

» Formulary management at Green Shield Canada (GSC)

Underlying GSC's SMARTspend™ banner is the philosophy that every investment in health care should produce value – a high-quality outcome relative to its cost. As a pharmacy benefits manager, GSC has always promoted formulary management as an effective way to control drug costs while ensuring plan members are able to access the drugs they need.

What's a formulary?

It's simply a list of drugs eligible for reimbursement under a benefits plan.

GSC's pharmacy experts

At GSC, drugs are reviewed by a committee of pharmacy experts to establish the overall value of each drug and determine where it should be placed on our formularies. Our criteria, based on objective medical evidence, evaluates the drug's clinical **efficacy, safety**, and the unmet need it fulfills to establish the **value** it offers to plan sponsors and plan members. The committee reviews drug submissions from manufacturers including clinical trials and other available evidence.

The six pharmacists on the committee cover a range of experience and expertise:

- Community pharmacy, including compounding
- Hospital pharmacy
- Specialty care, including oncology and transplant
- Public payor
- Pharma industry
- Quebec market

Plus, there's a nurse with clinical and health care navigation experience on the committee, and we have a committee member with a PhD in health policy.

GSC offers three types of formulary as the basis for our drug plans. These choices allow you to design a plan that best fits your needs and philosophy, whether that's providing broad access to new therapies or maximizing cost savings, or both. Of course, any formulary can be subject to limitations and conditions, such as co-pays, deductibles, maximums, and frequencies. And GSC offers a number of sustainability and outcomes-based strategies that can be added to any plan regardless of the formulary chosen.

Open formulary

Most drugs introduced to the marketplace and approved by Health Canada are added to GSC's open formulary and assigned a coverage status: "covered" or "prior authorization required." *Covered* drugs are full benefits of the plan. A small subset of high-cost and/or specialty drugs with potential for inappropriate prescribing and use are assigned a *prior authorization required* status meaning approval for the drug is granted only if the plan member meets certain clinical criteria.

Tiered formulary

This is an open formulary that offers an additional layer of cost management oversight through varying levels of reimbursement. Drugs are assigned to a tier based on clinical and cost information; you set the coinsurance level for each tier. (Plans are customized with a maximum of five tiers.) While this design allows for plan member choice, it encourages the use of cost-effective therapies by assigning them to tiers with higher levels of coinsurance. This means costs shift to plan members when they choose less cost-effective drugs.

Managed formulary

To ensure value for dollars spent, before being added to the formulary for reimbursement, all drugs newly approved in the Canadian market are evaluated by our committee of pharmacy experts. Drugs are then assigned to one of three categories: "covered," "not covered," or "prior authorization required."

Covered drugs are full benefits of the plan. A small subset of drugs is assigned a *not covered* status when the drugs provide no additional value over those already listed in the formulary. *Prior authorization required* is assigned to drugs for which "step therapy" can be applied and to non-high-cost drugs that offer value only when used for patients with certain clinical characteristics. And, as with the open formulary, a *prior authorization required* status is also assigned to high-cost and/or specialty drugs with potential for inappropriate prescribing and use. This type of formulary "management" balances the need of plan members to have access to medically necessary drug therapies with plan sustainability.

OPEN FORMULARY	TIERED FORMULARY (each tier can be subject to a different co-pay and/or coinsurance)	MANAGED FORMULARY
Covered	Covered (Two – four tiers)	Covered Not covered
Prior authorization required	Prior authorization required (Tier five)	Prior authorization required

Introducing the SMARTspend Formulary...

GSC was first carrier to develop a managed formulary – way back in 1996 – which will be called the SMARTspend Formulary as part of the new approach we'll be offering in the fall. For plan sponsors interested in introducing some level of formulary management into their plans, we're suggesting a way to gradually transition from an open to a managed formulary. With an emphasis on thoughtful and meaningful formulary management, this approach is designed to provide plan members with access to rational drug treatment while ensuring your plan remains sustainable – the focus being getting the right drug for the right person at the right time.

What sets the SMARTspend Formulary apart is that it offers two levels of formulary management:

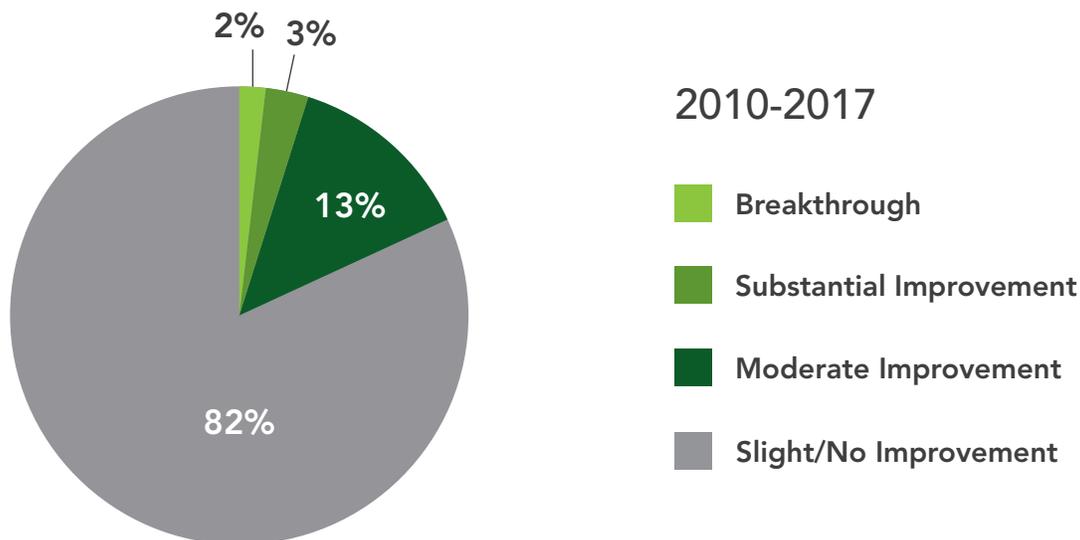
- **Lite** – This option manages a designated list of high-volume non-specialty drugs, such as for diabetes and asthma, where step therapy, enabled through an automatic-approval process driven by claims history, can be applied. This greatly reduces the need for a form-based prior authorization process and offers a better plan member experience. Management of these high-volume non-specialty drugs (e.g., for diabetes or heartburn) is where there's greater opportunity for savings.
- **Enhanced** – In addition to the drugs managed under the Lite option, this option extends management to a broader list of drugs that is generally cost effective in specific clinical circumstances and for which clinical criteria for access must be satisfied. It has the potential to generate greater savings owing to a more expansive list of drugs under management, including ones for Alzheimer's disease, pain, and heart disease.

A managed formulary equals value

The bottom line of formulary management is that it allows new drugs that offer genuine therapeutic value to be covered by your plan but doesn't waste your drug spend on therapies that, while also effective, are considerably more expensive – in other words, new drugs that don't offer significant clinical improvement over existing ones already proven to be more cost-effective.

The drug pipeline (explored in the [summer 2017 issue of Follow the Script](#)) regularly brings new drugs to market, but only a small number represent real breakthroughs. Whether or not a new drug represents an improvement over existing drugs, and therefore offers more therapeutic value, is assessed by the Patented Medicine Prices Review Board (PMPRB).

The PMPRB reviews manufacturers' pricing of patented medicines sold in Canada and ensures that it's not excessive. As part of the price review process, each new drug is assigned a recommended level of therapeutic improvement. Over a seven-year period (2010–2017), the PMPRB designated only five per cent of the 750 drugs it reviewed as **"substantial improvement"** or **"breakthrough"** drugs while 82 per cent was designated as **"slight/no improvement."**



As illustrated here, most new drugs offer little to no additional value over existing drugs. But an open formulary would cover all these drugs entering the market, while the SMARTspend Formulary would cover only those that offer meaningful value.

Not just drug cost

When our pharmacy committee is reviewing drugs, decisions are informed by clinical evidence and current treatment guidelines. But critical to the process is a cost-effectiveness analysis.

Cost is always considered in the context of:

- The efficacy and safety profile of the drug, and
- Whether the drug fulfills an unmet need.

Drugs for same therapeutic use with comparable efficacy and safety are ranked based on cost effectiveness. This means a drug with the same efficacy and safety but a higher cost is ranked as having a lower cost-effectiveness.

The real spend is in non-specialty drugs

The benefits industry focuses closely on specialty drugs, which only account today for approximately 20 per cent to 30 per cent of total drug spend. And, rightfully so, given that this is a growing market, but what about the other 70 to 80 per cent of non-specialty drug spend? While both open and managed formularies deliver a high degree of oversight and cost-management for specialty drugs, an open formulary doesn't discriminate as to which non-specialty drugs are eligible for reimbursement under the plan. In other words, an open formulary doesn't consider whether that drug should be eligible for reimbursement in the first place. A plan design that includes a managed formulary does exactly that – it begins by asking "should this drug be eligible for reimbursement?" When that answer is "yes," effective cost-management strategies are then applied to control the spend.

Our data shows that only two of the top ten disease states – inflammatory diseases (i.e., rheumatoid arthritis, Crohn's, psoriasis) and cancer – are largely treated with specialty drugs while most other diseases driving drug spend are treated with non-specialty drugs. And spending for drugs in those therapeutic areas is skyrocketing – in the past five years, diabetes spend, for example, has doubled while asthma spend has increased by a third. And that is what GSC's SMARTspend Formulary – Lite is all about – critical evaluation and management of drugs in the non-specialty categories that are responsible for driving a significant portion of the spend.

Unlike an open formulary, under the SMARTspend Formulary non-specialty drugs are first assessed to determine whether or not they should be eligible for reimbursement and then how GSC's cost management strategies can be used to manage the cost while ensuring effective treatment for common conditions.

A better plan member experience

A concern that often arises when consideration is given to the implementation of a managed formulary is how will plan members know what drug alternatives are eligible for reimbursement if the drug prescribed by their physician isn't eligible under the plan. To alleviate these concerns and help plan members better understand their treatment options, key to the SMARTspend Formulary is the management of drugs within therapeutic categories, such as diabetes and depression. For each category, we provide a list of applicable drugs that shows which ones are covered as full benefits under the formulary as well as those requiring prior authorization and those that are not covered. These comprehensive drug benefit listings make it easier for plan members and their physicians to select eligible alternatives under the plan.

It's up to you

As with all offerings under the SMARTspend banner, the SMARTspend Formulary is designed to attach value to your health benefits spend. The idea behind value is that every investment in health care – including providing plan members with health benefits – should produce a high-quality outcome relative to its costs. As a plan sponsor, you may be thinking it's time to re-evaluate your plan. Do you continue to cover benefits that offer limited value, or do you introduce formulary management as a way to ensure the long-term sustainability of your plan? The SMARTspend Formulary – Lite may be the perfect stepping stone to ensure the health care services you're investing in deliver the value and results you desire. However, if your goal is to maximize cost savings, consider implementing the SMARTspend Formulary – Enhanced.

SMARTspend™

BEHIND THE COUNTER

What's up with pharmacy practice in 2019?



In this issue of *Follow the Script*, we talk to GSC pharmacist Leila Mandlsohn, about some of the issues currently being talked about in the pharmacy world.

Follow the Script: Welcome Leila! Since we're now halfway through 2019, we'd like to hear about what's going on from a pharmacy practice perspective.

Leila: It just so happens that I have a few notes here about things that are a big focus of pharmacy right now. For starters, at a national level, at the CPhA [Canadian Pharmacists Association] there's a lot of attention on scope of practice. There are a number of provinces where pharmacists already have an expanded scope of practice that includes assessment of minor ailments, for example. And Ontario doesn't include this in its scope today – it is one of the last few provinces without it. So there's been some advocacy work around getting a standardized scope of practice across the country; it would be good for people to receive the same pharmacy services in all provinces.

FtS: Can you say which other provinces don't allow pharmacists to assess minor ailments?

Leila: B.C. is the other main holdout now along with the territories. At one end of the scale, you have Alberta, where pharmacists have a broad scope of service, and at the other end there's Yukon, Nunavut, and the Northwest Territories where pharmacists can pretty much only dispense drugs. Anyone can see a chart showing the scope of practice across Canada – it's posted on the CPhA [website](#).

FtS: Do you have a sense of why Ontario would be a holdout at this late date? Usually they're trendsetters.

Leila: No sense of why they've been lagging behind other provinces up to now, but the interesting thing is that the Ford government has now directionally committed to expanding the scope in Ontario.

FtS: It makes sense. The government can see that pharmacists can provide services more economically than doctors.

Leila: It's also a way of giving something back to pharmacies in light of all the reimbursement cuts they're going to be making. They're taking away MedsCheck, for example.

FtS: Wait, what? They're taking away MedsCheck?

Leila: Well, they're not exactly taking it away, instead they're refocusing and improving MedsCheck. It's now going to be focused only on transitions of care rather than for anybody and everybody. Transitions of care – such as when a patient transitions from the hospital to long-term care – is a big need. I don't think it's unreasonable, but it's going to mean reduced revenue for pharmacies because MedsCheck was a revenue stream. Ontario is also cutting the markup pharmacies can charge, so that's a big concern as well. So that's why I think adding minor ailments to scope of practice is a way of taking away something here but giving pharmacy something they've been asking for there.

FtS: Let's get away from talking just about the new government in Ontario. What else are pharmacies talking about?

Leila: Another area of focus is cannabis. Pharmacy really wants to be at the table. They want to make sure that cannabis is dispensed through pharmacies. The reality is that even if the regulations or the legislative changes aren't put in place to allow dispensing of cannabis in pharmacies, they will still be impacted. Cannabis is really no different than alcohol or foods. Patients have questions about how cannabis interacts with the other drugs they're taking. So pharmacists have to be educated and informed about the interactions between cannabis and medications.

FtS: You're talking about medical cannabis, right? Not recreational.

Leila: Yes, medical cannabis. Pharmacies see themselves as the most appropriate place to access your medical cannabis. And as the most well-equipped professional to address the questions from patients being treated with cannabis. Personally, I don't disagree.

FtS: The opioid crisis is still a big story in the media. I assume it continues to be a focus for pharmacy?

Leila: Opioids are still a big focus. There are some proposed legislative and regulatory changes to the Controlled Drugs and Substances Act and the Narcotic Control Regulations that would enable pharmacists to do a couple of things. Number one, CPhA is advocating to remove codeine as an over-the-counter drug and make it prescription only. Number two, they're advocating for a pharmacist's ability to adapt narcotic prescriptions; this goes back to scope of practice. So today, they can adapt prescriptions, but they cannot do so for narcotics. Having the ability to adapt prescriptions for narcotic drugs would be a good thing because that would enable pharmacists to play a role in the deprescribing of opioids and narcotics. Today any patient that may need to taper down an opioid has to go through a physician. So adapting prescriptions would expand pharmacists' services in terms of what they can do to help manage patients on high opioid doses.

FtS: Recently pharmacare has come up as a campaign issue for the upcoming federal election. Would that affect the pharmacy business?

Leila: Pharmacare is something that they're really watching closely. Obviously there are many implications, but from a pharmacy perspective, they really want to make sure that, whatever shape pharmacare eventually takes, the role of the pharmacist as a key player in health management is recognized.

FtS: What does that mean? What could change to their detriment?

Leila: It's not that something could change. Pharmacists want to be recognized and reimbursed for cognitive services – like counselling; in this case, it's medication management. They have an ability to work with patients to make sure the therapies are taken as recommended and they're effective. So pharmacy wants to be seen as the professional that can help address the non-adherence issue – I think it's really making sure that there's funding in pharmacare for professional services. The goal of pharmacare is to reduce drug prices and expand access but, by reducing drug prices, pharmacy revenue is going to decrease because it's directly tied to the cost of the drug. So cognitive services would be one way for them to not just capture revenue but, more importantly, demonstrate their true value within the health care system.

FtS: Is there anything interesting happening at the store level? What are the kinds of things pharmacists in a chain are hearing from head office?

Leila: Speaking of searching out new revenue, I've seen pharmacies moving into medical supplies such as compression stockings. And vaccines continue to be a driver as pharmacists can now provide more than just the influenza vaccine. They can do travel vaccines and other kinds of vaccines and charge a fee. For the flu shot, the government supplies the vaccine and pays a professional fee to the pharmacy for administering it. Whereas for all other vaccines, the pharmacy charges the cost of the vaccine plus the professional fee for administering it. Vaccines have become – and will continue to be – an important source of revenue.

FtS: At GSC we've been rolling out our Value-based Pharmacy Strategy over the past couple of years. Are we seeing any interest in quality improvement from pharmacy?

Leila: In Ontario, the College of Pharmacy is signaling a movement towards quality improvement. They've been working with Health Quality Ontario to identify quality indicators for community pharmacies and the first set of indicators to measure the impact of pharmacy on patient care was just released.

FtS: Thanks Leila, you'll have to come back again for an update on some of these issues.

DRUG REVIEW AT GSC...

To give you an idea of what drugs might impact your benefits plan next, every quarter *Follow the Script* highlights some of the drugs recently reviewed by GSC's Pharmacy and Therapeutic (P&T) Committee.

GSC CLASSIFICATION ¹	NEW DRUG ²	GENERAL INFORMATION	COST ³	COVERAGE DETAILS ⁴
NEUROLOGICAL DISORDERS				
<p>Biologic; High-cost; Specialty (Tier 5)</p>	<p>Aimovig™ (erenumab)</p>	<p>Migraine is a common recurrent episodic disorder and has been recognized as a major cause of disability in the workplace. It is estimated to affect 17 per cent of women and six per cent of men. Symptoms vary but often present as a disabling headache (usually pulsating or throbbing in nature) generally associated with nausea, and light and/or sound sensitivity. While there is no cure, medications can be used to relieve pain and reduce the number and severity of migraine attacks. Standard of care generally involves two main categories of medications known as: abortive (acute symptomatic) therapy (e.g., triptans) and preventive therapy (e.g., antidepressants, anticonvulsants, beta-blockers, onabotulinumtoxinA [Botox®], etc.). While there are a number of drug classes used for prevention of migraines, choice of agent is individualized based on a variety of factors including number of migraines per month, headache severity, comorbid conditions, side-effect profile, cost, patient preferences, administration, etc.⁵</p> <p>Aimovig is a first-in-class migraine prevention treatment that belongs to the class of medications now referred to as CGRP (calcitonin gene-related peptide) therapies. While the exact cause of migraines is not fully understood, it is thought that CGRP levels are elevated during a migraine and the idea is to block either CGRP or its receptor. Aimovig fulfills an unmet need and is the first CGRP to be approved. It offers an additional option for those requiring migraine prevention therapy and may be particularly beneficial for those who have failed, are intolerant, or have contraindications to current options. It was approved by Health Canada for the prevention of migraine in adults who have at least four migraine days per month. It is administered by subcutaneous injection (under the skin) either as a 70mg or 140mg dose once every month.</p>	<p>\$\$\$-\$\$\$\$</p> <p>Approximately \$6,380 to 12,770 per year depending on dose required</p>	<p>→ Specialty drug PPN → Requires prior approval</p>

GSC CLASSIFICATION ¹	NEW DRUG ²	GENERAL INFORMATION	COST ³	COVERAGE DETAILS ⁴
AUTOIMMUNE DISEASES				
<p>Biologic; High-cost; Specialty (Tier 5)</p>	<p>Nucala™ (mepolizumab)</p>	<p>Eosinophilic granulomatosis with polyangiitis (EGPA), formerly known as Churg-Strauss syndrome, is a rare autoimmune disease that causes vasculitis (inflammation in the wall of the blood vessels).⁶ The condition is characterized by asthma, high levels of eosinophils (a type of white blood cell that helps fight infection), and inflammation in the small- to medium-sized blood vessels affecting nearly any organ system; however, it commonly impacts the lungs and skin.^{6,7} The disease presents as periods of remission followed by periods of relapse. In severe cases, if left untreated, EGPA can lead to irreversible organ damage and potentially life-threatening complications. While there are currently no approved therapies, standard of care typically involves long-term use of glucocorticoids (steroids) and/or other immunosuppressive therapies, depending on disease severity and prior treatment response, to reduce inflammation and the immune response. However, given the suboptimal efficacy and side-effects associated with use of current treatments for EGPA, those who do not respond, continue to relapse, or experience side-effects are left with limited options.</p> <p>Nucala therefore fulfills an unmet need and is the first biologic therapy to be approved by Health Canada as an add-on to corticosteroids for the treatment of adult patients with EGPA. It is administered as a subcutaneous (under the skin) injection once every four weeks.</p>	<p>\$\$\$\$\$</p> <p>Approximately \$75,600 per year</p>	<p>→ Specialty drug PPN → Requires prior approval</p>
CYSTIC FIBROSIS				
<p>Traditional; High-cost; Specialty (Tier 5)</p>	<p>Kalydeco® (ivacaftor)</p>	<p>Cystic fibrosis (CF) is a serious, complex, life-threatening genetic disease caused by a mutation in the cystic fibrosis transmembrane conductance regulator (CFTR) gene leading to either abnormal or no CFTR protein being produced. When this happens, there is a disruption in the balance of specific molecules (chloride) and fluids causing the mucus in various organs to become thick and sticky. While CF is a multi-system disorder, it mainly affects the digestive system and lungs leading to malnutrition and persistent lung infections.</p>	<p>\$\$\$\$\$</p> <p>Approximately \$306,600 per year</p>	<p>→ Specialty drug PPN → Requires prior approval</p>

GSC CLASSIFICATION ¹	NEW DRUG ²	GENERAL INFORMATION	COST ³	COVERAGE DETAILS ⁴
CYSTIC FIBROSIS <i>(continued)</i>				
		<p>This ultimately limits the ability to breathe over time due to loss of function in the lungs. It is estimated that one in every 3,600 children born in Canada has CF.^{8,9}</p> <p>There is currently no cure; however, there are a variety of treatments available to manage the lung disease, including medications (e.g., CFTR modulators, mucus thinners, antibiotics, bronchodilators, etc.) and other strategies aimed at airway clearance (e.g., proper lung care, chest physical therapy, etc.). Treatment often requires a multidisciplinary approach due to the complex nature of the disease.</p> <p>CFTR modulators are a relatively new class of drugs that represent an important advance in the management of CF because they target the mutant CFTR protein itself rather than symptom management, however, use and effectiveness depend on the presence of specific CFTR mutation(s) in CF patients. Therefore, all patients generally undergo testing to see whether they carry a mutation that may make them eligible for treatment.¹⁰ Currently, there are three CFTR modulators available in Canada: Kalydeco, Orkambi®, and Symdeko®.</p> <p>Kalydeco was the first CFTR modulator to be available in Canada (in 2012) and more recently gained expanded approval to include those aged 12 months to <24 months. It is now approved for the treatment of CF for those aged 12 months and older (weighing seven kg to <25 kg) who have one of the following mutations in the CFTR gene: G551D, G1244E, G1349D, G178R, G551S, S1251N, S1255P, S549N, or S549R. Kalydeco addresses an unmet need as it is currently the only CFTR modulator approved for use in those as young as 12 months of age.</p> <p>It is administered orally (dose based on body weight for those aged 12 to <24 months) every 12 hours by mixing the granule packets with age-appropriate soft food or liquid (consumed just after or before a fat-containing food).</p>		

GSC CLASSIFICATION ¹	NEW DRUG ²	GENERAL INFORMATION	COST ³	COVERAGE DETAILS ⁴
CYSTIC FIBROSIS <i>(continued)</i>				
Traditional; High-cost; Specialty (Tier 5)	Orkambi® (lumacaftor/ ivacaftor)	<p>Orkambi, a combination therapy made up of lumacaftor and ivacaftor, was the second CFTR modulator to be available in Canada for those with two copies of the F508del mutation, which is the most common CF mutation. Although available since 2016, Orkambi recently gained expanded approval for the treatment of CF in those two years of age and older who have two copies of the F508del mutation in the CFTR gene. Additionally, Orkambi satisfies an unmet need as it is the only CFTR modulator for those aged two to five who have two copies of the F508del-CFTR mutation.</p> <p>It is administered orally (dose based on body weight for those aged two through five) every 12 hours by mixing the granule packets with age-appropriate soft food or liquid (consumed just after or before a fat-containing food).</p>	<p>\$\$\$\$\$</p> <p>Approximately \$248,981 per year</p>	<p>→ Specialty drug PPN</p> <p>→ Requires prior approval</p>
Traditional; High-cost; Specialty (Tier 5)	Symdeko™ (tezacaftor/ ivacaftor)	<p>Symdeko, a combination therapy made up of tezacaftor and ivacaftor, is the newest CFTR modulator to be approved by Health Canada that works by increasing the quantity and function of CFTR. Compared to other CFTR modulators currently available, Symdeko fulfills an unmet need by targeting additional CFTR mutations and benefiting an additional group of CF patients who previously may not have been eligible for treatment based on mutation status. It was granted Health Canada approval for the treatment of patients with CF aged 12 years and older who have two copies of the F508del mutation and those who have one copy of the F508del mutation and an additional specific mutation (known as a residual function mutation) in the CFTR gene.</p> <p>It is administered orally at a recommended dose of one tablet (tezacaftor/ivacaftor) taken in the morning and one tablet (ivacaftor) taken in the evening – approximately 12 hours apart – with fat-containing food.</p>	<p>\$\$\$\$\$</p> <p>Approximately \$274,845 per year</p>	<p>→ Specialty drug PPN</p> <p>→ Requires prior approval</p>

GSC CLASSIFICATION ¹	NEW DRUG ²	GENERAL INFORMATION	COST ³	COVERAGE DETAILS ⁴
CYSTIC FIBROSIS <i>(continued)</i>				
		The advent of three CFTR modulators, and more currently in the pipeline, that target the underlying CFTR defect represents an important advance for CF patients. These drugs suggest a future of more targeted therapies which could potentially modify the actual course of CF disease, ultimately slowing lung function decline and decreasing mortality.		

Notes:

¹ Traditional generally refers to small molecule compounds derived from chemical synthesis and also includes drugs not listed in Schedule D of the Food and Drugs Act; Biologic refers to drugs produced through biotechnology and listed in Schedule D of the Food and Drugs Act; High-cost refers to drugs subject to GSC's High Cost Drug Policies; Specialty (Tier 5) refers to drugs with an expected annual treatment cost of \$10,000 or more (certain drugs approaching the threshold may also be considered if clinically warranted)

² Brand (generic)

³ Based on manufacturer list price, does not reflect pharmacy markup and dispensing fee. \$ <1,000; \$\$ 1,000–4,999; \$\$\$ 5,000–9,999; \$\$\$\$ 10,000–49,999; \$\$\$\$\$ ≥50,000.

⁴ Applicable to all formularies unless otherwise noted. PPN refers to GSC's preferred pharmacy network program.

⁵ Chronic migraine, UptoDate, <https://www.uptodate.com/>.

⁶ FDA approves first drug for Eosinophilic Granulomatosis with Polyangiitis, a rare disease formerly known as the Churg-Strauss Syndrome, FDA U.S. Food & Drug Administration, <https://www.fda.gov/>.

⁷ Clinical features and diagnosis of eosinophilic granulomatosis with polyangiitis (Churg-Strauss), UpToDate, <https://www.uptodate.com/>.

⁸ About Cystic Fibrosis, Cystic Fibrosis Foundation, <https://www.cff.org/>.

⁹ What is Cystic Fibrosis, Cystic Fibrosis Canada, <https://www.cysticfibrosis.ca/>.

¹⁰ Cystic fibrosis, Overview of the treatment of lung disease, UptoDate, <https://www.uptodate.com/>.