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## **CLINICAL DECISION SUPPORT:** More Than Just 'Alerts' Tipsheet



### **Background**

Clinical decision support, or CDS, is a key functionality of health information technology. When CDS is applied effectively, it increases quality of care, enhances health outcomes, helps to avoid errors and adverse events, improves efficiency, reduces costs, and boosts provider and patient satisfaction.

CDS has the potential to improve care and is a centerpiece of the Medicare and Medicaid EHR Incentive Programs.<sup>1</sup>

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## Understanding CDS

CDS is **not** simply an alert, notification, or explicit care suggestion. CDS encompasses a variety of tools including, but not limited to:

- Computerized alerts and reminders for providers and patients
- Clinical guidelines
- Condition-specific order sets
- Focused patient data reports and summaries
- Documentation templates
- Diagnostic support
- Contextually relevant reference information

These functionalities may be deployed on a variety of platforms (e.g. mobile, cloud-based, installed).<sup>2</sup> CDS is not intended to replace clinician judgment, but rather to provide a tool to assist care team members in making timely, informed, and higher quality decisions.

The “CDS Five Rights” concept<sup>3</sup> provides a best practice framework that may be helpful when considering CDS options appropriate for a practice. The CDS Five Rights concept states that in order to provide benefits, CDS interventions must provide:

- the right information (evidence-based guidance, response to clinical need)
- to the right people (entire care team – including the patient)
- through the right channels (e.g., EHR, mobile device, patient portal)
- in the right intervention formats (e.g., order sets, flow-sheets, dashboards, patient lists)
- at the right points in workflow (for decision making or action)

Effective CDS must be relevant to those who can act on the information, in a way that supports completion of the right action.

While many providers may associate CDS with pop-up alerts, alerts are not the only, or necessarily the best, method of providing support. For example, a pop-up alert can only fire \*after\* an event has occurred (e.g., a provider has ordered a contraindicated medication).

CDS can be provided in various ways including, but not limited to:

- Interruptive activities such as “pop-up” alerts
- Information displays or links (such as InfoButton)
- Targeted highlighting of relevant data

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*For example, upon opening an adolescent patient's electronic record during a patient visit, the provider may be informed of a recommendation to conduct an age-appropriate depression screening. While interacting with a provider-chosen assessment tool, the patient's positive findings also prompt a shared care plan tool and an option to order a referral to a mental health provider. This example includes several CDS interventions (e.g., depression screening recommendation, shared care plan tool prompt, option to order a referral) and supports clinical workflow without interrupting the provider's thought process or contributing to alert fatigue, which has been identified as a key concern for implementers of CDS.<sup>4</sup>*

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## What Does Stage 2 Meaningful Use Require for CDS?

In Stage 2, eligible providers must implement *five* clinical decision support interventions related to *four* or more clinical quality measures,<sup>5</sup> if applicable, at a relevant point in patient care for the entire EHR reporting period, and have enabled the functionality for drug-drug and drug-allergy interaction checks for the entire EHR reporting period.<sup>6</sup>

### The Stage 2 Meaningful Use Final Rule states:

*CDS is not simply an alert, notification, or explicit care suggestion.*

### The rule also defines CDS as:

*HIT functionality that builds upon the foundation of an EHR to provide persons involved in care processes with general and person-specific information, intelligently filtered and organized, at appropriate times, to enhance health and health care.<sup>8</sup>*

The rule further describes non-alert CDS examples including disease-specific order sets and documentation forms and templates.<sup>7</sup>

The rule replaces the term “clinical decision support rule” with “clinical decision support intervention” to better align with, and allow for, the variety of decision support mechanisms available to help improve clinical performance and outcomes.<sup>9</sup>

CDS is often an integrated part of the provider’s EHR system, but may also present in a variety of other mechanisms, **including but not limited to:**

- Pharmacy systems
- Patients’ personal health records (PHRs)
- Patient portals provided by the practice



Some providers use certified EHR technology to drive, receive or trigger CDS in an external system – for example, sending data to a registry or immunization forecaster which provides CDS. To achieve meaningful use, such systems must interact with certified EHR technology in the normal course of the care delivery workflow, ensuring that decision support interventions are delivered at the right point in the workflow, based on relevant patient information, even if the appropriate point in workflow is not during a patient encounter.

## What Kinds of Things Constitute CDS?

There is no definitive or comprehensive list of what can constitute CDS. The Office of the National Coordinator for Health Information Technology and CMS broadly interpret CDS as is stated in the 2012 Final Rule. The rule allows a wide array of innovative and effective decision support tools available to providers.

Innovative types of CDS that would meet the meaningful use definition include support for public health reporting and patient safety reporting.

For instance, a CDS tool could inform a provider that a patient has a reportable condition (e.g., after entering a diagnostic code for a fall, or adverse drug event). It could then provide a template to ensure that the information necessary to complete reporting is captured and/or provide pre-populated forms needed to make the report.<sup>10</sup>

In the case above, CDS may not necessarily occur at the point of care, or may not target the provider. Instead CDS may be more appropriately directed toward the office staff responsible for populating and submitting report forms.



CDS in the form of documentation templates and order sets not only helps providers remember to complete safety event reports, but it may also help them capture the data they need to do so. In this case, the CDS could be explicit—such as, “here is a template for public health [or safety] reporting.” Alternatively, the CDS may simply be incorporated into general templates, perhaps by adding important safety data into high-risk order templates (e.g., anticoagulant orders or respirator use).

## QUESTIONS & ANSWERS

### Q: How is CDS defined for purposes of meaningful use?

A: The concept of CDS for Meaningful Use encompasses a wide range of information, which can be presented to providers, clinical/support staff, patients, and/or other caregivers at various points in time. Auditors should consider the government's desire to encourage innovative efforts to use CDS to improve care quality, efficiency, and outcomes. They should use the Meaningful Use definition of CDS as an evaluation guide: *HIT functionality that builds upon the foundation of an EHR to provide persons involved in care processes with general and person-specific information, intelligently filtered and organized, at appropriate times, to enhance health and health care.*<sup>11</sup>

### Q: Must the CDS be “fired” during the reporting period?

A: No. It is also worth noting that while a given CDS may be installed and activated in a provider's practice, it may not 'fire' during a given period. For instance, if a provider has active CDS to improve tuberculosis antibiotic selection, but has not seen any tuberculosis patients since installing the CDS, they should still receive credit for this as one of their 5 interventions for meaningful use. Providers may have printed or electronic screenshots of what the CDS looks like when it is triggered to show auditors.

### Q: Can screenshots be used to demonstrate CDS?

A: Yes. Some providers may not have test environments or 'dummy' patients available to show CDS 'in action' to auditors; again, they may instead present screenshots or other documentation detailing what the CDS is and under what conditions it would be triggered.

### Q: Does CDS directed at support staff, patients, or caregivers “count” for purposes of the meaningful use program?

A: Yes. CDS is not only for doctors or nurses, but also for support staff, patients, and other caregivers. For instance, some practices have used 'return to clinic' reminders available in their EHRs to remind front desk staff to proactively call patients due for routine screenings to remind them of upcoming appointments and/or explain pre-visit preparations such as fasting, outside lab work, etc. CDS delivered to patients could take the form of detailed medication instructions, home management tips, or dietary guidelines.

For more details on CDS, review the full tipsheet on the [eHealth Vendor](#) webpage.

## References

- <sup>1</sup> Food and Drug Administration. "FDASIA Health IT Report, Proposed Strategy and Recommendations for a Risk-Based Framework." <http://www.fda.gov/downloads/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CDRH/CDRHReports/UCM391521.pdf> (accessed 5/13/2014).
- <sup>2</sup> FDASIA Health IT report
- <sup>3</sup> Osheroff, Teich, Levick et al., 2012. Improving outcomes with CDS: an implementer's guide, Second Edition.
- <sup>4</sup> "Alert fatigue" occurs when a provider, after receiving too many alerts or reminders (some of which may be irrelevant or unhelpful to that provider), begins to override or ignore further alerts without attending to them, which can decrease the care improvements expected from the tools [www.informatics-review.com/wiki/index.php/Alert\\_Fatigue](http://www.informatics-review.com/wiki/index.php/Alert_Fatigue).
- <sup>5</sup> Note: CDS interventions are not required to be related to the same clinical quality measures that an EP has chosen to report. While there is no formal definition of this relationship, in general, the CDS intervention should be aimed at prospectively advancing the same clinical goal or guideline promoted by the clinical quality measure.
- <sup>6</sup> Note that the Meaningful Use regulations specify that because these types of CDS are counted in their own separate objective measure, they do not count towards the five CDS interventions requirements.
- <sup>7</sup> 77 FR 53997
- <sup>8</sup> 75 FR 44350
- <sup>9</sup> 77 FR 13714
- <sup>10</sup> In an excellent example of how CDS can drive improved treatment and public health, CDC conducted a pilot project with the Institute for Family Health, in which a link to information on active gastrointestinal public health alerts was added to provider displays when they documented certain symptoms or syndromes (<http://www.ncbi.nlm.nih.gov/pubmed/22473114>).
- <sup>11</sup> 75 FR 44350