continued from page 7

can also cause ear infections and pneumonia. Measles can also lead to serious problems such as brain swelling and even death. Mumps causes fever, headache, and painful swelling of one or both of the major saliva glands. Mumps can lead to meningitis and very rarely to brain swelling. Rarely, it can cause the testicles of boys or men to swell and render them sterile. Rubella is also called the German measles and causes slight fever, rash, and swelling of the glands in the neck. It can also cause brain swelling or a problem with bleeding. Some people have suggested that the measles, mumps, and rubella vaccine causes autism, but on the basis of research, there has been no link between autism and childhood vaccinations.

Hemophilus influenzae type b vaccine: This vaccine helps to prevent hemophilus influenza type b, which is a leading cause of serious illness in children and can lead to meningitis, pneumonia, and severe throat infection that can cause choking. It is given as a series of three or four shots.

Varicella vaccine: The varicella vaccine helps to prevent chickenpox. It is given to children once after they are 12 months old or to older children if they never had chickenpox or have never been vaccinated. The Centers for Disease Control and Prevention recently released a recommendation for a second dose of varicella vaccine to be given to children 4-6 years old to further improve protection against the disease. The Advisory Committee on Immunization Practices also recommended that children, adolescents, and adults who previously received one dose should receive a second dose.

Hepatitis B vaccine: This vaccine helps to prevent hepatitis B virus, which is an infection of the liver that can lead to liver cancer and death. It is given as a series of three shots, and the Hepatitis B and *Hemophilus influenzae* type b vaccines can also be given together in the same shot.

Pneumococcal conjugate vaccine: Owing to their ability to protect against a type of bacteria that is a common cause of ear infections, this vaccine is given in four doses to infants and toddlers. The vaccine may also be used in older children who are at risk for pneumoccocal infection. The bacteria can cause meningitis and bacteremia.

Meningococcal conjugate (MCV4) vaccine: This vaccine protects against four strains of bacterial meningitis caused by the bacteria Neisseria meningitides. It is an infection of the fluid around the brain and spinal cord and can cause high fever, headache, stiff neck, and confusion.

The American Academy of Pediatrics has *Immunizations and Infectious Diseases: An Informed Parent's Guide* available for sale. Information can be found by logging on to **http://www.cispimmunize.org/** and scrolling down to A Guide for Parents. The book sells for $14.95 and is written in an easy-to-understand language. Topics include information on over-the-counter (OTC) cold remedies, protecting your newborn, and much more. The American Academy of Pediatrics wrote *Immunizations and Infectious Diseases: An Informed Parent's Guide* based on the *Red Book*©, the resource pediatricians have used for more than 65 years.

SOURCES

American Academy of Pediatrics: www.cispimmunize.org
American Academy of Family Physicians: http://familydoctor.org
Center for Disease Control www.cdc.gov

HHN's Clipboard is coordinated by Doris J. Mosocco, RN, BSN, CHCE, COSC.

Asthma in Children

Children and Asthma in America, one of the nation's largest and most comprehensive surveys on children and asthma, revealed that more than half (54%) of all the children with asthma had a severe asthma attack in the previous year and more than one quarter (27%) had an asthma attack so severe that it was thought their lives were in danger. The survey findings indicate that the United States is falling short of the national treatment goals established for asthma and the condition is poorly controlled. The survey was conducted by Schulman, Ronca, and Bucuvalas, Inc., a national research firm specializing in health issues. A national sample of 41,433 households was screened to generate data on households with a child 4 to 18 years old currently suffering from asthma. The interviews were conducted from February to May 2004. The survey was released on behalf of Asthma Action America©, a national asthma education campaign supported by leading organizations committed to improving asthma care in the US. It was funded by GlaxoSmithKline, a research-based pharmaceutical company and a world leader in respiratory care.

Four out of five respondents reported that their child's asthma was well (43%) or completely controlled (35%), but when compared with the treatment goals established by the National Heart, Lung, and Blood Institute (NHLBI), the children scored low on nearly every established goal.

NHLBI goals of therapy include as follows:

- minimal or no chronic asthma symptoms (coughing, wheezing, shortness of breath, and chest tightness) during the day or night;
- minimal or no exacerbations (including hospitalization or emergency room visits);
- no limitations on activities; no school/parent's work missed;
- minimal use of short-acting beta-agonists (rescue inhaler);
- having a written Asthma Action Plan;
- visit your healthcare professional to monitor your asthma at least two times per year.

Two-thirds of the children experienced asthma symptoms during the day, during night, or during exercise. Twenty-three percent reported that they have visited the emergency room in the previous year and 54% indicated that they have missed school or daycare in the previous year because of their asthma. According to the survey, 24% of the children had not seen their healthcare provider to discuss about their condition in the past year and 54% had not had a lung function test in the past 12 months.

A written Asthma Action Plan was also included in the NHLBI treatment goals. Fifty-four percent of the children with asthma stated that they did not have a written Asthma Action Plan. A copy of an Asthma Action Plan can be found at **http://www.lungusa.org/site/pp.asp?c=dvLUK900E&b=261875** along with the NHLBI goals of therapy for treating asthma. The action plan includes three colored zones: a green zone for doing well, a yellow zone indicates getting worse, and a red zone for Medical Alert. Each zone contains symptoms to be aware of and actions to be taken within each of the different zones. Parents should work with their child's doctor to write an asthma action plan. "A written plan can give you and your child the confidence to treat asthma signs and symptoms promptly," states James Li, MEd, an asthma and allergy specialist at Mayo Clinic, Rochester, Minn (Mayo Clinic Web site, 2005). Each action plan is unique to the child and will assist the parents in managing the child's medication, recognizing an asthma attack, and deciding what to do on the basis of the symptoms the child is experiencing. A copy of the plan should be provided to the school nurse and teachers.

Asthma is one of the most common chronic diseases of childhood. According to the American Lung Association, an estimated 4 million children under the age of 18 years have had an asthma attack in the past 12 months. As asthma is a chronic disease, it is the most common cause of school absenteeism. William Sears, MD, a nationally acclaimed author, pediatrician, and an associate clinical professor of pediatrics at the University of California Irvine School of Medicine, stated, "We need to help parents recognize that proper asthma control means children are symptom-free all or most of the time" (Sears, n.d.). Results of the survey revealed a difference in how parents perceive their child's asthma and how the child perceives it. Comparing responses of parents with their children ranging in ages from 10 to 15 years, a majority (71%) disagreed about the child's overall health status. "It is concerning to see so many parents thinking their child's asthma is under control when many children are experiencing symptoms on a daily basis," said Dr. Sears (Sears, n.d.).

Even more concerning is the fact that more than half of those surveyed did not understand the causes of asthma symptoms. There was a widespread misunderstanding about the causes of and treatments for asthma symptoms. More than 90% of the respondents admitted that they never heard of bronchoconstriction (tightening of the muscles surrounding the airways) or inflammation (airway swelling and irritation). These are the two underlying causes of asthma symptoms. Only 53% were classified as having severe asthma and 63% of those with moderate asthma reported taking prescription medication for daily maintenance therapy on a regular basis.

Another tool that can assist parents to get their child's asthma under control is the Childhood Asthma Control Test for children aged 4-11 years and for teens 12 years and older. This questionnaire can identify children with poorly controlled asthma and assist parents to improve the management of their child's asthma. Andy Liu, MD, Associate Professor of Pediatrics at National Jewish Medical and Research Center (NJMRC), states, "In addition to their primary goal of evaluating asthma control, these questions can open a valuable dialogue between parent and child about asthma" (NJMRC Web site, 2005). The development of the test was funded by the pharmaceutical company GlaxoSmithKline. A printed version of the tests can be found at **http://www.njc.org/news/health-news/y2005/childhood-act.aspx**. An online version of the Asthma Control Test is available at **www.asthmacontrol.com**.

SOURCES

American Lung Association: www.lungusa.org

Mayo Clinic Staff. (December 30, 2005). *Asthma in children: creating an asthma action plan.* Available at: www.mayoclinic.com/health/asthma/HQ00273

National Jewish Medical & Research Center. (November 7, 2005). *New tool helps children get asthma under control.* Available at: www.njc.org/news/y2005/childhood-act. aspx

Sears, W. (n.d.). *Asthma control in children falls far short of national treatment goals.* Retrieved October 24, 2006, from http://www.lungusa.org/site/pp.aspx?c=dvLUK900E&b=261875

How to Give Medicine to Children

Have you ever used the dive bomber, the air-o-plane, or the choo-choo train technique when attempting to give medicine to a child? Being creative can make all the difference in successfully getting a full dose of medicine in that little mouth! Even more important for the parent is giving the medicine at the right time and watching out for any potential side effects or interactions from the drug. Dispensing the medicine properly to children is important whether we are giving OTC or prescription drugs. If given incorrectly, drugs may be ineffective or even harmful.

"The most important thing for parents to know is what the drug is, how to use it, and what reactions to look for," says Paula Botstein, MD, pediatrician and acting director of the Food and Drug Administration's (FDA) Office of Drug Evaluation III. Questions for parents to ask the doctor or the pharmacist include the following:

- What is the drug and what is it for?
- Will there be a problem with other drugs my child is taking?
- How often and for how long does my child need to take it?
- What if my child misses a dose?
- What side effects does it have and how soon will it start working?

Reading the label thoroughly is extremely important, cautions Debra Bowen, MD, an internist and director of FDA's medical review staff in the Office of OTC Drugs. "There are many warnings on there, and they were written for a reason. Don't use the product until you understand what's on the label." Make sure that the label contains a pediatric dose and do not assume that it is safe for anyone under 12 years of age.

Caution should be noted when giving cold medications to children because they are more sensitive than adults. Two common ingredients in cold medications such as antihistamines and alcohol can have adverse effects on young patients, causing excitability or excessive drowsiness. There are some drugs, such as aspirin, which can cause serious illness or even death of children with chickenpox or flu symptoms.

Children under 2 years of age should not be given any OTC drug without a doctor's consent. Prescription drugs can work differently in children than in adults. Take barbiturates, for example—they usually make adults feel sluggish; when given to a child, they become hyperactive. Amphetamines, which stimulate adults, can calm children.

Before giving OTC, make sure that they are truly necessary. A study published in the *Journal of the American Medical Association* found that more than half of all the mothers surveyed had given their 3-year-olds an OTC medication in the previous month. Keep in mind that not every cold needs medicine. Common viruses run their course for 7-10 days with or without medication. Antibiotics, available by prescription, are ineffective against cold viruses.

Failing to measure the medicine correctly can cause a reaction or overdose. Giving children several different kinds of medicine with duplicate ingredients will also cause an overdose. Pediatric liquid medicines can be given using a variety of dosing instruments. Plastic medicine cups, hypodermic syringes without needles, oral syringes, oral droppers, and cylindrical dosing spoons can all be used to measure out the correct dose. Some products come with their own measuring devices. Use caution when reading these dosing instruments.

Tips for Using Common Dosing Instruments

Syringes: Use with infants who cannot drink from a cup and can be used to draw up, and store a dose for later use.

Droppers: Safe with infants and children too young to drink from a cup. Use caution and measure at eye level, and administer quickly because they have a tendency to drip.

Cylindrical dosing spoons: Convenient for children who can drink from a cup but may spill the contents.

The FDA is currently working to change labels of OTC medications to make them more eye-catching, easier to read, and consumer-friendly. The FDA is also taking additional measures to provide more information to healthcare providers about the use of products in children. If you want to see a listing of Pediatric Exclusivity Label changes since July 1998, check out the FDA's site at **http://www.fda.gov/cder/pediatric/labelchange.htm#New%20listings**.

A tabular listing of label changes to include the date granted, the product, the indications for use, and the label changes can be found here.

Information contained in this article originally appeared in the January to February 1996 *FDA Consumer* and was written by Rebecca D. Williams. Information was revised in May 1996 and reprinted by the Food and Drug Administration (**http://www.fda.gov/fdac/features/196_kid.html**).