

Pharmacy Market Outlook *Highlights*

Keeping you at the forefront of drug price projections and market developments



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Disclaimer: This document is a projection of price behavior only. It is necessary to consider changes in volume and mix as well as the introduction and adoption of new drugs and other factors when preparing your drug expenditure budget. This document is compiled based on information gathered from many primary and secondary sources, which Vizient believes to be accurate to the best of its knowledge at the time of publication. It is intended as general information only and is provided as an accommodation to members. Use of this data is at your sole risk. This information is presented "as is" and without any warranty or guarantee, expressed or implied, as to completeness or accuracy, or otherwise.

Executive summary

The July 2021 *Pharmacy Market Outlook* is Vizient's best estimate of the change in the cost of pharmaceuticals, for hospitals that are Vizient® members participating in the Vizient Pharmacy Program, that will be purchased between Jan. 1 through Dec. 31, 2022. The forecast focuses on pharmaceutical products used across multiple health-system settings, including inpatient and non-acute environments, and provides a year-over-year estimate of the expected price change.

The oncology therapeutic class remains the top therapeutic class in spend by Vizient member purchases, followed by infectious disease products and disease modifying antirheumatic drugs (DMARDs). The therapeutic class with the highest estimated price change is DMARDs, given the pricing escalations anticipated for adalimumab (Humira; AbbVie) and etanercept (Enbrel; Amgen), and will continue until effective biosimilar competition enters the market.

Also, with this iteration of the *Pharmacy Market Outlook*, we have a significant addition to our analysis of therapeutic classes. For the first time, we are including diabetes medications as a new combined categorization of review. Glargine insulin is the dominant drug in this category. However, the increased use of newer categories — such as the glucagon-like peptide-1 (GLP-1) receptor agonists and the sodium glucose cotransporter-2 (SGLT-2) inhibitors — continues to be seen across different classes of trade.

Table 1. Summary of projected drug price inflation, January 1, 2022-December 31, 2022

Product group	Estimated price change weighted by Vizient purchases, %
Contract products	0.86
Noncontract products	2.24
Total weighted average drug price inflation estimate	3.10

Estimates based on Vizient member data.

Weighted by Vizient member purchases. Represents all classes of trade; excludes 340B purchases.

For expanded insights, data and projections from our pharmacy experts, download the complete version of the July 2021 *Pharmacy Market Outlook*.



Table 2. Highest spend therapeutic classes for Vizion members

Therapeutic classes (subclasses)	Key products in class
Antineoplastic (oncology) agents	Keytruda, Rituxan, Opdivo
DMARDs	Humira, Remicade, Enbrel
Hematopoietics	Neulasta, Aranesp, Udenyca
Immunomodulators - MS	Ocrevus, Tysabri, Gilenya
Infectious disease	
Vaccines	Prevnar 13, Gardasil 9, Pneumovax 23
Antibacterial/antifungal (systemic)	Rifaximin, Daptomycin, Ertapenem
HIV agents	Biktarvy, Genvoya, Triumeq
Hepatitis C agents	Epclusa, Mavyret, Harvoni
Plasma critical care - total	
Immune globulin intravenous	Privigen, Gamunex-C, Gammagard
Albumin	Alburx, Albutein, Flexbumin
Diabetes-related medications	Insulin (glargine, lispro, aspart), Trulicity, Jardiance

Source: Estimates based on analysis of Vizion member data from April 2020-March 2021
 Abbreviations: DMARD = disease-modifying antirheumatic drug;
 MS = multiple sclerosis

Table 3. Top 10 drugs by total spend among Vizion members (all classes of trade)

Rank	Generic name	Brand name
1	Adalimumab	Humira
2	Pembrolizumab	Keytruda
3	Remdesivir	Veklury
4	Ustekinumab	Stelara
5	Infliximab	Remicade
6	Rituximab	Rituxan
7	Denosumab	Prolia, Xgeva
8	Ocrelizumab	Ocrevus
9	Nivolumab	Opdivo
10	Alteplase	Activase

Source: Estimates based on analysis of Vizion member data from April 2020-March 2021

Key developments

- The Food and Drug Administration (FDA)-approved COVID-19 treatment remdesivir ranks as the third highest total spend across all classes of trade. An increase in member spend is also seen for ustekinumab, denosumab, ocrelizumab and alteplase.
- The top medications in terms of spending across all classes of trade for Vizion members are injectable medications administered or dispensed in an ambulatory or non-acute type setting, such as an infusion center and/or specialty pharmacy.
- Oncology products continue to represent almost one-quarter of Vizion member drug spend.
- The recent approval of insulins as biologics is paving the way for biosimilar developments and potential future interchangeability.

Ongoing challenges

- Biosimilars for the highest cost drugs (i.e. adalimumab) are still up to 18 months from market launch.
- While not a specialty drug, vasopressin (Vasopressin) continues to be in the top 10 drugs by projected price increase. This is an example of drugs identified in the FDA's Unapproved Drug Initiative. The manufacturer of this legacy drug received patent approval (and protection) for a new formulation, impacting price.

Our advice to hospitals

- Continue to elevate the strategic impact that pharmacy contributed to COVID-19 care, with a future focus on specialty pharmacy and home infusion
- Continue to focus on advocacy initiatives that could have substantial quality, cost, reimbursement, and labor effects on providers, including:
 - Promotion of biosimilar use
 - Restriction of payer-mandated policies
 - Support for 340B and the use of contract pharmacies
 - Impact of the FDA Unapproved Drug Initiative program

Table 4. Top drugs by size of projected price increase

Rank	Generic name	Brand name
1	Adalimumab	Humira
2	Pembrolizumab	Keytruda
3	Vasopressin	Vasopressin
4	Ustekinumab	Stelara
5	Denosumab	Prolia, Xgeva
6	Vedolizumab	Entyvio
7	Etanercept	Enbrel
8	Secukinumab	Cosentyx
9	Nivolumab	Opdivo
10	Ibrutinib	Imbruvica

Source: Estimates based on analysis of Vizient member data from April 2020-March 2021



Acute care

Impact on transition to outpatient care

Table 5 shows the top 10 drugs purchased under acute care class of trade, based on total member spend. As was highlighted in the Winter 2021 *Pharmacy Market Outlook*, although these products are identified in our member data as purchased for acute care, it can be difficult to ascertain in which settings these medications are actually used (e.g., true acute care in the hospital versus health system disbursement to outpatient locations), based on how member accounts are set up at the distributor level.

In an effort to isolate those drugs that are truly used in the inpatient space, we also provide the lens of top-ranking member purchase items, with a restriction to products where less than 5% of spend is in other classes of trade (e.g., retail, clinic, home infusion). With this lens, we tend to see more of the critical care medications that most impact our members in the acute space (e.g., vasopressin, sugammadex, acetaminophen [inj.]). This is in comparison to the overall acute care member spend picture, which is biologic-heavy and highlights the need for continued biosimilar adoption. See Table 5.

Key takeaways:

- Medications administered in the inpatient setting are generally not eligible for separate reimbursement under the medical benefit, so any increase in price for these drugs creates a direct loss that is not offset.
- Critical care drugs are having a greater impact on acute care spend.

Relief for providers on the horizon

We anticipate members will experience positive effects, from a cost perspective, due to a number of developments:

- Continued introduction of biosimilar candidates, along with increased payer adoption, will continue to facilitate competition and uptake, and drive down costs for biologics. Perhaps most impactful will be the much-anticipated launch in 2023 of the already approved adalimumab biosimilars.
- The first generic entrants for Ofirmev (intravenous acetaminophen) entered the market in Q4 2020. To date, there are four generic entrants on the market with an additional three anticipated to hit the market in 2021.¹
- Miacalcin (calcitonin salmon injectable) is no longer protected by any patents. In May 2021, Leucadia (part of CustoPharm) launched the first generic entrant.¹

Table 5. Top 10 acute care drugs by total member spend

Rank	Overall acute care	>95% of sales in acute care class of trade
1	Pembrolizumab	Vasopressin
2	Remdesivir	Albumin
3	Alteplase	Sugammadex
4	Nivolumab	Anti-thymocyte globulin, rabbit
5	Vasopressin	Human prothrombin complex concentrate (PCC), 4-factor
6	Rituximab	Acetaminophen
7	Pegfilgrastim	Calcitonin, salmon, synthetic
8	Immune globulin, gamma (IgG)/proline/IgA 0 to 50 mcg/mL	Pegasparagase
9	Adalimumab	Dexmedetomidine
10	Ocrelizumab	Cisatracurium besylate

Source: Vizient member data for April 2020-March 2021.

Specialty pharmaceuticals

This estimate is based on a list of 348 specialty drugs, defined as:

- Used to treat rare or orphan diseases
- Prices as the Centers for Medicare & Medicaid Services-defined high-cost at greater than \$670 per month, per patient
- Requires a specialist prescriber
- Requires high-touch, such as frequent clinical monitoring for safety and efficacy
- Sold as a limited distribution drug

Key takeaways:

- Of these specialty drugs, 80% fall into seven categories (in descending order): oncology, infectious disease, hematological disorders, immunology, genetic disorders, central nervous system (e.g. multiple sclerosis, pain), or women's health (e.g. infertility, pregnancy prevention).
- Approval on treatments for rare diseases are at an accelerated pace. Orphan and ultra-orphan therapies for disease states affecting fewer than 200,000 people in the U.S. are expected to account for 22% of all prescription drug sales by 2024.²
- Gene therapies, which can alter a patient's DNA or RNA to treat the genetic causes of a disease, are some of the most expensive treatments to date. Additional therapies are currently under investigation for hemophilia, sickle cell anemia and oncology indications.

4.68%

Specialty pharmaceuticals projected drug price inflation rate*

* Estimates based on Vizient member data.



Pediatrics

Key takeaways:

- As the focus on COVID-19 vaccines shifts to the under age 12 pediatric population, dose-finding clinical studies among age subgroups continue with manufacturers.
- Drug approvals for the pediatric population have remained focused in three categories: specialty drugs, gene therapy and chimeric antigen receptor (CAR) T-cell treatments. All three of these treatments present budgetary and revenue capture obstacles; therefore, additional evaluations must be made before including these medications in hospital formularies.
- Decreases in spend occurred for the following: infliximab, due to the entrance of biosimilars; palivizumab, given the lower number of respiratory syncytial virus cases as a result of social distancing; and asparaginase, a consequence due to the shortage in supply of this product.

3.18%

Projected pediatric drug price inflation rate*

* Estimates based on Vizient member data.

Table 6. Top 10 pediatric drugs based on spend^a among self-governed children’s hospitals that participate in the Vizient GPO

Current ranking among children’s hospitals ^b	Generic drug name (brand name; manufacturer)
1	Dinutuximab (Unituxin; United Therapeutics)
2	Pegaspargase (Oncaspar; Servier)
3	Coagulation factor VIIa (recombinant) (Novoseven; Novo Nordisk)
4	Immune globulin, gamm (IgG)/glycine/IgA greater than 50 mcg/mL (Gammagard; Takeda)
5	Eculizumab (Soliris; Alexion)
6	Infliximab (Remicade; Janssen Biotech)
7	Defibrotide sodium (Defitelio; Jazz Pharmaceuticals)
8	Somatropin (Nutropin AQ; Genentech)
9	Pneumococcal 13-valent conjugate vaccine (Prevnar-13; Pfizer)
10	Palivizumab (Synagis; Astra Zeneca)

^a 340B purchases were excluded from the analysis.

^b Jan 2020 through Sept 2020.

Abbreviation: GPO = group purchasing organization

Oncology

Key takeaways:

- Despite a pandemic, oncology therapy development continues to accelerate the pace of innovation with numerous new molecular entities approved by the FDA.
- As of June 1, 2021, the FDA granted 26 overall approvals for oncology medications; 45% are oral formulations.
- The FDA also granted additional indications during 2020 and first half of 2021, notably for checkpoint inhibitors. One of these, pembrolizumab, is the highest ranked by Vizient member spend for antineoplastics, reaching an all-time high of 12.4% of total GPO sales.
- Chimeric antigen receptor T-cell therapy (CAR-T) class of drugs continue to drive interest due to the revolutionary technology, despite the staggering price tag for a single dose. In the past 2 years, three additional CAR-T agents were approved. To combat the high price of these medications many academic medical centers are piloting outpatient administration of these drugs with robust clinic patient care services. The utilization of these medications is expected to continue to increase as physicians become adept with treating their complex side-effect profiles and additional indications are added.

3.25%

Oncology drugs projected drug price inflation rate*

* Estimates based on Vizient member data.



Infectious disease

Key takeaways:

- This edition of the *Pharmacy Market Outlook* analyzed trends for April 2020 through March 2021. Thus, it comes as no surprise that the impact of COVID-19 is reflected in our member spend, with remdesivir having the highest overall spend among members.
- Compared to our winter 2021 edition, we see a much larger portion (25% versus 4%) of spend fall under the category of non-HIV/non-hepatitis antivirals due to the approval and use of the COVID-19 treatment remdesivir, which falls under this category.
- Three of the 10 anti-infectives with highest spend among Vizient members are for the treatment of fungal infections (amphotericin B, posaconazole, and micafungin). Half can be used to treat either methicillin-resistant *Staphylococcus aureus* (vancomycin, ceftaroline, and daptomycin) or *Pseudomonas aeruginosa* (ceftazidime/avibactam and piperacillin/tazobactam).

2.50%

Projected drug price inflation rate*

* Estimates based on Vizient member data.

Table 7. Top 10 anti-infectives based on total spend among Vizient members^a

Rank	Generic (Brand)
1	remdesivir (Veklury)
2	rifaximin (Xifaxan)
3	vancomycin HCl ^b (various)
4	amphotericin B, liposomal (Ambisome)
5	ceftazidime/avibactam (Avycaz)
6	posaconazole (Noxafil)
7	ceftaroline (Teflaro)
8	micafungin (Mycamine)
9	piperacillin/tazobactam (Zosyn)
10	daptomycin (Cubicin, Cubin RF)

Source: Vizient member data for April 2020-March 2021.

^a acute class of trade

^b includes oral and injectable

Remdesivir, approved for the treatment of COVID-19 patients in the acute care setting, had the highest overall spend among Vizient members for antivirals, and was third in total overall spend in the acute care setting.

Immunomodulators and disease-modifying therapies

Key takeaways:

- The continuing COVID-19 pandemic provides real challenges for patients with multiple sclerosis (MS) and rheumatoid arthritis (RA) due to disease state factors and selected therapeutic agents utilized. Implications may include increased risk of infection, more severe COVID-19, or decreased response to COVID-19 vaccination.
- While members spent less on MS agents, the top in this class was ocrelizumab (Ocrevus), which has some clinical and operational advantages due to its lack of a black-box warning and because it is now labeled for a shorter infusion time (2 hours versus 3.5 hours).³
- Total member spend on immunomodulators was significantly less than during the previous time period. Adalimumab is used to treat RA, and is the top spend for Vizient members.
- Competition will primarily come from biosimilar agents used for RA treatments, and the first for adalimumab is expected in 2023.⁴ The next highest spend in this class is infliximab, for which multiple biosimilar agents are already available. Etanercept comes in third, with a biosimilar not expected to come to market until 2028 or 2029.⁵⁻⁶

Disease-modifying
antirheumatic drugs

4.70%

Projected inflation rate*

* Estimates based on Vizient member data.



Immunomodulators
multiple sclerosis drugs

2.96%

Projected inflation rate*

* Estimates based on Vizient member data.

Plasma products:

Intravenous immune globulin and albumin

Key takeaways:

- Global COVID-19 ramifications on the plasma supply chain continue to challenge manufacturers with capabilities to source raw plasma and equitably distribute on a global scale.
- Increased costs by manufacturers associated with stabilizing the plasma supply chain further increased the volume weighted average pricing of immune globulin intravenous (IgIV) in 2020.
- Albumin's volume weighted average pricing declined in 2020 due to low utilization and is anticipated to remain stable in the foreseeable future.

Plasma critical care products

2.99%

Projected inflation rate*

* Estimates based on Vizient member data.

New: diabetes-related medication spend

Given the increasing spend, we are adding diabetes medications to our roster of therapeutic categories deserving of evaluation. Due to the prevalence of this disease, a continually expanding roster of therapeutic agents, and the additional indications assigned to these agents, health systems must fully appreciate the spend and use of this category of drugs in their budgeting process.

Key takeaways:

- In March 2020, insulins were one of the categories of medications that were transitioned from regulation as drugs to regulation as biologics and therefore, targets for the development of biosimilar competition.
- Novel diabetes drugs are gaining more indications, not only in the management of blood glucose, but also for the prevention of cardiovascular events and other disease complications. As a result, health systems will see expanded use of these products in their patient populations and will have to discern the value opportunity associated with prescribing novel, higher cost, branded drugs.
- Regardless of practice setting, diabetes treatments play a significant role in patient care and health system expense. The continued expansion of indications of novel diabetes treatments and their greater use will likely result in greater expense. As a result, pharmacists must ensure the appropriate use of these agents to maximize and document improved patient care outcomes.
- Biosimilars may introduce much needed competition and pricing pressure for the insulin landscape. Given the extent to which diabetes impacts population health, focus on this treatment area should remain a priority.

Diabetes-related:
medication spend

2.63%

Projected inflation rate*



Diabetes management is in most cases associated with general practice, not specialty. However, due to the ongoing prevalence of this disease, a continually expanding roster of therapeutic agents, and the additional indications assigned to these medications, health systems must fully appreciate the spend and use of this category of drugs.

Biologics and biosimilars

Since the publication of our Winter 2021 Vizient *Pharmacy Market Outlook*, no additional biosimilars have been approved in the U.S. The total number of licensed biosimilars remains at 29.⁷ However, two additional biosimilars were introduced to the supply chain in the last six months bringing the total number of marketed agents to 19.⁸ There are currently 10 approved biosimilars that are not yet marketed.

Key takeaways:

- The largest contributor to drug price increases is still adalimumab and will remain that way until calendar year 2023, when biosimilar competitors are expected to launch.
- Additional biosimilar competition could be approved beginning in September of this year, with more versions of pegfilgrastim and bevacizumab, and possibly the first approval of a ranibizumab competitor.
- As the newest category of biologics, recently approved branded copies of insulins including the short-acting insulin lispro product (Admelog) and long-acting insulin glargine products (Basaglar, Semglee) are not deemed as interchangeable.
- For these insulins to become interchangeable, manufacturers will have to submit evidence of biosimilarity to the FDA followed by additional data, including switching studies. It is likely that biosimilars will be the first interchangeable insulins.



Insights from Vizient's Clinical Data Base

Throughout the course of the last year, we have learned much about the SARS-CoV-2 virus, and the available and preferred treatment options for COVID-19 have evolved. Changes in the utilization of these treatment options can be evaluated over time through the Vizient Clinical Data Base (CDB). The CDB is the analytic platform for performance improvement trusted by 97% of academic medical centers, more than 50 health care systems, and over 400 community hospitals nationwide.

Key takeaways for inpatient treatment:

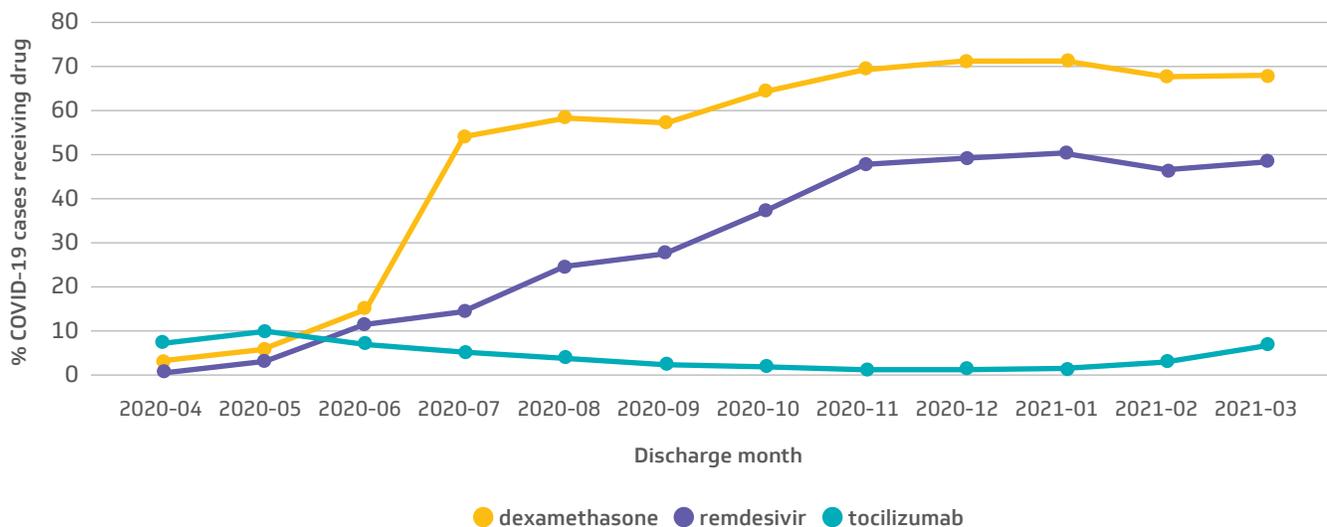
- While several agents were initially tested in both the inpatient and outpatient settings as we moved through the pandemic, clear front runners in the treatment of COVID-19 began to emerge in the second

half of 2020 and into 2021: primarily dexamethasone and remdesivir in the inpatient setting, with some utilization of tocilizumab, which is recommended for use in hospitalized patients that require oxygen delivery through a high-flow device or noninvasive ventilation.⁹

- As is highlighted in Figure 1, there was a sharp increase in the use of dexamethasone in July 2020 in response to the preliminary information from the United Kingdom's RECOVERY trial. The use of this medication has continued to increase since this time.

- Remdesivir is also highlighted as a product with a continual increase over time in the inpatient space. This increasing trend of more consistent use starts around November 2020.

Figure 1. Inpatient medication utilization for treatment of COVID-19[†]



Source: Vizient Clinical Data Base (April 2020-March 2021; n=436 hospitals). Includes cases ≥ 18 years of age and any ICD-10 diagnosis: U07.1 COVID-19.

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

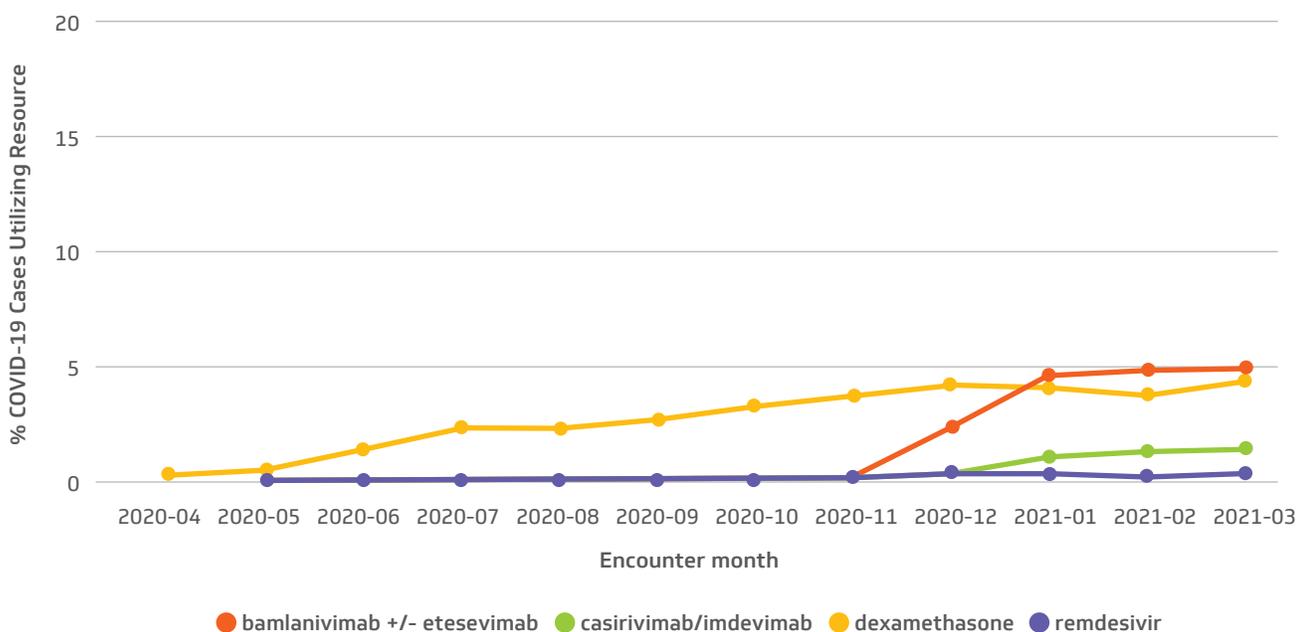
† Some hospitals may not be charging for remdesivir, therefore utilization may be under-represented; this will also hold true for other medications not billed to the patient.

- CDB data also indicates peaks in the utilization of tocilizumab. The utilization of tocilizumab has waxed and waned over time as clinical evidence for its place in therapy has changed. An increase in utilization is noted early in the pandemic and with an uptick in recent months.
- Also, in the non-inpatient sector, monoclonal antibodies appear to be the front runner for patients with mild to moderate COVID-19 and who are at high risk for progressing to severe COVID-19 and/or hospitalization.⁹

Key takeaway for non-inpatient treatment:

- At the time of writing this publication, the mainstay of treatment outside of supportive care and enrollment in clinical trials is the use of one of the combinations of anti-SARS-CoV-2 monoclonal antibodies (bamlanivimab +/- etesevimab or casirivimab + imdevimab) to treat outpatients with mild to moderate COVID-19 who are at high risk of clinical progression.¹
 - Vizient's CDB capture of use of these agents in the non-inpatient space is highlighted in Figure 2.

Figure 2. Non-inpatient medication utilization in the treatment of COVID-19†



Source: CDB (April 2020 – March 2021; n=417 hospitals). Includes cases ≥ 18 years of age and any ICD-10 diagnosis: U07.1 COVID-19.

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

- 1 IPD Analytics Payer & Provider Insights. IPD Analytics. 2021. Accessed June 8, 2021.
- 2 5 trends impacting specialty pharmacy. Optum. Accessed June 14, 2021. <https://www.optum.com/business/resources/library/5-trends-specialty-pharmacy.html>
- 3 Ocrevus product information. DailyMed. Accessed June 8, 2021. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=9da42362-3bb5-4b83-b4bb-b59fd4e55f0d&audience=consumer>
- 4 Joachim R. Weighing the potential of Humira biosimilars in the US: competitive dynamics analysis. Biosimilar Development. September 29, 2020. Accessed June 9, 2021. <https://www.biosimilardevelopment.com/doc/weighing-the-potential-of-humira-biosimilars-in-the-u-s-competitive-dynamics-analysis-0001>
- 5 Biosimilar approvals and launches in the US. GABI. February 26, 2021. Accessed June 9, 2021. <https://www.gabionline.net/Biosimilars/General/Biosimilar-approvals-and-launches-in-the-US>
- 6 Bryne J. US: Sandoz sees route to market with Enbrel biosimilar blocked for eight more years. BioPharma-Reporter.com. May 18, 2021. Accessed June 9, 2021 at: <https://www.biopharma-reporter.com/Article/2021/05/18/Sandoz-sees-route-to-market-with-Enbrel-biosim-blocked-until-2029>
- 7 Biosimilar product information. Food and Drug Administration. December 17, 2020. Accessed June 4, 2021. <https://www.fda.gov/drugs/biosimilars/biosimilar-product-information>
- 8 IQVIA SMART solution. Online subscription required. Accessed June 4, 2021. <https://www.customerportal.iqvia.com/sites/portal>
- 9 COVID-19 Treatment Guidelines Panel. Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. National Institutes of Health. National Institutes of Health. Updated June 17, 2021. Accessed June 7, 2021. <https://www.covid19treatmentguidelines.nih.gov/>



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