American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

POLICY STATEMENT

Immunization Information Systems

Committee on Practice and Ambulatory Medicine

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

ABSTRACT

The American Academy of Pediatrics continues to support the development and implementation of immunization information systems, previously referred to as immunization registries, and other systems for the benefit of children, pediatricians, and their communities. Pediatricians and others must be aware of the value that immunization information systems have for society, the potential fiscal influences on their practice, the costs and benefits, and areas for future improvement.

BACKGROUND

IMMUNIZATION INFORMATION SYSTEMS (IISs), previously known as immunization registries, have rapidly developed over recent years.[1] Appropriate functioning standards for IISs[2] that also address privacy and confidentiality have been adopted by the National Immunization Program,[3] and the American Immunization Registry Association has developed registry standards of excellence that provide a standardized self-assessment tool.[4,5] The American Academy of Pediatrics (AAP) continues to welcome and support the development of this technology and other systems for the benefit of children, pediatricians, and their communities. It is important for pediatricians to be aware of the value that IISs have for society, the potential fiscal influences on their practices, and areas for future efforts.

IISs AND SOCIETY

Since 1993, the United States Public Health Service (through the Immunization Grant Program, also called the "317 program"), the Robert Wood Johnson Foundation, and the National Immunization Program of the Centers for Disease Control and Prevention have provided funding for the development of IIS projects in virtually every state.[2] The projected annual cost of a nationwide network of IISs is $78 million for children 0 to 5 years of age ($100 million for children 0–6 years of age).[6] Annual cost offsets are estimated at $280 million.[6,7] These savings would result from improved efficiencies in the following areas:

- $168 million in immunization-assessment activities for entry in school, child care, and Head Start programs;
- $58 million in manual pulling of records for all children entering kindergarten;
- $16.2 million in manual pulling of records for changing health care professionals;
- $26.5 million in duplicated immunizations;
- $2 million in Health Plan Employer Data and Information Set (HEDIS) reports; and

www.pediatrics.org/cgi/doi/10.1542/peds.2006-1723

doi:10.1542/peds.2006-1723

All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

Key Words
immunization registries, immunization information systems, pediatricians, fiscal influences, costs, reimbursement, practice

Abbreviations
IIS—immunization information system
AAP—American Academy of Pediatrics

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275). Copyright © 2006 by the American Academy of Pediatrics

Downloaded from by guest on May 26, 2016

- $11.1 million in the National Immunization Survey.

IISs would be helpful in identifying and improving immunization rates in vulnerable populations. They would also be a valuable tool for public health efforts in infection control and prevention during outbreaks. Also, recent catastrophic events suggest a need for seriously examining the role of IISs in disaster preparations.

IISs AND PATIENTS

Pediatric patients and their families would benefit from having a regional or national immunization record instead of a paper one. There would be a decrease in duplication of immunizations. Interstate agreements are being developed that would enable physicians to access IISs from an adjacent state.

Reports vary about whether IISs improve immunization rates. In Oregon, immunization rates improved from 32% to 36% as a result of having accurate immunization data from the registry.[8] Another study reported improved accuracy of immunization data, but the "up-to-date" rate did not change after 3 years of IIS use.[9] A report from Minneapolis stated improved rates in one practice environment but not in another.[2]

IISs provide an automated reminder recall system. One study with an inner-city population reported a 2% improvement (38%–40%) in immunization rates by 2 years of age using an automated telephone recall system[10]; another study showed no improvement in immunization rates and identified the rate-limiting step as reaching the families, not generating a reminder.[11]

IISs AND PEDIATRIC PRACTICE

Although recently there has been more published research about IISs in the private sector, there continues to be a paucity of information on the fiscal effect on private practices. The savings from not having to manually pull a chart for immunization records are estimated at $14.70 per chart.[12] The fiscal effect on a practice depends on whether immunization data can be directly downloaded into the IIS from billing information, which in most cases requires the practice to purchase appropriate software. This downloaded information would provide the date and type of vaccine to the IIS but not the other required fields, such as lot numbers, site, administering personnel, etc. One study reported that manually entered data would cost $3.24 per shot, compared with $0.24 if the entry were automated.[13]

A study in 2004 reported an increase in cost of $0.56 per shot after implementation of an IIS in the private sector, with nurses spending 3.4 minutes per shot on registry activities.[14] There are no reports on the cost to practices to enter historical immunization data on patients to populate the database of the IIS.

It is important that both the public and private sectors continue to study the financial implications of these systems, not only on the practice, but on the system of care itself. A recent task force of America's Health Insurance Plans (AHIP), an organization representing the nation's major health plans, has been charged with exploring collaborative opportunities or promoting provider participation with IISs and to share health insurance plans' experiences and initiatives.[15]

RECOMMENDATIONS

1. The AAP supports continued improvement in IISs.
2. The AAP supports the continued evaluation of IISs to determine their cost-effectiveness in increasing immunization rates.
3. The AAP supports further needed research into the cost and benefits of IISs for the practicing pediatrician.
4. Physicians should be reimbursed for entering historical immunization data into the database of the IIS.
5. Data in IISs should be used as tools to improve quality of immunization services and not to penalize physicians whose immunization coverage is below average.
6. IISs must be integrated with electronic medical chart systems.

COMMITTEE ON PRACTICE AND AMBULATORY MEDICINE, 2005–2006

Robert D. Walker, MD, Chairperson
*Kyle Yasuda, MD, Immediate Past Chairperson
Lawrence D. Hammer, MD
Allen D. Harlor, Jr, MD
Philip G. Itkin, MD
P. John Jakubec, MD
Andrea J. Leeds, MD
Robert D. Walker, MD

LIAISONS

Adrienne A. Bien
Medical Group Management Association
A. Todd Davis, MD
Ambulatory Pediatric Association
Winston S. Price, MD
National Medical Association

STAFF

Heather Fitzpatrick, MPH

*Lead author

REFERENCES

1. Saarlas KN, Hinman AR, Ross DA, et al. All Kids Count 1991–2004: developing information systems to improve child health and the delivery of immunizations and preventive services. *J Public Health Manag Pract.* 2004;(suppl):S3–S15
2. Hinman AR. Tracking immunizations. *Pediatr Ann.* 2004;33: 609–614
3. Centers for Disease Control and Prevention. Immunization

Downloaded from by guest on May 26, 2016

registry progress: United States, January–December 2002. *MMWR Morb Mortal Wkly Rep.* 2204;53:431–433
4. Centers for Disease Control and Prevention. *Immunization Registry Minimum Functional Standards*. Atlanta, GA: Centers for Disease Control and Prevention; 2001. Available at: www.cdc.gov/nip/registry/st_terr/tech/stds/htmmin-funct-stds2001.htm. Accessed June 21, 2005
5. American Immunization Registry Association. *Registry Standards of Excellence in Support of an Immunization Program*. New York, NY: American Immunization Registry Association; 2002. Available at: www.immregistries.org/pdf/PROWstandardscomp1.pdf. Accessed June 21, 2005
6. Horne PR, Saarlas KN, Hinman AR. Cost of immunization registries: experiences from the All Kids Count II Projects. *Am J Prev Med.* 2000;19:94–98
7. Horne PR, Saarlas KN, Hinman AR. Update on immunization registries. *Am J Prev Med.* 2001;20:174
8. National Vaccine Advisory Committee. *Immunization Registries: Progress Report*. Washington, DC: National Vaccine Advisory Committee; 2000. Available at: www.dhhs.gov/nvpo/ProgRepFinal1reg.doc. Accessed June 21, 2005
9. Davidson AJ, Melinkovich P, Beaty BL, et al. Immunization registry accuracy [published correction appears in *Am J Prev Med*. 2003;25:178]. *Am J Prev Med.* 2003;24:276–280
10. LeBaron CW, Starnes DM, Rask KJ. The impact of reminder-recall interventions on low vaccination coverage in an inner-city population. *Arch Pediatr Adolesc Med.* 2004;158:255–261
11. Daley MF, Steiner JF, Brayden RM, Xu S, Morrison S, Kempe A. Immunization registry-based recall for a new vaccine. *Ambul Pediatr.* 2002;2:438–443
12. McKenna VB, Sager A, Gunn JE, Tormey P, Barry MA. Immunization registries: costs and savings. *Public Health Rep.* 2002;117:386–392
13. Rask KJ, Wells KJ, Kohler SA, Rust CJ, Cangialose CB. The cost to providers of participating in an immunization registry. *Am J Prev Med.* 2000;19(2):99–103
14. Glazner JE, Beaty BL, Pearson KA, Lowery EN, Berman S. Using an immunization registry: effect on practice costs and time. *Ambul Pediatr.* 2004;4:34–40
15. America's Health Insurance Plans. New: AHIP Immunization Registry Task Force. *Vaccine and Immunization Newsletter*. July 18, 2005. Available at: www.ahip.org/Newsletters/newsletterpublic.aspx?docid=11725#story4. Accessed July 14, 2006

Downloaded from by guest on May 26, 2016

Immunization Information Systems
Committee on Practice and Ambulatory Medicine
Pediatrics 2006;118;1293
DOI: 10.1542/peds.2006-1723

Updated Information & Services	including high resolution figures, can be found at: /content/118/3/1293.full.html
Citations	This article has been cited by 7 HighWire-hosted articles: /content/118/3/1293.full.html#related-urls
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): **Committee on Practice & Ambulatory Medicine** /cgi/collection/committee_on_practice_-_ambulatory_medicine **Safety** /cgi/collection/safety_sub **Standard of Care** /cgi/collection/standard_of_care_sub
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: /site/misc/Permissions.xhtml
Reprints	Information about ordering reprints can be found online: /site/misc/reprints.xhtml

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2006 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Downloaded from by guest on May 26, 2016

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Immunization Information Systems

Committee on Practice and Ambulatory Medicine

Pediatrics 2006;118;1293
DOI: 10.1542/peds.2006-1723

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/118/3/1293.full.html

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2006 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Downloaded from by guest on May 26, 2016