

ICD-10 CM

International Statistical Classification of Diseases & related Health Problems

(Clinical Modification)



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A STUDY ON IMPORTANCE OF INTERNATIONAL CLASSIFICATION OF DISEASES (ICD) IN ANALYSIS OF INPATIENT MORBIDITY & MORTALITY DATA WITHIN HOSPITAL SETTINGS IN INDIA

AIM

To study the importance of ICD for analysis & presentation of inpatient morbidity & mortality data within hospital settings in India

OBJECTIVES

- To classify the annual inpatient diagnosis data according to International Classification of Diseases
- To identify the annual case mix of inpatients
- To identify the top diagnosis & Disease related groups (DRG) among the inpatients
- To identify the top causes of mortality among the inpatients
- To perform demographic, seasonal & discharge outcome wise analysis

STUDY METHODOLOGY

A descriptive cross-sectional study was undertaken at a multi-specialty tertiary care hospital in Jaipur, India. It was a retrospective record-based review study that included inpatients admitted in the hospital from 1st January 2020 to 31st December 2020.

Annual Inpatient data for the calendar year 2020 with the following inclusion & exclusion criteria was used-

- Inpatients admitted for Medical Management for all departments
- Inpatients admitted for Surgical Management for all departments
- Planned & Emergency admissions through ER both included
- Patients admitted in all wards included
- Female inpatients admitted for labor & delivery
- Inpatients with Discharge Outcome as Normal Discharge, LAMA & Expired

INCLUSIONS

- Transplant & donor cases
- Follow up surgical cases
- Cases whose discharge/death summaries could not accessed through HMIS
- Cases with a high proportion of missing, ambiguous ICD-10 codes, or poor documentation of diagnosis

EXCLUSIONS

ICD-10 CM (Clinical Modification)

WHO mandated Health data standard

KEY CHARACTERISTICS



Alphanumeric codes



Statistical Analysis



3 character codes



Comparative Analysis



Dual -axis classification



Billings & Reimbursements



Chapters---DRGs---Diseases



Data Standardization



Semantic interoperability

Why ICD???

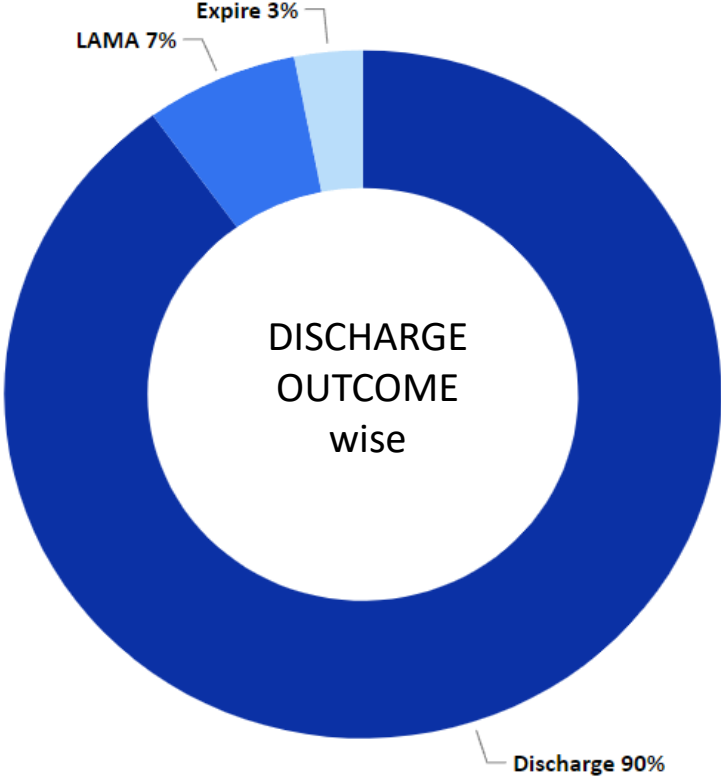
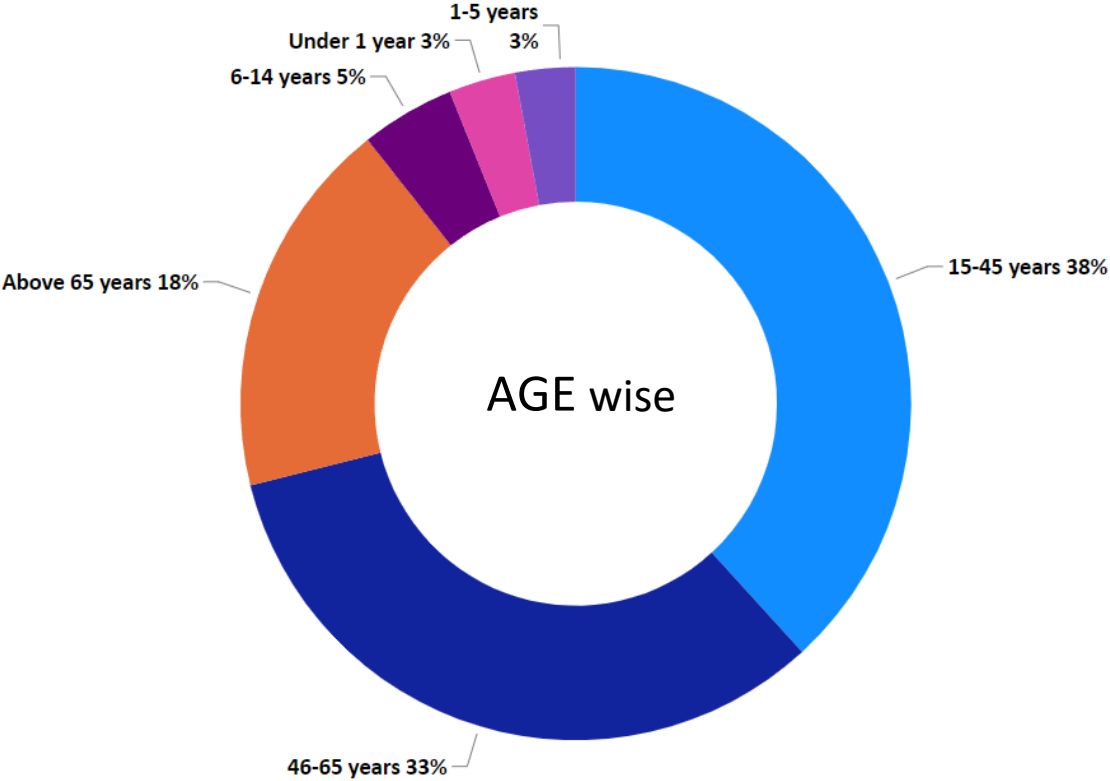
- Disease index/Case mix
- Department wise index
- Doctor wise index
- Morbidity statistics
- Mortality statistics (Gross, Net, Case Fatality Rates, ASMR)
- Geographical analysis (Catchment area)
- Age specific analysis
- Gender specific analysis
- Risk factor analysis
- Association studies
- Healthcare Utilization studies
- QOC Assessment
- Survival Analysis
- Temporal /Seasonal trends
- Comorbidity analysis
- Discharge Outcome wise analysis
- Public Health Surveillance
- National & International comparisons- Benchmarking



Source- <https://www.shutterstock.com/search/statistics>

Study Population-
Annual Inpatient data
for CY-2020

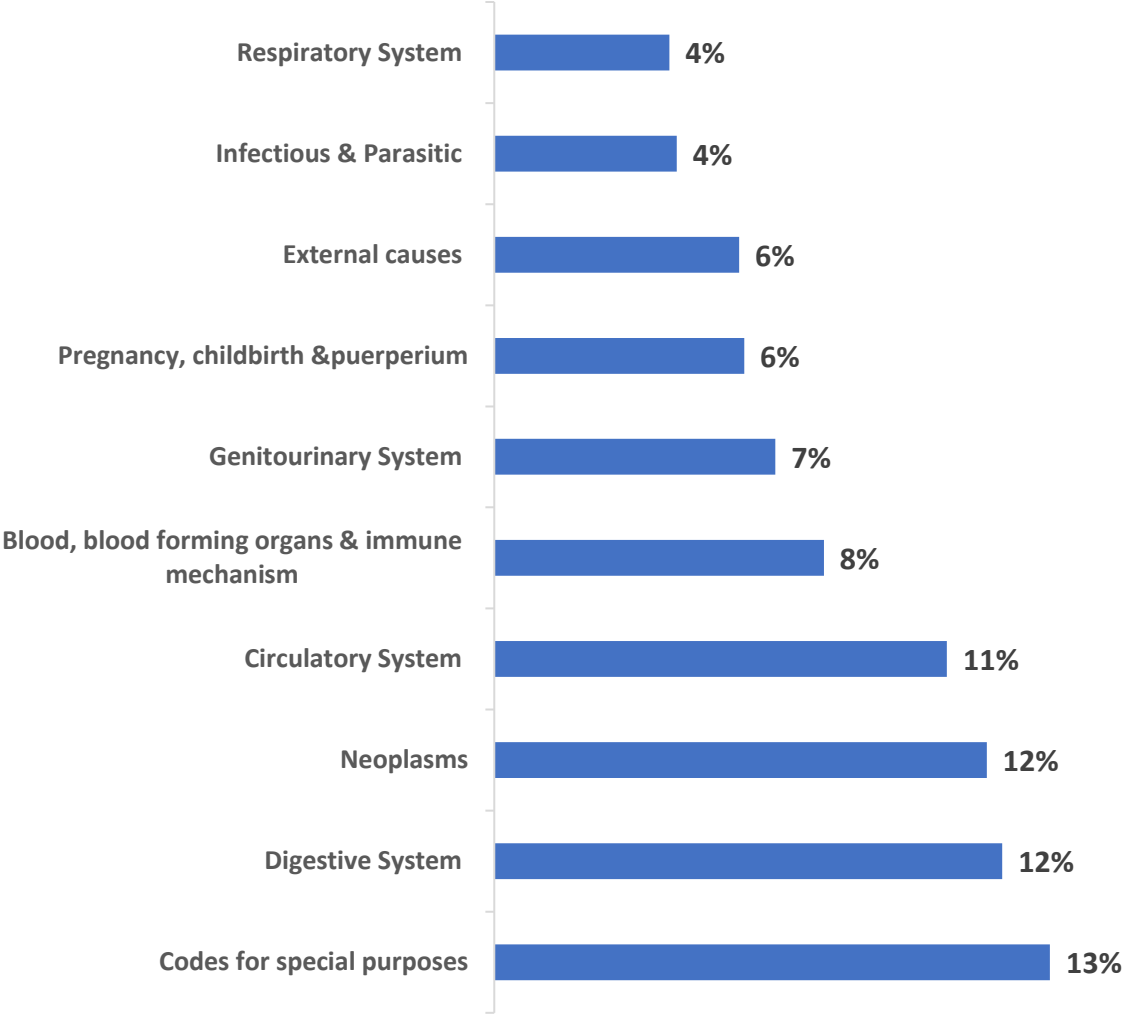
Study Methodology-
Retrospectively done
through Medical
records
(discharge/death
summaries)



Age group	Female				Male				Grand Total
	Discharge	Expired	LAMA	Total	Discharge	Expired	LAMA	Total	
Under 1 year	211	8	41	260	373	20	43	436	696
1-5 years	208	1	16	225	377	6	20	403	628
6-14 years	350	2	8	360	591	4	24	619	979
15-45 years	3836	39	194	4069	3782	94	306	4182	8251
46-65 years	2516	72	199	2787	3822	181	317	4320	7107
Above 65 years	1261	83	115	1459	2123	155	204	2482	3941
Grand Total	8382	205	573	9160	11068	460	914	12442	21602

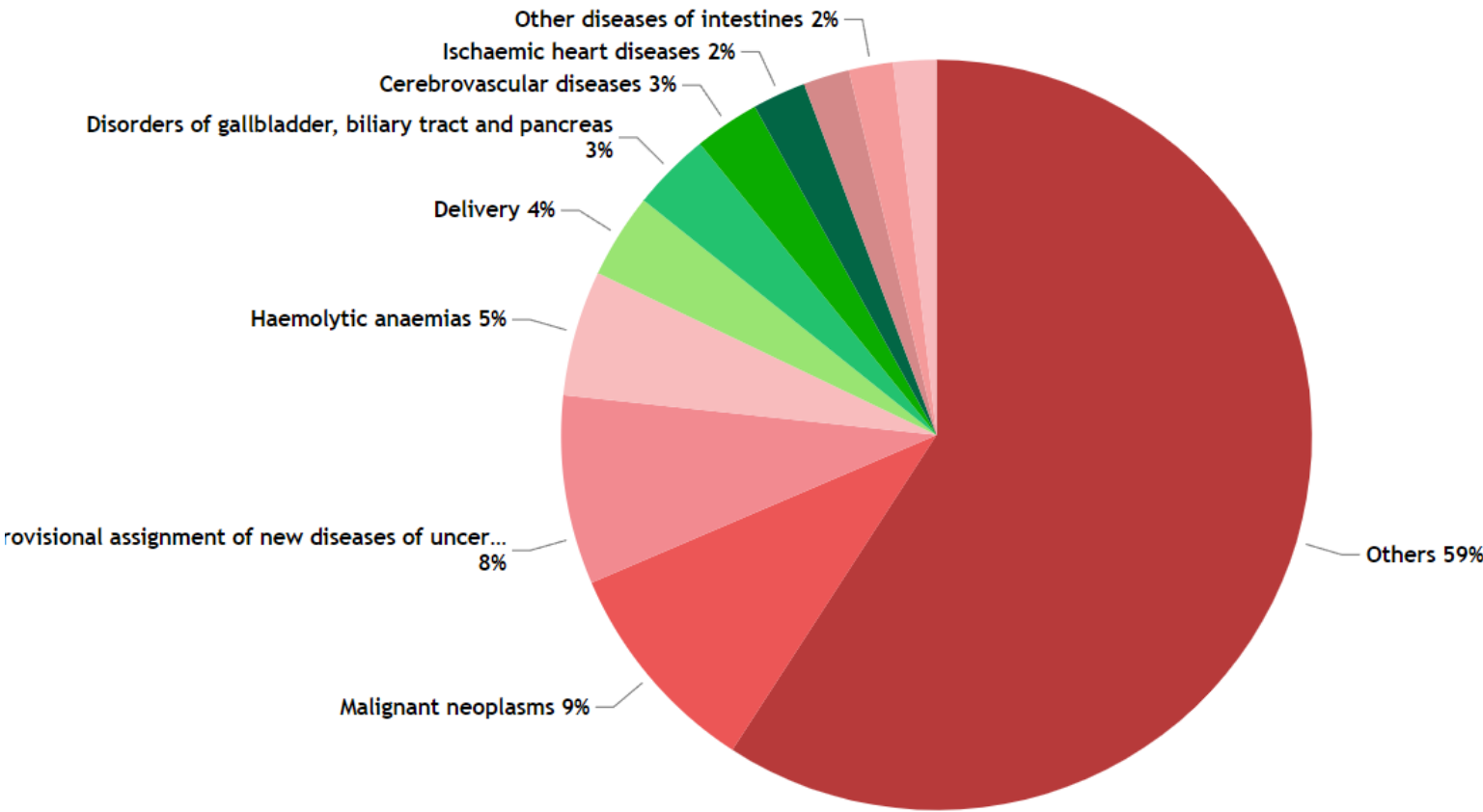
ICD Chapter	Chapter Name	No of cases
A00-B99	Certain infectious & parasitic diseases	935
C00-D48	Neoplasms	2523
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1689
E00-E90	Endocrine, nutritional and metabolic diseases	512
F00-F99	Mental and behavioural disorders	134
G00-G99	Diseases of the nervous system	482
H00-H59	Diseases of eye & adnexa	249
H60-H95	Diseases of ear & mastoid process	34
I00-I99	Diseases of circulatory system	2319
J00-J99	Diseases of respiratory system	897
K00-K93	Diseases of digestive system	2602
L00-L99	Diseases of skin & subcutaneous tissue	182
M00-M99	Diseases of the musculoskeletal system and connective tissue	617
N00-N99	Diseases of the genitourinary system	1440
O00-O99	Pregnancy, childbirth and the puerperium	1280
P00-P96	Certain conditions originating in the perinatal period	342
Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	184
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	777
S00-T98	Injury, poisoning and certain other consequences of external causes	1254
U00-U99	Codes for special purposes	2847
V01-Y98	External causes of morbidity and mortality	26
Z00-Z99	Factors influencing health status and contact with health services	277

These 10 chapters account for 80% of total case mix

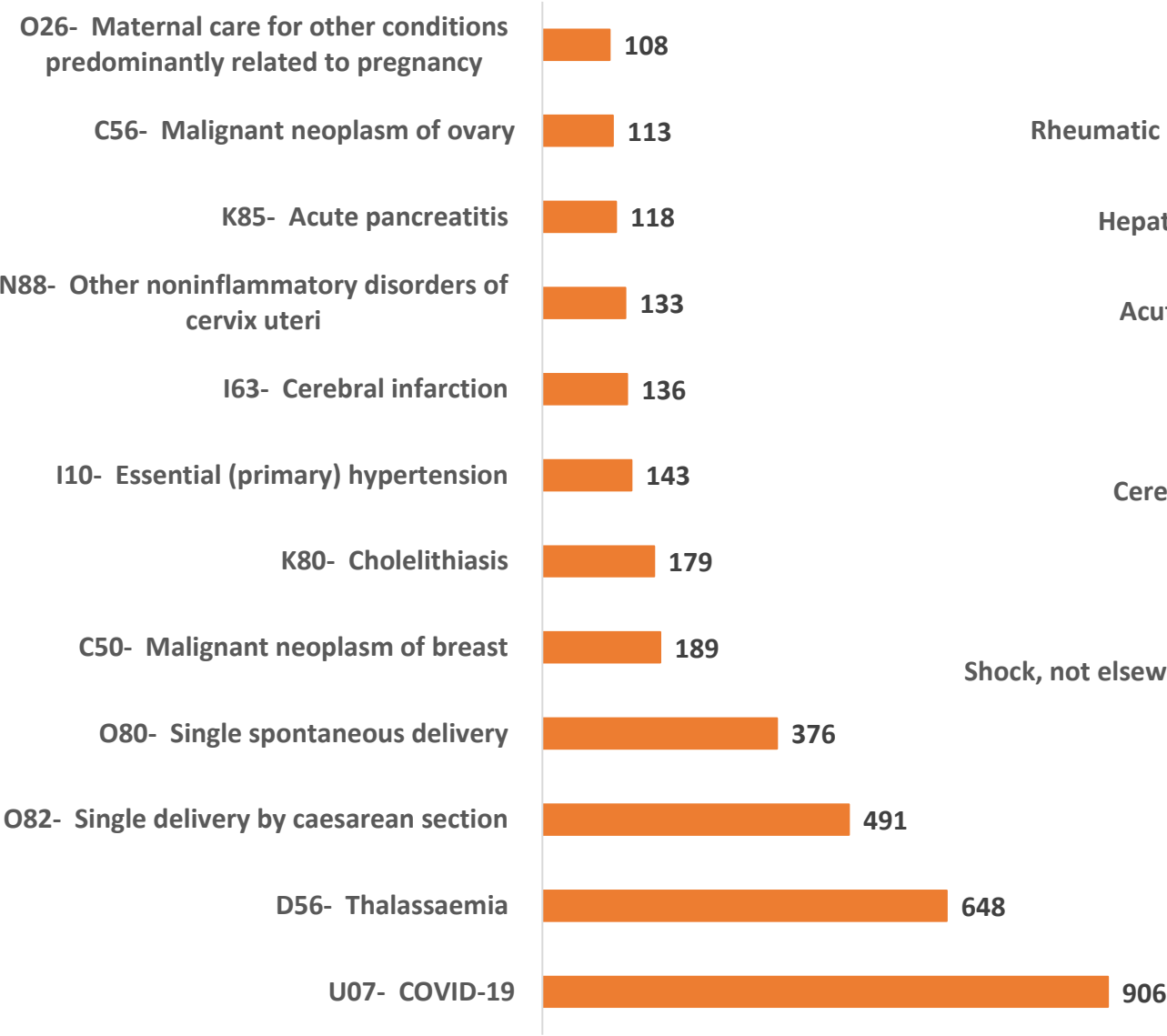


ICD -10 CM	DRG (Disease Related Group)	No of cases
U00-U49	Provisional assignment of new diseases of uncertain etiology	2854
C00-C97	Malignant neoplasms	2032
D55-D59	Haemolytic anaemias	1168
O80-O84	Delivery	789
K80-K87	Disorders of gallbladder, biliary tract and pancreas	731
I60-I69	Cerebrovascular diseases	608
I20-I25	Ischaemic heart diseases	496
K70-K77	Diseases of liver	429
K55-K63	Other diseases of intestines	412
I10-I15	Hypertensive diseases	401

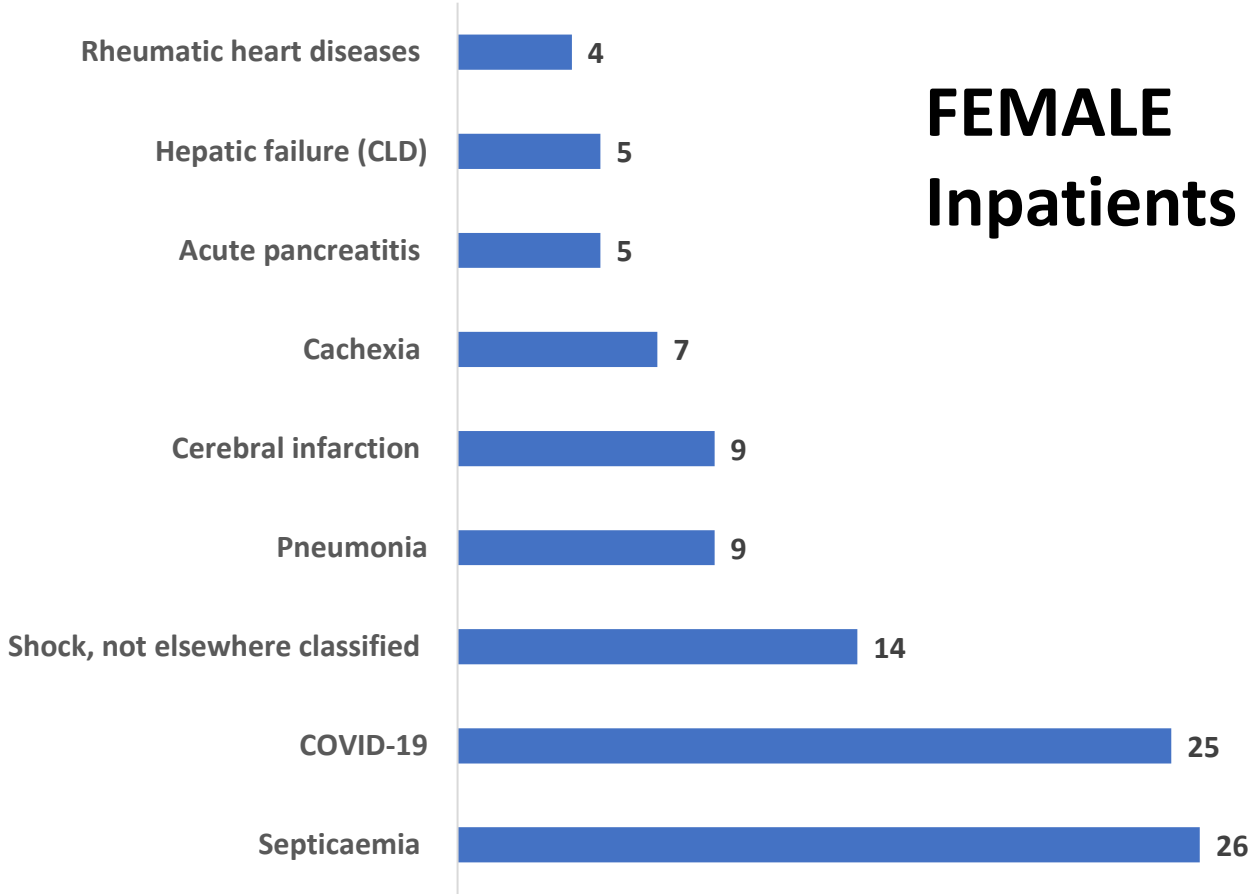
Top 10 Disease Related Groups (DRGs)



Top 12 Diagnosis – (Total Sample Size=9160)

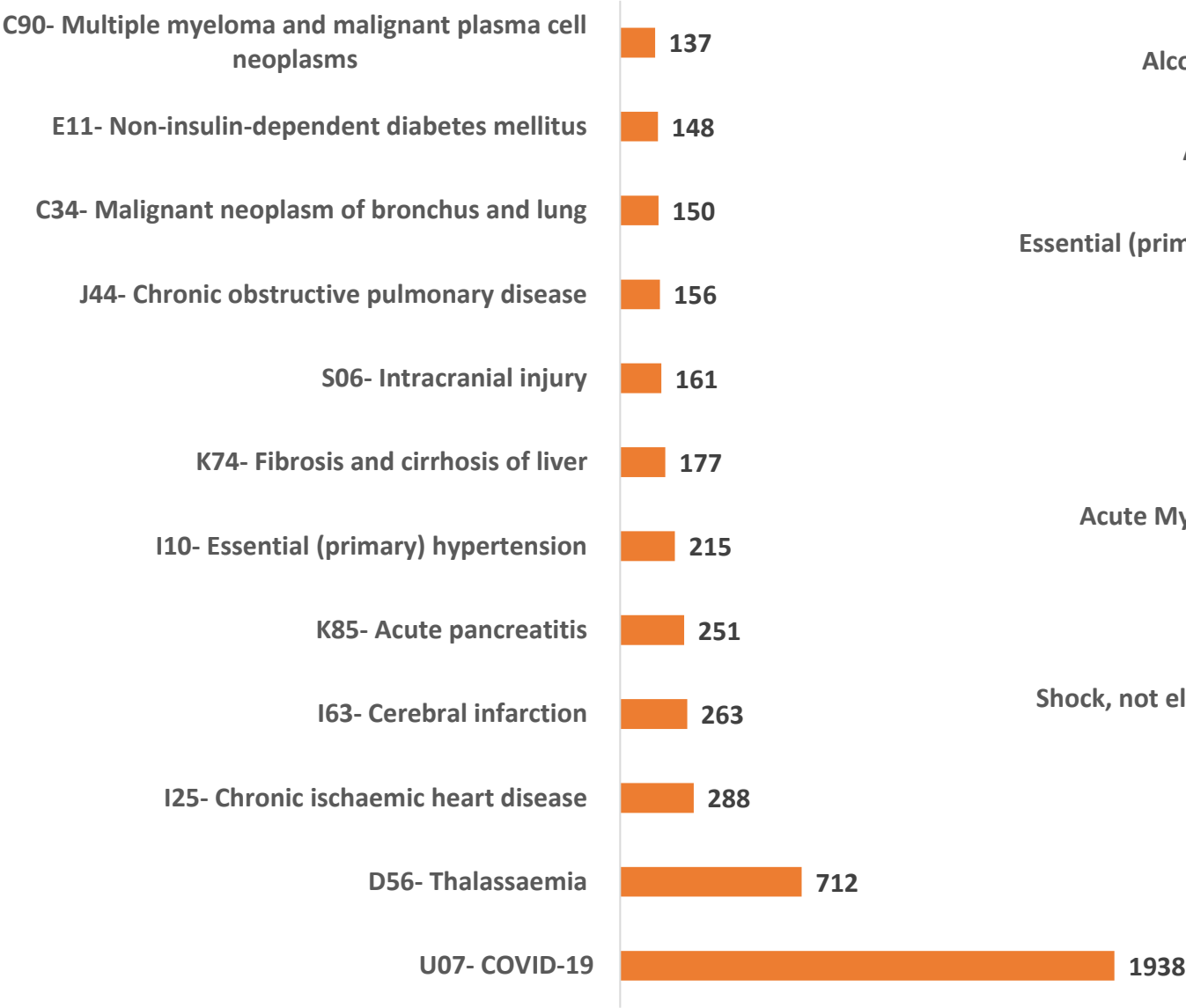


Top 10 Causes of Mortality - (Total Deaths=205)

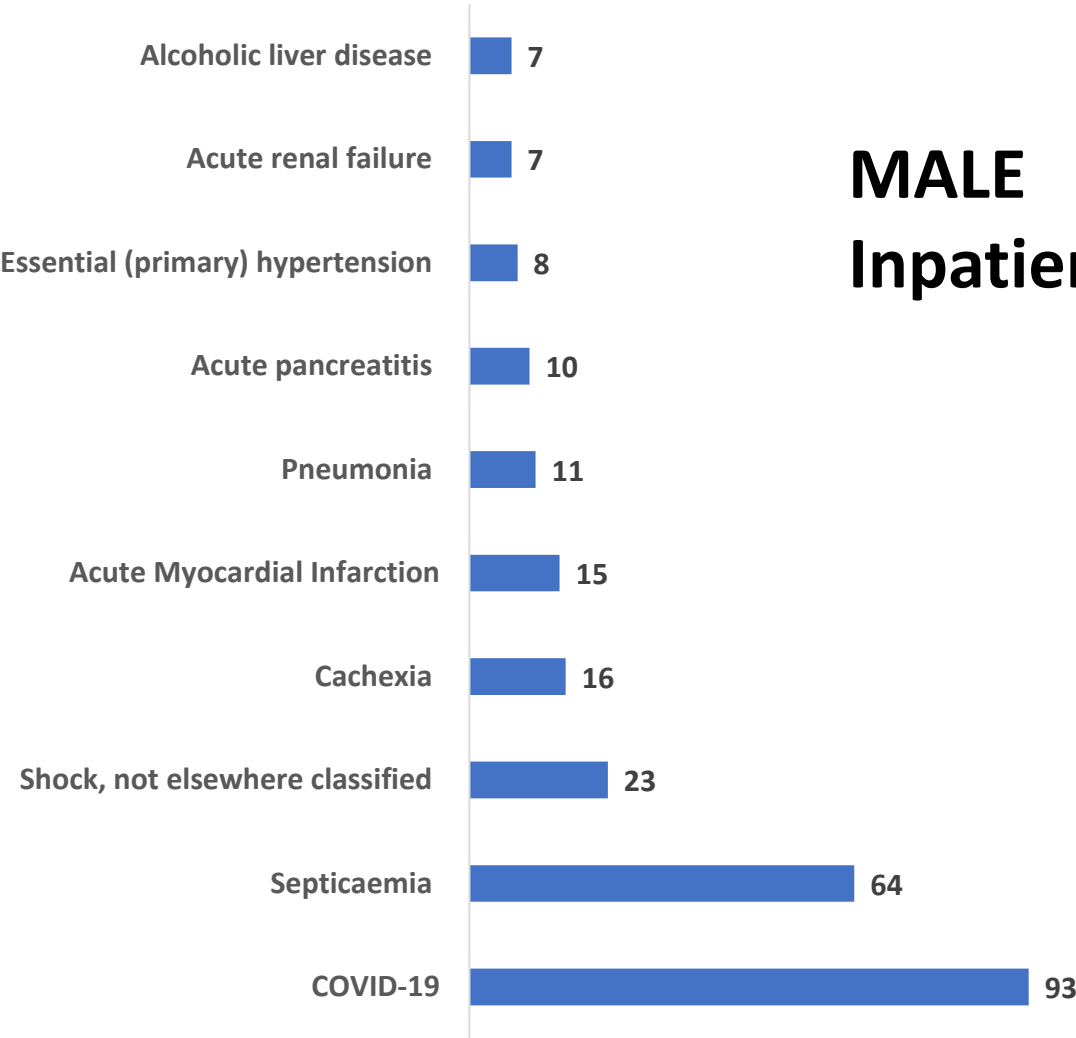


**FEMALE
Inpatients**

Top 12 Diagnosis – (Total Sample Size=12442)



Top 10 Causes of Mortality - (Total Deaths=460)

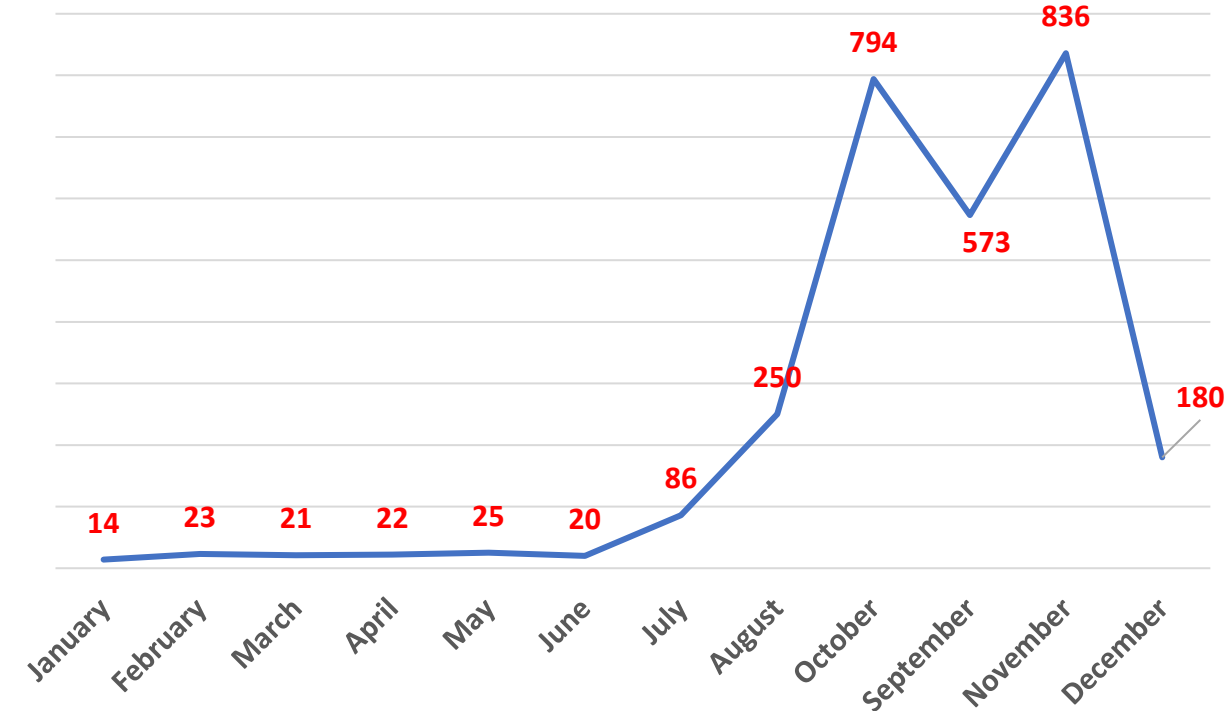


**MALE
Inpatients**

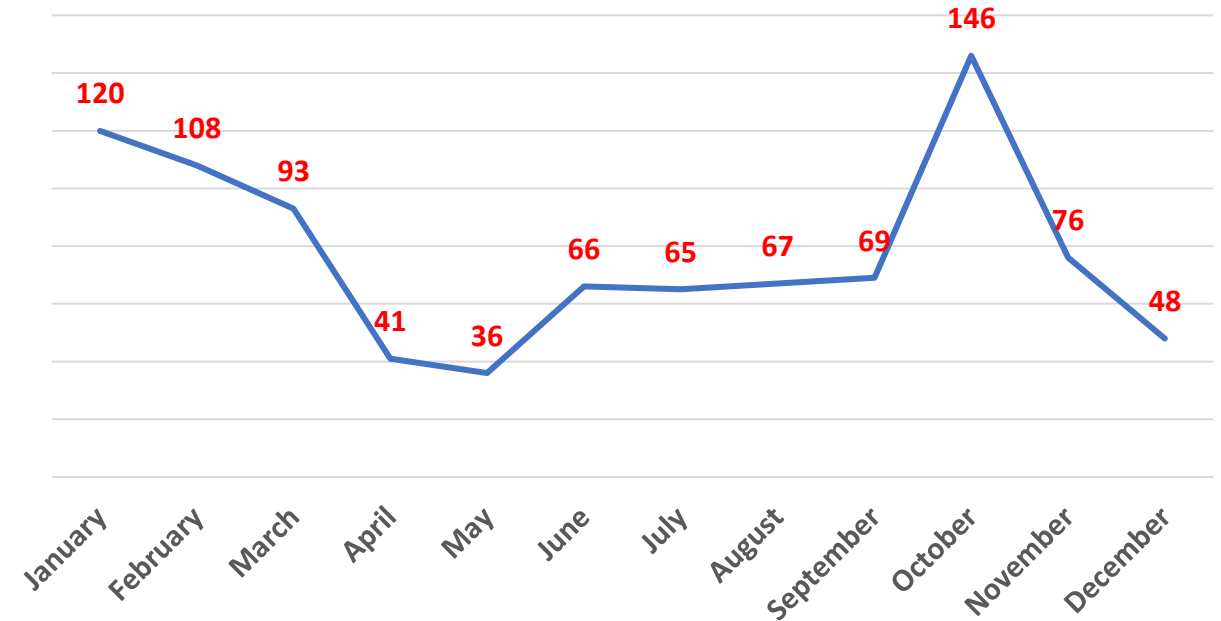


TEMPORAL ANALYSIS

U07-COVID-19 (Total cases=2844)



A00-B99- Infectious & Parasitic diseases (Total cases=935)



Significance

- Resource allocation
- Service Planning
- Targeted healthcare interventions
- Surveillance

KEY FINDINGS during data collection

- Discharge summaries missing from HMIS
- Discharge summaries are non-standardized. Each department has its own Performa.
- 4 digit subcategories – complicate the matter
- Primary diagnosis difficult to identify for multi-diagnosis cases
- Monthly compilation of disease diagnosis not captured

RECOMMENDATIONS

Implementation of ICD-10 CM

