iCoDE June 22, 2022 Steering Committee Meeting Summary Report

Journal of Diabetes Science and Technology
2022, Vol. 16(6) 1575–1576

DOI: 10.1177/19322968221119146
journals.sagepub.com/home/dst
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Keywords
continuous glucose monitoring, cybersecurity, data integration, electronic health record, health care organizations

The integration of Continuous Glucose Monitoring Data into the Electronic Health Record (iCoDE) Project aims to facilitate integration of continuous glucose monitor (CGM) data into the electronic health record (EHR) to improve clinical care.[1] On June 22, 2022, the Steering Committee met to review the progress of each working group (WG) (Table 1).

Working Group 1 presented a conceptual framework that includes a definition of CGMs, clinical use cases or "modes" of action, and a classification of data types. They recommended both a core and expanded dataset of elements that should be made available by manufacturers for potential inclusion in the EHR. Relevant data schema and terminologies were presented, and four common data models were identified as needing further review to ensure they can accommodate CGM data. Recommendations for data quality frameworks are in progress.

Working Group 2 focused on best practices for linking patient data accounts with EHR records and methods to address privacy and legal concerns. They proposed a set of cybersecurity standards for CGM manufacturers to comply with and proposed sets of identifiers for data linkage. The WG discussed possible linkage solutions to overcome the data asymmetry between CGM manufacturers and EHRs. Working Group 2 will cover providing data to multiple providers and authorizing account linkage.

Working Group 3 proposed adopting a "Fast Healthcare Interoperability Resources (FHIR)-first" strategy[2] for EHR and third-party apps data transfer, with Health Level Seven International (HL7) version 2.x recommended for use cases where FHIR is not possible or appropriate.[3] The group recommended focusing on a data pull rather than push approach. To reconcile multiple data sources, perform data quality checks, accommodate high resolution data and meta-data if needed, and run additional transformation and analyses, health care organizations (HCOs) should adopt a "middleware" or staging environment, rather than attempt to perform those tasks in the EHR. There was additional discussion on which data should and should not be shared. Future discussions will refine these points further.

Working Group 4 explored how to best represent and visualize CGM data in the EHR. They recognized the ambulatory glucose profile and related CGM metrics as the current standard data elements.[4] They presented recommendations on where these data elements should be housed in the EHR and desired features to improve usability. Working Group 4 will further refine the recommendations for ambulatory and inpatient use cases.

Working Group 5 proposed several clinical workflows to operationalize CGM-EHR integrations. They developed descriptions of the related roles and responsibilities of various team members.[5] This WG developed workflows and checklists for four workflows while acknowledging the natural variation in care settings. Working Group 5 will finalize workflows for each user case and review limitations within each workflow.

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Table 1. iCoDE Project Working Groups and Chairs.

WGs	WG chairs
WG1: Data Standards	Juan C. Espinoza, MD
WG2: Account Linkage, Entity, and Identity Resolution	Randi E. Seigel, JD
WG3: Integration and Interoperability	Julian M. Goldman, MD, & Shahid N. Shah, MSc
WG4: Analytics and Visualization	Sarah D. Corathers, MD
WG5: Clinical Workflows	Alaina P. Vidmar, MD
WG6: Contracting, Partnership, Project Management, and Business Models	Maurice Tut, MS

Abbreviation: WG, working group.

Working Group 6 authored a comprehensive Project Guide to document the business and technical requirements for CGM data integration. The Project Guide defines types of partnerships, discusses financial considerations for HCOs, and creates template timelines and checklists for integration projects. Working Group 6 will continue to work with the other groups to incorporate more details into the Project Guide.

All WGs will further review their recommendations before a final vote by members of the Steering Committee.

Abbreviations

CGM, continuous glucose monitor; EHR, electronic health record; FHIR, Fast Healthcare Interoperability Resources, HCO, health care organization; HL7, Health Level Seven International; iCoDE, integration of Continuous Glucose Monitoring Data Into the Electronic Health Record; WG, working group.

Acknowledgments

The organizers of the iCoDE project thank Annamarie Sucher-Jones for her expert editorial Assistance.

Declaration of Conflicting Interests

The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: DCK is a consultant for EOFlow, Fractyl Health, Lifecare, Integrity, Rockley Photonics, and Thirdwayv. JCE is a paid consultant of AI Health. AMY, JH, RES, JMG, SNS, SDC, APV, and MT have nothing relevant to disclose.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: iCoDE is supported by grants from Abbott Diabetes Care, AI Health, Ascensia Diabetes Care, Bigfoot Biomedical, Dexcom, Diabeloop, Eli Lilly, EOFlow, Glytec, LifeScan, Livongo, Medtronic Diabetes, Rockley Photonics, Sanofi, Terumo, TransformativeMed, and Welldoc.

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