# eCW Reference Guide: Clinical Rule Engine

The Clinical Rule Engine can be configured to prompt the end user to perform an action or can be configured to perform actions automatically when items are documented or entered into the system. It is a versatile feature that can assist the end user in being more efficient and automating tasks that are commonly performed. In terms of Clinical Quality Measures, a clinical rule can automate code selection, referral creation, and other tasks that would otherwise be manually performed.

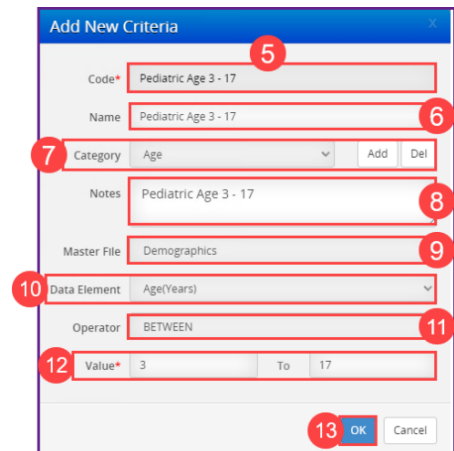**PATH**: Admin > Configure Clinical Rule Engine

Creating Clinical Criteria

Clinical Criteria must be built to create rules for the Clinical Rule Engine. The steps to configure clinical criteria for clinical rules are as follows:

1. Click Admin icon
2. Click Configure Clinical Rule Engine
3. Click Clinical Criteria
4. Click New Criteria
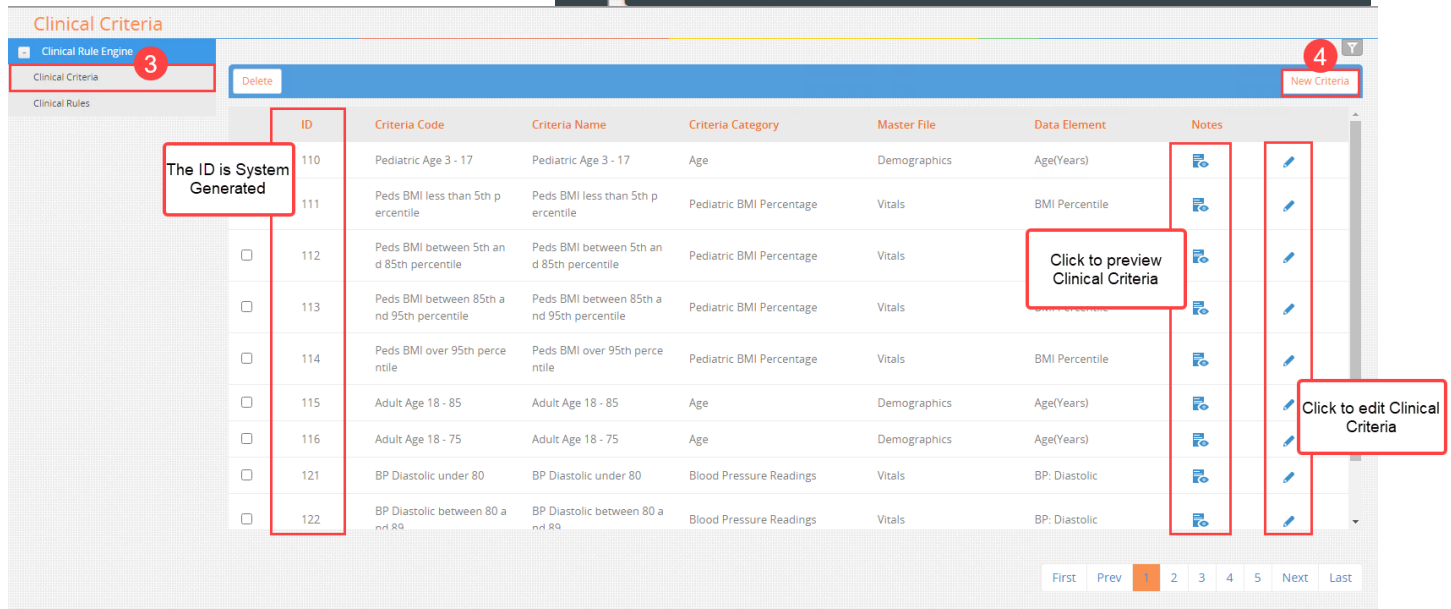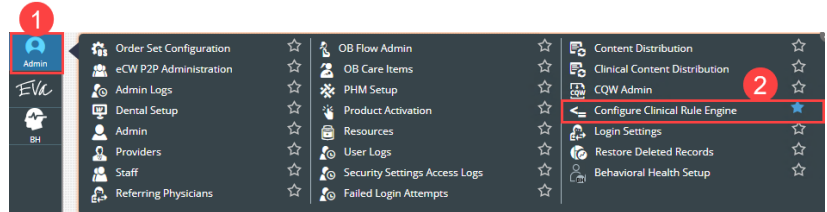
5. Type Code *Alpha-numeric accepted*
6. Type Name
7. Select Category
   Customized to organization; click Add to create a new category or delete to remove existing category
8. Enter Notes
   Not required but recommended for more detail on the criteria
9. *Select Master File*
   The selection in this area will dictate the items seen in the Data Element drop down in Step 9
10. Select Data Element
11. Select Operator
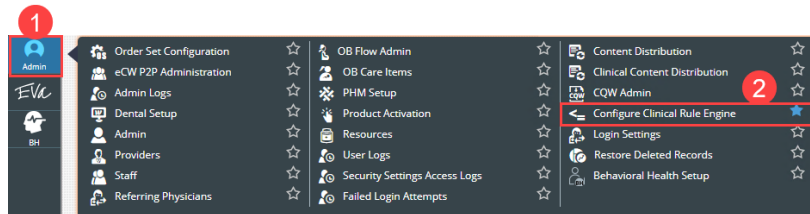12. Enter Value
13. Click OK

Creating a Clinical Rule

Clinical Criteria must be built to create rules for the Clinical Rule Engine. The criteria are each item that may be used to create a rule, such as a lab result value or the BMI percentile. Once a criterion is created it can be used for multiple rules. *Avoid using special characters

PATH: Admin > Configure Clinical Rule Engine

The steps to configure clinical criteria for clinical rules are as follows:

1. Click Admin icon
2. Click Configure Clinical Rule Engine

3. Click Clinical Rules
4. Click Setup Clinical Rule

5. Type Name *Alpha-numeric accepted*
6. Select Category *This is the 'trigger' that will make the rule fire in the system*
7. Enter Notes *Not required but recommended for more detail on the criteria*
8. Select Effective Dates *Not Required; if left blank, rule will be activated*

9. Click Next

10. Click Add Criteria
    Note: Add Block will allow for Operators 'AND', 'OR', 'NOT' to be selected, if Add Block is not clicked when adding

more than one criterion, the system will display the pop-up to select one

11. Select Clinical Criteria
    Only one criterion can be selected at a time
12. Click Add to Rule
    Repeat Steps 11 and 12 to add additional criteria
13. Click Next

14. Select Event Type *This is what the system should do based on the criteria on the rule (see Event Types)*
15. Events for this rule will appear in this section
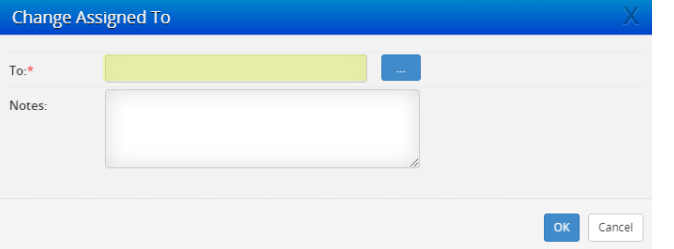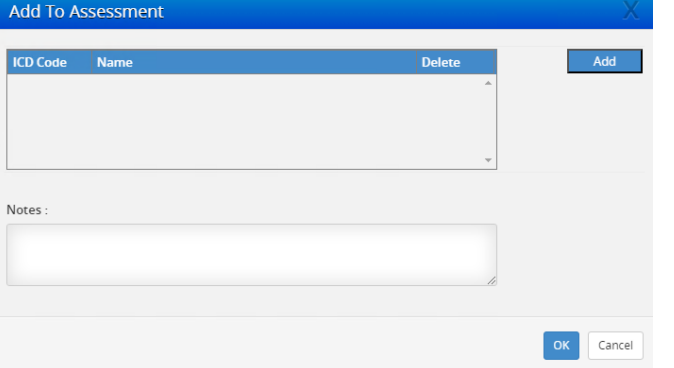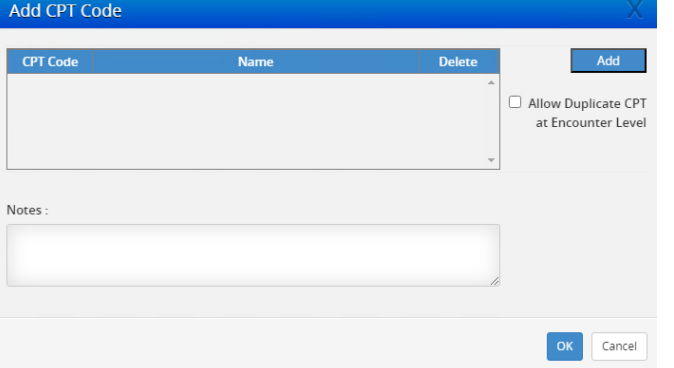
16. Select Rule Status = On
17. Click Done

Event Types

Create Action	*Complete highlighted fields (minimum requirement)*	Create Action Action Type* — Select an Action — Subject* — Select a Subject — Priority* — Select Priority — Assigned To* — Select Assigned To — Facility* — Select Facility — Due Date* — Select Due Date — Time (hours) Notes OK Cancel
Create Referral	*Complete highlighted fields (minimum requirement)*	Create Referral Assigned To* — Select Assigned To — Provider Auth Type Speciality All End Date — Select Due Date — Priority — Select Priority — Reason* Notes OK Cancel
Create Telephone Encounter	*Complete highlighted fields (minimum requirement)*	Create Telephone Encounter Caller Facility* Reason* -Select Reason- Add AssignedTo* — Select Assigned To - Provider* High Priority ☐ Message: OK Cancel
Add to Problem List	*Click Add to search and select code(s) then click OK*	Add To ProblemList ICD Code Name Delete Add Notes : OK Cancel

Order Lab	*Complete highlighted fields (minimum requirement)*	
Order DI	*Complete highlighted fields (minimum requirement)*	
Order Procedure	*Complete highlighted fields (minimum requirement)*	
Show Pop-Up Message	*Enter Message to display to end user*	

Change Assigned To	*Complete highlighted fields (minimum requirement)*	Change Assigned To
		To:* [field] [...] Notes: [text box] OK Cancel
Add to Assessment	*Click Add to search and select code(s) then click OK*	Add To Assessment ICD Code Name Delete [Add] Notes: [text box] OK Cancel
Add CPT Code to Progress Note	*Click Add to search and select code(s) then click OK*	Add CPT Code CPT Code Name Delete [Add] ☐ Allow Duplicate CPT at Encounter Level Notes: [text box] OK Cancel

Clinical Criteria Build

Below is the Clinical Criteria recommended to build to use as criteria for a clinical rule for clinical quality measure capture as listed below. Please note that for the blood pressure to work properly, the BP Systolic and BP Diastolic items must be configured as separate fields in the Vitals section of eCW.

Criteria Code	Master File	Data Element	Operator	Value	Value	LOINC Code	Attr Value	Attr Value
Pediatric Ages 3 - 17	Demographics	Age (Years)	BETWEEN	3	17			
Peds BMI less than 5th percentile	Vitals	BMI Percentile	BETWEEN	0.01	4.99			
Peds BMI 5th and 85th percentile	Vitals	BMI Percentile	BETWEEN	5	85.99			
Peds BMI 85th to 95th percentile	Vitals	BMI Percentile	BETWEEN	85	95.99			
Peds BMI over 95th percentile	Vitals	BMI Percentile	>	95				
Adult Age 18-85	Demographics	Age (Years)	BETWEEN	18	85			
Adult Age 18-75	Demographics	Age (Years)	BETWEEN	18	75			
BP Diastolic under 80	Vitals	BP: Diastolic	BETWEEN	1	79			
BP Diastolic between 80 and 89	Vitals	BP: Diastolic	BETWEEN	80	89			
BP Diastolic equal to or greater than 90	Vitals	BP: Diastolic	> =	90				
A1c result value less than 7	Labs	LOINC Code	<			4548-4	7	
A1c result value of 7 or above and below 8	Labs	LOINC Code	BETWEEN			4548-4	7	7.9
A1c result value between 8 and 9	Labs	LOINC Code	BETWEEN			4548-4	8	9
A1c result value over 9	Labs	LOINC Code	>			4548-4	9	
Adult BMI 20s	Vitals	BMI	BETWEEN	20	20.99			
Adult BMI 21s	Vitals	BMI	BETWEEN	21	21.99			
Adult BMI 22s	Vitals	BMI	BETWEEN	22	22.99			
Adult BMI 23s	Vitals	BMI	BETWEEN	23	23.99			
Adult BMI 24s	Vitals	BMI	BETWEEN	24	24.99			
Adult BMI 25s	Vitals	BMI	BETWEEN	25	25.99			
Adult BMI 26s	Vitals	BMI	BETWEEN	26	26.99			
Adult BMI 27s	Vitals	BMI	BETWEEN	27	27.99			
Adult BMI 28s	Vitals	BMI	BETWEEN	28	28.99			
Adult BMI 29s	Vitals	BMI	BETWEEN	29	29.99			
Adult BMI 30s	Vitals	BMI	BETWEEN	30	30.99			
Adult BMI 31s	Vitals	BMI	BETWEEN	31	31.99			
Adult BMI 32s	Vitals	BMI	BETWEEN	32	32.99			
Adult BMI 33s	Vitals	BMI	BETWEEN	33	33.99			
Adult BMI 34s	Vitals	BMI	BETWEEN	34	34.99			
Adult BMI 35s	Vitals	BMI	BETWEEN	35	35.99			
Adult BMI 36s	Vitals	BMI	BETWEEN	36	36.99			
Adult BMI 37s	Vitals	BMI	BETWEEN	37	37.99			
Adult BMI 38s	Vitals	BMI	BETWEEN	38	38.99			
Adult BMI 39s	Vitals	BMI	BETWEEN	39	39.99			
Adult BMI 40 to 44s	Vitals	BMI	BETWEEN	40	44.99			
Adult BMI 45 to 49s	Vitals	BMI	BETWEEN	45	49.99			
Adult BMI 50 to 59s	Vitals	BMI	BETWEEN	50	59.99			
Adult BMI 60 to 69s	Vitals	BMI	BETWEEN	60	69.99			
Adult BMI 70 or greater	Vitals	BMI	>	70				

Criteria Code	Master File	Data Element	Operator	Value	Value	LOINC Code	Attr Value	Attr Value
BP Systolic equal to or greater than 140	Vitals	BP: Systolic	> =	140				
BP Systolic between 130 and 139	Vitals	BP: Systolic	BETWEEN	130	139			
BP Systolic less than 130	Vitals	BP: Systolic	BETWEEN	1	129			

Clinical Rule Build

The Clinical Rules below are some of the recommended clinical rules for clinical quality measure capture as listed below. The clinical criteria must be creating prior to creating the rules. The *Trigger* for the rule is an organizational decision to be determined prior to the build.

Rule Name	Rule Category	Trigger	BLOCK	Criteria 1	OPERATOR	Criteria2	Action	Outcome
Pediatric BMI less than 5th percentile	Vitals		1	Pediatric Age 3 -17	AND	Peds BMI less than 5th percentile	Add Assessment	Add ICD Z68.51
Pediatric BMI between 5th and 85th percentile	Vitals		1	Pediatric Age 3 -17	AND	Peds BMI between 5th and 85th percentile	Add Assessment	Add ICD Z68.52
Pediatric BMI between 85th and 95th percentile	Vitals		1	Pediatric Age 3 -17	AND	Peds BMI between 85th and 95th percentile	Add Assessment	Add ICD Z68.53
Pediatric BMI over 95th percentile	Vitals		1	Pediatric Age 3 -17	AND	Peds BMI over 95th percentile	Add Assessment	Add ICD Z68.54
Systolic BP greater than or equal to 140	Vitals		1	Adult Age 18 - 75	AND	BP Systolic equal to or greater than 140	Add CPT	Add CPTII 3077F
BP Systolic between 130 and 139	Vitals		1	Adult Age 18 - 75	AND	BP Systolic between 130 and 139	Add CPT	Add CPTII 3075F
BP Systolic less than 130	Vitals		1	Adult Age 18 - 75	AND	BP Systolic less than 130	Add CPT	Add CPTII 3074F
BP Diastolic greater than or equal to 90	Vitals		1	Adult Age 18 - 75	AND	BP Diastolic equal to or greater than 90	Add CPT	Add CPTII 3080F
BP Diastolic between 80 and 89	Vitals		1	Adult Age 18 - 75	AND	BP Diastolic between 80 and 89	Add CPT	Add CPTII 3079F
BP Diastolic less than 80	Vitals		1	[116] Adult Age 18 - 75	AND	BP Diastolic under 80	Add CPT	Add CPTII 3078F
A1c Result less than 7.0	Vitals		1	Adult Age 18 - 75	AND	A1c result value less than 7	Add CPT	Add CPTII 3044F
A1c Result between 7.0 and 7.9	Vitals		1	Adult Age 18 - 75	AND	A1c result value of 7 or above and below 8	Add CPT	Add CPTII 3051F
A1c Result between 8.0 and 9.0	Vitals		1	Adult Age 18 - 75	AND	A1c result value between 8 and 9	Add CPT	Add CPTII 3052F
A1c Result over 9.0	Vitals		1	Adult Age 18 - 75	AND	A1c result value over 9	Add CPT	Add CPTII 3046F
Adult BMI 20.0 to 20.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 20s	Add Assessment	Add ICD Z68.20
Adult BMI 21.0 to 21.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 21s	Add Assessment	Add ICD Z68.21
Adult BMI 22.0 - 22.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 22s	Add Assessment	Add ICD Z68.22
Adult BMI 23.0 - 23.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 23s	Add Assessment	Add ICD Z68.23
Adult BMI 24.0 to 24.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 24s	Add Assessment	Add ICD Z68.24
Adult BMI 25.0 to 25.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 25s	Add Assessment	Add ICD Z68.25
Adult BMI 26.0 to 26.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 26s	Add Assessment	Add ICD Z68.26

Rule Name	Rule Category	Trigger	BLOCK	Criteria 1	OPERATOR	Criteria2	Action	Outcome
Adult BMI 27.0 to 27.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 27s	Add Assessment	Add ICD Z68.27
Adult BMI 28.0 to 28.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 28s	Add Assessment	Add ICD Z68.28
Adult BMI 29.0 to 29.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 29s	Add Assessment	Add ICD Z68.29
Adult BMI 31.0 to 31.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 31s	Add Assessment	Add ICD Z68.31
Adult BMI 32.0 to 32.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 32s	Add Assessment	Add ICD Z68.32
Adult BMI 33.0 to 33.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 33s	Add Assessment	Add ICD Z68.33
Adult BMI 34.0 to 34.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 34s	Add Assessment	Add ICD Z68.34
Adult BMI 35.0 to 35.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 35s	Add Assessment	Add ICD Z68.35
Adult BMI 36.0 to 36.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 36s	Add Assessment	Add ICD Z68.36
Adult BMI 37.0 to 37.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 37s	Add Assessment	Add ICD Z68.37
Adult BMI 38.0 to 38.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 38s	Add Assessment	Add ICD Z68.38
Adult BMI 39.0 to 39..9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 39s	Add Assessment	Add ICD Z68.39
Adult BMI 40.0 to 44.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 40 to 44s	Add Assessment	Add ICD Z68.41
Adult BMI 45.0 to 49.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 45 to 49s	Add Assessment	Add ICD Z68.42
Adult BMI 50.0 to 59.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 50 to 59s	Add Assessment	Add ICD Z68.43
Adult BMI 60.0 to 69.9	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 60 to 69s	Add Assessment	Add ICD Z68.44
Adult BMI 70 or greater	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 70 or greater	Add Assessment	Add ICD Z68.45
Adult 30.0 to 30.9 BMI	Vitals		1	Adult Age 18 - 85	AND	Adult BMI 30s	Ass Assessment	Add ICD Z68.30