



COVID-19 Queries User Guide

These searches aim to equip primary care with EMR resources which will enable them to identify and prioritize ambulatory patients from within their roster who are in greatest need of the COVID-19 vaccination according to the [Phase Two Vaccine roll-out plan](#) announced by the Ministry of Health.

For more information on EMR decision support tools, please visit www.ehealthce.ca or contact emrtools@ehealthce.ca



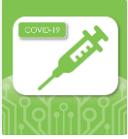


COVID-19 Queries User Guide

COVID-19 Query User Guide

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Introduction to the COVID-19 Queries

The following table describes the inclusion and exclusion criteria for the COVID-19 EMR searches as well as suggested use cases.

Search	Suggested Use Case	Includes	Excludes
Highest Risk Population Search	Identifies individuals with the highest risk of developing COVID-19 and eligible to receive the vaccine first as per the criteria listed in the Phase 2 roll out plan	<ul style="list-style-type: none"> • Organ transplant recipients • Hematopoietic stem cell transplant recipients • People with neurological diseases in which respiratory function may be compromised (e.g., motor neuron disease, myasthenia gravis, multiple sclerosis) • Hematological malignancy diagnosed less than 1 year ago • Kidney disease with eGFR < 30 	<ul style="list-style-type: none"> • People with a PEG or Polysorbate allergy • Children under 16 years of age • People who have already received the COVID-19 vaccine
High-Risk Population Search	Identifies individuals with a high risk of developing COVID-19 and eligible to receive the vaccine after the highest-risk population as per the criteria listed in the Phase 2 roll out plan	<ul style="list-style-type: none"> • Obesity (BMI > 40) • Other treatments causing immunosuppression (e.g., chemotherapy, immunity-weakening medications) • Intellectual or developmental disabilities (e.g., Down Syndrome) 	<ul style="list-style-type: none"> • People with a PEG or Polysorbate allergy • Children under 16 years of age • People who have already received the COVID-19 vaccine
At-Risk Population Search	Identifies individuals at risk of developing COVID-19 and eligible to receive the vaccine after the high-risk population as per the criteria listed in the Phase 2 roll out plan	<ul style="list-style-type: none"> • Immune deficiencies / autoimmune disorders • Stroke / cerebrovascular disease • Dementia • Diabetes • Liver disease • All other cancers • Respiratory diseases • Spleen problems • Heart disease • Hypertension with end organ damage 	<ul style="list-style-type: none"> • People with a PEG or Polysorbate allergy • Children under 16 years of age • People who have already received the COVID-19 vaccine



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		<ul style="list-style-type: none">• Diagnosis of mental disorder• Substance use disorders• Thalassemia• Immunocompromising health conditions	
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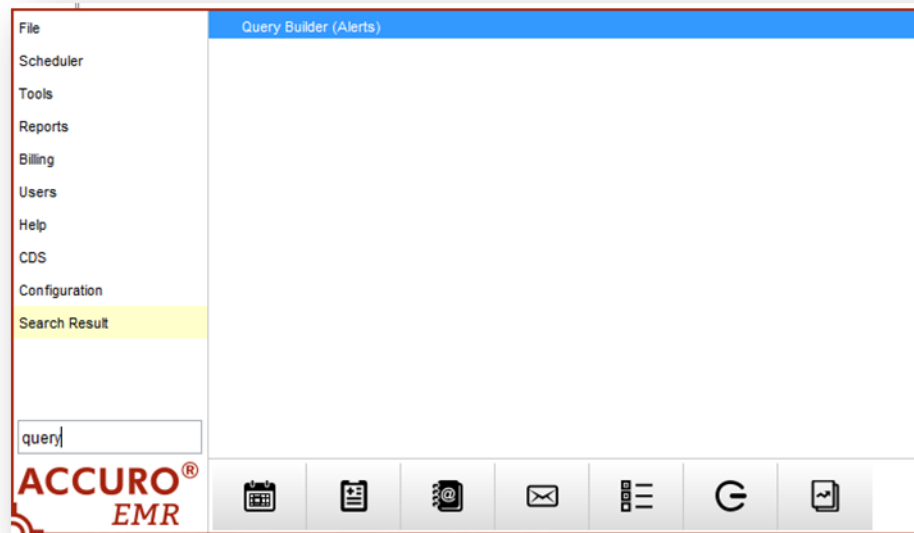
Important considerations:

- Given the broad criteria, these searches may pull a large list of patients. Small modifications or customizations may be required based on variations in documentation and clinical workflow between practices. For a more detailed view on conditions included in each search, please refer to the appendix in this document.
- Please note that search results are dependant on data quality within the EMR. For more information on improving data quality, please see how [eCE Automates](#) can help.
- These searches were created based on the [Phase 2 Vaccine rollout plan](#) announced by the Ministry of Health on March 23rd 2021. If you notice they conflict with any new or updated information, please let us know by emailing us at emrtools@ehealthce.ca.

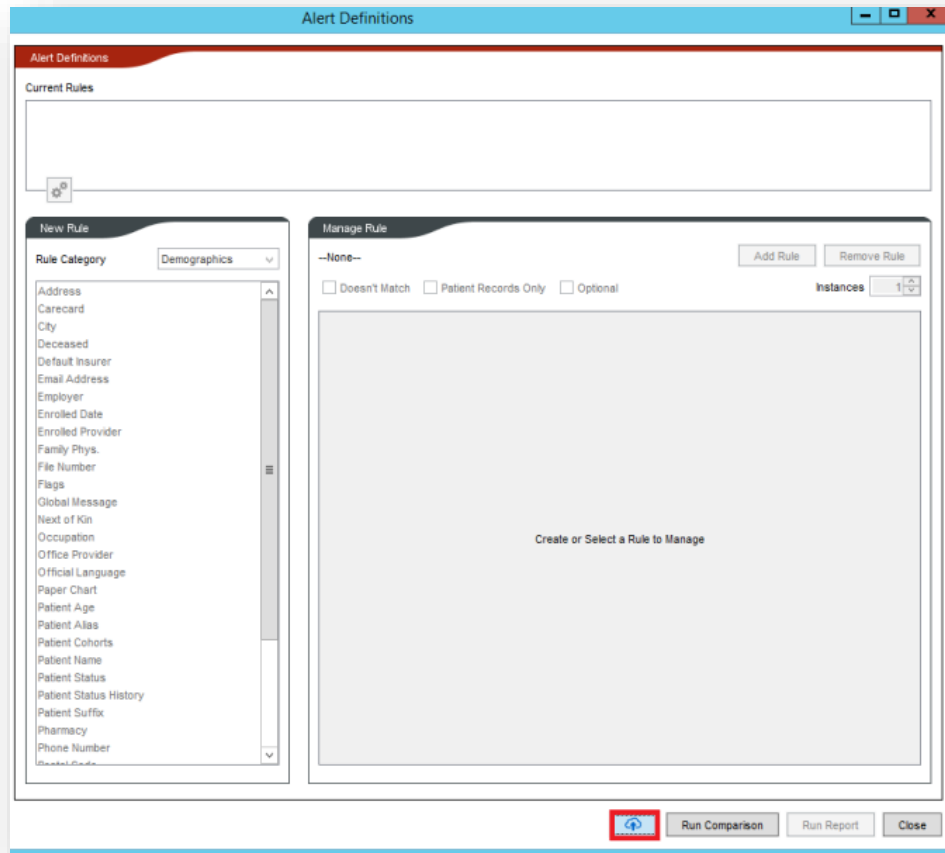
Accuro EMR

Importing and Running a Search

1. Once you have signed into Accuro you can begin the tool download process from any screen. Start by clicking the Accuro Icon in the bottom left corner or simply click the "Alt" button to open the menu options. Then search for "**Query Builder (Alerts)**" and click on the option.



2. The Alert Definition window will appear. Click **“Alert Publisher”** at the bottom right corner.



3. The Alert Definitions Publisher window should now be open. From here search one of the following: **“COVID”, “Coronavirus”, “avong1”, “COVID-19”, “COVID-19 Vaccine Highest Risk Population Search V2.0.0”, “COVID-19 Vaccine High Risk Population Search V2.0.0”**. In the top left corner and then select from the publisher named **“avong1”**. Refer below to the searches available and click **“Download Alert”**.
- **COVID-19 Vaccine Highest Risk Population Search V2.0.0**
 - **COVID-19 Vaccine High Risk Population Search V2.0.0**
 - **COVID-19 Vaccine At Risk Population Search V2.0.0**

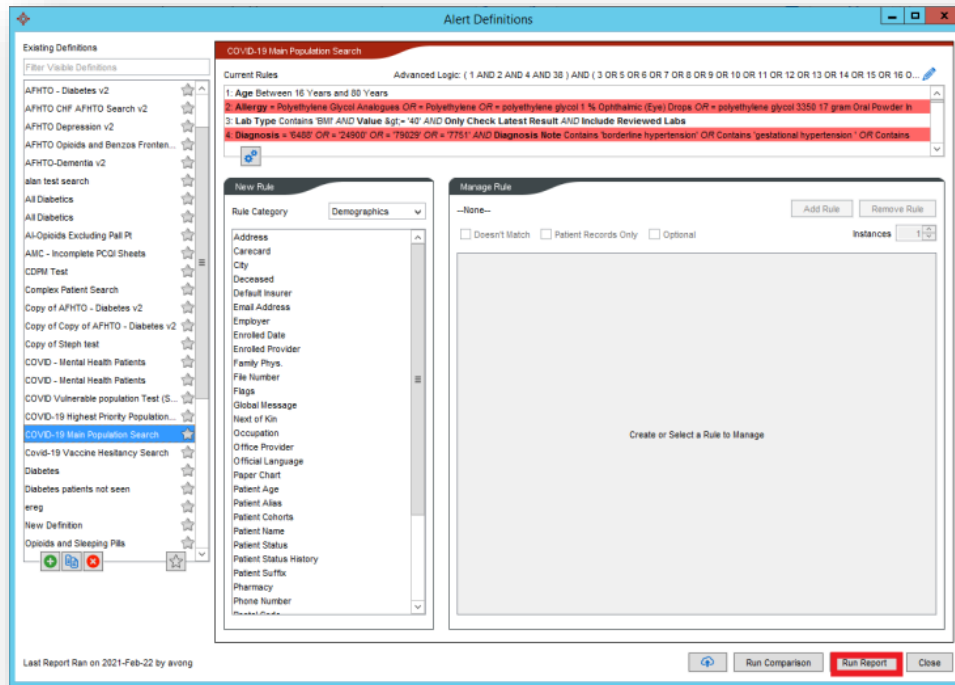
Download Alerts Publish Alerts

Search

Publisher

Alert	Description	Date	Publisher	Keywords
COVID-19 Vaccine Highest Risk Pop...	According to the eligibility criteria ou...	2021-Apr-08	avong1	Covid, COVID-19, Coronavirus,

4. The search is now downloaded. The search can be accessed by repeating **steps 1 & 2** and finding the name of the search. Select and click **“Run Report”**.



5. Determine if the search applies to All Patients or a selected provider. As well, check off the bottom three boxes below then click **“Run”**.

Check for Alert Matches

COVID-19 Main Population Search

Apply Against

All Patients

Selected Providers' Patients

Chin, Stephanie

Denomme, Danielle

Loneragan, Tara

Newcombe, Kevin

Fields to Display

Match Types to View

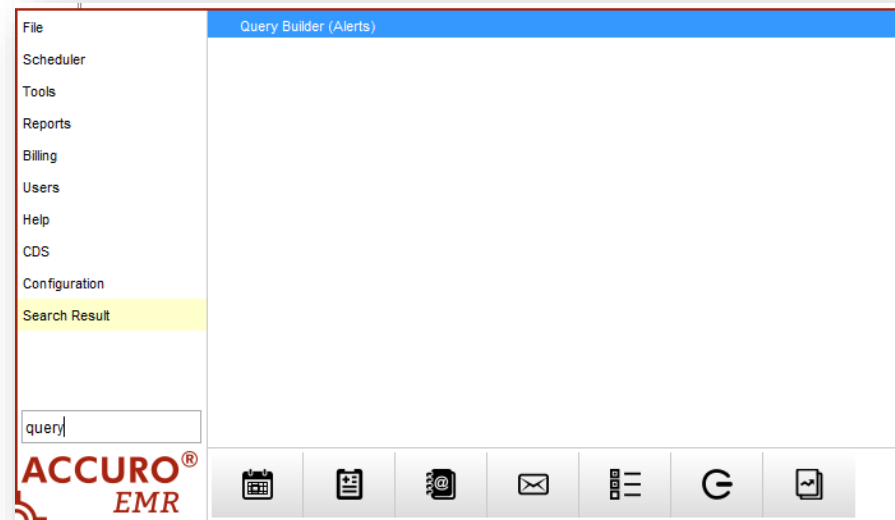
Unassigned Assigned Completed

Run Cancel

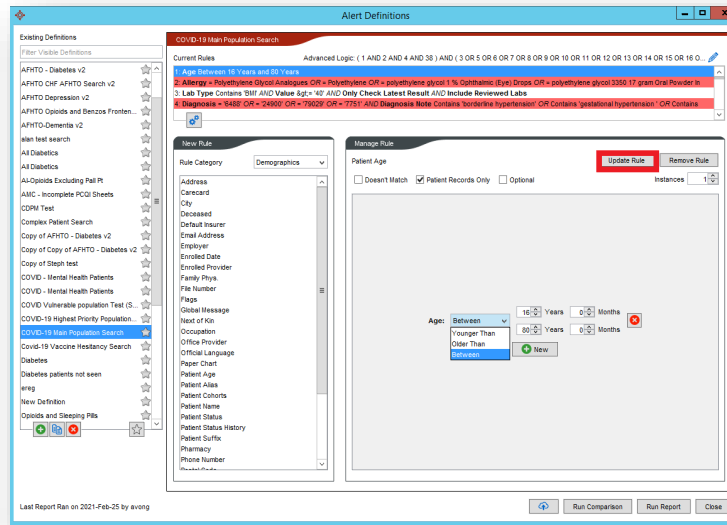
Modifying a Search

Reminder: We do our best to ensure that these searches are as widely applicable as possible to as many providers in the province, however variations in documentation and clinical workflow between practices would mean that there might need to be some small modifications or customization for them to best fit your patient roster. Please validate the search results and let us know if we can assist with any customization. If you require any assistance with modifying these searches, please feel free to reach out to us at emrtools@ehealthce.ca.

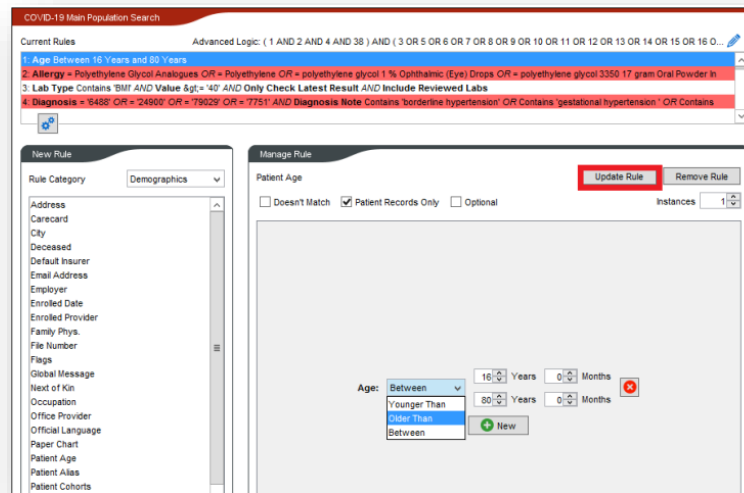
1. Click the "Alt" button to open the menu options. Then search for "Query Builder (Alerts)" and click on the option.



2. Select the search to modify. Click the line that needs to be updated (blue hover).



3. Change the criteria by selecting the dropdown and confirming the option. Click "Update Rule".



Appendix

Search Contents

Name of Search in Accuro	Metric	Description
<p>Highest Risk Population Search</p>	<p>Numerator: pts. with highest risk of increased severity of symptoms with COVID-19 Denominator: All pts. in the EMR. Excludes: Patients already vaccinated against Covid-19, those with PEG or Polysorbate allergy and children under 16 years of age</p>	<ul style="list-style-type: none"> • Pts. with ‘organ transplant’, ‘lung transplant’, ‘heart transplant’, ‘kidney transplant’, ‘liver transplant’, ‘cornea transplant’, ‘renal transplant’ • Pts. with ‘stem cell transplant’ • Patients with ‘Motor Neuron Disease/ Amyotrophic Lateral Sclerosis’, ‘Myasthenia Gravis’, ‘Parkinson’s Disease’, ‘Stroke’, ‘Multiple Sclerosis’, ‘Muscular dystrophy’ <ul style="list-style-type: none"> ○ ICD-9 codes: 335.2, 358, 332, 434, 340, 359.0, 359.1 ○ SNOMED-CT: 37340000, 91637004, 49049000, 422504002, 24700007, 73297009 • Patients with ‘Leukemia’, ‘Lymphoma’, ‘Myeloma’, ‘lymphoid’, ‘myeloid’, ‘lymphocytosis’, ‘plasmocytoma’, ‘lymphoproliferative’, ‘fungoides’, ‘sarcoma’, ‘macroglobinemia’, ‘lymphomatoid’, ‘gammopathy’, ‘acute lymphocytic’, ‘chronic lymphocytic (CLL)’, ‘acute myeloid (AML)’, ‘chronic myeloid (CML)’, ‘multiple myeloma (MM)’, ‘Hodgkin’s’, ‘non-Hodgkin’s (NHL)’ <ul style="list-style-type: none"> ○ ICD-9 codes: 200, 201, 202,203, 204, 205, 206, 207, 208 ○ SNOMED-CT: 91861009, 118601006, 109989006 • eGFR <30
<p>High Risk Population Search</p>	<p>Numerator: pts. who have a high risk of increased severity of symptoms with COVID-19 Denominator: All pts. in the EMR. Excludes: Patients already vaccinated against Covid-19,</p>	<ul style="list-style-type: none"> • BMI: pts. with BMI>40 • Treatments causing immunosuppression: AHFS class Immunosuppressive Agents, methotrexate, hydroxychloroquine sulfate, Plaquenil 200mg tablet, tacrolimus, cyclosporine, mycophenolate mofetil, mycophenolate sodium, azathioprine, sirolimus, prednisolone, tofacitinib citrate, xeljanz 10mg tablet, everolimus, leflunomide, Humira 40 mg/0.8 ml syringe, abatacept, Enbrel 25mg vial kit, infliximab, remicade 100mg vial, consentyx 150 mg/ml syringe, simulect 20mg vial, zinbryta 150mg/ml syringe

	<p>those with PEG or Polysorbate allergy and children under 16 years of age</p>	<ul style="list-style-type: none"> • Intellectual or developmental disabilities: Patients with ‘Down Syndrome’, ‘Autism’, ‘Fetal Alcohol Syndrome’, ‘Fragile X Syndrome’, ‘Turner’s syndrome’, ‘Angelman’, ‘developmental delay’, ‘mental retardation’, ‘global developmental delay’, ‘Asperger’, ‘major neurocognitive disorder’, ‘tertiary syphillitis’, ‘prader-willii syndrome’, ‘Williams syndrome’, ‘smith-magenis syndrome’, ‘smith-lemli-opitz syndrome’, ‘lesch-nyhan syndrome’, ‘rett syndrome’, ‘cri-du-chat syndrome’, ‘sotos syndrome’ <ul style="list-style-type: none"> ○ ICD-9 codes: 758.0, 299.0, 760.71, 759.81 ○ SNOMED-CT: 41040004, 408856003, 35919005, 205788004, 710008008, 38804009, 76880004, 23560001, 63247009, 401315004, 43929004, 10406007, 68618008, 75968004
<p>At-Risk Population Search</p>	<p>Numerator: pts. at risk of complications due to COVID-19 Denominator: All pts. in the EMR. Excludes: Patients already vaccinated against Covid-19, those with PEG or Polysorbate allergy and children under 16 years of age</p>	<ul style="list-style-type: none"> • Weakened Immunity: Patients with “rheumatoid arthritis”, “lupus”, “IBD”, “inflammatory bowel disease”, “ulcerative colitis”, “crohn’s”, “crohn”, “multiple sclerosis”, “Guillain-barre”, “guillain barre”, “chronic inflammatory demyelinating polyneuropathy”, “psoriasis”, “grave’s disease”, “hashimoto”, “hashimoto’s”, “myasthenia gravis”, “vasculitis”, “immunodeficiency”, “HIV” <ul style="list-style-type: none"> ○ ATC Code (for Oscar EMR): L04, A07EA, H02 ○ ICD-9: 714, 6954, 7100, 556, 3580, 27906, V13.81, 995, 999.42 ○ SNOMED-CT: 200936003, 69896004, 24526004, 64766004, 34000006, 24700007, 40956001, 444728005, 9014002, 353295004, 21983002, 91637004, 31996006, 234532001, 86406008 • Patients with “cerebrovascular accident”, “CVA”, “stroke” <ul style="list-style-type: none"> ○ ATC Code: B01A ○ dxCode/ICD-9: 434, 436 ○ Rx: Plavix, activase, clopidogrel • Patients with “dementia”, “Parkinson”, “alzheimer”, “senile”, “psychosis”, “lewy”, “corticobasa”, “cognitive impairment”, “MCI”, “frontotemporal”, “Jakob”, “Huntington”, “Wernicke”, “Korsakoff”, “prion” <ul style="list-style-type: none"> ○ Rx: rivastigmine, galantamine, donepezil, memantine ○ dxCode/ICD-9: 290, 332, 331, 33183, 046, 3334, 294.2 ○ SNOMED-RT: D9-20200 ○ SNOMED-CT: 52448006, D9-22054, 386805003, 58756001, 69482004 • Diabetes: dx research code: (6488, 249, 79020, 7751) and status ‘A’ patients with “niddm”, “iddm”, “t1d”, “t2d”, “DM1”, “DM2”, “DMT2”, “DMT1”, “T2DM”, “T1DM”, “Type 1 diabetes”, “Type 2 diabetes”, “diabetes”, “DM Type II”, “DM Type I”, “DM Type 2”, “DM Type 1”, Type 2 DM”, “Type 1 DM”, “DM” <ul style="list-style-type: none"> ○ Rx: acarbose, actos, amaryl, avandia, diamicron, glibenclamide, glimepiride, gluconorm, Glucophage, glyburide, glucobay, januvia,

		<p>liraglutide, linagliptin, nateglinide, onglyza, pioglitazone, prandase, repaglinide, saxaglyptin, sitagliptin, starlix, tolbutamide, Victoza, Humalog, Humulin, insulin, alogliptin, byetta, canagliflozin, exenatide, gliclazide, metformin, orinase, rosiglitazone, trajenta, apidra, detamir, glargine, lantus, Levemir, mix 25, mix 50, Novolin, novomix, novomix 30, novorapid</p> <ul style="list-style-type: none"> ○ dxCode/ICD-9: 25001, 7902, 250, E100, E11 ○ SNOMED-CT Code: 9414007, 46635009, 440540006 ○ SNOMED-RT Code: DB-610, DB-61200, DB-610 ○ Service Code: K030A, Q040A ○ A1C > 6.9 ○ FBS > 6.9 <ul style="list-style-type: none"> ● Patients. with “liver disease”, “cirrhosis” <ul style="list-style-type: none"> ○ dxCode/ICD-9: 571 ○ ICD-10: K76-9 ○ SNOMED-CT: 235856003, 19943007, 41309000, 9953008 ○ Rx: ursodial ● Patients with “cancer”, “carcinoma”, “lymphoma”, “retinoblastoma”, “osteosarcoma”, “sarcoma”, “melanoma”, “leukemia”, ‘malignant neoplasms’, does not contain tested negative for cancer, does not contain high probability for cancer ● Patients with “Asthma” <ul style="list-style-type: none"> ○ Rx: ipratropium, terbutaline, salmetrol, formoterol, Pulmicort, alvesco, Qvar, Ventolin, salbutamol, tiotropium ○ dxCode/ICD-9: 496, 493 ○ SNOMED RT Code: D2-00036, D2-60000 ○ SNOMED CT Code: 195967001 ● Patients with “COPD”, “obstructive pulm”, “emphysema”, “chronic bronchitis”, “obstructive lung”, “obstructive airway” <ul style="list-style-type: none"> ○ Rx: turdoza, acclidinium, glycopyrronium, seebri, umeclidinium, incruise, tiotropium bromide ○ dxCode/ICD-9/ICD-10: 492, 4912, J41, J42, J43, J44, J47 ○ SNOMED-RT Code: D260000 ○ SNOMED-CT Code: 13645005 ● Patients with ‘asplenia’, ‘ruptured spleen’, ‘Splenectomy’, ‘no spleen’ <ul style="list-style-type: none"> ○ SNOMED: 707147002, 17604001 ● Patients with “CHD”, “heart disease”, “outlet ventricle”, “cyanotic heart”, “chronic cyanosis”, “CHF”, “heart failure”, “reduced heart”, “cardiomyopathy”, “pulmonary hypertension”, “heart transplant”,
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		<p>“arrhythmia”, “valvular disease”, “congestive heart”, “HFrEF”, “HFpEF”, “Coronary artery disease”, “CAD”, “coronary artery”, “Artery disease”, “arteriosclerotic heart disease”, “Coronary arteriosclerosis”, “coronary sclerosis”, “STEMI”, “NSTEMI”, “Angina”, “CABG”, “angio”</p> <ul style="list-style-type: none"> ○ ATC Code: C09CA, C07A, C03DA, C09A ○ dxCode/ICD-9: 7825, 428, 425, 4160, 375, 414, 413, 411, 410, 428, I50 ○ SNOMED CT Code: 53741008, 13213009, 7368005, 45503006, 7484005, 368009, 42343007, 84114007, 85898001, 70995007, 698247007 <ul style="list-style-type: none"> ● Patients with “hypertension”, “HTN”, “high blood pressure”, “HBP”, ‘hypertensive retinopathy’ <ul style="list-style-type: none"> ○ Rx: amlodipine ○ dxCode (for Oscar EMR): 401 ○ SNOMED RT Code: D3-02000 ○ SNOMED CT Code: 38341003 ○ ICD9 / SNOWMED code for hypertensive retinopathy: 362.11 / 6962006 ● Patients with ‘Mental Health’, ‘Major depressive disorder’, ‘Major depressive episode’, ‘Persistent Depressive Disorder’, ‘Bipolar Disorder (aka Manic Depression)’, ‘Seasonal Affective Disorder’, ‘Psychotic Depression’, ‘Postpartum Depression’, ‘Peripartum Depression’, ‘Atypical Depression’, ‘Generalized Anxiety Disorder’, ‘Obsessive Compulsive Disorder’, ‘Panic Disorder’, ‘Post-Traumatic Stress Disorder’, ‘Social Phobia’, ‘Social Anxiety Disorder’, ‘Schizophrenia’, ‘Binge Eating’, ‘Bulimia Nervosa’, ‘Anorexia Nervosa’, ‘Borderline Personality Disorder’, ‘Narcissistic Personality Disorder’, ‘Paranoia’, ‘Delusional Disorders’, ‘Schizoid Personality Disorder’, ‘Schizotypal Personality Disorder’ <ul style="list-style-type: none"> ○ ICD 9 codes: 311, 296, 300.0, 307.5, 301, 295 ○ SNOWMED CT: 74732009, 191659001, 43568002, 22407005, 34315001, 30687003, 16295005, 1196001, 442057004, 14183003, 2618002, 35489007, 78667006, 370143000, 191627008, 191618007, 13746004, 71294008, 231504006, 35846004, 75837004, 77486005 ● Patients with ‘alcohol use disorder’, ‘cannabis use disorder’, ‘cocaine use disorder’, ‘opioid use disorder’, ‘smoking’, ‘methamphetamine use disorder’, ‘cannabis abuse’, ‘alcohol Dependence’ ● Patients with ‘Thalassemia’
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