

Developing a Pediatric EHR Testing & Certification Program in the USA: Initial Phase

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Abstract

In 2016, the 21st Century Cures Act included ONC's 10 functionality recommendations for voluntary testing and certification of pediatric EHRs. Since 2019, Drummond has been developing a new pediatric EHR testing and certification program with pediatric and industry experts. The testing criteria are based upon AAP's 47 requirements that include ONC's 10 recommendations. It is anticipated the program will be operationalized and ready for EHR vendors in 1Q2022.

Keywords:

Pediatric functionality, electronic health record, certification

Introduction

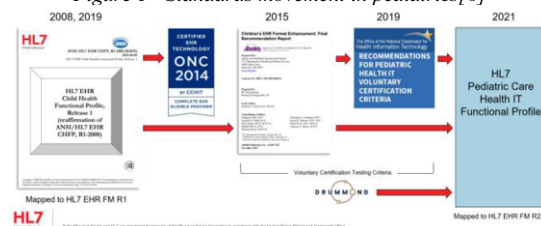
Drummond Group – an Accredited Test Lab (ATL) and an ONC Authorized Certification Body (ACB) – is approved by the Office of the National Coordinator for Health Information Technology (ONC) to test and certify vendor electronic health records (EHR). In 2016, the U.S. Department of Health and Human Services passed the 21st Century Cures Act which included ONC's 10 recommendations for voluntary certification of pediatric EHRs.[1] The 10 recommendations had been distilled from the 47 American Academy of Pediatric's (AAP) requirements described in the Agency for Health and Research Quality (AHRQ) 2015 report.[2] In 2019, Drummond formally engaged clinical and industry leaders to advise the development of a voluntary pediatric EHR testing and certification program based upon these 47 requirements.[2] The purpose is to develop a voluntary EHR pediatric certification program to test and certify the functionalities needed to safely monitor and adjust to the velocity of change in children's development (e.g., weight, height, milestones, etc.) [3,4], as EHRs have largely been developed for adult care. Pediatric patients are in the age group which includes birth to 21 years.[5]

A search of the literature showed a paucity of evidence on developing an EHR testing and certification program. At the time of this publication, the program development was well underway and the steps in the initial phase are described under Results. Future publications include a more detailed description of the program development, implementation evaluations, and contribution of new methodologic knowledge to develop and implement formal testing and certification programs for EHR functionality generalizable to other clinical domains.

Method

The methodology involved reviewing the 47 AAP developed requirements to develop test criteria.[2]. The 10 ONC recommendations are a subset. Figure 1 shows the historical standards movement in pediatrics. These resources are listed in the References.

Figure 1 - Standards movement in pediatrics[6]



Subject matter experts were consulted and resources reviewed for specificity. Few changes were made to the approach during the program development. The tasks are described in more detail under Results. A concurrent Drummond project to review patient safety and usability functionality was deferred due to the limiting impact of COVID-19 on subject matter experts' availability.

Results

The initial phase involved reviewing in detail the 47 AAP requirements, including the 10 ONC recommendations.[1,2] High-level comparisons of the AAP's 2013 report were also included in the 2015 document.[2] Requirements were grouped by themes and described in "findings reports" to identify the intent, goals, process, and initial data elements for each requirement. Sections on the findings reports included: description and primary intent, testable elements including base and advanced functionality, user stories (i.e., clinical narratives), and any outstanding questions. Questions were brought to the expert working group and advisory panel for review and response. An outline of test scripts based on inpatient, ambulatory and "other" care settings and personas were developed to test functionality in a workflow format and to reflect context and age-specific test criteria. Themes included: newborn screening, childhood immunizations, preventative/well-child visits and care gaps, adoption and foster care, accurate medication prescribing (e.g., weight-based dosing), and access control (i.e., information

available through personal health records). Table 1 lists examples of the pediatrics specific topics.

Table 1: Examples of the 47 AAP Requirements (including samples of ONC's 10 Recommendations):

- *Prevention/Child well visits (e.g., Bright Futures)*
- *Document caregivers*
- *Growth parameters & vital signs (e.g., USCDI v2)*
- *Producing completed forms*
- *Adoption & foster care*
- *Guardian notifications or permission*
- *Flag special healthcare needs*
- *Newborn screening*
- *Accurate prescribing (e.g., weight-based maximum single and daily doses, and adult doses)*
- *Access control (privacy, security, and confidentiality)*

In addition, we are exploring functionality needs for minor emancipation and privacy. Test script writing is in progress. Once the test scripts have been written and piloted, Drummond will formally launch the testing and certification program as part of its comprehensive health IT certification services. A corresponding "Drummond Certified" seal will be designed and distributed to EHR vendors to attest certification of successful testing results in 1Q2022.

The rigorous methodology was strengthened through Drummond's participation on the HL7 Pediatric Care Health IT Functional Profile project[6] and on the national-level Protecting Privacy to Promote Interoperability (PP2PI) Workgroup (<https://www.drummondgroup.com/pp2pi/>)

Limitations

First, the program is in development so caution should be used in relying on these results. Second, Drummond currently does not have a clinical director or pediatrician on staff. Third, there were no existing testing and certification programs for pediatric EHRs. These risks were mitigated by formally engaging with pediatric, clinical, EHR, and other industry experts, many of whom were key stakeholders and contributors to ONC's 10 recommendations and 47 AAP requirements.[1-6] In addition, Drummond was able to leverage its corporate knowledge of over 20 years' experience as an ONC ATL and ACB.

Conclusions

In offering a voluntary pediatric EHR testing and certification program based upon ONC and AAP pediatric EHR recommendations and requirements, Drummond is contributing to improving child health. The next phase includes beta testing the program, and planning post implementation evaluation. Complementary publications from the perspectives of the clinical advisors, the vendor EHR experts, and the other industry contributors are currently underway.

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