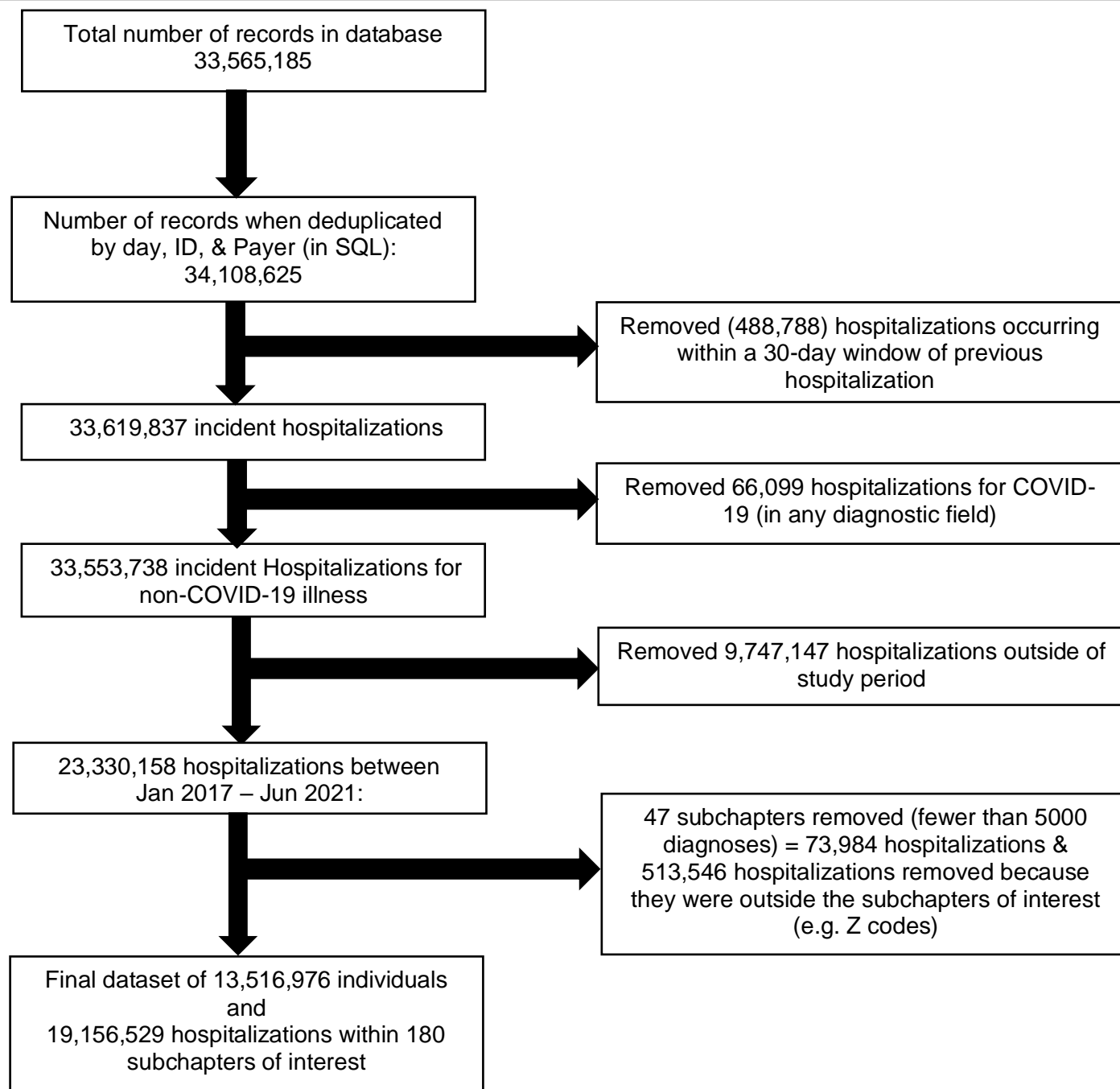


## Trends in non-COVID-19 hospitalizations

**Supplemental Figure S1.** Flowchart illustrating the data subsetting process for the COVID-19 Research Database inpatient data, Jan 1, 2017 – Jun 31, 2021



## Trends in non-COVID-19 hospitalizations

**Supplementary Table S1.** Categorization of ICD-10 Chapters and diagnostic codes

Chapter No.	ICD-10 Code Range	Description
1	A00 – B99	Certain infectious and parasitic diseases
2	C00 – D49	Neoplasms
3	D50 – D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
4	E00 – E89	Endocrine, nutritional and metabolic diseases
5	F01 – F99	Mental, behavioral and neurodevelopmental disorders
6	G00 – G99	Diseases of the nervous system
7	H00 – H59	Diseases of the eye and adnexa
8	H60 – H95	Diseases of the ear and mastoid process
9	I00 – I99	Diseases of the circulatory system
10	J00 – J99	Diseases of the respiratory system
11	K00 – K95	Diseases of the digestive system
12	L00 – L99	Diseases of the skin and subcutaneous tissue
13	M00 – M99	Diseases of the musculoskeletal system and connective tissue
14	N00 – N99	Diseases of genitourinary system
15	O00 – O9A	Pregnancy, childbirth and the puerperium
16	P00 – P96	Certain conditions originating in the perinatal period
17	Q00 – Q99	Congenital malformations, deformations and chromosomal abnormalities
18	R00 – R99	Symptoms, signs, and abnormal clinical laboratory findings, not elsewhere classified
19	S00 – T88	Injury, poisoning and certain other consequences of external causes

## Trends in non-COVID-19 hospitalizations

### Supplementary Table S2.

Excluded subchapters (fewer than 500 diagnoses between Jan1 2017- June 2021)

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Acute rheumatic fever (I00-I02)	Infectious arthropathies (M00-M02)
Arthropod-borne (A90-A99)	Infectious and parasitic sequelae (B90-B94)
Autoinflammatory syndromes (M04)	Inflammatory CNS (G00-G09)
Birth trauma (P10-P15)	Injuries multiple (T07)
Bullous disorders (L10-L14)	Necrotic lower respiratory (J85-J86)
Burns internal (T26-T28)	Neoplasms of bone (C40-C41)
Burns multiple (T30-T32)	Newborn complications (P00-P04)
Certain zoonotic bacterial (A20-A28)	Optic nerve (H46-H47)
Cleft lip (Q35-Q37)	Other chlamydiae (A70-A74)
Complications of endocrine system (E36)	Other heart disease (I30-I5A)
Complications genitourinary (N99)	Other human herpesviruses (B10)
Complications puerperium (O85-O92)	Other infectious (B99)
Complications trauma (T79)	Other musculoskeletal (M95)
Complications skin (L76)	Other newborn (P84)
Complications spleen (D78)	Other spirochetal (A65-A69)
Complications respiratory (J95)	Periprosthetic fracture (M97)
Congenital malformations respiratory (Q30-Q34)	Diseases of peritoneum (K65-K68)
Digestive newborn (P76-P78)	Protozoal disease (B50-B64)
Disorders of glucose and pancreas (E15-E16)	Respiratory-cardio perinatal (P19-P29)
Ear complications (H95)	Rickettsioses (A75-A79)
Endocrine newborn (P70-P74)	Temperature newborn (P80-P83)
Eye complications (H59)	Tuberculosis (A15-A19)
Frostbite (T33-T34)	Unknown mortality (R99)
Glomerular diseases (N00-N08)	Unspecified mental (F99)
Helminthiasis (B65-B83)	Viral prion, infections of CNS (A80-A89)
	Ill-defined and unknown mortality (R99)

## Trends in non-COVID-19 hospitalizations

**Supplementary Table S3.** Estimated IRR and 95% Prediction Interval of select ICD10 chapters between Jan and Apr 2020

	Jan 2020 IRR (95% Prediction Interval)	Feb 2020 IRR (95% Prediction Interval)	Mar 2020 IRR (95% Prediction Interval)	Apr 2020 IRR (95% Prediction Interval)
Blood and Blood forming organs (D50-D89)	1.21 (1.17, 1.26)	1.03 (1.00, 1.07)	0.81 (0.78, 0.84)	0.70 (0.67, 0.72)
Circulatory System (I00-I99)	1.13 (1.11, 1.15)	1.02 (1.01, 1.04)	0.74 (0.72, 0.75)	0.77 (0.76, 0.78)
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	1.11 (1.06, 1.17)	0.96 (0.91, 1.01)	0.64 (0.61, 0.67)	0.45 (0.43, 0.47)
Digestive System (K00-K95)	1.08 (1.07, 1.10)	0.99 (0.98, 1.01)	0.76 (0.75, 0.77)	0.48 (0.47, 0.49)
Ear and Mastoid (H60-H95)	1.08 (1.05, 1.10)	1.02 (1.00, 1.05)	0.67 (0.67, 0.67)	0.28 (0.27, 0.29)
Endocrine, Nutritional, and Metabolic (E00-E89)	1.16 (1.15, 1.18)	1.05 (1.03, 1.06)	0.79 (0.77, 0.80)	0.69 (0.68, 0.70)
Eye and Adnexa (H00-H59)	1.15 (1.12, 1.18)	1.03 (1.01, 1.06)	0.70 (0.69, 0.72)	0.28 (0.28, 0.29)
Genitourinary System (N00-N99)	1.13 (1.12, 1.15)	0.98 (0.97, 0.99)	0.76 (0.75, 0.77)	0.62 (0.62, 0.63)
Infectious & Parasitic Diseases (A00-B99)	1.13 (1.11, 1.16)	1.07 (1.05, 1.10)	0.95 (0.93, 0.96)	0.61 (0.60, 0.62)
Injury, poisoning, external causes (S00-T88)	1.06 (1.05, 1.07)	1.03 (1.02, 1.04)	0.79 (0.78, 0.79)	0.57 (0.57, 0.58)
Mental, Behavioral, and Neurodevelopmental (F01-F99)	1.16 (1.14, 1.17)	1.03 (1.01, 1.04)	0.85 (0.84, 0.86)	0.91 (0.89, 0.92)
Musculoskeletal system and Connective tissue (M00-M99)	1.12 (1.11, 1.13)	1.00 (0.99, 1.01)	0.71 (0.70, 0.72)	0.45 (0.45, 0.45)
Neoplasms (C00-D49)	1.17 (1.14, 1.19)	1.00 (0.98, 1.02)	0.81 (0.79, 0.83)	0.65 (0.64, 0.67)
Nervous System (G00-G99)	1.16 (1.14, 1.18)	1.07 (1.05, 1.09)	0.71 (0.70, 0.72)	0.68 (0.66, 0.69)
Conditions in the perinatal period (P00-P96)	0.96 (0.87, 1.06)	0.84 (0.76, 0.94)	0.85 (0.77, 0.94)	0.85 (0.77, 0.95)
Pregnancy, Childbirth, and Puerperium (O00-O9A)	1.07 (1.04, 1.09)	0.97 (0.95, 0.99)	0.92 (0.90, 0.94)	0.89 (0.87, 0.91)
Respiratory System (J00-J99)	1.15 (1.14, 1.16)	1.09 (1.08, 1.10)	0.93 (0.92, 0.94)	0.40 (0.40, 0.41)
Signs and Symptoms not elsewhere classified (R00-R99)	1.12 (1.10, 1.13)	1.02 (1.01, 1.03)	0.83 (0.83, 0.84)	0.58 (0.58, 0.58)
Skin and Subcutaneous (L00-L99)	1.10 (1.07, 1.12)	1.01 (1.00, 1.03)	0.77 (0.75, 0.78)	0.60 (0.59, 0.61)

## Trends in non-COVID-19 hospitalizations

**Supplementary Figure S2.** Incidence Rate Ratio (IRR) per Diagnostic Chapter for the months between January 2020 and June 2021S

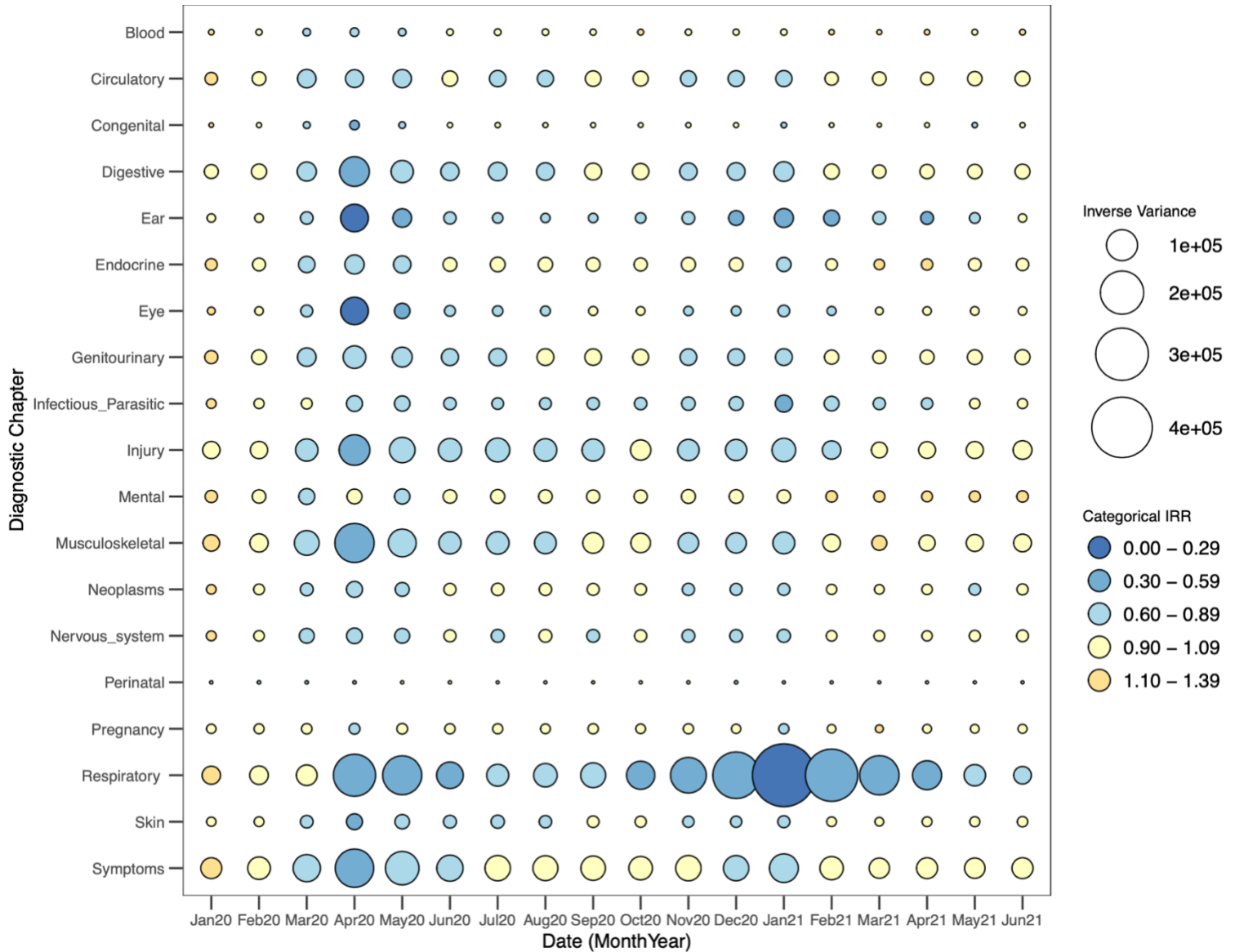
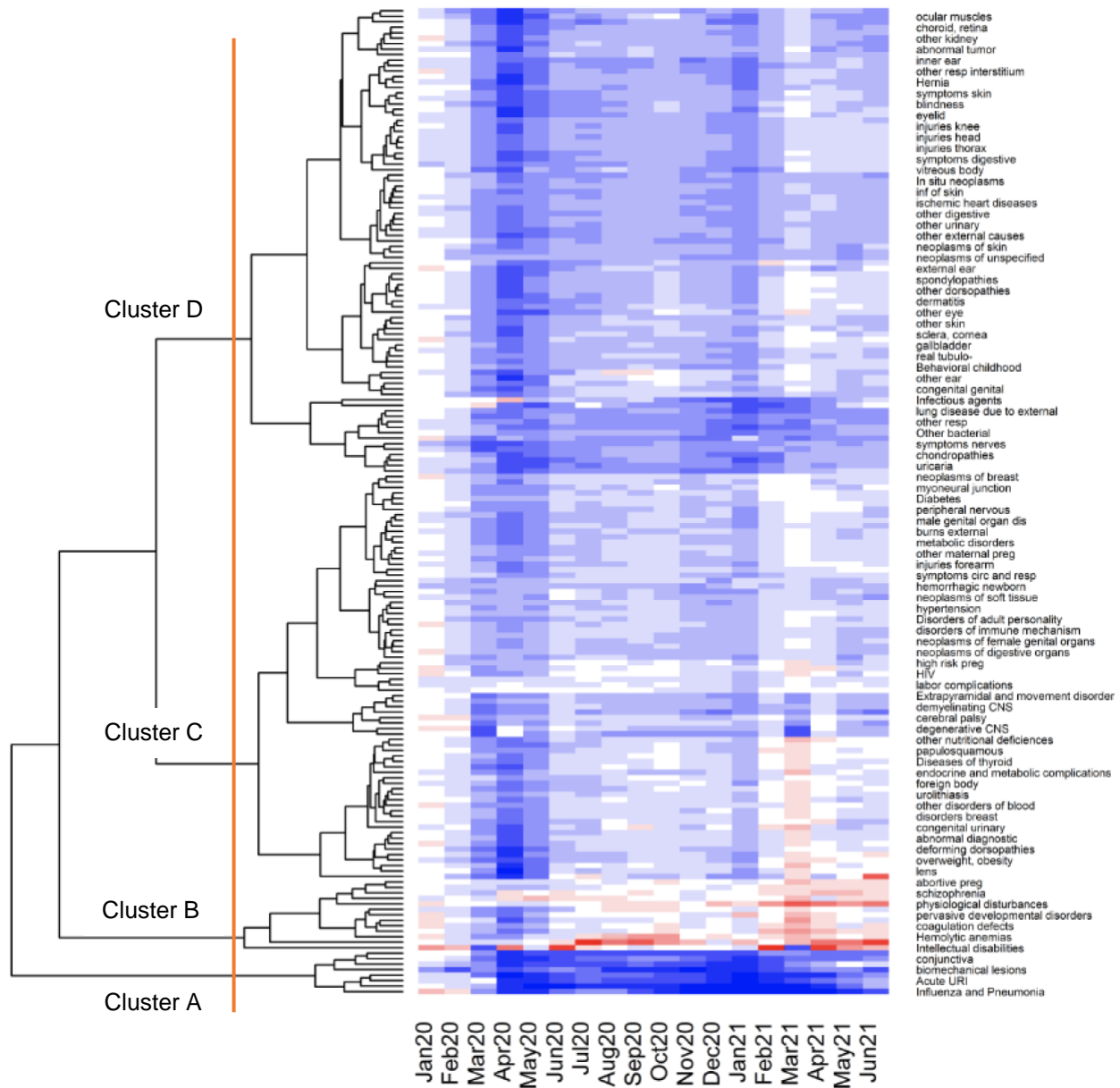


Figure S2 Caption: Each bubble is colored according to IRR and the diameter of the bubble is proportional to the inverse of the IRR variance estimate (i.e. a larger bubble signifies greater confidence in the estimate).

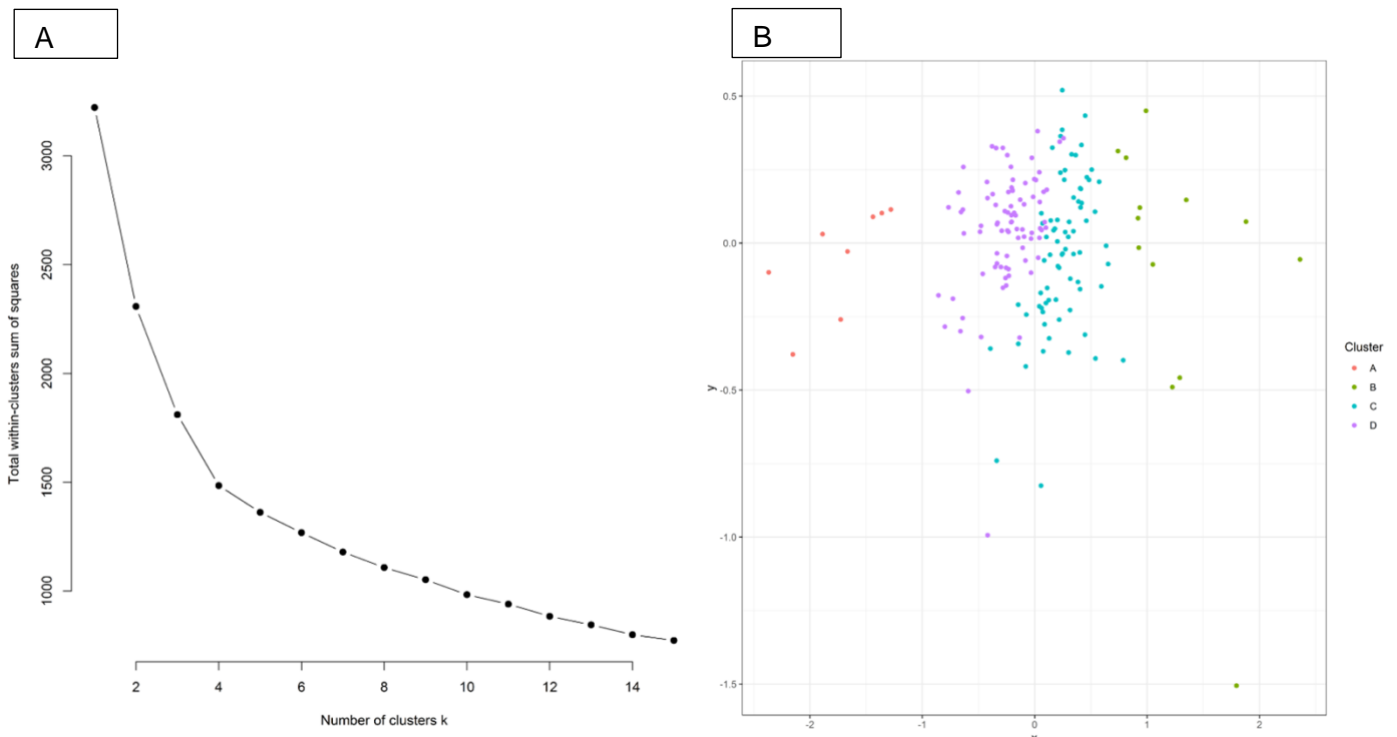
## Trends in non-COVID-19 hospitalizations

**Supplemental Figure S3:** shows the clusters of the subchapters and where I made the cut-offs – can update this to have clear demarcations of the cut-offs



## Trends in non-COVID-19 hospitalizations

### Supplemental Figure S4. Results from k-means and principle components analysis of the ICD-10 subchapters



Supplemental Figure S4 caption: Panel A shows an “elbow plot” with the explained within-cluster sum of squares on the Y-axis and the number of clusters on the X-axis. Panel B shows the principal components analysis of subchapters when categorized into 4 clusters. A cut-off of 4 clusters was chosen based on the elbow plot in panel A.

Trends in non-COVID-19 hospitalizations

**Supplementary Table S4.** Incidence Rate Ratio and 95% Prediction interval of select Subchapters of disease, March 2021 to December 2021

Subchapter	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
I&P (J09-J18)	0.74 (0.72, 0.76)	0.29 (0.28, 0.30)	0.37 (0.35, 0.38)	0.58 (0.56, 0.61)	0.74 (0.71, 0.78)	0.68 (0.65, 0.71)	0.51 (0.49, 0.53)	0.35 (0.34, 0.36)	0.23 (0.23, 0.24)	0.17 (0.17, 0.18)
Acute URI (J00 – J06)	1.09 (1.07, 1.08)	0.33 (0.33, 0.34)	0.28 (0.27, 0.28)	0.39 (0.38, 0.40)	0.58 (0.53, 0.59)	0.51 (0.50, 0.52)	0.51 (0.50, 0.52)	0.52 (0.51, 0.53)	0.46 (0.45, 0.46)	0.35 (0.34, 0.35)
Acute LRI (J20-J22)	0.91 (0.87, 0.95)	0.26 (0.25, 0.27)	0.20 (0.19, 0.21)	0.24 (0.22, 0.25)	0.33 (0.31, 0.35)	0.31 (0.29, 0.33)	0.29 (0.27, 0.31)	0.31 (0.30, 0.33)	0.24 (0.23, 0.25)	0.16 (0.15, 0.16)
Viral skin and mucous (B00 – B09)	0.74 (0.69, 0.79)	0.34 (0.32, 0.36)	0.42 (0.40, 0.45)	0.43 (0.41, 0.46)	0.39 (0.37, 0.41)	0.43 (0.40, 0.45)	0.45 (0.43, 0.48)	0.50 (0.47, 0.53)	0.52 (0.49, 0.55)	0.52 (0.49, 0.56)
Middle ear (H65 – H75)	0.66 (0.64, 0.68)	0.19 (0.18, 0.19)	0.30 (0.29, 0.31)	0.41 (0.40, 0.43)	0.53 (0.51, 0.55)	0.59 (0.57, 0.61)	0.59 (0.57, 0.61)	0.50 (0.48, 0.52)	0.40 (0.39, 0.42)	0.32 (0.31, 0.33)
Intestinal Infectious (A00-A09)	0.68 (0.64, 0.73)	0.35 (0.32, 0.37)	0.42 (0.39, 0.44)	0.46 (0.43, 0.50)	0.52 (0.48, 0.56)	0.52 (0.49, 0.56)	0.56 (0.53, 0.61)	0.50 (0.47, 0.54)	0.44 (0.41, 0.47)	0.37 (0.34, 0.40)
Intellectual Disabilities (F70 – F79)	0.51 (0.43, 0.60)	1.77 (1.50, 2.11)	1.04 (0.89, 1.24)	2.04 (1.75, 2.42)	1.30 (1.11, 1.53)	1.21 (1.04, 1.43)	1.08 (0.93, 1.27)	1.10 (0.94, 1.29)	1.20 (1.03, 1.44)	1.15 (0.98, 1.38)
Schizophrenia (F20 – F29)	0.86 (0.82, 0.90)	1.23 (1.17, 1.29)	1.17 (1.12, 1.23)	1.23 (1.17, 1.28)	1.18 (1.13, 1.24)	1.19 (1.14, 1.25)	1.27 (1.21, 1.33)	1.22 (1.16, 1.28)	1.07 (1.02, 1.13)	1.11 (1.06, 1.17)
STI (A50 – A64)	0.80 (0.71, 0.92)	0.60 (0.53, 0.68)	0.74 (0.66, 0.84)	0.93 (0.83, 1.06)	1.10 (0.97, 1.24)	1.30 (1.16, 1.47)	1.25 (1.11, 1.41)	1.34 (1.20, 1.52)	1.13 (1.01, 1.29)	1.21 (1.07, 1.38)
Hemolytic anemias (D55 – D59)	0.75 (0.67, 0.85)	0.77 (0.68, 0.87)	0.99 (0.88, 1.12)	1.03 (0.91, 1.17)	1.26 (1.12, 1.43)	1.39 (1.24, 1.58)	1.52 (1.35, 1.73)	1.50 (1.33, 1.72)	1.22 (1.09, 1.40)	1.23 (1.09, 1.41)
Coagulation defects (D65 – D69)	0.93 (0.83, 1.04)	0.76 (0.68, 0.85)	0.87 (0.78, 0.98)	1.13 (1.02, 1.27)	1.05 (0.95, 1.18)	1.09 (0.98, 1.22)	1.19 (1.07, 1.34)	1.26 (1.13, 1.41)	1.06 (0.95, 1.19)	1.15 (1.02, 1.29)



