CD Summary

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Telephone 503/731-4024
Emergencies 503/731-4030
Fax 503/731-4798
cd.summary@state.or.us
www.ohd.hr.state.or.us/cdpe/

CENTER FOR DISEASE PREVENTION & EPIDEMIOLOGY • OREGON HEALTH DIVISION

PNEUMOCOCCAL DISEASE: COMMON...DEADLY...PREVENTABLE

PNEUMOCOCCAL DISEASE kills more people in the United States (11,000-41,000/year) than any other vaccine-preventable bacterial disease. It is also a leading cause of morbidity, with an annual toll of 2,600-6,200 cases of meningitis, 16,000-55,000 cases of bacteremia, and 150,000-570,000 cases of pneumonia.[1]

Ominously, *S. pneumoniae* isolates in the U.S. are increasingly resistant to multiple antimicrobial agents.[2] In the Portland area, about 20% of isolates are not susceptible to penicillin.

Among older adults, the incidence of pneumococcal disease rises sharply with age. In the Portland area, the incidence of pneumococcal bacteremia in persons <65 years old was 13.7/100,000 during 1996-7, but 56.8/100,000 among persons 65 or older. The incidence of pneumococcal pneumonia follows a similar pattern, but is estimated to be ~5x more common.

Two vaccines are currently licensed in the U.S. for protection against invasive pneumococcal disease: *Pneumovax® 23* (Merck) and *Pnu-Imune® 23* (Wyeth-Lederle Laboratories). Both include capsular polysaccharide antigens from 23 serotypes of *S. pneumoniae*, representing 85%-90% of the serotypes that cause invasive infections in this country.[2]

The following summarizes the latest recommendations of the Advisory Committee on Immunization Practices (ACIP) regarding pneumococcal polysaccharide vaccine (PPV).[2] At least 80% of healthy young adults develop antigen-specific antibody responses within 2-3 weeks; however, immunogenicity varies with age and underlying illness.

PPV is 56%-81% effective against invasive pneumococcal disease. Among persons with diabetes mellitus, coronary vascular disease, congestive heart failure, chronic pulmonary disease, and asplenia, vaccine effectiveness ranged from 65%-84%; it was 75% effective in immunocompetent persons ≥65 years of age.

About half of those vaccinated experience mild, local side effects, which usually last <48 hours; more severe reactions are rare. Revaccination has caused some patients to develop Arthus-type reactions, but such events are quite rare; in one study of 1099 Medicare beneficiaries who had inadvertently received two pneumococcal vaccinations there were no reactions serious enough to require hospitalization.[3]

ADULT IMMUNIZATION: CAN WE DO BETTER?

Curiously, while pediatricians and health-care payors (not to mention the importance of school entry laws) have managed to get childhood immunization rates to ~98% by school-entry age, adult immunization rates are significantly lower. Despite the fact that many older persons have relatively frequent medical encounters, and despite the pneumococcal vaccines' record for safety and efficacy, only ~56% of Oregonians (second highest in U.S.) ≥65 years old have been immunized against *S. pneumoniae*.[4]

Physicians play an important role in most people's vaccination decisions, and generally support the pneumococcal vaccine recommendations. Oregon survey data indicate that for patients who report having received the vaccine, 66% said that the most influential source of information in their decision to be vaccinated came from their doctor or nurse.

Frequent exhortations from well-meaning but perhaps naïve pundits notwithstanding, adult immunization rates in general and pneumococcal vaccination rates in particular are poor. There are many excuses. Few patients clamor for this kind of service, either out of ignorance or apathy, one supposes. Accessible records of adult immunizations are almost non-existent, complicating record review for both patient and practitioner. Many physicians were put off years ago by theoretical concerns about potential adverse reactions from an inadvertent second dose of pneumococcal vaccine. (Fortunately, these concerns have been allayed by accumulated data.) And some have perhaps been underwhelmed by the vaccine's efficacy. Well, it may not be the perfect vaccine, but if you keep in mind that its claim to fame is in reducing the rate of bacteremia (cf. pneumonia), it isn't all that bad. If the best alternative you can come up with for preventing pneumococcal disease in your patients is telling them to "dress warmly before you go outside," maybe you should give it a second look.

The most promising methods for raising pneumococcal immunization rates in the clinic rest on making subtle changes in the way you and your staff do business. Successful elements in past campaigns have included:

- system-wide standing orders[5,6]
- computer-generated reminders attached to charts of high-risk patients[7]
- pre-visit screening and chart stickers by clinic staff[8]
- postcard reminders to high-risk patients and physicians' feedback on clinic coverage rates[9-11]
- inclusion of pneumococcal vaccine with fall flu clinics[12]

Because one size does not fit all, elements of a successful effort must be tailored to your own environment.

FREE STUFF

One item we can offer you is a *Lifetime Immunization Record* for your patients so that they can carry documentation of your excellent preventive care. To get a bunch, contact the Immunization Program (Jennifer Kelly; phone 503/731-4342, fax 731-3095; jennifer.kelly@state.or.us). Informational posters and pamphlets are also yours for the asking.

The Oregon Medical Professional Review Organization is working with several Oregon hospitals to develop model standing-order policies for influenza and pneumococcal immunizations.

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Contact the Immunization Project Coordinator for more information (Ruth Michels, 503/279-0100; *orpro.rmichels@sdps.org*).

Pneumococcal vaccine is not only safe, effective, and covered by Medicare; it's also one of the few weapons we have against invasive pneumococcal disease. We look forward to the day when—as for children—every adult medical visit is viewed as an opportunity to lead a step from the gloaming of old age and infirmity into the basking warmth of the Golden Years.

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Influenza Surveillance Notes

EFFECTIVE NOVEMBER 1, the Oregon State Public Health Lab will accept throat wash specimens for influenza testing. Specimens can only be accepted if they are collected within 3 days of clinical onset of so-called "influenza-like illness (fever ≥38.3˚C, cough, myalgia, and 2 or more of: headache, sore throat, rhinorrhea, malaise, chills, prostration) and that fact is indicated on the lab slip. Experience has shown that these are the specimens most likely to yield useful information.

Throat wash kits will be available from the OSPHL: (*osphl.ohd@ state.or.us*; 503/229-5882) or from your local health department. Lab slips should be marked "rule out influenza." Specimens should be kept cool (but not frozen); if they will be >24 hours in transit, include a cold pack. That way they'll stay cold. If they get hot it doesn't work very well, and your time and effort may be wasted.

Pneumococcal Vaccine at a Glance

INDICATIONS

a) Persons ≥65 years old
b) Persons ≥2 years old with chronic cardiovascular or pulmonary disorders including congestive heart failure, diabetes mellitus, chronic liver disease, alcoholism, CSF leaks, cardiomyopathy, COPD, or emphysema.
c) Persons ≥2 years with splenic dysfunction, asplenia, or other immunosuppresive conditions, including HIV infection.
d) Persons ≥2 years who live in chronic long-term care facilities*
e) Alaskan Natives and certain American Indian populations.

CONTRAINDICATIONS

Safety during the first trimester of pregnancy has not been evaluated. Review manufacturer's package for additional information.

PRIMARY SCHEDULE

One dose for most people†
Dose: 0.5 ml intramuscular (IM) or subcutaneous (SC).

COMMENTS

When indicated and vaccine status is unknown, vaccinate and document.
All residents of nursing homes and long-term care facilities should have their vaccination status assessed and documented.
It can be given concurrently with influenza vaccine.

*Although not strictly speaking part of the ACIP recommendations, this is a reasonable extrapolation from those guidelines.

†Persons who were vaccinated prior to age 65 should be vaccinated again after they reach 65 *if* five or more years have passed since the first dose. For all persons with functional or anatomic asplenia, transplant patients, patients with chronic kidney disease, immunosuppressed or immunodeficient persons, and others at highest risk of fatal infection, a second dose should be given—at least five years after first dose.