**Handout for the Analytics Academy (Part 1: Select Information From the Slides)**

**eCQM Value Set Table: cqm\_value\_set\_codes**

**SELECT** *\** **FROM** cqm\_value\_set\_codes **WHERE latest** = **TRUE

SELECT DISTINCT value\_set\_name
FROM** cqm\_value\_set\_codes
**WHERE latest** = **TRUE
ORDER BY value\_set\_name**

*List of fields*

|  |
| --- |
| id |
| value\_set\_oid |
| value\_set\_name |
| value\_set\_version |
| code\_value |
| code\_description |
| code\_system\_name |
| code\_system\_version |
| code\_system\_oid |
| purpose |
| latest |

*List of code systems on this table*

|  |
| --- |
| code\_system\_name |
| AdministrativeGender |
| AdministrativeSex |
| CDCREC |
| CDT |
| CPT |
| CVX |
| HCPCS |
| HCPCS Level II |
| HSLOC |
| ICD10CM |
| ICD10PCS |
| ICD9CM |
| LOINC |
| RXNORM |
| SNOMEDCT |
| SOP |

**HEDIS Value Set Table: hedis\_value\_set\_codes**

**SELECT** *\** **FROM** hedis\_value\_set\_codes **WHERE latest** = **'TRUE'

SELECT DISTINCT value\_set\_name
FROM** hedis\_value\_set\_codes
**WHERE latest** = **'TRUE'
 AND value\_set\_name ILIKE '%Alcohol%'
ORDER BY value\_set\_name**

*Example from presentation where we were looking for any Value Sets that have the key word “alcohol” in the name*

*List of fields*

|  |
| --- |
| id |
| value\_set\_name |
| value\_set\_oid |
| value\_set\_version |
| code\_value |
| code\_description |
| code\_system\_name |
| code\_system\_oid |
| code\_system\_version |
| med\_category |
| med\_route |
| latest |

*List of code systems on this table*

|  |
| --- |
| code\_system\_name |
| CPT |
| CPT-CAT-II |
| CVX |
| HCPCS |
| ICD10CM |
| ICD10PCS |
| ICD9CM |
| ICD9PCS |
| LOINC |
| Modifier |
| NDC |
| POS |
| SNOMED CT US Edition |
| UBREV |
| UBTOB |

**Examples of Connecting Value Sets to Tables in Relevant**

Diagnosis Codes (using relevant\_cases, if that Transformer exists in your instance and contains the OID)

**SELECT DISTINCT
 patientid
FROM** relevant\_cases
 **INNER JOIN** cqm\_value\_set\_codes

 **ON** cqm\_value\_set\_codes.**value\_set\_oid** = relevant\_cases.**value\_set\_oid
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1003.104.12.1011'**

Diagnosis Codes (eCW)

**SELECT DISTINCT** problemlist.**patientid
FROM** problemlist
 **INNER JOIN** itemdetail **ON** itemdetail.**itemID** = problemlist.**asmtid AND propID** = 13
 **INNER JOIN** hedis\_value\_set\_codes
 **ON** hedis\_value\_set\_codes.**code\_value** = itemdetail.**value
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'

SELECT DISTINCT** relevant\_visits.**patient\_id
FROM** relevant\_visits
 **INNER JOIN** diagnosis **ON** diagnosis.**EncounterId** = relevant\_visits.**id
 INNER JOIN** itemdetail **ON** itemdetail.**itemid** = diagnosis.**itemid AND propID** = 13
 **INNER JOIN** hedis\_value\_set\_codes
 **ON** hedis\_value\_set\_codes.**code\_value** = itemdetail.**value
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'**

 **SELECT DISTINCT** edi\_invoice.**patientid
FROM** edi\_invoice
 **INNER JOIN** edi\_inv\_diagnosis **ON** edi\_inv\_diagnosis.**invoiceid** = edi\_invoice.**id
 INNER JOIN** hedis\_value\_set\_codes **ON** hedis\_value\_set\_codes.**code\_value** = edi\_inv\_diagnosis.**code
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'
WHERE** edi\_invoice.**deleteflag** = 0
 **AND** edi\_invoice.**voidflag** = 0

Diagnosis Codes (NextGen)

**SELECT DISTINCT** patient\_diagnosis.**person\_id
FROM** patient\_diagnosis
 **INNER JOIN** person\_surrogate\_key **ON** person\_surrogate\_key.**person\_id** = patient\_diagnosis.**person\_id
 INNER JOIN** hedis\_value\_set\_codes

 **ON** hedis\_value\_set\_codes.**code\_value** = patient\_diagnosis.**diagnosis\_code\_id
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'

SELECT DISTINCT** patient\_problems.**person\_id
FROM** patient\_problems
 **INNER JOIN** hedis\_value\_set\_codes

 **ON** hedis\_value\_set\_codes.**code\_value** = patient\_problems.**concept\_id
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'**

*NOTE that concept\_id is a SNOMED code*

**SELECT DISTINCT** encounter\_diags.**person\_id
FROM** encounter\_diags
 **INNER JOIN** hedis\_value\_set\_codes

 **ON** hedis\_value\_set\_codes.**code\_value** = encounter\_diags.**icd9cm\_code\_id
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1339'**

Procedure Codes (using relevant\_visit\_billing\_codes, if that Transformer exists in your instance)

**SELECT DISTINCT** relevant\_visits.**patient\_id
FROM** relevant\_visit\_billing\_codes
 **INNER JOIN** relevant\_visits **ON** relevant\_visits.**id** = relevant\_visit\_billing\_codes.**visit\_id
 INNER JOIN** hedis\_value\_set\_codes
 **ON** hedis\_value\_set\_codes.**code\_value** = *LEFT*(relevant\_visit\_billing\_codes.**code**, 5)
 **AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1262'**

Procedure Codes (eCW)

**SELECT DISTINCT** relevant\_patients.**id AS** patient\_id
**FROM** relevant\_patients
 **INNER JOIN** edi\_invoice **ON** edi\_invoice.**patientid** = relevant\_patients.**id
 AND** edi\_invoice.**deleteflag** = 0
 **AND** edi\_invoice.**voidflag** = 0
 **INNER JOIN** edi\_inv\_cpt **ON** edi\_inv\_cpt.**invoiceid** = edi\_invoice.**id
 INNER JOIN** hedis\_value\_set\_codes **ON** hedis\_value\_set\_codes.**code\_value** = *LEFT*(edi\_inv\_cpt.**code**, 5)
 **AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1262'**

Procedure Codes (NextGen)

**SELECT DISTINCT** claims.**person\_id
FROM** claims
 **INNER JOIN** charges **ON** charges.**source\_id** = claims.**enc\_id
 INNER JOIN** hedis\_value\_set\_codes

 **ON** hedis\_value\_set\_codes.**code\_value** = *LEFT*(charges.**cpt4\_code\_id**, 5)
 **AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1262'**

Lab Codes (using relevant\_labs, if that Transformer exists in your instance)

**SELECT DISTINCT** relevant\_labs.**person\_id
FROM** relevant\_labs
 **INNER JOIN** cqm\_value\_set\_codes **ON** cqm\_value\_set\_codes.**code\_value** = relevant\_labs.**loinc\_code
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113762.1.4.1056.50'**

Lab Codes (eCW)

**SELECT DISTINCT** relevant\_visits.**patient\_id
FROM** labdata
 **INNER JOIN** relevant\_visits **ON** relevant\_visits.**id** = labdata.**encounterid
 INNER JOIN** labdatadetail **AS** ldd **ON** ldd.**reportid** = labdata.**reportid
 INNER JOIN** labloinccodes

 **ON** labloinccodes.**itemid** = ldd.**propid AND** labloinccodes.**deleteflag** = 0
 **INNER JOIN** cqm\_value\_set\_codes

 **ON** cqm\_value\_set\_codes.**code\_value** = labloinccodes.**code
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113762.1.4.1056.50'**

Lab Codes (NextGen)

If you can, use relevant\_labs

Otherwise, use the design of an existing lab Transformer. These tables have a LOINC field:

* lab\_order\_tests.loinc\_code
* lab\_results\_obr\_p.loinc\_code
* lab\_results\_obx.loinc\_code

Immunization Codes (using relevant\_immunizations, if that Transformer exists in your instance)

**SELECT** relevant\_immunizations.**patient\_id
FROM** relevant\_immunizations
 **INNER JOIN** cqm\_value\_set\_codes **ON** cqm\_value\_set\_codes.**code\_value** = relevant\_immunizations.**cvx\_code** :: **VARCHAR
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1003.196.12.1214'**

*Note: the field relevant\_immunizations.cvx\_code may be formatted as a number*

Immunization Codes (eCW)

**SELECT DISTINCT
 patientid
FROM** immunizations
 **INNER JOIN** cqm\_value\_set\_codes **ON** cqm\_value\_set\_codes.**code\_value** = immunizations.**cvx\_code
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1003.196.12.1214'**

Immunization Codes (NextGen)

**SELECT DISTINCT** imm\_nor.**person\_id
FROM** imm\_order\_vaccines
 **INNER JOIN** imm\_nor **ON** imm\_order\_vaccines.**order\_num** = imm\_nor.**order\_num
 INNER JOIN** cqm\_value\_set\_codes

 **ON** cqm\_value\_set\_codes.**code\_value** = imm\_order\_vaccines.**cvx\_code** :: **VARCHAR
 AND** cqm\_value\_set\_codes.**latest** = **TRUE
 AND** cqm\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1003.196.12.1214'**

Medication Codes (eCW and NextGen that use relevant\_medications)

**SELECT DISTINCT
 patient\_id
FROM** relevant\_medications
**WHERE value\_set\_oids** && **'{2.16.840.1.113883.3.526.3.1190}'**

**SELECT DISTINCT
 patient\_id
FROM** relevant\_medications
**WHERE value\_set\_oids** && **'{2.16.840.1.113883.3.526.3.1572,
 2.16.840.1.113883.3.526.3.1574,
 2.16.840.1.113883.3.526.3.1575}'**

**Exercise #5**

*SQL Code for the Sunny Day Grant*

*--Defines the universe***DROP TABLE IF EXISTS** universe;
**CREATE TEMPORARY TABLE** universe **AS
SELECT DISTINCT** relevant\_patients.**id**,
 relevant\_patients.**mrn**,
 relevant\_patients.**last\_name**,
 relevant\_patients.**first\_name**,
 relevant\_patients.**date\_of\_birth**,
 *extract*(**YEAR FROM** *age*(**'2022-01-01'**, relevant\_patients.**date\_of\_birth**)) **AS** age
**FROM** relevant\_patients
**WHERE** *extract*(**YEAR FROM** *age*(**'2022-01-01'**, relevant\_patients.**date\_of\_birth**)) <= 12
 **AND** relevant\_patients.**inactive** = **'f'
 AND** relevant\_patients.**deceased** = **'f'
 AND** *EXISTS*(**SELECT FROM** relevant\_visits
 **WHERE** relevant\_patients.**id** = relevant\_visits.**patient\_id
 AND uds\_medical IS TRUE
 AND visit\_date BETWEEN '2022-01-01' AND '2022-04-30'**);

*--Risk factor #1 is persistent asthma diagnosis***DROP TABLE IF EXISTS** relevant\_asthma\_temp;
**CREATE TEMPORARY TABLE** relevant\_asthma\_temp **AS
SELECT DISTINCT** patient\_id
**FROM** relevant\_asthma
**WHERE persistent ILIKE '%TRUE%'
 AND started\_on** <= **'2022-04-30'**;

*--Risk factor #2 is BMI Percentile above 75***DROP TABLE IF EXISTS** relevant\_bmi\_percentile\_temp;
**CREATE TEMPORARY TABLE** relevant\_bmi\_percentile\_temp **AS
SELECT** patient\_id
**FROM**(**SELECT DISTINCT ON** (patient\_id)
 patient\_id,
 **value**,
 **date
 FROM** relevant\_bmi\_percentile
 **WHERE date** <= **'2022-04-30'
 ORDER BY** patient\_id, **date DESC**) **AS** last\_bmi
**WHERE value** > **'75'**;

*--Risk factor #3 is ever had positive blood lead lab***DROP TABLE IF EXISTS** lead\_lab\_temp;
**CREATE TEMPORARY TABLE** lead\_lab\_temp **AS
SELECT DISTINCT patient\_id
FROM** srhc\_lead\_labs
**WHERE lab\_result ILIKE '%abnormal%'**;

**SELECT** universe.**mrn**,
 universe.**last\_name**,
 universe.**first\_name**,
 universe.**date\_of\_birth**,
 universe.**age**,
 **CASE WHEN** relevant\_asthma\_temp.**patient\_id IS NULL THEN FALSE ELSE TRUE END AS** has\_asthma,
 **CASE WHEN** relevant\_bmi\_percentile\_temp.**patient\_id IS NULL THEN FALSE ELSE TRUE END AS** has\_high\_bmi,
 **CASE WHEN** lead\_lab\_temp.**patient\_id IS NULL THEN FALSE ELSE TRUE END AS** has\_positive\_lead\_lab
**FROM** universe
 **LEFT JOIN** relevant\_asthma\_temp **ON** relevant\_asthma\_temp.**patient\_id** = universe.**id
 LEFT JOIN** relevant\_bmi\_percentile\_temp **ON** relevant\_bmi\_percentile\_temp.**patient\_id** = universe.**id
 LEFT JOIN** lead\_lab\_temp **ON** lead\_lab\_temp.**patient\_id** = universe.**id
WHERE** relevant\_asthma\_temp.**patient\_id IS NOT NULL
 OR** relevant\_bmi\_percentile\_temp.**patient\_id IS NOT NULL
 OR** lead\_lab\_temp.**patient\_id IS NOT NULL**;

*If you need a Temporary Table with the lead labs, here is the suggested code:*

**DROP TABLE IF EXISTS** srhc\_lead\_labs;
**CREATE TEMPORARY TABLE** srhc\_lead\_labs **AS**

**SELECT DISTINCT** enc.**patientid AS** patient\_id,
 **CASE WHEN** ld.**colldate IS NOT NULL AND** *EXTRACT*(**YEAR FROM** ld.**colldate**) > 1902
 **THEN** ld.**colldate** :: **DATE
 WHEN** ld.**resultdate IS NOT NULL AND** *EXTRACT*(**YEAR FROM** ld.**resultdate**) > 1902
 **THEN** ld.**resultdate** :: **DATE
 END AS** performed\_on,
 ld.**result AS** lab\_result,
 ldd.**value AS** lab\_value
**FROM** labdata **AS** ld
 **INNER JOIN** labdatadetail **AS** ldd **ON** ldd.**reportid** = ld.**reportid
 INNER JOIN** enc **ON** enc.**encounterid** = ld.**encounterid
 INNER JOIN** labloinccodes **ON** labloinccodes.**itemid** = ldd.**propid AND** labloinccodes.**deleteflag** = 0
 **INNER JOIN** hedis\_value\_set\_codes **ON** hedis\_value\_set\_codes.**code\_value** = labloinccodes.**code
 AND** hedis\_value\_set\_codes.**latest** = **'TRUE'
 AND** hedis\_value\_set\_codes.**value\_set\_oid** = **'2.16.840.1.113883.3.464.1004.1147'
WHERE** *COALESCE*(ldd.**value**, ld.**result**) **IS NOT NULL
 AND** ((ld.**colldate IS NOT NULL AND** *EXTRACT*(**YEAR FROM** ld.**colldate**) > 1902)
 **OR** (ld.**resultdate IS NOT NULL AND** *EXTRACT*(**YEAR FROM** ld.**resultdate**) > 1902))
 **AND** ld.**received** = 1
 **AND** ld.**status** = 1
 **AND** ld.**deleteflag** = 0
 **AND** enc.**deleteflag** = 0
 **AND** ld.**cancelled** = 0
 **AND** (ld.**result IS NULL OR** ld.**result** !~\* **'(.\*cancelled.\*|.\*error.\*|.\*never done.\*)'**);