Later this year Headquarters West Division of Information Resources will release a complete rewrite of the Resource and Patient Management System (RPMS) Immunization software package. This new version, 7.0, replaces Version 6.8 of the MCH package. With the same release, Q-man will be updated so that the vaccine codes reflect the new immunization codes, and the Immunization section of the Health Summary will be reformatted.

**Retained Features**

The new package retains all of the features contained in Version 6.8, as follows:
1. ability to track immunizations and forecast immunization due dates
2. ability to add and edit immunizations and skin tests
3. ability to print lists of, and letters to, persons due for immunizations
4. ability to print Quarterly Immunization Report (age-appropriate immunization rates for children ages 3-27 months) and Vaccine Accountability Report (doses administered, by age)

**New Features**

In addition, the new Immunization Package contains several new or updated features that increase its usefulness for immunization tracking and recall.

**IMM/Serve Forecasting Algorithm.** One of the problems with the old immunization program was its inability to keep up with the rapidly changing immunization schedule. To overcome that shortcoming, we contracted with Medical Decisions Associates for a license to use their IMM/Serve forecasting software, which evaluates immunization histories and determines due dates. IMM/Serve is updated each time there is a change in vaccine recommendations and currently forecasts DTaP/Td, hepatitis B, polio, MMR, hepatitis A, varicella, Hib and pneumococcal conjugate vaccines (Table 1). IMM/Serve allows the user to choose among several vaccine scheduling options and to choose which vaccines will be forecast. The forecasting algorithm also includes universal forecasting of influenza and pneumococcal vaccines for persons 65 years of age and older, and the ability to build a registry of high risk individuals who need these vaccines. Other vaccines, (e.g., meningococcal, typhoid) and immune globulins (e.g., HBIG, RSV Monoclonal antibody) are available for data entry but are not forecast.

**Expanded Data Entry Function.** The new Immunization Package facilitates data entry at the time of vaccination, and captures all of the documentation required by the National Childhood Vaccine Injury Act, including date, age, facility, vaccine type and series number, lot number, date of Vaccine Information Statement, and vaccine provider.

**Customized Due Letters.** In the new package, a manager can easily customize Due Letters and Official Immunization
Table 1. Vaccines forecast through the new immunization program as of November, 1999

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>minimum age forecast</th>
<th>maximum age forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP/Td</td>
<td>2 months</td>
<td>—</td>
</tr>
<tr>
<td>polio</td>
<td>2 months</td>
<td>18 years</td>
</tr>
<tr>
<td>Hib</td>
<td>2 months</td>
<td>59 months</td>
</tr>
<tr>
<td>hepatitis B</td>
<td>birth</td>
<td>18 years</td>
</tr>
<tr>
<td>varicella</td>
<td>12 months</td>
<td>18 years</td>
</tr>
<tr>
<td>MMR</td>
<td>12 months</td>
<td>18 years</td>
</tr>
<tr>
<td>hepatitis A</td>
<td>24 months</td>
<td>18 years</td>
</tr>
<tr>
<td>conjugate pneumococcal polysaccharide</td>
<td>65 years (55 in Alaska)</td>
<td>—</td>
</tr>
<tr>
<td>influenza</td>
<td>65 years</td>
<td>—</td>
</tr>
</tbody>
</table>

* RSV Monoclonal antibody (Synagis) is not forecast, but is available for data entry.
** Forecasting for conjugate pneumococcal vaccine should be inactivated by the program manager until this vaccine is available.

Table 2. Definitions of age-appropriate immunizations by age for the Quarterly Report

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Minimum requirement for age-appropriate immunizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-6 months</td>
<td>one DTaP, one polio, one Hib, one HepB</td>
</tr>
<tr>
<td>5-7 months</td>
<td>two DTaP, two polio, two Hib, two HepB</td>
</tr>
<tr>
<td>7-15 months</td>
<td>three DTaP, two polio, two Hib, two HepB</td>
</tr>
<tr>
<td>16-18 months</td>
<td>three DTaP, two polio, three Hib, two HepB, one MMR</td>
</tr>
<tr>
<td>19-23 months</td>
<td>four DTaP, three polio, three Hib, three HepB, one MMR</td>
</tr>
<tr>
<td>24-27 months</td>
<td>four DTaP, three polio, three Hib, three HepB, one MMR</td>
</tr>
</tbody>
</table>

Table 3. Immunization rates calculated for 24-35 month-olds in the Two-Year-Old Report

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccines completed by specific ages</td>
<td>DTaP#1 by 3, 5, 7, 12, 16, 19, 24, or 36 months</td>
</tr>
<tr>
<td>Vaccine series completed by specific ages</td>
<td>DTaP#1, polio#1, Hib#1, and HepB#1 by 3, 5, 7, 12, 16, 19, 24, or 36 months</td>
</tr>
<tr>
<td>National Objectives</td>
<td>DTaP#4, polio#3, Hib#3, MMR#1, by 24 or 36 months</td>
</tr>
</tbody>
</table>

Using The Immunization Package to Improve Immunization Rates

Evidence from published studies shows that recall messages to families of children overdue for immunizations and reminders in advance of appointments were the most cost-effective means of improving immunization rates. A computerized registry is the backbone of a tracking and recall system. The key components are an accurate count of children who are followed in your clinic, accurate immunization histories in the database, timely reminders sent to children due for immunizations, follow-up of children who miss immunizations, and regular determination of immunization rates with feedback to providers about the rates and ways to improve them.

Accurate count of children followed in clinic. Maintaining an accurate registry of children requires that all children within one’s jurisdiction are registered in the RPMS and activated into the immunization registry. At Alaska Native Medical Center (ANMC), any child less than 2 years old who is registered in RPMS is activated into the immunization registry at the time of registration. In addition, someone needs to inactivate children who move or go to another provider. The new Immunization Package allows a manager to designate why a child was inactivated (when a death is entered into RPMS, the person is automatically inactivated).

Accurate immunization histories. Having accurate immunization histories involves a lot of work. It requires timely data entry for all immunizations given in clinic, as well as data entry of historical vaccines given elsewhere. After years of frustration with an inaccurate database, the ANMC pediatrics clinic began doing point-of-service data entry in 1996. Nurses and case manager also enter historical immunizations.

Timely reminders. If the immunization histories are accurate, then a manager or nurse can print accurate due letters for parents. In addition, reminder letters can be printed and sent to parents of children “past due” (over a month overdue) for immunizations.

Regular determination of immunization rates. Research shows that assessment of immunization rates and feedback to providers can improve immunization rates in a clinic practice. If the immunization histories are accurate, a manager can print age-appropriate immunization rates (Quarterly Report) and two-year-old immunization rates (Two-Year-Old Report) to apprise clinic staff of progress in meeting immunization goals. Reviewing these reports will help individual clinics determine where to concen-
trate their efforts (e.g., if 3- to 4-month-olds have low immunization rates, a clinic will want to concentrate on getting infants in for their 2-month-old immunizations).

Case Report

In 1991 the immunization rate for Anchorage children followed at ANMC was unknown, and the RPMS Immunization Package was not being utilized. That year, the pediatrics clinic decided to place a high priority on achieving on-time immunizations. A programmer activated all Anchorage children less than two years old (n = ~2000) registered in the RPMS into the Immunization Registry. A case manager was assigned, who reviewed charts and inactivated about 350 patients who had moved or who were receiving care elsewhere. The case manager then conducted quarterly reviews of children 3 to 27 months of age who were overdue for immunizations and sent due letters or followed up with parents by phone. In 1996 nurses began point-of-service data entry, which allowed entry of lot numbers, contraindications, and adverse events, thus improving the quality and timeliness of immunization data entry. Currently, in 1999, the age-appropriate immunization rate for Anchorage children is 84-89% (Figure 1) despite the high turnover rate for clinic patients, and a large number of patients who utilize multiple facilities. Nurses enter all the required documentation items (vaccine, date, dose number, lot number, Vaccine Information Statement date, and provider) for each vaccine given in pediatrics clinic.

For more information, contact Rosalyn Singleton, MD, Arctic Investigations Program, Centers for Disease Control, 4055 Tudor Centre Drive, Anchorage, AK 99508; phone (907) 729-3418; fax (907) 729-3429; e-mail ris2@cdc.gov.

Figure 1. Quarterly age-appropriate immunization rates from September 1990 to September 1999 in Anchorage children followed at Alaska Native Medical Center as printed from RPMS

References

FOCUS ON ELDERS

Prevention and the Periodic Health Examination for Elders

Bruce Finke, MD, Director, Elder Care Initiative, and Staff Physician, Zuni-Ramah Service Unit, Zuni, New Mexico

The periodic preventive health outpatient visit plays an important role in health promotion and disease prevention. The best examples of this in current use are the Well Child and the Well Women exams. These visits form the cornerstone of preventive services for children and women. The periodic preventive visit for older individuals also has a clear role to play in providing quality, age-specific care.

Just as the Well Child and Well Woman exams are designed to accomplish specific functions, so the elder preventive visit must be tailored to fit the specific needs of the elderly patient. The comprehensive elder exam can fulfill a number of functions, not all evident at first glance. These include:

• Screening for impairment of function
• Screening for disease and geriatric syndromes (e.g., falls, incontinence)
• Screening for abuse, neglect, and exploitation
Ensuring access to available services
Patient education and risk factor modification counseling
Caregiver support
Developing or updating the patient database
Developing a sense of relationship and understanding with the patient and his/her family
Data collection for public health interventions (through the RPMS system)

It is important to recognize that there is ample evidence that health promotion activities have a role in the prevention of disability and the maintenance of health and independence in old age. In addition, there is evidence to support a number of screening activities in older individuals with the goal of prolonging and improving the quality of life. The U.S. Preventive Services Task Force has issued a set of recommended, evidence-based preventive services for age 65 and older, as reviewed in the January, 1999 IHS Primary Care Provider (Volume 24, Number 1, p 8).

The office-based comprehensive elder exam should serve as the periodic preventive visit for all older patients. In future articles we will review the key elements of this examination, discuss strategies for implementing it in a busy clinic, and examine patient selection (“How old is old?”). The periodic elder exam will be the cornerstone to preventive care for our elderly patients, ensuring that we and they are taking advantage of every available resource to help them maintain health and function.

References

MEETINGS OF INTEREST

Clinical Recognition and Management of Heart Disease – with a Special Session on Cardiovascular Disease in Indian Health
January 19-21, 2000; Tucson, Arizona

This course, sponsored by the American College of Physicians – American Society of Internal Medicine, is designed to update primary care providers, particularly family physicians, internists, and emergency medicine providers, on the triage of patients with chest pain, the management of myocardial infarction, the intermediate coronary syndrome, ischemic heart disease, hypertension, hyperlipidemia, atrial fibrillation, and ventricular arrhythmias. Interventions in the primary and secondary prevention of heart disease will be presented. Heart disease in women will be reviewed, and there will be multiple electives on topics such as physical examination of the heart utilizing teaching mannequins, and chest radiographs. Dr. Barbara Howard, principle investigator for the Strong Heart Study, and Dr. James Galloway of the Native American Cardiology Program will provide insights into diabetes and heart disease as well as other issues in Native Americans related to cardiovascular disease. For more information or a registration form, please contact ACP-ASIM at (800) 523-1546, ext 2600 and request information on course code G01.

Midwinter OB/Peds Conference
January 28-30, 2000; Telluride, Colorado

The Fifteenth Annual Midwinter OB/Peds Conference will be held in Telluride, Colorado, January 28-30, 2000. This conference will offer continuing education to providers interested in new developments in health care for women and children. Among the planned presentations will be “Pediatric Vulvovaginitis,” “Noncontraceptive Benefits of Birth Control Pills,” “Navajo Ceremonials and Rituals,” and “New Medications for Management of the Menopause.” The IHS Clinical Support Center is the accredited sponsor; the CSC is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing education for physicians. For more information contact Alan Waxman, MD at (505) 722-1000 or Diana Hu, MD at (520) 283-2501.

Annual NAIHS Internist Meeting
January 28-30, 2000; Telluride, Colorado

The Annual Navajo Area IHS Internists Meeting will be held in Telluride, Colorado, January 28-30, 2000. Featured topics will include resistant hypertension, Parkinson’s disease, pacemakers, and anticoagulation, among others. For more information, contact Dr. Bruce Tempest at (505) 722-1000; e-mail btempest@gimc.ihs.gov.

The Next Millennium: The 2000 Meeting of the National Councils of the IHS
January 31-February-3, 2000; San Diego, California

The National Councils (Clinical Directors, Service Unit Directors, Chief Medical Officers, and Nurse Consultants) of the Indian Health Service will hold their 2000 annual meeting January 31-February 3, 2000 in San Diego, California. An exciting and informative program is planned to address Indian Health Service/Tribal/Urban program issues and offer solutions to common concerns throughout Indian country. Indian Health Program Chief Executive Officers and Clinico- administrators
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