

# Developmental Surveillance and Screening in the Electronic Health Record



Timothy Ryan Smith, MD

## KEYWORDS

- Electronic health record • Privacy • Developmental delay • Interoperability
- Clinical decision support • Health Information Exchange

## KEY POINTS

- Define electronic health record (EHR) tools such as clinical decision support systems, registries, patient portals, and their application to developmental surveillance and screening.
- Discuss principles of interoperability and privacy and the challenges and opportunities posed for integration of developmental screening and surveillance into the EHR.
- Describe a conceptual framework that includes appropriate EHR tools in the completion of developmental screening and surveillance and referral to appropriate providers.

## INTRODUCTION

Despite consensus among pediatricians about the importance of monitoring development in primary care, effective developmental screening and subsequent intervention remains challenging.<sup>1</sup> Developmental delay affects greater than 10% of pediatric patients<sup>2</sup> and nearly 50% of children fail to receive appropriate screening despite relative inexpensive cost and low difficulty.<sup>3</sup> Developmental delays require a medical evaluation that may include chromosomal analysis, MRI, and laboratory studies, as well as subspecialty medical and allied health evaluation.<sup>4</sup>

The electronic health record (EHR) provides an opportunity for prompt, consistent developmental assessment with clear, actionable protocols for intervention and follow-up, as well as tracking, to ensure practice improvement. Providers recognize the growing impact of EHR, positive and negative, on clinical care<sup>5</sup> and professional organizations attempt to support their members in creating efficient and efficacious systems. For example, the American Academy of Pediatrics (AAP) identifies the importance of health information technology in clinical care by setting the following priorities: (1) appropriate management and tracking of health data and services, (2)

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Department of Pediatrics, University of Kansas Medical Center, 3901 Rainbow Boulevard, MS 4004, Kansas City, KS 66160, USA

E-mail address: [tsmith@kumc.edu](mailto:tsmith@kumc.edu)

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effective transfer of health information in patient care transitions, and (3) review of clinical data in continuous quality improvement.<sup>6</sup>

This article begins by defining developmental screening and surveillance. The next section introduces and applies the principles of interoperability and privacy to such evaluation in the EHR. Following, the current and future applications of tools, such as clinical decision support, registries, patient portals, and mobile technology is discussed. A conceptual framework summarizes the application of EHR tools. The conclusion reviews obstacles to implementation and future prospects. A glossary at the end of the article defines key terms and concepts from clinical informatics. Published literature on EHR and developmental screening and surveillance is limited, but representative articles are listed in **Box 1**.

## DEVELOPMENTAL SURVEILLANCE AND SCREENING

Developmental surveillance addresses parental concerns and uses knowledgeable observation by a skilled practitioner to identify developmental problems.<sup>7</sup> The AAP states that appropriate developmental surveillance represents a “flexible, longitudinal, continuous, and cumulative process.”<sup>6,7</sup> Bright Futures and AAP recommend developmental surveillance at all routine child health visits, also called well-child visits.<sup>7</sup>

In contrast, developmental screening involves use of a validated, standardized tool to identify and characterize risk.<sup>1</sup> The Council on Children with Disabilities identifies 20 developmental screening tools with appropriate validation, although this list is not exhaustive. Selection of an appropriate screening tool is challenging and often involves consideration of the following: the scope of developmental domains (gross-motor, fine-motor, social, language, and problem-solving) to be screened, scoring, other administrative needs, qualification for reimbursement by payers, and cost of tools.<sup>1</sup>

## INTEROPERABILITY

Developmental issues require multidisciplinary collaboration and hinges on record systems sharing appropriate information. Interoperability, the ability of 2 or more systems to exchange and use information, is regularly discussed yet remains elusive in

### Box 1

#### Literature on electronic health record tools and concepts and developmental screening and surveillance

Clinical Decision Support System (CDSS) - Carroll AE, Bauer NS, Dugan TM, et al. Use of a computerized decision aid for developmental surveillance and screening: a randomized clinical trial. *JAMA Pediatr* 2014;168(9):815–21.

CDSS - Council on Children With Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee, et al. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. *Pediatrics* 2006;118(1):405–20.

Policy Statement on Multiple Tools - Council on Clinical Information Technology. Health information technology and the medical home. *Pediatrics* 2011;127(5):978–82.

Dashboards or CDSS - Jensen RE, Chan KS, Weiner JP, et al. Implementing electronic health record-based quality measures for developmental screening. *Pediatrics* 2009;124(4):e648–54.

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