

AN EPIDEMIOLOGY PUBLICATION OF THE OREGON DEPARTMENT OF HUMAN SERVICES

OREGON'S CAMPAIGN TO PROMOTE JUDICIOUS USE OF ANTIBIOTICS

A YEAR AGO, we kicked off Oregon's Campaign to Promote Judicious Use of Antibiotics. Since then, avid readers of the *CD Summary* have learned that a widened mediastinum on CXR is suggestive of inhalational anthrax, that the family of birds most susceptible to West Nile virus is known as *Corvidae* (crows, magpies and jays), and that smallpox vaccine has nasty side effects.

However, the day-to-day practice of medicine hasn't really changed that much — and the deluge of patients seeking relief from cold and flu symptoms is about to descend. Are you ready? This issue of the *CD Summary* will discuss recent national data and provide an update on Oregon's program to encourage judicious use of antibiotics. We'll also give you some tips on things you can do in your own practice to educate your patients about antibiotic resistance.

NATIONAL OVERVIEW

From 1980 through 1992, antimicrobial prescribing rates for children by physicians in office-based practice in the U.S. increased 48%.¹ In 1995, the Centers for Disease Control and Prevention (CDC) launched a national educational program to reduce antimicrobial resistance by encouraging judicious use of antibiotics for upper respiratory infections, since 75% of oral antibiotics in the U.S. are

prescribed for otitis media, sinusitis, bronchitis, pharyngitis and URI.¹ The linchpin of the campaign has been the development of consensus guidelines on the management of upper respiratory infections for health care professionals,^{2,3} and posters, brochures, and fact sheets for patients.* Some of CDC's activities this year include piloting a medical school curriculum that teaches appropriate use (fourth-year students at Oregon Health & Sciences University will serve as guinea pigs starting in February, 2003) and launching a media campaign.

MAYBE IT'S WORKING!

This past June, some promising news emerged. JAMA published data provided by 2,500 to 3,500 office-based physicians from 1989 through 2000.⁴ The annual rate of antimicrobial prescriptions per 1000 children and adolescents younger than 15 years decreased from 838 in 1989–1990 to 503 in 1999–2000 — a whopping 40% reduction. For the 5 common respiratory tract infections combined,[†] the average annual rate decreased 44% — from 674 prescriptions per 1,000 in 1989–1990 to 379 in 1999–2000.

Recently published studies from Tennessee, Wisconsin, Washington and Massachusetts offer clues as to what makes an educational intervention successful.⁵⁻⁷ The common theme was that education needs to be aimed at both

clinicians and patients. The researchers promoted the CDC guidelines to clinicians through lectures and academic detailing and by giving them feedback on their prescribing habits. To reach the public, most of the interventions used some combination of direct mailings of materials to patients; patient brochures, fact sheets, and posters in doctors' offices; and presentations on the dangers of antibiotic misuse to community groups, schools and daycare providers.

ON THE HOME FRONT

Well, we can read, so we have modeled our campaign after these successful interventions, directing educational efforts toward both clinicians and the general public.

We started with clinician education. Although all 71 pages of the CDC guidelines are fun- and fact-filled, you needn't wade through all of them. Using the CDC guidelines, we developed a set of one-page clinical algorithms for sinusitis, cough illness/bronchitis, pharyngitis and otitis media — which are endorsed by the Oregon Chapter of the American College of Physicians, the Oregon Academy of Family Physicians, and the Oregon Pediatric Society.

In addition, we developed patient brochures, available in English and Spanish; viral "prescription" pads with a checklist of over-the-counter and home remedies to

Recommendations for judicious use of antibiotics in upper respiratory tract infections

Otitis Media

1. Reserve treatment for acute otitis media, defined as middle ear effusion plus at least one other sign of inflammation of the middle ear (ear discharge, bulging red or yellow tympanic membrane [TM], ear pain).
2. Consider watchful waiting and symptomatic treatment if patient >2 years and TM not ruptured.
3. Drug of choice: high dose amoxicillin (80–90 mg/kg/day for children, 1.5–3.5 gm/day for adults) for 5–7 days (10 days if <2 years).

Sinusitis

1. Diagnose as sinusitis if patient has prolonged rhinorrhea or cough without improvement for > 10-14 days, or if patient has more severe signs and symptoms (T > 39° C, facial pain, maxillary toothache).
2. Drug of choice: high dose amoxicillin (80–90 mg/kg/day for children, 1.5–3.5 gm/day for adults) for 7–10 days.

Pharyngitis

1. Diagnose group A streptococcal pharyngitis using combination of clinical findings and laboratory testing—only group A streptococcus requires antibiotics.
2. Drug of choice: penicillin for 10 days.

Cough Illness/Bronchitis

1. Antibiotics are not effective in treating patients with cough illness/bronchitis without chronic lung disease, and do not prevent complications.
2. The presence of sputum and its characteristics are not helpful in distinguishing between bacterial and viral infection
3. Bacterial infections that may rarely cause prolonged cough are *B. pertussis*, *M. pneumoniae*, and *C. pneumoniae*.

* To view/order these materials, go to <http://www.cdc.gov/drugresistance/community/>



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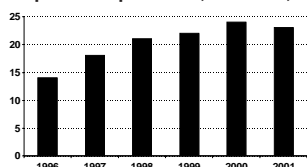
use in lieu of antibiotics; and question-and-answer sheets for otitis media and for cough illnesses in children, and cough illnesses in adults. Both the guidelines and the patient materials are available on our web site: <http://www.healthoregon.org/antibiotics/home.htm>. And we have staff available to give grand rounds or CME presentations on the judicious use of antibiotics at your hospital or clinic.

What about the general public? Our goal is to work with community groups, parent-teacher associations, and day-care providers to spread the word. Several health plans and independent practice associations have also stepped up to the plate to help spread our materials to their members. We are developing a presentation on the dangers of antibiotic misuse, along with alternatives for antibiotics, suitable for lay audiences.

EVALUATION

The bottom line is reducing the prevalence of resistant bacteria in the Oregon population. One reason we are so worked up about inappropriate use of antibiotics for respiratory infections is the increasing incidence of drug-resistant *Streptococcus pneumoniae*, a leading cause of meningitis, bacteremia, pneumonia and otitis media.

Percent of invasive *S. pneumoniae* isolates non-susceptible* to penicillin, Portland, 1996–2001



ABCs Surveillance, Oregon Emerging Infections Program
*Non-susceptible defined as MIC >0.1 ug/ml

Oregon's Emerging Infections Program gathers data on Portland Tri-county area patients with invasive isolates of *S. pneumoniae*; the year 2001 actually showed a slight decline in the proportion of isolates that were resistant to penicillin (see figure). It is still too early to tell whether this will amount to a trend, but we will continue to monitor susceptibility in the Portland area, and the rest, quite frankly, is up to you.[§]

TIPS FOR HEALTH PROFESSIONALS

The Table (*verso*) summarizes the principles of judicious use that we are promoting. More details on treatment are available in our clinical algorithms and from the full CDC consensus guidelines (available on our web site).^{2,3}

Clinicians often face patients who specifically come in asking for antibiotics, sometimes even by brand name. Below are some strategies to use when educating your patients about the dangers of antibiotic misuse:

- Provide realistic expectations for the duration of the patient's symptoms. It is not unusual for URI symptoms from viral infections to last 10–14 days. Don't dismiss the patient's symptoms as "only a viral infection."
- Personalize the risk of unnecessary antibiotic use. Educate patients that antibiotic use increases the risk of carriage of and infection with resistant bacteria that may be difficult to treat and require more expensive antibiotics or even hospitalization. Point out that antibiotics commonly have side effects like gastrointestinal symptoms, and that rare reactions such as anaphylaxis may occur.

- Employ materials developed by CDC or your state health department to assist in patient education. Brochures, fact sheets, or posters in your waiting room may help to inform patients about the risk of misuse of antibiotics.
- Involve office personnel in the educational process. Reinforcement of provider messages by office staff can be a powerful adjunct in changing patient attitudes.
- Promote non-antibiotic measures for relief of viral respiratory symptoms using a viral "prescription" pad. Analgesics and decongestants can be useful, along with non-pharmacologic therapies, such as rest, hydration, gargling, humidifiers, etc.

For more information about the program or to schedule a talk (or volunteer to give a talk for your hospital or clinic), call Ann Thomas, MD, at 503/731-4024.

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[§] Okay, some of you may have noticed that this drop actually occurred before our educational efforts were launched in the winter of 2002, but it does suggest that a reversal of the upward trend in resistance noted in the period 1996–2000 may be possible.