



Patient Admissions Data Analysis



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Average Length of Stay by Medical Condition

Medical_Condition	Average_Length_of_Stay
Burns	47
Pneumonia	48
Bronchitis	51
Allergies	55
Diabetes	56
Asthma	59
Alzheimers Disease	250
Skin Infection	251
Stroke	261
Influenza	289
Multiple Sclerosis	305
Sprain	308
Arthritis	310
Urinary Tract Infection	313
Sinusitis	325
Epilepsy	328
Heart Disease	346
Anxiety	355
Chronic Obstructive Pulmonary Disease	372
COVID-19	395
Depression	530
Fracture	532
Hypertension	556
Chronic Kidney Disease	561
Parkinsons Disease	612
Gastroenteritis	703
Common Cold	716
Cancer	774
Migraine	1281

The data shows the average length of stay for each medical condition, with migraines having the highest average stay and the common cold also having a relatively long stay. This may be due to patients initially coming in for this condition which led to the discovery of more serious underlying issues which require longer hospitalization admissions.

Medical Conditions that are above the average length of stay

Medical_Condition	Average_Length_of_Stay
COVID-19	395
Depression	530
Fracture	532
Hypertension	556
Chronic Kidney Disease	561
Parkinsons Disease	612
Gastroenteritis	703
Common Cold	716
Cancer	774
Migraine	1281

This provides insights into which medical conditions have an above-average length of stay, which can help with resource allocation and planning. By identifying medical conditions that have longer length of stays, the healthcare administrators can better determine the necessary supplies and adjust staffing schedules accordingly. This will ensure that an appropriate amount of healthcare professionals are available in each department.

Monthly Total Admissions

Month	Total_Admissions
2023-02	7
2023-03	28
2023-04	26
2023-05	27
2023-06	35
2023-07	25
2023-08	33
2023-09	21
2023-10	25
2023-11	31
2023-12	35
2024-01	26
2024-02	24
2024-03	33
2024-04	25
2024-05	31
2024-06	20
2024-07	8

There is a spike in the summer months, with June having one of the highest admission rates. This could be attributed to increased outdoor activities, such as barbecues and sport which can result in injuries or burns. Another one of the highest is in December, likely due to seasonal illnesses such as the flu, respiratory infections as well as the stress and overindulgence associated with the holiday season. This trends highlight which months may require additional staffing or resource allocation to meet demand.

Admissions Trends based on Medical Condition over the last 4 years

This analyzed the trends in medical condition admissions from 2021 to 2024. The percentage increase represents the change in admissions from 2023 to 2024. This data provides insights into year over year trends which help with planning and resource allocation. The 2024 data only includes admissions from January to July which explains why most of 2024 admissions are lower than they were for 2023 admissions.

Medical_Condition	2021_Admissions	2022_Admissions	2023_Admissions	2024_Admissions	Percentage_Increase	
Alzheimers Disease	7	19	8	12	50.00	
Fracture	5	10	10	12	20.00	
Stroke	8	14	10	10	0.00	
Epilepsy	5	14	7	6	-14.29	
Hypertension	5	12	10	8	-20.00	
Sinusitis	7	10	8	6	-25.00	
Chronic Obstructive Pulmonary Disease	5	7	10	7	-30.00	
Asthma	9	9	11	7	-36.36	
Anxiety	3	10	10	6	-40.00	
Bronchitis	8	8	16	9	-43.75	
Chronic Kidney Disease	6	15	9	5	-44.44	
Sprain	4	10	14	7	-50.00	
Heart Disease	3	11	10	5	-50.00	
Gastroenteritis	7	7	9	4	-55.56	
COVID-19	4	8	9	4	-55.56	
Allergies	4	7	14	6	-57.14	
Urinary Tract Infection	8	12	10	4	-60.00	
Parkinsons Disease	2	8	15	6	-60.00	
Depression	5	10	16	6	-62.50	
Skin Infection	7	12	20	7	-65.00	
Cancer	8	12	12	4	-66.67	
Multiple Sclerosis	4	13	12	4	-66.67	
Pneumonia	1	7	18	6	-66.67	
Migraine	9	13	16	5	-68.75	
Influenza	4	10	18	5	-72.22	
Burns	3	15	9	2	-77.78	
Arthritis	2	17	12	2	-83.33	
Diabetes	6	9	13	1	-92.31	
Common Cold	6	17	16	1	-93.75	

Predictions for 2024 Admissions

Medical_Condition	2021_Admissions	2022_Admissions	2023_Admissions	2024_Admissions_January-July	Projected_2024_Admissions	Percentage_Increase	
Alzheimers Disease	7	19	8	12	21	162.50	
Fracture	5	10	10	12	21	110.00	
Stroke	8	14	10	10	17	70.00	
Epilepsy	5	14	7	6	10	42.86	
Hypertension	5	12	10	8	14	40.00	
Sinusitis	7	10	8	6	10	25.00	
Chronic Obstructive Pulmonary Disease	5	7	10	7	12	20.00	
Asthma	9	9	11	7	12	9.09	
Anxiety	3	10	10	6	10	0.00	
Chronic Kidney Disease	6	15	9	5	9	0.00	
Bronchitis	8	8	16	9	15	-6.25	
Heart Disease	3	11	10	5	9	-10.00	
Sprain	4	10	14	7	12	-14.29	
Gastroenteritis	7	7	9	4	7	-22.22	
COVID-19	4	8	9	4	7	-22.22	
Allergies	4	7	14	6	10	-28.57	
Urinary Tract Infection	8	12	10	4	7	-30.00	
Parkinsons Disease	2	8	15	6	10	-33.33	
Depression	5	10	16	6	10	-37.50	
Skin Infection	7	12	20	7	12	-40.00	
Cancer	8	12	12	4	7	-41.67	
Multiple Sclerosis	4	13	12	4	7	-41.67	
Migraine	9	13	16	5	9	-43.75	
Pneumonia	1	7	18	6	10	-44.44	
Influenza	4	10	18	5	9	-50.00	
Burns	3	15	9	2	3	-66.67	
Arthritis	2	17	12	2	3	-75.00	
Diabetes	6	9	13	1	2	-84.62	
Common Cold	6	17	16	1	2	-87.50	

To project the total number of admissions for 2024 for each medical condition, we use the admissions data available up to July 2024 and use this to predict the rest of 2024 admissions based on the trend from the first half of 2024.

Summary

- This analysis on patient admissions provides insights into hospital trends that aids in resource allocation, staffing and supply management. By understanding peak admissions periods, medical conditions with above average length of stay, trends in yearly admissions and projection for the coming year will assist healthcare administrators in planning effectively to improve patient care and ensure the hospital is running efficiently