

## Using CQL to Compare CDC Opioid Prescribing Guidelines with Washington State Regulations

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### What might the attendee be able to do after being in your session?

Attendees will learn a strategy for determining the difference between state and federal opioid prescription recommendations or regulations using CQL authoring. The resultant CQL can be used both to identify specific differences, and to create locally-relevant clinical decision support tools.

### Description of Problem or Gap

In order to prescribe opioids in some states, health practitioners are required to follow specific steps based on their state laws or regulations. The Centers for Disease Control and Prevention (CDC) has also released 12 national recommendations to aid clinicians' opioid prescription decisions, and has worked with partners to create computable implementation guides (IGs) to support technical application within a facility's electronic health record (EHR) system. IGs can be written in any computable language and used to build standardized, interoperable applications. The CDC Guidelines are written in Clinical Quality Language (CQL), a domain-specific language for clinical quality and decision support. Of note, CQL can be used as a logic artifact within FHIR, making its use a forward-looking design choice. Ideally, state regulations and the CDC Guidelines would work in concert, both following similar logic; yet this is not always the case. In Washington state (WA), the rules for prescribing and monitoring opioids vary considerably from the CDC Guidelines. The gap we address is that without computable logic expressing state rules, the local variation from CDC Guidelines can not be easily understood, and locally relevant Clinical Decision Support (CDS) tools can not be built.

### Methods: What did you do to address the problem or gap?

We compared the written narrative descriptions for the regulations and recommendations from both the CDC and WA, as well as reviewed the IGs for the CDC Guidelines published on [build.fhir.org](http://build.fhir.org).

### Results: What was the outcome(s) of what you did to address the problem or gap?

The CDC Guidelines are expressed precisely in CQL, with 12 enumerated recommendations and a brief description for each available in their 'at-a-glance' documentation,[1] plus greater detail available in the full report.[2] Each of the recommendations also had an associated IG with workflow diagrams and CQL source code.[3]

Washington, on the other hand, have an overarching requirement from the state's Agency Medical Directors Group,[4] as well as five governing boards which each have their own prescribing requirements.[5] The rules for each board are generally similar, with slight variations based on profession.[6] It is also of note that the CDC's CQL-based implementation requires a high level of data quality and a consistent terminology. In contrast, only one of the WA governing boards requires an ICD code or diagnosis prior to prescription of opioid;[6] the absence of diagnoses makes triggering events far more complex.

Other differences from CDC Guidelines include a Continuing Education requirement. These data are part of provider credentialing and are not typically part of the EHR. In addition,

PMP checking requirements differ by profession, and only some match the CDC Guidelines. Finally, prescribing limits based on pain phase vary from the CDC Guidelines.

### **Discussion of Results**

These variations in rules complicate the ability to author computability logic, but do not prevent such authoring. In fact, the complexity of the rules suggests a greater need for CDS, in order to simplify the process of a specific provider prescribing to a specific patient.

In implementing the WA regulations as computable logic, we found that the national CDC Guidelines provided a logical place to start developing an opioid prescription CDS, and that modifications could be made in areas where the state laws diverge. That said, most of the CDC Guidelines' IGs have many data (terminology) requirements, which assumes a high level of data quality and consistency of terminology (i.e., ICD-10 and SNOMED), which is not a legal requirement for most WA practitioners and may not be present at all WA healthcare facilities' Electronic Health Record systems. Building a CDS system for opioid prescriptions is complex, but we found authoring CQL-based logic systems to usefully contextualize the differences between federal recommendations and a state's rules.

### **Conclusion**

Authoring of state rules in CQL provided a computable representation that highlighted variance from the CQL expressions of the CDC recommendations, and provides a basis for a decision support tool implementing required local prescribing rules.

### **Attendee's Take-away Tool**

Attendees will learn a potential strategy for developing a CQL-based opioid prescription clinical decision support system things to consider if they want to marry the CDC Opioid Prescription Guidelines with their own state regulations when planning to implement a clinical decision support system. CQL will be available to attendees.

### **Use of Knowledge Acquired at Previous AMIA Events**

Attending the 2019 Annual Symposium increased the authors' knowledge of and potential for CQL-based clinical decision support tools.

### **References**

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