Electronic Clinical Decision Support (CDS) Tools that Support the Implementation of the CDC Clinical Practice Guideline for Prescribing Opioids for Pain

Overview

In November 2022, the Centers for Disease Control and Prevention (CDC) released the 2022 CDC Clinical Practice Guideline for Prescribing Opioids for Pain (2022 Clinical Practice Guideline). The 2022 Clinical Practice Guideline is a clinical tool to help clinicians and patients work together to make informed, patient-centered decisions about pain care. The 2022 Clinical Practice Guideline broadens the scope from primary care physicians to include additional clinicians whose practice areas include prescribing opioids in outpatient settings (e.g., upon discharge from hospital, emergency departments, and other facilities) for patients 18 years or older.

The 2022 Clinical Practice Guideline includes 12 recommendations for clinicians providing pain care for outpatients aged 18 years or older with acute pain (duration less than 1 month), subacute pain (duration of 1-3 months), or chronic pain (duration of more than 3 months). The 2022 Clinical Practice Guideline emphasizes that recommendations are voluntary and are meant to provide flexibility to clinicians and patients. The recommendations are not a regulation, law, or rigid standard of care.

To help support guideline-concordant care, CDC and the Office of the National Coordinator for Health Information Technology (ONC) worked collaboratively to convert the 2016 CDC Guideline for Prescribing Opioids for Chronic Pain recommendations into shareable electronic clinical decision support (CDS) tools for electronic health records (EHRs). Integrating the content of the guideline recommendations into electronic CDS equips clinicians with tools and resources within the patient encounter while also helping support, not replace, care that is individualized, flexible, and patient-centered. These older CDS artifacts were previously piloted at sites such as Yale New Haven Health, Duke Health, the University of Colorado School of Medicine, and the Medical University of South Carolina,

As the 2022 Clinical Practice Guideline updates and replaces the 2016 CDC Guideline for Prescribing Opioids for Chronic Pain, CDC and ONC are focusing on developing and updating the CDS tools. Examples of next steps include implementing and validating the new and updated artifacts in collaboration with several clinical partner sites.

Announcements

ONC Tech Forum CDS Series Webinar 3

Creating Value by Modernizing and Measuring Clinical Decision Support

Webinar #3 video presentation and slides will be posted here when they become available.

ONC Tech Forum CDS Series Webinar 2

This webinar includes a presentation from Yale New Haven Health about their utilization of CDS Hooks to implement Recommendation 10 of the 2022 Clinical Practice Guideline.

Webinar presentations are available here:

ONC Tech Forum Clinical Decision Support Series Session #2 The Future of CDS (part 1) [PDF - 5.2 MB]

ONC Tech Forum Clinical Decision Support Series Session #2 The Future of CDS (part 2) [PDF - 7.1 MB]

ONC Tech Forum Clinical Decision Support Series Session #2 The Future of CDS (part 3) [PDF - 1.6 MB]

ONC Tech Forum CDS Series Webinar 1

In this webinar the Medical University of South Carolina presented about their utilization of CDS Hooks to implement the 2022 CDC Clinical Practice Guideline recommendations in both interventive and non-interventive alerts.

View the webinar here:

ONC Tech Forum CDS Series 1 Webinar slides are available here https://www.healthit.gov/sites/default/files/2023-06/TechForum-ClinicalDecisionSupportSeries_Session1_508.pdf

Project Pilot Announcements

Yale New Haven Health Initiates 2023 Pilot

The Office of the National Coordinator for Health IT (ONC) and the Centers for Disease Control and Prevention (CDC) are pleased to announce that Yale New Haven Health System (YNHHS) will serve as a pilot site for the Refinement and Development of Electronic Clinical Decision Support (CDS) Interventions for CDC Guideline for Prescribing Opioids for Pain project. This pilot will involve testing standardized CDS implementations of recommendation statements from the *2022 CDC Clinical Practice Guideline for Prescribing Opioids for Pain.* The pilot CDS services will be hosted on an independent server and interact with a commercial electronic health record system by utilizing the Health Level Seven International (HL7®) CDS Hooks and Fast Healthcare Interoperability Resources (FHIR®) standards. YNHHS will perform this pilot as a subcontractor to Security Risk Solutions, Inc. The pilot is expected to be completed by July 2023.

University of Colorado Anschutz Medical Campus Initiates Pilot

The Office of the National Coordinator for Health Information Technology (ONC) and the Centers for Disease Control and Prevention (CDC) are pleased to announce that the University of Colorado Anschutz Medical Campus, with support from the Data Science to Patient Value Initiative, the Department of Emergency Medicine, the Division of General Internal Medicine, and the Clinical Research Informatics and Innovation Unit, is conducting a pilot of clinical decision support (CDS) interventions for the CDC Guideline for Prescribing Opioids for Chronic Pain (CDC Prescribing Guideline). The pilot will involve testing standardized CDC Prescribing Guideline recommendations. The pilot CDS services will be hosted on an independent server and interact with a commercial electronic health record system by utilizing the Health Level Seven International (HL7®) CDS Hooks and Fast Healthcare Interoperability Resources (FHIR®) standards. The University of Colorado will perform this pilot as a subcontractor to Security Risk Solutions, Inc.

Medical University of South Carolina Initiates Pilot

The Office of the National Coordinator for Health IT (ONC) and the Centers for Disease Control and Prevention (CDC) are pleased to announce that the Medical University of South Carolina (MUSC) Biomedical Informatics Center (BMIC) is conducting a pilot of clinical decision support (CDS) interventions for the CDC Guideline for Prescribing Opioids for Chronic Pain (CDC Prescribing Guideline). The pilot will involve testing standardized CDS artifacts implementing CDC Prescribing Guideline recommendations. The pilot CDS services interact with commercial electronic health record (EHR) systems by utilizing the Health Level Seven (HL7) CDS Hooks and Fast Healthcare Interoperability Resources (FHIR) standards. In addition, this pilot will leverage MUSC's BMIC FHIR Gateway to facilitate interactions between CDS services hosted on an independent server and the MUSC EHR. MUSC will perform this pilot as a subcontractor to Security Risk Solutions, Inc.

Yale New Haven Health Completes Successful Pilot

The Office of the National Coordinator for Health IT (ONC) and the Centers for Disease Control and Prevention (CDC) are pleased to announce that Yale New Haven Health (Yale) successfully completed a third year of piloting standardized clinical decision support (CDS) artifacts. Yale tested standardized CDS artifacts that implemented recommendation statements from the CDC Guideline for Prescribing Opioids for Chronic Pain (CDC Prescribing Guideline). The electronic CDS services were hosted on an independent server and accessed remotely from Yale's development instance of their commercial electronic health record (EHR) system. These services interacted with the EHR system by utilizing the Health Level Seven International (HL7) CDS Hooks and Fast Healthcare Interoperability Resources (FHIR) standards.

The pilot's goal was to assess the feasibility of implementing shareable electronic CDS modules that provide point of care clinical guidance from the CDC Prescribing Guideline. In 2021, testing focused on implementing emerging CDS Hooks functionalities such as the order-sign hook and suggestion cards. The order-sign hook provides CDS interventions when a clinician is ready to sign one or more orders for a patient. CDS Hooks suggestion cards add actionable functionality to alerts.

Yale piloted a CDS service that implemented recommendation statement 10 of the CDC Opioid Prescribing Guideline. Recommendation 10 counsels clinicians to conduct urine toxicology testing (to assess for prescribed medications as well as other controlled prescription and nonprescription drugs) before starting a patient on opioid therapy and to consider administering urine tests for that patient at least annually. Using the order-sign hook, Yale implemented a CDS evaluation and subsequent recommendation to conduct a urine toxicology test before a clinician signed a prescription in the EHR. With the addition of suggestion card functionality, when a clinician accepted a CDS alert, a draft urine toxicology screen order was added to the existing draft prescription order. Yale's groundbreaking CDS pilots demonstrated the advancement of technology to help improve opioid prescribing practices providing safe and effective pain management for patients.

Duke Health Completes Successful Pilot

The Office of the National Coordinator for Health IT (ONC) and the Centers for Disease Control and Prevention (CDC) are pleased to announce that Duke Health (Duke) successfully completed a second year of piloting standardized clinical decision support (CDS) artifacts. Duke tested standardized CDS artifacts that implemented recommendation statements from the CDC Guideline for Prescribing Opioids for Chronic Pain (CDC Prescribing Guideline). The electronic CDS services were hosted on an independent server and accessed remotely from Duke's development instance of their commercial electronic health record (EHR) system. These services interacted with the EHR system by utilizing the Health Level Seven (HL7) CDS Hooks and Fast Healthcare Interoperability Resources (FHIR) standards.

The pilot's goal was to assess the feasibility of implementing shareable electronic CDS modules that provide point of care clinical guidance from the CDC Prescribing Guideline. In 2021, testing focused on implementing the emerging CDS Hooks functionality of the order-select hook and additional CDS enhancements. The order-select hook triggers a CDS invocation when a clinician selects an order within an EHR. In addition, CDS enhancements tested by Duke included EHR alerts when a patient's urine toxicology test included unexpected results.

Duke piloted a CDS service that implemented recommendation statement 10 of the CDC Prescribing Guideline. Recommendation 10 suggests that clinicians conduct urine toxicology testing (to assess for prescribed medications as well as other controlled prescription and nonprescription drugs) before starting a patient on opioid therapy and to consider administering urine tests for that patient at least annually. The CDS services piloted by Duke also reviewed existing urine toxicology screen results for positive findings of nonprescription controlled substances such as cocaine and phencyclidine (phenylcyclohexyl piperidine, abbreviated as PCP). When a CDS review found unexpected positive results, the CDS captured any subsequent negative results for those substances. The resulting alert reported both the positive findings and any subsequent negative results. Duke's implementation of this recommendation leveraged the order-select hook, allowing the evaluation and alert to run when a clinician initially selected a medication order in the EHR. Duke's innovative pilot demonstrated advances in standardized CDS technology to help improve opioid prescribing practices providing safe and effective pain management for patients.

Project Presentations

Multi Project CQL Webinar February 24, 2021

Utilizing Clinical Quality Language (CQL) for CDS

- Bryn Rhodes, Dynamic Content Group dba Alphora
- William Lober, University of Washington School of Medicine
- Chris Moesel, MITRE
- Dave Dorr, Ohio State University School of Medicine
- Max Sibilla, University of Pittsburgh School of Medicine
- Emilia Flores, University of Pennsylvania Health System
- C. Holder, ThoughtWorks
- Dave Carlson, Clinical Cloud Solutions

More information about this webinar and a webinar recording is available here https://alphora.atlassian.net/wiki/spaces/PUB/blog/2021/03/03/1367605264/CQL+for+CDS+Seminar+-+2+24+2021

Virtual Panel Presentation AMIA 2020 Virtual Annual Symposium November 18, 2020

Building on Success: Standards-based Decision Support in Commercial EHRs

- Kawamoto, University of Utah
- Rhodes, Dynamic Content Group
- McPeek Hinz, Duke University Health System
- Malinowski, Cerner

Subscribers to the AMIA 2020 Virtual Annual Symposium: Digital Collection can access a recording of this panel presentation

Virtual Panel Presentation ONC Clinical Decision Support Workshop September 15, 2020

Federal Updates on Clinical Decision Support: Pain Management and Prescribing

- Roland Gamache, PhD, Agency for Healthcare Research and Quality
- Joshua Richardson, PhD, RTI International
- Kristen Miller, DrPH, National Center for Human Factors in Healthcare
- MedStar Health
- Wes Sargent, Centers for Disease Control and Prevention
- Greg White, Security Risk Solutions
- Kensaku Kawamoto, MD, PhD, University of Utah

A recording of the ONC CDS Workshop, including this panel presentation is available at https://www.healthit.gov/news/events/clinical-decision-support-cds-workshop

Virtual Panel Presentation ONC Tech Forum August 10, 2020

Advances in Opioid Prescribing through Health IT

- JaWanna Henry, ONC, Moderator
- Verlyn Hawks, Utah Navajo Health System
- Ronald Larsen, State of Utah, Department of Commerce
- Emily Mitchell, Accenture Federal Services
- Bryn Rhodes, Database Consulting Group
- Jaime Smith, Surescripts
- Eugenia McPeek Hinz MD MS, Associate Chief Medical Information Officer for Duke University Health System

A recording of this panel presentation is available to registered participants at https://kauffman.6connex.com/event/onctechforum/en-us#!/WorkingSessions/n566743

CDC Recommendation Statements Summarized

1. Selection of non-pharmacologic therapy, nonopioid pharmacologic therapy, opioid therapy	7. Considerations for follow-up and discontinuation of opioid therapy
2. Establishment of treatment goals	8. Evaluation of risk factors for opioid-related harms and ways to mitigate patient risk
3. Discussion of risks and benefits of therapy with patients	9. Review of prescription drug monitoring program (PDMP) data
4. Selection of immediate-release or extended-release and long-acting opioids	10. Use of urine drug testing
5. Dosage considerations	11. Considerations for co-prescribing benzodiazepines.
6. Duration of treatment	12. Arrangement of treatment for opioid use disorder

Project Artifacts

Opioid Prescribing Support Implementation Guide FHIR R4 (includes artifacts for implementing all 12 CDC recommendations)	http://build.fhir.org/ig/cqframework/opioid-cds-r4/

Opioid Prescribing Support Quick Start Guide (for recommendations #10 and #11)	http://build.fhir.org/ig/cqframework/opioid-cds-r4/quick-start.html
CDC Opioid Prescribing Guideline FHIR R4 - Process Documentation	http://build.fhir.org/ig/cqframework/opioid-cds-r4/process-documentation.html
CDC Opioid Prescribing Guideline FHIR R4 - Integration Documentation	http://build.fhir.org/ig/cqframework/opioid-cds-r4/integration-documentation.html
CDC Opioid Prescribing Guideline FHIR R4 - Implementation Documentation	http://build.fhir.org/ig/cqframework/opioid-cds-r4/implementation-documentation.html
CDC Opioid Prescribing Guideline FHIR R4 - Service Documentation	http://build.fhir.org/ig/cqframework/opioid-cds-r4/service-documentation.html
Opioid Prescribing Support Implementation Guide STU3 and DSTU2 (recommendations #4, #5, #7, #8, #10 and #11)	http://build.fhir.org/ig/cqframework/opioid-cds/index.html
CDC Opioid Prescribing Guideline - Process Documentation	http://build.fhir.org/ig/cqframework/opioid-cds/process-documentation.html
CDC Opioid Prescribing Guideline - Integration Documentation	http://build.fhir.org/ig/cqframework/opioid-cds/integration-documentation.html
CDC Opioid Prescribing Guideline - Implementation Documentation	http://build.fhir.org/ig/cqframework/opioid-cds/implementation-documentation.html
CDC Opioid Prescribing Guideline - Service Documentation	http://build.fhir.org/ig/cqframework/opioid-cds/service-documentation.html
CDC MME CQL Calculator FHIR R4 IG	https://fhir.org/guides/cdc/opioid-mme-r4/mme-calculator.html

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