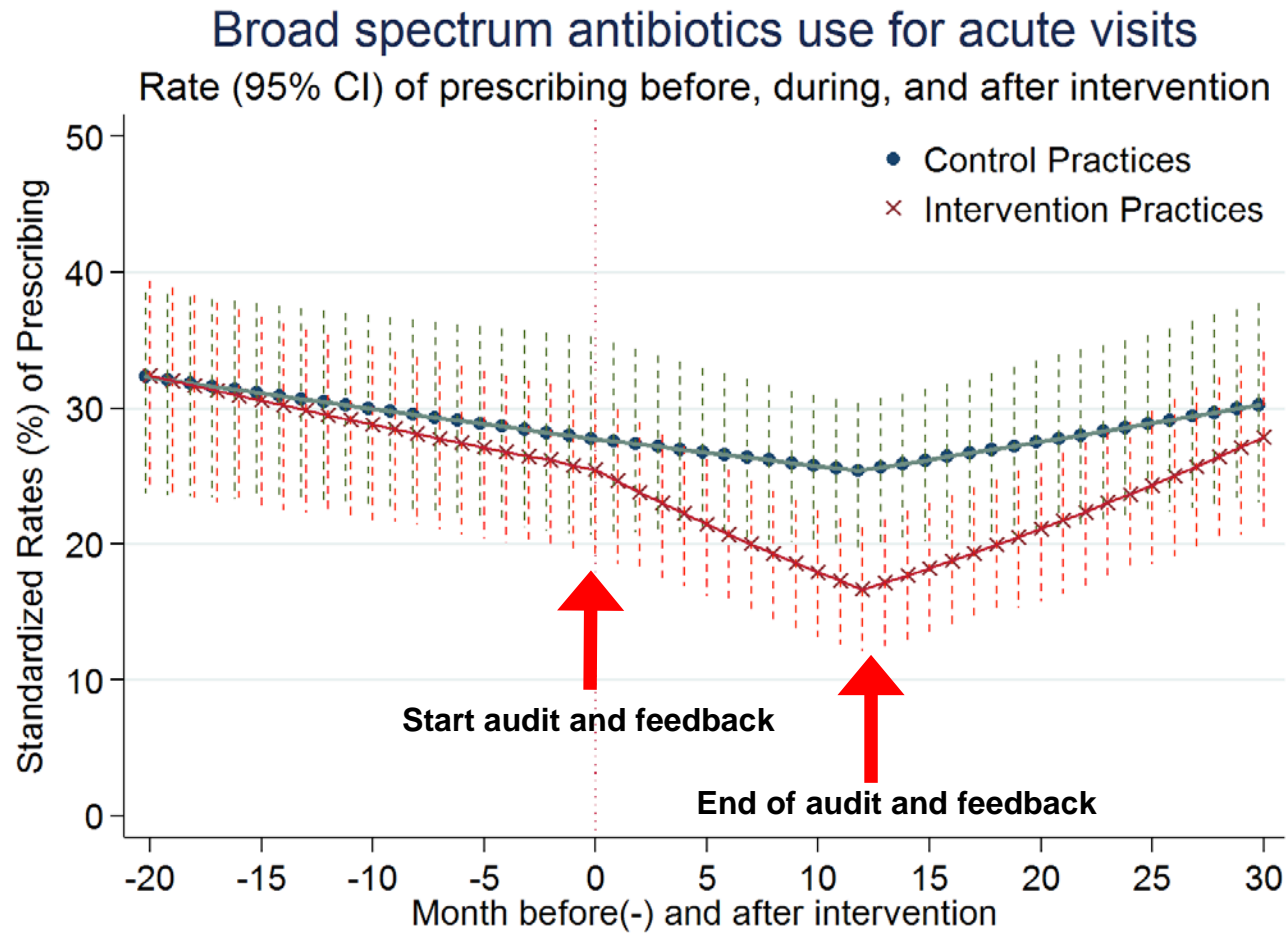
Figure. Antibiotic Prescribing for Acute Bronchitis in the United States by Site of Care, 1996-2010



Barnett and Linder. *JAMA*. 2014;311(19):2020-2022



# Audit and Feedback Can Reduce off-Guideline Prescribing



Gerber et al. *JAMA*.2013;309(22):2345

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## Parental Pressure for Antibiotics

*“We have lots of parents who come in and they know what they want. They don’t care what we have to say. They want the antibiotic that they want because they know what is wrong with their child.”*

Szymczak, *ICHE*, 2014, vol. 35, no. s3



# Non-Clinical Drivers of Antibiotic Prescribing

- Perceived parental pressure
- Presence of trainees
- Time of day
- Patient race
- Practice location



# Improved Communication can Improve Antibiotic Prescribing

Effects of internet-based training on antibiotic prescribing rates for acute respiratory-tract infections: a multinational, cluster, randomised, factorial, controlled trial

*Paul Little, Beth Stuart, Nick Francis, Elaine Douglas, Sarah Tonkin-Crine, Sibyl Anthierens, Jochen W L Cals, Hasse Melbye, Miriam Santer, Michael Moore, Samuel Coenen, Chris Butler, Kerenza Hood, Mark Kelly, Maciek Godycki-Cwirko, Artur Mierzecki, Antoni Torres, Carl Llor, Melanie Davies, Mark Mullee, Gilly O'Reilly, Alike van der Velden, Adam W A Geraghty, Herman Goossens, Theo Verheij, Lucy Yardley, on behalf of the GRACE consortium*

- 246 practices, 4264 patients, 6 European countries
- Training in enhanced communication skills:
  - gathering information on patient concerns/expectations
  - exchange of information on symptoms, natural disease course
  - Tx; agreement of a management plan
- **Communication training led to a >30% reduction in antibiotic prescribing for ARTI**

www.thelancet.com Vol 382 October 5, 2013



## Socio-Behavioral Levers to Improve Antibiotic Prescribing

*... Your health is very important to us. As your doctors, we promise to treat your illness in the best way possible. We are also dedicated to avoid prescribing antibiotics when they are likely to do more harm than good...*

Meeker et al, JAMA Internal Medicine. March 2014(174)3





# Socio-Behavioral Levers to Improve Antibiotic Prescribing

## Original Investigation

### Effect of Behavioral Interventions on Inappropriate Antibiotic Prescribing Among Primary Care Practices A Randomized Clinical Trial

Daniella Meeker, PhD; Jeffrey A. Linder, MD, MPH; Craig R. Fox, PhD; Mark W. Friedberg, MD, MPP;  
Stephen D. Persell, MD, MPH; Noah J. Goldstein, PhD; Tara K. Knight, PhD; Joel W. Hay, PhD; Jason N. Doctor, PhD

#### Suggested alternatives

- “antibiotics are generally not indicated for this”

#### Accountable justification

- free text, or “no justification given”

#### Peer comparison

- top decile “top performer” or “not top performer”



## Summary/AAP Points of Emphasis:

- Outpatient antibiotic use is, by far, the largest % of direct human exposure, but not proportionally reflected in NAP
- Kids get LOTS of antibiotics; no pediatricians on Council
  - 30% perinatal; 8% postnatal, >1 Rx/yr after that
- Highlight patient harm (in addition to resistance)
  - ADEs, CDI, microbiome → immune development
- Audit/feedback can improve prescribing
- Other socio-behavioral approaches work, such as communication training and holding clinicians accountable

