



Electronic Documentation in Pediatrics: The Rationale and Functionality Requirements

Heather C. O'Donnell, MD, MSc, FAAP,^{ab} Srinivasan Suresh, MD, MBA, FAAP,^c COUNCIL ON CLINICAL INFORMATION TECHNOLOGY

Clinical documentation is a fundamental component of the practice of medicine. It has significantly evolved over the past decade, largely because of the growth of health information technology and electronic health records. Although government agencies and other professional organizations have published position statements on the structure and use of electronic documentation, few have specifically addressed the documentation needs for the care of children. A policy statement on electronic documentation of clinical care by general pediatric and subspecialist providers by the American Academy of Pediatrics is needed. This statement provides insight on the unmet needs of key stakeholders to direct future research and development of the electronic media necessary to enhance the wellness of children and improve health care delivery. It also addresses the challenges and opportunities for efficient and effective clinical documentation in pediatrics.

BACKGROUND INFORMATION

The move from paper charting to electronic documentation has created a need for guidance to facilitate pediatricians' ability to effectively communicate the clinical picture while accurately reflecting the extent and quality of care provided. The American College of Physicians and the American Medical Informatics Association have published guiding principles regarding clinical documentation, focusing on the primary role of documentation for patient-centered clinical care and improving outcomes.¹⁻³ In addition to advancing these principles, more methods to reduce documentation burden and manage information overload are warranted. Furthermore, there are unique requirements for pediatric documentation that should be clarified for pediatric generalists and subspecialists, such as means to record adolescent information confidentially and to communicate medical history with schools.

abstract

^aDepartment of Pediatrics, Children's Hospital at Montefiore and Albert Einstein College of Medicine, Bronx, New York; ^bPediatric Physicians' Organization at Children's Hospital, Boston Children's Hospital, Brookline, Massachusetts; and ^cDivisions of Health Informatics and Emergency Medicine, Department of Pediatrics, University of Pittsburgh School of Medicine and UPMC Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania

Drs O'Donnell and Suresh equally contributed as coauthors to draft, review, and revise the manuscript with input of all reviewers and the Board of Directors, and both authors approved the final manuscript as submitted.

Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers. However, policy statements from the American Academy of Pediatrics may not reflect the views of the liaisons or the organizations or government agencies that they represent.

The guidance in this statement does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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.

This document is copyrighted and is property of the American Academy of Pediatrics and its Board of Directors. All authors have filed conflict of interest statements with the American Academy of Pediatrics. Any conflicts have been resolved through a process approved by the Board of Directors. The American Academy of Pediatrics has neither solicited nor accepted any commercial involvement in the development of the content of this publication.

DOI: <https://doi.org/10.1542/peds.2020-1682>

Address correspondence to Heather C. O'Donnell, MD, MSc, FAAP.
E-mail: heather.odonnell@childrens.harvard.edu

To cite: O'Donnell HC, Suresh S, AAP COUNCIL ON CLINICAL INFORMATION TECHNOLOGY. Electronic Documentation in Pediatrics: The Rationale and Functionality Requirements. *Pediatrics*. 2020;146(1):e20201682

The Agency for Healthcare Research and Quality technical brief on core functionality in pediatric electronic health records (EHRs), the Health Level Seven International Child Health Functional Profile for EHR Systems, and a few American Academy of Pediatrics (AAP) policy statements comprehensively delineate specific EHR functionality needs of pediatricians.⁴⁻⁸ However, specific guidelines on documentation content and workflow in existing and future systems are imperative to align documentation tasks with the core tenets of pediatric care.

This policy statement addresses the common barriers that pediatric practitioners face in dealing with clinical documentation. A clear policy will serve as a guiding force in prioritizing the key elements of a patient note, navigating the complex world of electronic documentation implementation and enhancement, and focusing research efforts on ideas that show promise in decreasing clinical burden and improving care. The accompanying technical report provides a background for the recommendations in this statement.⁹

STATEMENT OF PROBLEM

Electronic clinical documentation is a requirement for the Centers for Medicare & Medicaid Services' Meaningful Use program (renamed Promoting Interoperability)¹⁰ and has been adopted by the majority of hospitals and clinics in the United States,^{11,12} but current certification and implementation standards for EHRs provide few specific guidelines on documentation content and workflows. In addition, the documentation needs of child health providers are often different from those of providers caring for adults. Yet, there has not been a unique focus on defining the best practices for electronic clinical documentation in pediatric populations.

The change from paper-based to electronic documentation has had many benefits but has introduced additional regulatory requirements, presented new threats to the utility of patient notes, and galvanized both the desire and opportunity to use clinical documentation for additional purposes. Multiple stakeholders with differing priorities (clinical, regulatory, research, quality, and economic) and varying abilities of some providers to interact efficiently with electronic systems have contributed to increased documentation burden and physician burnout.¹³⁻¹⁶ Considering these issues, clear guidance on clinical documentation is needed.

SUMMARY AND CONCLUSIONS

Clinical communication and, hence, documentation are at the heart of the practice of medicine. Electronic documentation, now broadly adopted, has been accepted as the standard medium. A great deal has been learned during the transition to electronic documentation, including the opportunity to discover the unintended consequences of various tools and workflows. Importantly, we have recognized that paper notes of the past cannot be directly translated into an EHR format. Although it has offered many advantages, the transition to electronic notes has changed the very nature of the structure, workflow, and use of documentation.¹⁷ The roles and use of documentation have expanded, but its primary role to support clinical reasoning and communication should always be paramount. Building on this knowledge, this is an opportune time for the AAP to implement guidance to direct care and clinical documentation in the 21st century to best serve the needs of pediatric providers, patients, and families.

Multiple barriers must be overcome to implement these

recommendations. In local and vendor EHR development, there will always be competing priorities to this primary function of supporting clinical reasoning and communication, including regulatory obligations¹⁸ and requirements tied to fiscal reimbursement.¹⁰ In addition, there may be difficulty engaging vendors in pediatric-specific projects because children represent a smaller percentage of overall health care usage and burden. Gaining a consensus among child health care providers on needs and priorities and advocacy from pediatric organizations could be helpful in this regard. As part of the implementation of the 21st Century Cures Act, the Office of the National Coordinator for Health Information Technology has proposed new criteria to support voluntary certification of health information technology for use by pediatric clinicians; this may advance the recognition and prioritization of pediatric needs by EHR vendors.¹⁹

One of the key recommendations is ensuring representation from all stakeholders when considering electronic documentation implementation, changes, and enhancements. However, convening a large group of stakeholders and gaining consensus can be time consuming and laborious. In addition, clinical providers often do not have dedicated time or a percentage of full-time equivalents allotted for this work. Yet, the early and complete engagement of clinical providers and/or end users is critical to the successful development and implementation of electronic documentation.

Ideally, clinical informaticists should facilitate clinical documentation improvement. They can bridge the gap of understanding between frontline clinicians and health information technology professionals and vendors. Clinical informaticists

can also provide expertise on the best practices on clinical documentation improvement. When having a trained clinical informaticist is not feasible, such as in smaller health care settings, the role of EHR vendor user groups and professional clinical informatics organizations, such as the AAP Council on Clinical Information Technology and the American Medical Informatics Association, becomes vital.

This policy statement stresses the importance of research of documentation structure, content workflows, and functionalities to determine best practices. However, such evaluations may be arduous because of the difficulty in assessing documentation quality and its ability to effectively communicate information to stakeholders. Although standard measures of documentation quality are being developed,²⁰ they often require manual review of notes. Automated methods to continuously monitor documentation quality would be more efficient.

RECOMMENDATIONS

1. EHR documentation functionalities, including documentation templates, data entry, and display, need to support the pediatric care core values of age-based, longitudinal, and family-centered care. To address this, professional pediatric-focused organizations and health care institutions should conduct the following:
 - a. work with stakeholders to build consensus on documents that should be standardized, such as school forms, for integration into all EHRs;
 - b. continue to advocate for pediatric-specific documentation needs to EHR vendors and developers;
 - c. support the creation and dissemination of models and best practice guidelines for pediatric electronic documentation; and
- d. promote the development of policies and methods to facilitate the seamless sharing of electronic documentation tools (eg, templates and workflows) and data across child health providers nationally.
2. Models of shared documentation among health care providers and with patients, caregivers, and other key stakeholders (eg, adolescents, schools, and immunization registries) should continue to be explored as a means to improve clinical communication among care teams, facilitate health outcomes tracking, and potentially reduce documentation burden for providers. Effective models could be incorporated in developing health information exchanges.
3. Tools and strategies aimed at relieving documentation burden should be developed and researched to understand their impact on documentation time and clinical care as well as on satisfying evaluation and management codes and other regulatory requirements. Examples of potential tools and strategies include the following:
 - a. automated data entry (eg, device integration and barcoding);
 - b. documentation task distribution (eg, integration of patient-generated health data);
 - c. elimination of redundancy that is consistent with family-centered care (eg, linkages for family and social history); and
 - d. alternative documentation methods (eg, speech recognition and scribes).
4. Mechanisms to mitigate information overload, such as enhanced data displays, search tools, and streamlined and standardized note structures, need to be developed and studied.
5. Professional organizations and health care institutions should refine pediatric data definitions and partner with EHR vendors to integrate these standards into electronic systems.
6. The reuse of clinical documentation to support regulatory requirements, evaluation and management codes, research, and quality improvement efforts should be supported. However, there must also be clear understanding and mitigation of any negative impacts on the clinical narrative, usefulness as a clinical communication tool, and documentation burden.
 - a. Guidelines for the appropriate attainment of data from clinical documentation should continue to be developed and propagated. For example, the completion of a task within the EHR should be captured as its own documentation. Additional documentation that the task was completed should not be required.
 - b. Although complete discrete data are often most useful for reuse, the documentation of incomplete discrete data should be enabled if clinically relevant, for example, the ability to record that a patient received a vaccine even if the exact preparation or month and day of receipt are unknown.
 - c. National research organizations and the health information technology industry should support research in alternative models and technology to facilitate the reuse of clinical data (eg, natural language understanding).
7. All documentation implementation and improvement initiatives should include representation from medical providers including trainees and attending physicians as well as, if possible, patient and family representatives and specialists in health information management, quality

improvement, reporting, research, billing, and clinical informatics.

- Medical schools, residency programs, and physician licensing boards should integrate continuing electronic documentation training into their curricula using Accreditation Council for Graduate Medical Education program requirements as a guide. Attending physicians should provide timely and frequent feedback to trainees regarding documentation quality. In addition, EHRs should support clear delineation of trainee documentation and attending attestation.

LEAD AUTHORS

Heather C. O'Donnell, MD, MSc, FAAP
Srinivasan Suresh, MD, MBA, FAAP

COUNCIL ON CLINICAL INFORMATION TECHNOLOGY EXECUTIVE COMMITTEE, 2018–2019

Emily Chui Webber, MD, FAAP
Gregg M. Alexander, DO
Sandy Lee Chung, MD, FAAP
Alexander M. Hamling, MD, MBA, FAAP
Eric S. Kirkendall, MD, MBI, FAAP
Ann M. Mann, MD, FAAP
Heather C. O'Donnell, MD, MSc, FAAP
Reza Sadeghian, MD, MBA, MSc, FAAP
Eric Shelov, MD, MBI, FAAP
Srinivasan Suresh, MD, MBA, FAAP
Andrew M. Wiesenthal, MD, SM, FAAP

LIAISONS

Dale C. Alverson, MD, FAAP – *Section on Telehealth Care*
Francis Dick-Wai Chan, MD, FAAP – *Section on Advances in Therapeutics and Technology*
Melissa S. Van Cain, MD, FAAP – *Section on Pediatric Trainees*

STAFF

Lisa Krams, MAHS

ABBREVIATIONS

AAP: American Academy of Pediatrics
EHR: electronic health record

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2020 by the American Academy of Pediatrics

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: No external funding.

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

REFERENCES

- Kuhn T, Basch P, Barr M, Yackel T; Medical Informatics Committee of the American College of Physicians. Clinical documentation in the 21st century: executive summary of a policy position paper from the American College of Physicians. *Ann Intern Med.* 2015;162(4):301–303
- Cusack CM, Hripcsak G, Bloomrosen M, et al. The future state of clinical data capture and documentation: a report from AMIA's 2011 Policy Meeting. *J Am Med Inform Assoc.* 2013;20(1):134–140
- McGowan JJ, Cusack CM, Bloomrosen M. The future of health IT innovation and informatics: a report from AMIA's 2010 Policy Meeting. *J Am Med Inform Assoc.* 2012;19(3):460–467
- Dufendach KR, Eichenberger JA, McPheeters ML; Agency for Healthcare Research and Quality. Core functionality in pediatric electronic health records. Available at: <https://effectivehealthcare.ahrq.gov/topics/pediatric-ehr/technical-brief>. Accessed January 10, 2018
- Health Level Seven International. HL7 EHR Child Health Functional Profile (CHFP), release 1. Available at: www.hl7.org/implement/standards/product_brief.cfm?product_id=15. Accessed January 10, 2018
- American Academy of Pediatrics Council on Clinical Information Technology. Policy statement: Electronic prescribing in pediatrics: toward safer and more effective medication management. *Pediatrics.* 2013;131(4):824–826
- Spooner SA; Council on Clinical Information Technology, American Academy of Pediatrics. Special requirements of electronic health record systems in pediatrics. *Pediatrics.* 2007;119(3):631–637
- Lehmann CU; Council on Clinical Information Technology. Pediatric aspects of inpatient health information technology systems. *Pediatrics.* 2015;135(3). Available at: www.pediatrics.org/cgi/content/full/135/3/e756
- O'Donnell HC, Suresh S; Council on Clinical Information Technology. Electronic documentation in pediatrics: the rationale and functionality requirements. *Pediatrics.* 2020;146(1):e20201684
- Office of the National Coordinator for Health Information Technology. Promoting interoperability. Available at: <https://www.healthit.gov/topic/meaningful-use-and-macra/promoting-interoperability>. Accessed June 4, 2020
- Charles D, Gabriel M, Searcy T; Office of the National Coordinator for Health Information Technology. Adoption of electronic health record systems among U.S. non-federal acute care hospitals: 2008-2014. 2015. Available at: <https://www.healthit.gov/sites/default/files/data-brief/2014HospitalAdoptionDataBrief.pdf>. Accessed January 12, 2018
- Office of the National Coordinator for Health Information Technology. Office-based physician electronic health record adoption. Available at: <https://dashboard.healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php>. Accessed January 12, 2018

13. Tutty MA, Carlasare LE, Lloyd S, Sinsky CA. The complex case of EHRs: examining the factors impacting the EHR user experience [published correction appears in *J Am Med Inform Assoc*. 2019;26(11):1424]. *J Am Med Inform Assoc*. 2019;26(7):673–677
14. Gardner RL, Cooper E, Haskell J, et al. Physician stress and burnout: the impact of health information technology. *J Am Med Inform Assoc*. 2019;26(2):106–114
15. Shanafelt TD, Dyrbye LN, Sinsky C, et al. Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clin Proc*. 2016;91(7):836–848
16. Joukes E, Abu-Hanna A, Cornet R, de Keizer NF. Time spent on dedicated patient care and documentation tasks before and after the introduction of a structured and standardized electronic health record. *Appl Clin Inform*. 2018;9(1):46–53
17. Cimino JJ. Improving the electronic health record—are clinicians getting what they wished for? *JAMA*. 2013;309(10):991–992
18. The Joint Commission. Interpreting Joint Commission standards: FAQs. Available at: https://www.jointcommission.org/standards_information/jcfaq.aspx. Accessed January 16, 2018
19. Department of Health and Human Services; Office of the Secretary. 21st Century Cures Act: interoperability, information blocking, and the ONC Health IT Certification Program. *Fed Regist*. 2019;84(42):7424–7610. Available at: <https://www.govinfo.gov/content/pkg/FR-2019-03-04/pdf/2019-02224.pdf>. Accessed June 4, 2020
20. Stetson PD, Morrison FP, Bakken S, Johnson SB; eNote Research Team. Preliminary development of the Physician Documentation Quality Instrument. *J Am Med Inform Assoc*. 2008;15(4):534–541

Electronic Documentation in Pediatrics: The Rationale and Functionality Requirements

Heather C. O'Donnell, Srinivasan Suresh and COUNCIL ON CLINICAL INFORMATION TECHNOLOGY

Pediatrics 2020;146;

DOI: 10.1542/peds.2020-1682 originally published online June 29, 2020;

Updated Information & Services

including high resolution figures, can be found at:
<http://pediatrics.aappublications.org/content/146/1/e20201682>

References

This article cites 13 articles, 3 of which you can access for free at:
<http://pediatrics.aappublications.org/content/146/1/e20201682#BIBL>

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):

Current Policy

http://www.aappublications.org/cgi/collection/current_policy

Council on Clinical Information Technology

http://www.aappublications.org/cgi/collection/council_on_clinical_information_technology

Health Information Technology

http://www.aappublications.org/cgi/collection/health_information_technology_sub

Electronic Health Records

http://www.aappublications.org/cgi/collection/electronic_health_records_sub

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:

<http://www.aappublications.org/site/misc/Permissions.xhtml>

Reprints

Information about ordering reprints can be found online:

<http://www.aappublications.org/site/misc/reprints.xhtml>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Electronic Documentation in Pediatrics: The Rationale and Functionality Requirements

Heather C. O'Donnell, Srinivasan Suresh and COUNCIL ON CLINICAL INFORMATION TECHNOLOGY

Pediatrics 2020;146;

DOI: 10.1542/peds.2020-1682 originally published online June 29, 2020;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/146/1/e20201682>

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, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2020 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

