Comment on Dr. Chung's Editorial: Pediatric Health Information Technology—What We Need for Optimal Care of Children

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Background and Significance

Dr. Chung brings up an essential issue within the current US healthcare system.[1] While pediatric-specific electronic health records (EHR) systems do exist, many EHR systems were not built with pediatric patients or healthcare workers in mind.[2] Currently, a Health Level 7 (HL7, www.hl7.org) project is underway to create the HL7 Pediatric Care Health Information Technology Functional Profile Release 1 (HL7 PCHIT FP R1), a child health functional domain profile that will help address those needs.[3] The HL7 PCHIT FP R1 was developed based on feedback and direct involvement of pediatricians and representatives from HL7 (http://www.hl7.org/), the American Academy of Pediatrics, the Agency for Healthcare Research and Quality (AHRQ), and the Drummond Group (https://www.drummondgroup.com/).

HL7 Pediatric Care Health Information Technology Functional Profile Release 1

The purpose of a functional profile is to create a "subset of the Functional Model, in which functions have been designated (sometimes in varying degrees) for certain EHR systems or healthcare delivery settings or narrow operation requirements."[4] In other words, a functional profile maintains the requirements of the functional model while adding new functionality specific to the profile's purpose. In this case, the HL7 PCHIT FP R1 is geared toward the development of an EHR system that provides the required functions to care for patients under 21 years within any clinical setting. This functional profile builds upon previous pediatric EHR functional standards such as the HL7 Child Health Functional Profile (HL7 CHFP) Release 1, the 2013 AHRQ Children's EHR Format List, the 2015 AHRQ Children's EHR Format Enhancement Final Recommendation Report, and the 2015 Office of the National Coordinator for Health Information Technology (ONC) 10.[5–7] It is based upon the EHR System Functional Model Release 2.1 (EHRS-FM Release 2.1), published in 2020, and complements the earlier HL7 CHFP, published in 2008.[5,8] Each function and criteria within the HL7 PCHIT FP R1 were meticulously reviewed and vetted for significance and applicability to the US pediatric setting and accounted for current jurisdictional regulations, clinical practices, and potential future changes.

The HL7 Electronic Health Records Workgroup began by ensuring the EHR uses pediatric-specific data in all aspects, including ordering, clinical decision support, documentation, and reporting. In addition, criteria were added to existing functions in the functional model, including criteria that address adolescent privacy concerns in the OpenNotes era.[9,10] For example, under the entity authentication function, we require the system to support functions that are very specific to pediatrics, such as documentation of adolescent patient permission to release information to caregivers; the ability to segment healthcare data such that minor consent services could remain private as jurisdictional legislation allows; and transferrable access authority (such as for when a child reaches the age of maturity or is emancipated), among others.

The HL7 PCHIT FP R1 also includes new functions explicitly developed for the pediatric domain, including managing pediatric primary care, child abuse reporting, child welfare, newborn screening, children with special healthcare needs, and school-based linkages. These new functions are reviewed in more detail in ►Table 1.

Table 1 Health Level 7 Pediatric Care Health Information Technology Functional Profile Release 1 new functionality and their key conformance criteria

New functions	Criteria supports
Pediatric primary care	• Communication between providers and all caregivers • Inclusion of pediatric-specific diagnoses and vital signs • Transition from pediatric to adult care
Child abuse reporting	• Reporting and documentation of abuse/neglect • Communication with other authorities involved
Child welfare	• Documentation of caregivers, including foster parents • Documentation of transitions of care
Newborn screening	• Documentation of newborn screening tests • Reporting of newborn screening results • Follow-up for abnormal newborn screening results
Children with special healthcare needs	• Identifying patients for care management • Capturing information specific to this population, e.g., code status, palliative care involvement, DME
School-based linkages	• Appropriate medical record access for school-based clinicians • Compliance with Family Educational Rights and Privacy Act rules where applicable[11]

Conclusion

In summary, we agree with the concerns brought by Dr. Chung and demonstrate current work being done toward creating more pediatric-friendly EHR system. There has been other work in this area as well, such as the recent 2020 ONC work regarding the *21st Century Cures Act*, which Dr. Chung mentioned in her editorial, that provided 10 recommendations for pediatric-specific criteria required for EHR certification and directed a voluntary certification program to support testing and certification of pediatric EHR system to support pediatric care and practice settings.[7] Currently undergoing the HL7 Balloting process, the HL7 PCHIT FP R1 will be published as an HL7 Informative Standard as early as Q1 2022 and, once complete, will facilitate testing of EHR systems for certification. The HL7 PCHIT FP R1 is one step toward improving and optimizing the health and wellbeing of pediatric patients by taking into consideration their unique needs within the EHR system and improving its usability for pediatric providers.

Clinical Significance Statement

The HL7 PCHIT FP R1 is an HL7 informative standard that defines pediatric-specific functional requirements for an EHR. Clinicians, healthcare institutions, EHR vendors, and health information technology certifying bodies can leverage the standard to determine the specific EHR functionalities that support child health.

Multiple Choice Questions

1. Which is one of the new functions in the PCHIT R1?
   a. Manage allergy, intolerance, and adverse reaction list
   b. Manage pediatric primary care
   c. Manage adverse events
   d. Manage patient-originated data

   Correct Answer: The correct answer is option b. The other functions existed as part of the EHRS-FM Release 2.1.

2. What is the purpose of a functional profile?
   a. Create guidelines for clinical practice
   b. Allow users to access the EHR platform
   c. Establish functional requirements for an EHR
   d. Create a new functional model

   Correct Answer: The correct answer is option c. A functional profile defines what functions a system needs to be able to perform (and to what degree) to meet the criteria of the profile.

Conflict of Interest
The authors are members of the PCHIT workgroup that produced the PCHIT FP R1. Additionally, Dr. Feliciano Yu is an organizational member of HL7 and Co-chair of the HL7 EHR Work Group. C.T. is a Contractor to the Drummond Group. T.M. is an employer at Drummond Group.

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