

Potential Barriers and Suggested Ideas for Change

Key Activity: Develop Effective Office Practices to Increase Your Immunization Rates

Rationale: Lee G, et al. Adolescent immunizations: Missed opportunities for prevention. *Pediatrics*. 2008;122(4):711-717
 Allred, NJ, et al. The impact of missed opportunities on seasonal influenza vaccination coverage for healthy young children. *J Public Health Management and Practice: JPHMP*. 2011;17(6):560

Several studies have shown that eliminating missed opportunities could increase vaccination coverage by up to 20%.
<http://www.cdc.gov/vaccines/pubs/pinkbook/strat.html>

Aim: Establish, document, and implement practice policies and procedures that maximize opportunities to immunize, while reducing potential barriers due to office policies in order to attain 100% compliance with the recommended immunization schedule for all patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Gap: Practice policies and procedures do not maximize immunization opportunities.		
Missed opportunities for patients to make and keep appointments	<ul style="list-style-type: none"> • Offer well-child visits and vaccination-only visits in the early morning, during the lunch hour, in the evenings, and on weekends to accommodate parents' work schedules. • Consider reserving vaccination-only appointments for the same day a parent calls. • Take vaccination-only walk-ins. • Consider revising office policies that require a physical examination during the last 12 to 18 months to immunize; this policy may present a barrier for many adolescents. • Schedule time to provide immunizations during sick visits. • Review your office policy regarding the administration of vaccines when a parent or guardian is not present. • Know your state's guidelines regarding consent. 	<ul style="list-style-type: none"> • For one week, track the time of day that patients are usually seen for well-child and vaccine visits and the times that visits are most often requested. • Consider adding a few time slots during those hours and cutting back at other times.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Missed opportunities to immunize when a patient is in the office	<ul style="list-style-type: none"> • Develop standing orders that allow eligible staff to administer vaccines to patients who meet specified criteria. • Create an office policy that allows vaccination of children during sick visits. • Turn on EMR prompts that tell you when a patient is due for an immunization. • Implement nurse prompts in which nurses flag the charts for patients who are due for immunizations. • Educate office staff about proper contraindications and precautions and encourage vaccination during visits when children have a mild acute illness or low-grade fever. 	Consider using a screening tool to make use of standing orders and screen for proper contraindications or precautions.
Immunizations not being tracked	<ul style="list-style-type: none"> • Work with other community providers to encourage communication regarding immunizations given outside the medical home. (This communication will be particularly important given the new influenza recommendations to immunize all children 6 months to 18 years.) • Check the immunization records of siblings present during an office visit; immunize them, if indicated, the same day or schedule a vaccine-specific appointment. • For paper records, track patients' immunizations on a stand-alone immunization sheet attached to the front of a patient's chart. 	<ul style="list-style-type: none"> • Use your EHR or an immunization information system to flag records of patients who need immunizations, to more easily track patient immunizations and to recall patients who are behind in immunizations. (See the KCA Implement Reminder/Recall System.) • Verify vaccinations administered by an alternative provider.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Office staff unaware of recommended immunizations for health care workers and/or unwilling to obtain them because of misinformation	Develop an office policy that mirrors OSHA and CDC guidelines for immunization of health care workers.	<ul style="list-style-type: none"> Consider extending a predetermined lunch hour so staff can be immunized. Consider a policy that allows medical office staff to immunize nonmedical staff. Do not charge for vaccines administered to employees in the office. Conduct a 30-minute in-service session addressing myths surrounding immunization and why health care workers need to be immunized. Use a vaccine refusal/declination form for staff who decline recommended immunizations.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Office staff unaware of proper handling and storage of vaccines	<ul style="list-style-type: none"> Educate office staff regarding proper storage and handling of vaccines. Use the CDC's Storage and Handling Toolkit to determine proper storage and handling requirements. Create a plan for your office using the Immunization Action Coalition (IAC) Checklist. Monitor refrigerator and freezer daily using a refrigerator log. Develop a plan to address necessary action if the refrigerator temperature is out of acceptable range or the refrigerator is malfunctioning. Monitor vaccine stock for expired doses. 	

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Key Activity: Address Vaccine Hesitancy

Rationale: The percentage of children exempt from at least one vaccine recommended for school entry has been on the rise. For example, from 2000 to 2004–2005, the exemption rate in King County, Washington rose from 2.9% to 4.2% (*The VacScene Immunization Newsletter*. July/August 2005;V11(4). “Parental concerns about vaccine safety can lead to lower immunization rates and increase public vulnerability” (*The VacScene Immunization Newsletter*. 2005;V11(4):1).

Aim: Establish, document, and implement practice policies and procedures that address parental vaccine hesitancy to improve office immunization rates and attain 100% compliance with the recommended immunization schedule for all patients.

Potential Barriers	Suggested Ideas for Change
Provider is not adequately discussing vaccine safety and immunization requirements when patient, parent, or guardian is vaccine-hesitant.	<ul style="list-style-type: none"> Identify and remedy gaps in provider knowledge of vaccine-preventable illness as well as vaccine safety, schedules, and local immunization requirements for daycare, preschool, and school entry. <ul style="list-style-type: none"> Become knowledgeable about these topics. Use the Vaccine Information Statement (VIS), available in many languages, as a tool to provide information to parents about the benefits and risks of immunization. Strongly recommend that the patient be immunized the day of their visit and continue the series according to the AAP immunization schedule. <ul style="list-style-type: none"> Every visit is an opportunity to reexamine the vaccination decision. Encourage families who refuse immunization to continue to receive other services from your practice. Emphasize the importance of immunizations. <ul style="list-style-type: none"> Keep immunization discussion open during future visits if parents continue to be hesitant about vaccinating. If considering dismissal from the practice, refer to Bioethics Policy.

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<p>Parent or guardian questions the value of vaccinations.</p>	<ul style="list-style-type: none"> • Determine specific issues of concern. <ul style="list-style-type: none"> – MMR and autism. – Thimerosal and autism. – Too many vaccines overloading the immune system. <ul style="list-style-type: none"> ○ Click here for information about Common Misconceptions and How to Respond. ○ Click here for information on Responding to 7 Common Parental Concerns About Vaccines & Vaccine Safety. • Address specific parental immunization concerns. <ul style="list-style-type: none"> – Use photos of vaccine-preventable diseases to express the value of vaccination. (See Immunization Action Coalition Web site.) – Focus education on specific issues identified by the patient, parent, or guardian. – Point out the importance of getting immunization information from reliable sources and provide families with a written list of resources, especially the following: <ul style="list-style-type: none"> ○ AAP Childhood Immunization Support Program. ○ Immunization Action Coalition. ○ The Vaccine Education Center. – Because delaying vaccination is a risky choice, ask patients, parents, and guardians who refuse recommended immunizations to sign the AAP Refusal to Vaccinate Form. Initial and date if refusal continues during subsequent discussion.

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Key Activity: Implement Reminder/Recall System

Rationale: With the increasing complexity of the vaccination schedule, reminders and recalls become more important in facilitating timely vaccination. In general, the greater the number of contacts made, the greater the effectiveness of reminder/recall systems. Reminder/recall systems are effective in improving vaccination coverage when used alone or in combination with other interventions.

Aim: Establish, document, and implement practice policies and procedures to remind patients when a vaccine is or will be due, recall patients who are past due for any reason, and encourage use of an immunization registry in a practice to attain 100% compliance with recommended immunization schedules for all patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Gap: No reminder/recall system is used in the practice.		
Patient is not recalled for a follow-up immunization after a vaccine shortage.	<ul style="list-style-type: none"> Use notices (such as preprinted postcards, phone calls, e-mails, or text messages) to indicate that the vaccine is now available and request parents to schedule an appointment. Click to view sample postcard text. Ensure office scheduling can handle added appointments in a timely manner. 	<ul style="list-style-type: none"> Consider adding specific times for vaccine-only appointments or well-child checks for 2 weeks after postcards are mailed out. Use an immunization screening form when immunizing a child not seen during a well-child check-up.
Patient is not recalled for a vaccination missed due to a temporary contraindication.	<ul style="list-style-type: none"> Keep an immunization recall log with: <ul style="list-style-type: none"> Child's name Vaccine(s) missed Date of missed vaccination(s) Date to call parent to send postcard if appointment not made When parent calls for a catch-up appointment, check the name off the log. If the name is not checked off within a predetermined time, send a self-addressed, preprinted postcard, or call, text, or e-mail. Click to view a sample log. 	<ul style="list-style-type: none"> Make sure your office scheduling can handle the added appointments in a timely manner. Consider setting aside times for vaccine-only appointments or well-child checks in the 2 weeks after notices are sent out.

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Patient reminders are not generated in a computerized office.	<ul style="list-style-type: none"> Use your electronic medical record (EMR) or immunization registry to generate an appointment or immunization reminders. These systems may also make automated phone calls or send e-mails. 	<ul style="list-style-type: none"> Send a test message to ensure the system is working correctly. Make sure the office phone number is listed on the message so patients can call without having to look it up.
Patient reminders are not generated in a noncomputerized office.	<ul style="list-style-type: none"> Designate an office vaccine champion, someone with whom most patients come into contact in the office, for example, "Nurse Jane," who is leaving a message. Have the vaccine champion make phone calls to patients who need an appointment for a vaccination. 	<ul style="list-style-type: none"> Send a preprinted postcard when the office vaccine champion leaves a message to ensure patients get 2 reminders to make an appointment.
Practice does not use staff reminders to recall patients for missed immunization.	When a vaccination is missed for any reason, place a staff reminder on a patient's chart to alert staff members of the need to administer all vaccines at the next opportunity.	<ul style="list-style-type: none"> Create an office procedure that outlines what to do when a staff member sees the flag. <ul style="list-style-type: none"> Who will alert physician or nurse? Who will prepare vaccine? Make sure staff members follow through when they see the flag.
Practice does not use seasonal vaccine reminders.	<ul style="list-style-type: none"> Ask the parent or patient to self-address a preprinted postcard; then send out at appropriate times to remind patients when seasonal vaccines are due. Keep a reminder log of patients with the indication for vaccination as they are seen during the year so notices can be sent or parents called before the season. 	Consider holding a clinic or creating walk-in appointments for seasonal vaccines.

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Practice does not have a protocol to schedule a patient who needs to catch up on multiple immunizations.	Go to the CDC's vaccine Web site and download the Catch-up Immunization Scheduler for children 6 years of age or younger.	

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Key Activity: Manage Catch-Up Schedule

Rationale: According to a national study, approximately 22% of 1,352 children aged 19 to 35 months received immunizations from more than one provider. Immunization records from providers the children had seen most recently underestimated the number of children who were up to date on recommended immunizations. Of the children classified by the provider as needing vaccines, 23% were, in fact, up to date and completely vaccinated (Stokley S, Rodewald LE, Maes EF. The impact of record scattering on the measurement of immunization coverage. *Pediatrics*.2001;107(1):91-96).

The problem with incomplete records is common: Patients transfer into a practice, children are adopted, vaccines are obtained at different provider sites, or a practice's records are incomplete.

Aim: Establish, document, and implement practice policies and procedures that identify children with missing records, implement a consistent office catch-up schedule, and use combination vaccines whenever possible.

The strategies shown in the table below are designed to optimize immunization compliance with the recommended immunization schedule for all patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Gap: Patient's immunization history is incomplete.		
Provider or practice does not have a policy to manage patients with incomplete or missing immunization records.	<ul style="list-style-type: none"> Establish an office policy by reaching consensus among all providers: Will you immunize children with incomplete records or wait for more information? Consider using combination vaccines to catch patients up as quickly as possible with the minimum number of injections. Consider using a reminder sheet, medical chart flag, or EHR-based prompt (alert) to indicate when children are due or overdue for immunizations and which immunizations are due. This approach is especially helpful with children on a catch-up schedule. Click to view reminder sheet. 	<ul style="list-style-type: none"> Consider using the state immunization information system (formerly known as immunization registry) to find past records. Designate an office immunization champion to be responsible for flagging charts or updating the reminder log.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Providers or staff have a limit to the number of immunizations (injections) they provide during a single visit.	<ul style="list-style-type: none"> Review the literature that demonstrates there is no limit from an immunological standpoint. Discuss the pros and cons and what is best for the child, considering: <ul style="list-style-type: none"> Additional visits that may be required The cumulative pain, which is more likely if injections are spread out over multiple visits The stress for child and parent Discuss the real issue of stress for the office staff when administering many injections. Reach a consensus among all partners, discuss with office staff, and establish an office guideline. Review charts to assess adherence to new office policy. 	<ul style="list-style-type: none"> Assess barriers to adherence: Is it at the staff, provider, or patient level? Develop a small-change intervention to address the barriers (e.g., a script for nursing/tech staff to use or a noon conference to educate providers and staff). Consider adopting a mechanism to reduce pain of injections (e.g., a pinwheel to “blow away the pain,” mindfulness techniques, etc.) and train office staff on these techniques.
Providers or staff do not accurately document immunizations.	<ul style="list-style-type: none"> Determine whether your practice’s immunization records (including your EHR) are complete and available at each visit. <ul style="list-style-type: none"> Use a stand-alone immunization record to determine if records are complete. Keep a stand-alone immunization record at the front of each chart or, if using an EHR, at an easily visible stage of the EHR. Update the immunization record at the time of service. Check patient charts at every visit to ensure that immunization records are complete and available on the chart. 	<ul style="list-style-type: none"> Identify an office immunization champion to be in charge of placing a reminder in each new patient’s chart and checking records at a designated time. Office immunization champion could review all charts patients who will be seen that day or check individual charts when taking the patient to the examination room. Work with your EHR vendor or IT assistant to place prompts (alerts) for providers on the EHR in visible locations.



Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
International adoptees, transfer patients, and patients in foster care do not have complete immunization records.	<p>Develop a plan for managing international adoptees, transfer patients, and patients in foster care.</p> <ul style="list-style-type: none"> • Obtain immunization records when possible. • Determine if the records are reputable. See the AAP Red Book section 2 Medical Evaluation for Infectious Diseases for Internationally Adopted, Refugee, and Immigrant Children. • Develop a one-page information sheet for new patients outlining what they or their parents or caregivers should bring to their first visit. • Consider using a state IIS to search for a history. • Consider serologic testing, depending on the country of origin, if records are in doubt. • Consider reimmunization using combination vaccines. 	<ul style="list-style-type: none"> • Make sure your office policy designates someone to be responsible for each step. • Consider getting to know a few of the adoption agencies or other services being used by patients. It may help save time knowing if children from a certain location tend to have more reputable records or common gaps in immunization than others.

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Key Activity: Maximize Early Adolescent Platform

Rationale: Beginning in 2005, three new vaccines were introduced and recommended for adolescents, a population with a low incidence of well-child care visits. Providers now have a remarkable prevention opportunity that begins at ages 11 to 12 years. Because infections can be prevented through adolescent immunization, it is important to identify approaches that would most effectively and efficiently increase the proportion of adolescents who receive recommended vaccines and to integrate these approaches into primary care.

Aim: Establish, document, and implement practice policies and procedures that reduce the number of common barriers to achieving optimal compliance with the recommended immunization schedule for early adolescent patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Gap: Adolescent rates of well-care visits and immunization are low.		
Provider does not have a clear picture of its adolescent immunization coverage.	<ul style="list-style-type: none"> If your office has no plans to adopt EMR in the near future, consider assessing adolescent immunization rates through use of your state immunization information system (registry). If your office has EMR, work with your IT person or with the vendor to develop an immunization assessment protocol that can be run periodically. 	<ul style="list-style-type: none"> Do a manual assessment by randomly selecting 20 charts of the group in which you are interested (e.g., 10 charts of 13-year-old females and 10 charts of 13-year-old males). In addition to Tdap, meningococcal conjugate, and HPV vaccine, consider checking vaccination status for catch-up vaccines (e.g., hepatitis B, MMR, and varicella).

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Relatively few of the office's adolescent patients come into the office.	<ul style="list-style-type: none"> Educate parents on the importance of well-care visits for their adolescent children. Make it convenient for patients and their families to come into the office for immunizations by: <ul style="list-style-type: none"> Offering hours in the evening and on weekends Considering securing verbal consent by phone when an adolescent is unaccompanied at a visit Send reminders before vaccines are due and/or recall messages when vaccines are past due. (If automated phone messages are ineffective, try other media such as text messages, personal phone calls, postcards, letters, or e-mail.) 	<ul style="list-style-type: none"> Consider designating staff time for an adolescent-specific, officewide chart review and send a notice to all adolescents behind on vaccinations. Make use of a registry or EMR if possible to help streamline this process. Be sure families leave the office knowing when the child's next visit should be. For the HPV series: If your physician scheduling system does not allow appointments to be scheduled months in advance, consider developing a nurse-only visit schedule that can go out for several months. Consider scheduling an immunization night for adolescents one evening each month.
Adolescents attending well-care visits leave the office with 1 or 2 vaccinations, but without all routinely recommended vaccines.	<ul style="list-style-type: none"> Ensure that all office personnel (e.g., MAs, nurses, and physicians) present all adolescent vaccines the "same way, same day" (i.e., explain that each is important and all four (Tdap, meningococcal conjugate, HPV, influenza) should be given at the same visit. Use prompts for adolescents who are due for a vaccination. These should appear on charts or in the EMR during all office visits and should remind everyone of the need for and value of vaccinations. 	Designate an adolescent vaccine office champion, someone who sees most adolescents when they are in the office and who is dedicated to checking all adolescents' charts for vaccination status and placing prompts at visits.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Adolescents attending acute-care visits leave the office without all routinely recommended vaccines.	<ul style="list-style-type: none"> • Create an office policy that supports immunization at acute-care visits. • Check immunization records for vaccination status at all visits, including sick visits and visits for physical examinations for sports. • Use prompts for adolescents who are due for a vaccination. These should appear on charts or in the EMR during all office visits and should remind everyone of the need for and value of vaccinations. 	<ul style="list-style-type: none"> • Schedule a follow-up visit if a vaccine was not delivered at a sick appointment and plan to immunize at the next visit. • To catch adolescents up on their vaccinations, consider designating time for an adolescent-specific, officewide chart review. Send recall messages to everyone who is behind.
Parents are refusing one or more adolescent immunizations.	<ul style="list-style-type: none"> • After you understand the concern and acknowledge that you, like the parent, want the best for the child, advise the parent about why you see the vaccine as important to the child at this time. • Use Vaccine Information Statements (VISs) to guide conversations and educate patients and parents about vaccinations. • Ensure that materials and handouts that address the importance of adolescent vaccines, safety, and information about the preventable diseases are available. 	If parents delays vaccination, consider having them sign the AAP Declination Form to emphasize that the parent is taking responsible for this risky choice.
The cost of immunization is an issue, particularly for underinsured adolescents and those not covered by VFC vaccine or Section 317 vaccine.	<ul style="list-style-type: none"> • See KCA Know Your Cost to Immunize for more information. • Investigate eligibility of underinsured patients for VFC vaccine at a federally qualified health center (FQHC). • Develop a policy about how and when referrals should occur. 	Explore partnering with school-based health clinics to ensure that adolescents receive all vaccines needed in a cost-effective manner.

Potential Barriers and Suggested Ideas for Change

Key Activity: Know Your Costs to Immunize

Rationale: In a 2006 AAP Periodic Survey of Fellows, pediatricians reported the following:

- 38% of their patients were fully covered for immunization by private or public health insurance plans.
- 32% were covered by the Vaccine for Children (VFC) program.
- 24% were partially covered by private insurance.
- 6% had no health insurance or coverage benefits for immunizations.

The same survey also reported that:

- Approximately 3 of 10 pediatricians referred patients without insurance coverage or with high co-pay amounts or deductibles to a public health clinic for immunizations.
- Only 4 of 10 pediatricians indicated that vaccine reimbursement from private (39%) and public (35%) insurers was adequate.

Despite coverage for immunizations having increased due to the Affordable Care Act's provision mandating full coverage for all ACIP-recommended immunizations without cost sharing for those enrolled in non-grandfathered private health plans, some children and adolescents continue to lack such coverage and vaccine reimbursement continues often to be problematic.

Aim: Establish, document, and implement practice policies and procedures that reduce the pediatrician's costs to immunize and improve office efficiencies, which keeps them in the vaccine business and providing all recommended vaccines. This is done in an effort to attain 100% compliance with the recommended immunization schedule for all patients.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Gap: Practice policies and procedures do not reflect true immunization costs.		
Pediatricians are unaware of their immunization costs.	Know your immunization costs. Use the Vaccine Survival Guide to calculate the true cost of immunizing your practice and negotiate higher payment.	Carefully check your numbers. Sometimes a small error can result in a much larger error when calculating costs.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Pediatricians are unaware of how to minimize costs associated with immunizing, making the cost prohibitive in some practices.	<ul style="list-style-type: none"> • Participate in the Vaccines for Children (VFC) program, which provides free vaccines to pediatricians for uninsured children and allows the provider to bill the administration fee. (In some states, underinsured children are also eligible for free vaccine through the provider's office and do not need to be referred to public health departments. The Center for Disease Control and Prevention (CDC) has more detailed information, as do state VFC programs. • Identify the local health department, another pediatrician who participates in the VFC program, or other local resources for referral of children who do not receive vaccine in your office due to excessive cost to the patient or practice. Ensure that alternative providers communicate to the medical home the vaccines that have been administered. • Participate in a group purchasing organization (GPO). <ul style="list-style-type: none"> – Average prices of vaccines are reported to the CDC quarterly. Refer to the CDC Vaccine Price List for current vaccine contract prices and private sector vaccine prices. – GPOs combine orders from practices, hospitals, nursing homes, other medical facilities and Accountable Care Organizations to receive volume discounts from specific vendors. (See January 2008 AAP News article.) – AAP members report significant savings on vaccines when purchased through GPOs. For a list of GPOs used and recommended by Academy members, refer to the AAP's article on group purchasing . 	<ul style="list-style-type: none"> • Ensure that your office has a process to identify children who are eligible for VFC vaccine. • Direct staff to administer VFC vaccine instead of private stock in those cases. • Ensure that the office staff members track the number of doses of VFC vaccine that have been administered for the required reports. • Check into other GPOs that may offer better discounts. Make sure that all the manufacturers you use are included in the GPO. If a majority of your products are from a manufacturer not included in the GPO, you may not realize the full potential savings.

Potential Barriers	Suggested Ideas for Change	Still Not Seeing Results?
Pediatricians are unaware of how to minimize costs associated with immunizing, making the cost prohibitive in some practices. (continued)	<ul style="list-style-type: none"> – Various AAP chapters have organized GPOs. AAP is developing a database that will provide inclusion criteria. – Identify the local public health department, another physician who participates in the VFC program, or another local source to refer children to who do not receive immunizations in your office due to excessive cost to the patient or the practice. – Ensure that alternative providers communicate to the medical home when vaccines have been administered. <ul style="list-style-type: none"> • Negotiate better contracts. 	Address how to reduce costs if payment is not increasing.
Pediatricians are unaware of how to minimize costs associated with immunizing, making the cost prohibitive in some practices. (continued)	<ul style="list-style-type: none"> • Code correctly to ensure payment. Refer to these resources for coding information: <ul style="list-style-type: none"> – Table of Proper Codes – Overview of Administration Codes – Reporting 99211 Correctly – Coding Calculator 	Work with your AAP chapter or the national AAP office to identify a coding expert who can do an in-service session for all office staff involved.