

Vizient data insights brief

COVID-19: inpatient pharmacy utilization and outcomes

October 14, 2020

Overview



Vizient® continues to analyze COVID-19 impacts on patient outcomes by leveraging insights from the Vizient Clinical Data Base (CDB). In this insight brief, Vizient examined inpatient utilization and outcomes for select medications considered as potential treatments in COVID-19 between April and July 2020.

Methodology and Insights

Vizient evaluated inpatient utilization and outcome metrics for potential COVID-19-related treatments for all available hospitals in the Clinical Data Base (CDB) with pharmacy utilization data from April through July of 2020 (n=415 hospitals). Cases utilizing hydroxychloroquine, remdesivir and dexamethasone appear to be lower acuity based on lower expected deaths, % of cases with ICU utilization and invasive ventilation (Table 1); while initial data may indicate more favorable mortality in patients receiving remdesivir or dexamethasone, further investigation is needed as more data becomes available. Cases receiving tocilizumab had longer LOS and higher expected deaths, utilization of ICU services and invasive ventilation, potentially indicating a higher acuity patient population receiving this drug.

Table 1: Utilization and outcomes for potential COVID-19-related treatments

Individual Resource*	Utilization Total COVID-19 Cases with Pharmacy Utilization: 128,049			Mean LOS (Obs)	Mean LOS (Exp)	LOS Index	% ICU Cases	Mean ICU Days	% Deaths (Obs)	% Deaths (Exp)	Mortality Index	% Early Deaths	% Cases With Invasive Ventilation [#]
	Cases Receiving Drug	% Cases Receiving Resource	Mean Days Resource Used/ Case										
hydroxychloroquine	30,749	24.0	4.5	13.0	9.5	1.37	33.0	12.5	19.3	20.3	0.95	1.1	30.4%
famotidine	26,325	20.6	8.8	15.2	10.2	1.49	47.9	13.3	23.2	23.8	0.97	1.2	45.2%
dexamethasone	22,247	17.4	5.2	10.7	9.4	1.14	33.4	10.1	13.5	15.9	0.85	0.7	22.4%
tocilizumab	9,390	7.3	1.2	18.3	10.9	1.68	58.1	14.1	26.7	24.9	1.07	0.8	50.2%
remdesivir [†]	8,102	6.3	5.0	12.0	9.5	1.27	41.2	10.8	13.4	15.6	0.86	0.3	24.7%

Source: CDB (April-July 2020), 2020 AMC Risk Model; total hospitals evaluated: 415

Includes cases ≥ 18 years of age; any ICD-10 diagnosis of U071

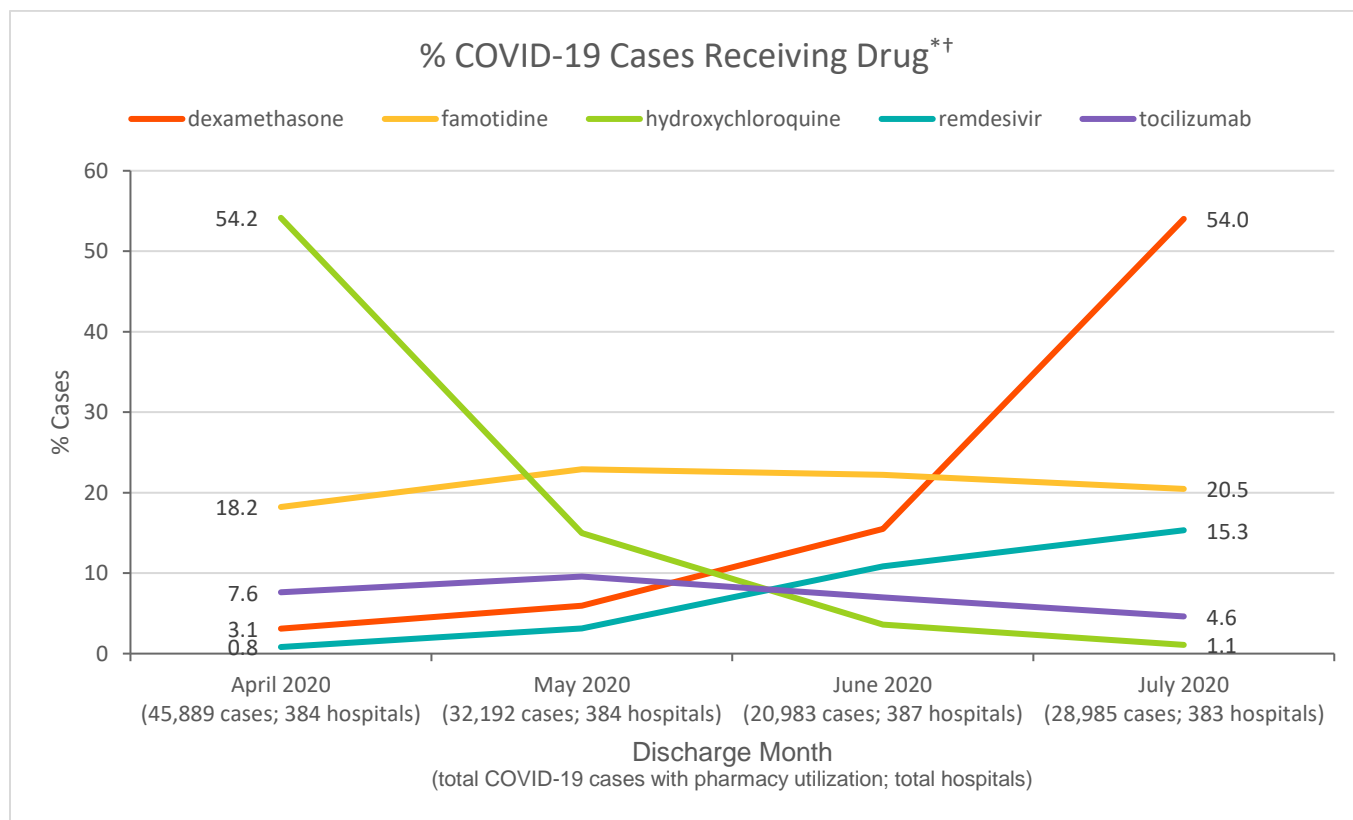
* Cases receiving selected drugs may have received drug for alternative indications other than COVID-19; cases that receive selected drugs may have also received other COVID-19 treatments

[#] Invasive ventilation includes cases with any ICD-10 procedure code of 5A19054,5A1935Z,5A1945Z or 5A1955Z

[†] Some hospitals may not be charging for remdesivir; therefore, utilization may be under-represented; this will also hold true for other medications not billed to the patient

When evaluating utilization of potential COVID-19-related treatments by month, hydroxychloroquine utilization shows a marked decrease from April to July (Figure 1). This may be a result of the available literature demonstrating a lack of positive impact and potential for adverse outcomes for hydroxychloroquine in COVID-19, as well as subsequent updated recommendations and guidelines^{1,2,3,4}. Increases in remdesivir and dexamethasone are seen between April and July 2020, which may be a result of shifting literature and recommendations regarding their utilization in COVID-19^{4,5,6}. In addition to an overall increase in dexamethasone utilization from April to July 2020, the increase appears more pronounced from June to July and amongst cases with invasive ventilation compared to those that did not (Figure 2). An important consideration when evaluating this data is that cases may be receiving these drugs for alternative indications other than COVID-19 treatment and/or may have received multiple agents for treatment. Additionally, remdesivir utilization may be under-represented in the data as some hospitals are not currently charging for this therapy; this will also hold true for other medications not billed to the patient.

Figure 1: Utilization of potential COVID-19-related treatments by discharge month



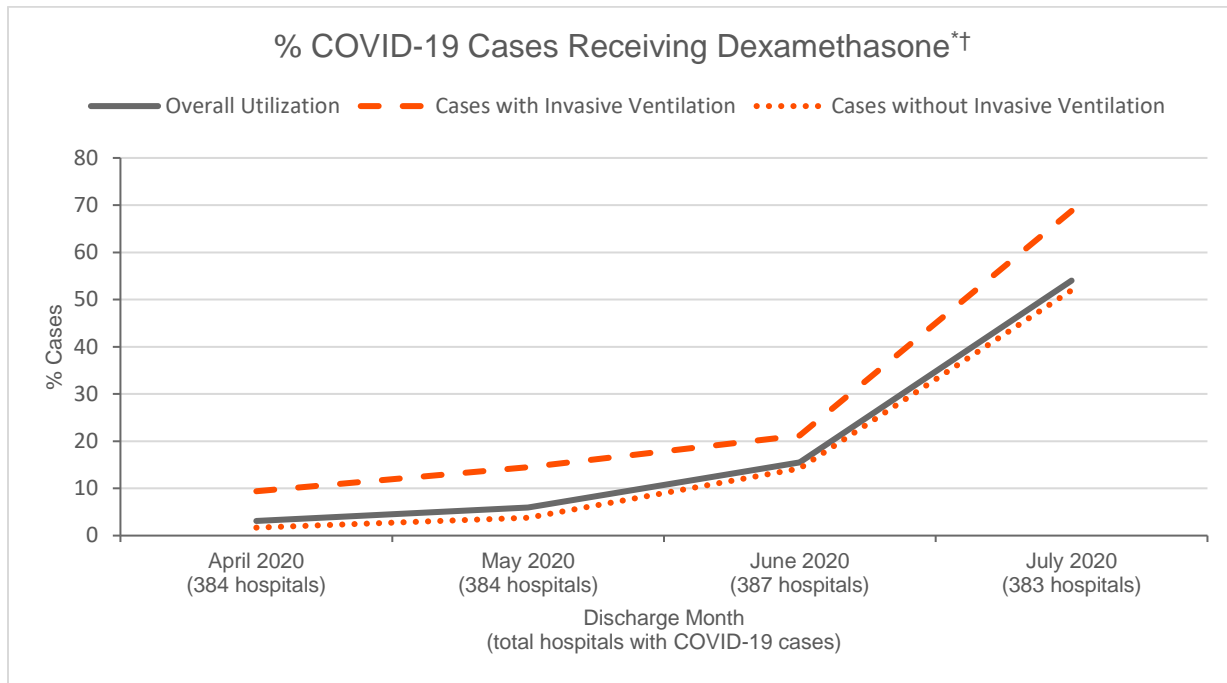
Source: CDB (April-July 2020)

Includes cases ≥ 18 years of age; any ICD-10 diagnosis of U071

* Cases receiving selected drugs may have received drug for alternative indications other than COVID-19; cases that receive selected drugs may have also received other COVID-19 treatments

† Some hospitals may not be charging for remdesivir; therefore, utilization may be under-represented; this will also hold true for other medications not billed to the patient

Figure 2: Utilization of dexamethasone in COVID-19 by discharge month



	April 2020	May 2020	June 2020	July 2020
Overall COVID-19 Cases	45,889	32,192	20,983	28,985
Cases with Invasive Ventilation	8,401 (18%)	6,554 (20%)	3,833 (18%)	3,533 (12%)
Cases without Invasive Ventilation	37,488 (82%)	25,638 (80%)	17,150 (82%)	25,452 (88%)

Source: CDB (April-July 2020)

Includes cases ≥ 18 years of age; any ICD-10 diagnosis of U071

* Cases receiving selected drugs may have received drug for alternative indications other than COVID-19; cases that receive selected drugs may have also received other COVID-19 treatments

† Some hospitals may not be charging for remdesivir; therefore, utilization may be under-represented; this will also hold true for other medications not billed to the patient

References:

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About the Vizient Clinical Data Base

Sustainable improvement begins with two key elements: visibility and clarity. Visibility helps identify performance gaps, while clarity helps create connections, understand causes and drive change. The Vizient® Clinical Data Base (CDB) provides total transparency through risk-adjusted methodologies and benchmarked outcomes data. Through a single platform, CDB allows members to measure quality and financial performance compared with other hospitals. It highlights opportunities for improvement by combining risk-adjusted encounter data and line-item transaction detail to yield information on patient outcomes and utilization.

CDB allows access to integrated quality and cost data to gain deeper insights that inform and equip decision makers. Understand performance gaps and drive collaborative improvements with advanced analytics and deeper insights.



To learn more, contact
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As the nation's largest member-driven health care performance improvement company, Vizient provides solutions and services that empower health care providers to deliver high-value care by aligning cost, quality and market performance. With analytics, advisory services and a robust sourcing portfolio, we help members improve patient outcomes and lower costs.