

DATA ACCESS

- Juan/Alejandra/Rohit/Suzanne
Starwood EHR
- Gautham
Claims Blue C.
- Joel /Chris/Ajit/Pat
Optum-EHR
Truven-claims
- MARK
Truven - Medical
"
- Christoph
Quintiles IMS
FRANCE Germany
- URVI/Christian

- HANIH/charlie Red's Net

- SARAH

George
- ~~Columbia~~

[- CPRD
- Humedica
- Truven] CDR
Columbia EHR

S&L

*

R

Juan

Joel

Christoph

Charlie

Christine

Jason

Alejandro

Rohit

Clinical

- Gautham

- Anasthasia

- Charlie

- Jyoti

- Joel

- Anna

- Richie

- Sunny

- Christian
(oncology)

- George
(Int Med)

(Psych)

(Ped / Oncology)

(mental health)

(c.v.s)
Pulmonology

Clin. Pharm.

Medicine.

Has Donor Phenotype

- George - Endometriosis
- Juan - FH / Diabetic / MI
- Joel - Heart F. / Afib /
- Anastasia
- Jyoti - Depression / CHF / MI
- Christoph — Bipolar, Suicide
- Will — R.A. Heart dis.
- Charlie — < 18
- Christian — Diabetic
- Rohit — "

- Yong Hui

Smoking status

- Alejandro

Hypertension

DONE!

At Least 50 min

| | | JnT | St _{an} | Chol | Columb. | IMS |
|-----------------|--|-----|------------------|------|---------|-----|
| ① | AORTIC ANEURISM | → ✓ | | | ✓ | |
| ring up ② | emerge's Peripheral Arterial Disease (PAD) | → ✓ | ✓ | ✓ | ✓ | ✓ |
| (Severe) Asthma | HEART (ALL) FAILURE | → ✓ | | | | |
| ② | Heart failure Reduced Ejecta frac | → ✓ | | | | |
| ⑤ | Obesity | | ✓ | | ✓ | |
| | | | +A | | | |
| ⑥ | Seizure | | | | | |
| ⑦ | T2D | | | | | ✓ |
| | | | ✓ | | | |
| ⑧ | Heart failure Preserved ejecta fraction | ✓ | | | | |
| ⑨ | | | | | | |

WANT To BUILD

In PROCESS

Anxiety

T2DM IN KIDS

Chronic KIDNEY DX
Anaphylaxis

99269
99267
99270
99271

(Severe) Asthma

DONE!

At Least 50

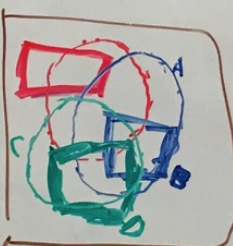
puvrr

VTE

□ = labeling heuristic
○ = model predictions

Training Pattern

Test



Label

| | | | |
|---|---|---|---|
| | □ | □ | □ |
| □ | □ | □ | □ |
| □ | | □ | □ |
| □ | | | □ |

Label

| | | | |
|---|---|---|---|
| | ○ | ○ | ○ |
| □ | □ | □ | □ |
| □ | □ | □ | □ |
| □ | □ | □ | □ |

pred

$K(C,B)$
 $K(C,D)$
 $K(A,B)$
 $K(A,D)$

label
 T F
 F F

99277

T2D

99278

Heart failure Preserved ejection fraction

99273

Glaucoma

| | Jnt | Stk | Cuor | Columb. | IMS |
|--|-----|-----|------|---------|-----|
| 99276 ① Aortic Aneurysm | ✓ | | | ✓ | |
| 99131 ② eMorge's Peripheral Arterial Disease (PAD) | ✓ | ✓ | ✓ | ✓ | ✓ |
| 99265 ③ HEART (ALL) FAILURE | ✓ | | | | |
| 99266 ④ Heart failure Reduced Ejection fraction | ✓ | | | | |
| 99279 ⑤ Obesity | | ✓ | | ✓ | |
| 99170 ⑥ Seizure | | | | ✓ | ✓ |
| 99277 ⑦ T2D | ✓ | | ✓ | | |
| 99278 ⑧ Heart failure Preserved ejection fraction | ✓ | | | ✓ | |
| 99273 ⑨ Glaucoma | | | | ✓ | |





WANT To BUILD

In PROCESS

Anxiety

T2DM
IN KIDS

Anaphylaxis

CHRONIC
KIDNEY DX

(Severe) Asthma

99269
99267
99270
99271

DONE!

At Least 50

| | Jnt | SK | CARD | Columb. | IMS |
|--|-----|---------|------|---------|-----|
| 99276 ① AORTIC ANEURISM | ✓ | | | ✓ | |
| 99131 ② eMerge's Peripheral Arterial Disease (PAD) | ✓ | ✓ | ✓ | ✓ | ✓ |
| 99265 ③ HEART (ALL) FAILURE | ✓ | | | ✓ | |
| 99266 ④ Heart failure Reduced Ejection frac | ✓ | | | ✓ | |
| 99279 ⑤ Obesity | | ✓ +A | | ✓ | |
| 99170 ⑥ Seizure | | | | ✓ | ✓ |
| 99277 ⑦ T2D | | ✓ ✓ | | ✓ | |
| 99278 ⑧ Heart failure Preserved ejection fraction | ✓ | | | ✓ | |
| 99273 ⑨ Glaucoma | | | | ✓ | |
| 99280 VTE | | | | | |

99262
99263
99267
99270
99271

(Severe)
Asthma

DONE!

At Least
50

| | | Jnt | St | Card | Columb. | IMS |
|-------|---|-----|--------|------|---------|-----|
| 99276 | ① AORTIC ANEURISM | → ✓ | | ✓ | ✓ | ✓ |
| 99131 | ② eMerge's Peripheral Arterial Disease (PAD) | → ✓ | ✓ | ✓ | ✓ | ✓ |
| 99265 | ③ HEART (ALL) FAILURE ID 99265 | → ✓ | | ✓ | ✓ | |
| 99266 | ④ Heart failure Reduced Ejection fraction ID 99266 | → ✓ | | | ✓ | |
| 99279 | ⑤ Obesity ID 99279 | | ✓ | | ✓ | |
| 99170 | ⑥ Seizure | | | ✓ | ✓ | ✓ |
| 99277 | ⑦ T2D | | ✓ ✓ | | ✓ | ✓ |
| 99278 | ⑧ Heart failure Preserved ejection fraction ID 99278 | ✓ | | | ✓ | |
| 99273 | ⑨ Glaucoma | | | | ✓ | ✓ |
| 99280 | VTE ID 99280 | | | | | |

~~99282~~
~~99269~~
~~99267~~
~~99270~~
~~99271~~

(Severe)
Asthma

DONE!

At Least
50

| | | JnT | St | Curr | Columb. | IMS |
|-------|--|-----|---------|------|---------|-----|
| 99276 | ① AORTIC ANEURISM | ✓ | ✓ | ✓ | ✓ | ✓ |
| 99131 | ② eMerge's Peripheral Arterial Disease (PAD) | ✓ | ✓ | ✓ | ✓ | ✓ |
| 99265 | ③ HEART (ALL) FAILURE <small>ID 99265</small> | ✓ | ✓ | ✓ | ✓ | |
| 99266 | ④ Heart failure Reduced Ejection frac <small>ID 99266</small> | ✓ | ✓ | ✓ | ✓ | |
| 99279 | ⑤ Obesity <small>ID 99249</small> | | ✓ +A | | ✓ | |
| 99170 | ⑥ Seizure | | ✓ | ✓ | ✓ | ✓ |
| 99277 | ⑦ T2D | | ✓ | | ✓ | ✓ |
| 99278 | ⑧ Heart failure Preserved ejection fraction <small>ID 99278</small> | ✓ | ✓ | ✓ | ✓ | |
| 99273 | ⑨ Glaucoma | | ✓ | | ✓ | ✓ |
| 99280 | VTE <small>ID 99280</small> | | ✓ | | | |

99280

VTE

IMU

99280

VTE

| | JNJ | Fon | C Hop | Columbia | INM |
|--------------------|-----|---------|-------|----------|-----|
| S | ✓ | | | ✓ | ✓ |
| M | ✓ | ✓ | ✓ | ✓ | ✓ |
| (D) | ✓ | ✓ | ✓ | ✓ | ✓ |
| (t) | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9260 | ✓ | ✓ | | ✓ | ✓ |
| | ✓ | ✓ +A | | ✓ | ✓ |
| e | | ✓ | ✓ | ✓ | ✓ |
| | | ✓ | | ✓ | ✓ |
| re #178 tion | ✓ | ✓ | | ✓ | |
| ng | | ✓ | | ✓ | ✓ |
| | | ✓ | | ✓ | ✓ |



1. 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348

99280

VTE
ID 47280

[illegible]

①

99286

T2DM
IN KIDS
Anaphylaxis

②

99285

③

99276

AORTIC
ANEURISM

④

99131

emerge's
Peripheral
Arterial
Disease (PAD)

⑤

99265

HEART (ALL)
FAILURE
ID 99265

⑥

99266

Heart failure
Reduced
Ejection frac
ID 99266

⑦

99279

Obesity
ID 99279

⑧

99170

Seizure

⑨

99277

T2D

⑩

99278

Heart failure
Preserved
ejection fraction
ID 99278

⑪

99273

Glaucoma

⑫

99280

VTE
ID 99280

JNJ

Stan

CHOP

Columbia

IMU

①

99286

(Severe)
Asthma
IN KIDS

②

99285

Anaphylaxis

③

११७७६

AOETIC ANEURISM

④

99/31

eMerge's
Peripheral
Arterial Disease (PAD)

5

99265

HEART (ALL) FAILURE

⑥

99266

Heart failure
Reduced Ejection frac

7

99279

Obesity
ID 99249

2

99170

Seizure

9

99277

T2D

10

99278

Heart failure
Preserved ID#128
ejection fraction

⑪

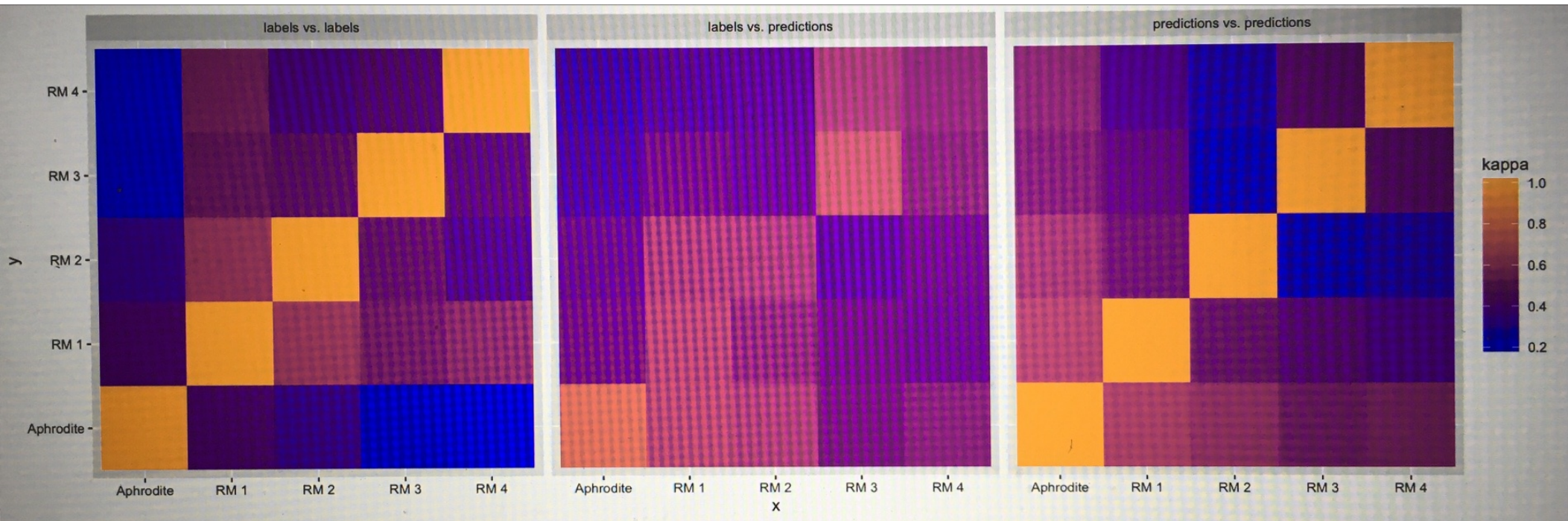
99273

Glarcomen

12

99280

VTE



What we accomplished

- Created 12 phenotype definitions
- Successfully re-used each definition at four other sites
 - gets you the count of patients
- Got breakdown by age, gender, and year at three sites
 - Gets you a table of stratified percentage of patients

What Next?

- Hang on to your phenotype definition materials
 - The description of the intent of the definition
 - The human readable definition of the logic of the definition
- Hang on to your csv files with the stratified cohort breakdown
- Jon Duke and I will get back to you on how we (as OHDSI) collect the items above