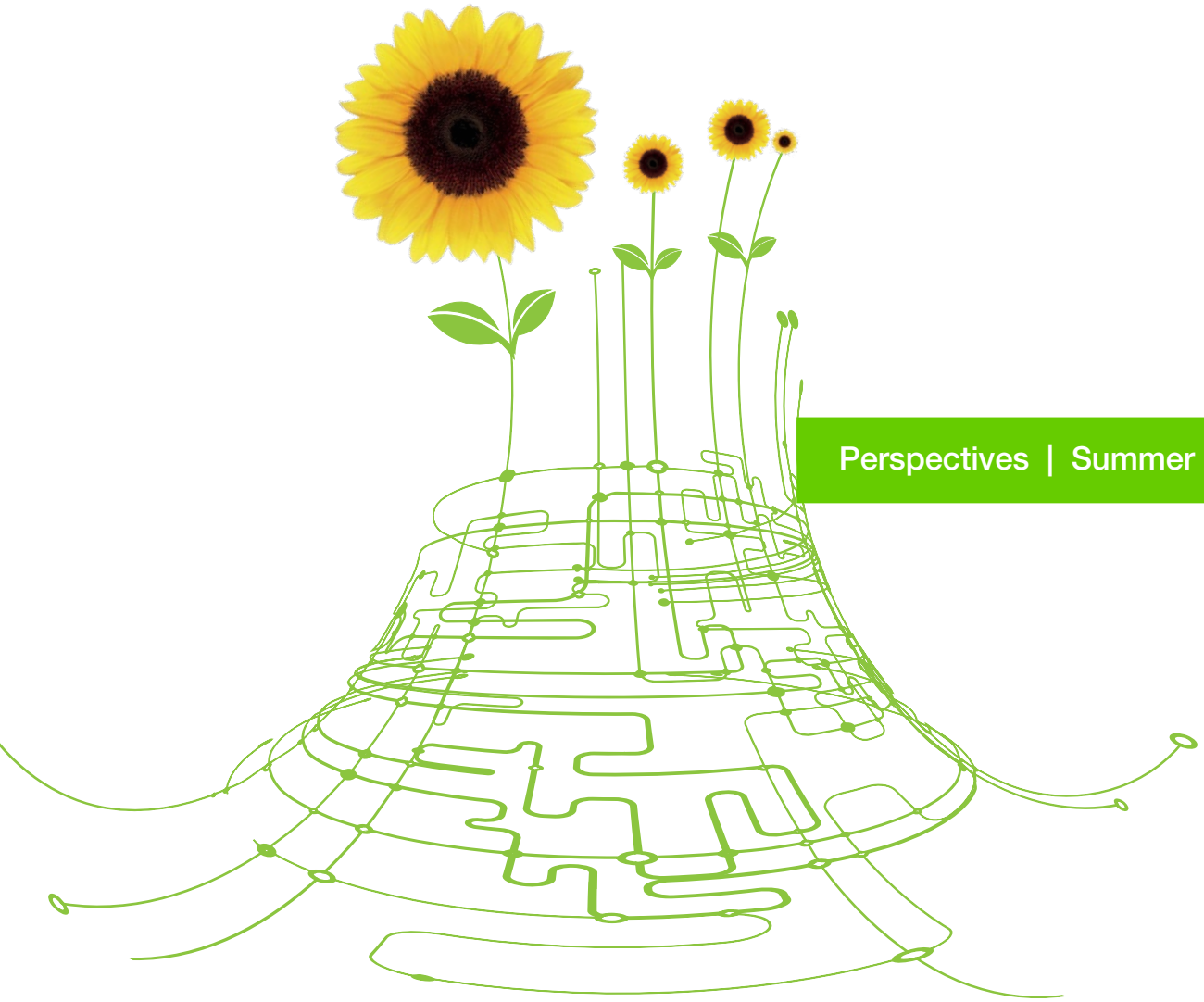

Perspectives | Summer 2017

Report:
2016 Drug Data Trends and National Benchmarks

TELUS | HEALTH®

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Now, more than ever, new medical treatments can be game changers for serious diseases. The challenge for plan sponsors is to keep their drug plans sustainable, while ensuring their plan members have access to breakthrough treatments.

Understanding how cost drivers impact drug plans contributes to the health benefit management toolkit. With an understanding of key data and insights relating to claim trends, medication utilization and cost-saving strategies, plan sponsors can better assess their benefit plans and make informed decisions.

In 2016, drug claim costs continued to rise and the two major contributors were the increased number of claimants and high-cost specialty drugs. Fortunately, hepatitis C costs and claimants stabilized and generic drug use tempered the growth in costs. The recent introduction of biosimilars provides additional opportunities for savings, and prior authorization can ensure that specialty medications are being used appropriately.

2016 Highlights

- 3.6% more cardholders submitted claims. When their claiming activity is spread across all cardholders, the average eligible amount per cardholder grew by 5.8%.
- Small increases of just 1% for both average eligible amount per individual claim and average number of claims per claimant.
- Generic drugs represented 62.4% of claims costs, up 4.2%, and the number of cardholders with a generic pricing drug plan continues to climb steadily.
- Overall, high-cost specialty drugs accounted for 25.9% of total eligible costs, 2.3% of claims and 0.96% of claimants.
- Brand single-source drugs accounted for 67.5% of adjudicated claims, up 1.4% over 2015.
    - Low-cost traditional drugs represented 50.9% of eligible claim costs and 90.5% of claims.
    - Within single-source drugs
        - High-cost, biologic specialty drugs represented 26.4% of eligible claim costs and 1.6% of claims.
        - High-cost, non-biologic specialty drugs share of eligible costs declined to 12.5% and 0.7% of claims.
    - Top brand single-source drugs
        - Drugs to treat immunological conditions such as rheumatoid arthritis, psoriasis, and Crohn's disease maintained top rankings in 2016.
        - Hepatitis C drugs were ranked ninth in 2015 and fell off the top ten list to 19th in 2016.
        - Cholesterol drugs were ranked 10th in 2015, and also dropped off the list to 12th in 2016.
- Six biosimilar drugs are currently available in Canada, and four of them are immunomodulators
    - Inflectra, the first biosimilar for Remicade, introduced in 2014, represented less than 0.5% of total eligible costs and less than 1% of all claimants in that drug class. New Inflectra claimants represented 4% of costs.

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Terms of reference

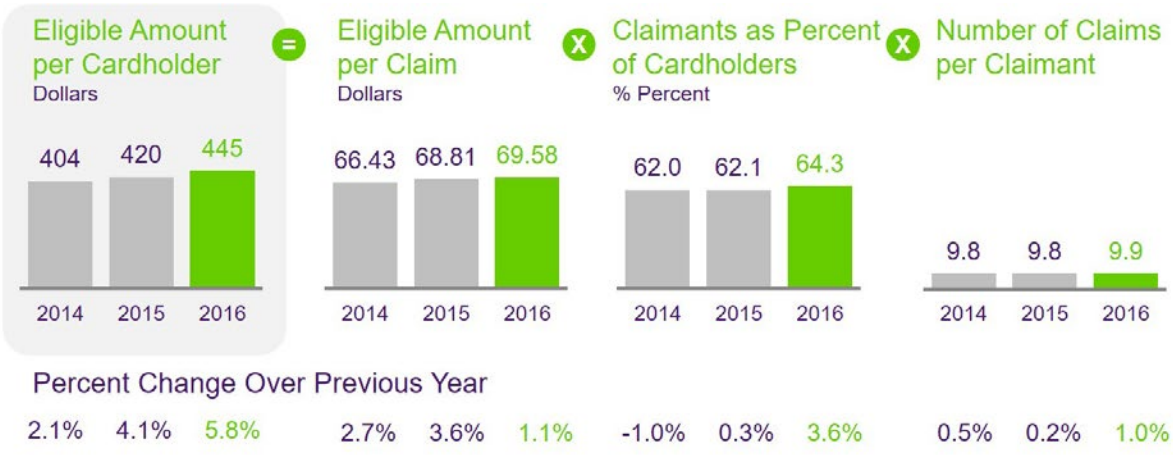
- The information provided is based on an analysis of prescription drug claims processed by TELUS Health, which adjudicates for over 11 million privately insured lives.
- The data used for the analysis was sourced from the TELUS Health Data Warehouse as of March 2017, reflective of the age group 0 to 64.
- Comparison with previous years' reports may show minor differences in numbers due to data updates and methodology upgrades.
- **Cardholders:** the covered employee and dependents, people who are insured by a contract provided by a plan sponsor, also referred to as a beneficiary.
- **Primary Cardholder:** the employee only without dependents, or certificate holder.
- **Claimant:** the cardholder making a claim, i.e. patient.
- **Eligible amount:** represents the amount submitted by the pharmacy and allowed by TELUS Health based on agreed upon drug price, markup and dispensing fees. The amount submitted by the pharmacy may be cut back if it exceeds the agreed amount. This amount does not take into account the deductible or co-insurance, or other drug plan features.
- **Adjudicated amount:** represents the amount paid after plan design is applied to the eligible amount of the claim. The difference between the eligible and adjudicated amounts is the plan member's contribution, in the form of a coinsurance, deductible or other plan design features.
- **TELUS BoB:** TELUS Health Book of Business

Trends in claims data

In 2016, 64.3% of all cardholders submitted claims, a 3.6% increase over 2015 (62.1%). This is a notable change compared to 2015 (increase of 0.3%) and 2014 (decrease of 1.0%). When the eligible costs of their claims are spread across all cardholders, the average eligible amount per cardholder was $445 in 2016, 5.8% more than the $420 recorded in 2015. When comparing the costs by primary cardholder, the average eligible amount was $1,059 in 2016, 5% more than $1,009 in 2015.

The average eligible amount per individual claim was $69.58, a modest increase of 1.1% over 2015. Similarly, the average number of claims per claimant, at 9.9, is up just 1% from 2015. When claims are averaged across all cardholders (i.e., including those who did not submit claims), the average number of claims per cardholder is 6.4.

Chart 1 | The cost per claim and number of claimants rose in 2016



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Differences by region

Variations in populations and provincial drug plans can result in regional variations in drug claims data trends.

Region	2016	Canadian Rank	Growth Over 2015	Canadian Rank
Atlantic Canada				
1. Average eligible amount per cardholder	$571	3	17.5%	1
2. Average eligible amount per claim	$77.24	2	1.1%	2
3. Adjudicated amount per claim	$60.45	2	25.1%	1
4. Adjudicated amount as % of eligible amount	78.3%	3	—	—
5. Cardholders who submitted claims	71.6%	1	5.8%	1
6. Number of claims per claimant	10.3	2	9.9%	1
Quebec				
1. Average eligible amount per cardholder	$581	1	4.3%	3
2. Average eligible amount per claim	$56.61	4	0.1%	3
3. Adjudicated amount per claim	$47.59	3	4.4%	3
4. Adjudicated amount as % of eligible amount	84.1%	1	—	—
5. Cardholders who submitted claims	70%	2	4%	3
6. Number of claims per claimant	14.7	1	0.2%	3
It is of common practice for Quebec pharmacies to dispense 30-day supplies for prescriptions, whereas pharmacies in the rest of Canada are more likely to dispense larger days' supplies.				
Ontario				
1. Average eligible amount per cardholder	$466	3	6%	2
2. Average eligible amount per claim	$78.86	1	2.1%	1
3. Adjudicated amount per claim	$62.95	1	5.4%	2
4. Adjudicated amount as % of eligible amount	79.8%	2	—	—
5. Cardholders who submitted claims	64.2%	3	4.2%	2
6. Number of claims per claimant	9.2	3	- 0.3%	4
Western Canada				
1. Average eligible amount per cardholder	$337	4	3.5%	4
2. Average eligible amount per claim	$65.13	3	-0.1%	4
3. Adjudicated amount per claim	$45.27	4	1.2%	4
4. Adjudicated amount as % of eligible amount	69.5%	4	—	—
5. Cardholders who submitted claims	61.3%	4	2.4%	4
6. Number of claims per claimant	8.4	4	1.3%	2
The lower dollar amounts in Western Canada reflect the existence of provincial Pharmacare programs, which kick in and help absorb the costs of claims once plan members have paid an out-of-pocket deductible.				

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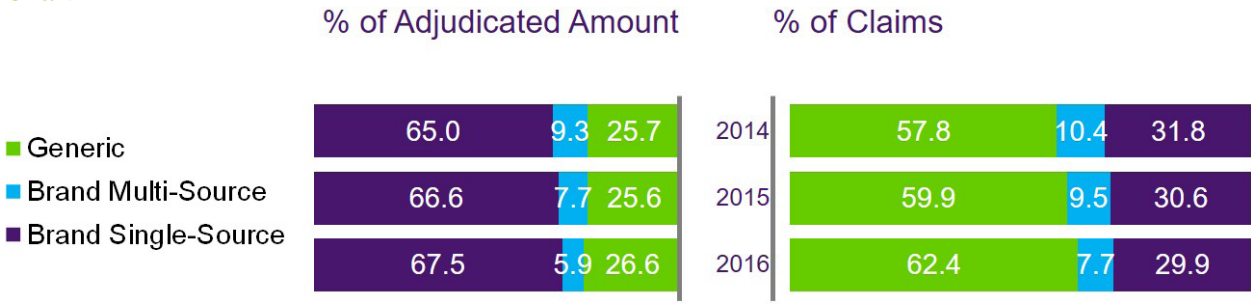
Trends by drug type

Brand versus generic

Brand drugs can be categorized as multi-source or single-source. Multi-source are brands that have generic versions on the market and single-source brands are typically newer products that still have patent protection and do not yet have a generic alternative. It is important to note that biologic drugs are currently categorized as single-source brands, even after patent expiry, since the subsequent-entry biologics, also called biosimilars, are not currently considered interchangeable with their reference biologic product. With that in mind, biosimilars are also currently considered brand single-source drugs.

In 2016, generics represented 62.4% of claims, up 4.2% from 2015 (59.9%). Plan design is contributing to the increased use of generic drugs (see Generic drug plans). Despite this growth in utilization of generics, brand single-source drugs dominated adjudicated costs, at 67.5%, a moderate gain of 1.4% over 2015 (66.6%).

Chart 2



High-cost versus low-cost

To get a more accurate picture of what's happening within **brand single-source drugs**, it's important to differentiate between high-cost and low-cost drugs. TELUS Health defines drugs costing more than $10,000 per patient annually as high-cost, specialty drugs. And then within each of these categories, additional trends come to light when drugs are sub-divided further by non-biologic and biologic. Low-cost, non-biologic drugs are also referred to as traditional drugs.

Within brand single-source drugs, in 2016 the low-cost traditional drugs represented 50.9% of eligible claim costs and 90.5% of claims. Low-cost biologics (such as insulin and vaccines) accounted for 10.2% of costs and 7.2% of claims.

After a few years of double-digit growth, high-cost, non-biologic specialty drugs saw their share of eligible costs decline by 0.8% to 12.5% in 2016, from 13.4% in 2015. Their share of claims remains at 0.7%. This is due, in part, to the stabilization of hepatitis C drug claim costs. [See Hepatitis Treatment Costs Started to Stabilize in 2016 page 11]

TELUS Health defines a specialty drug as

- a drug that has a high cost based on a potential per claimant utilization exceeding $10,000 per year;
- may require special medication delivery (e.g. special handling, preparation, administration, storage, or distribution); and
- may require complex treatment maintenance (e.g. complex disease, complex dosing, intensive monitoring and clinical management etc.)

Although many specialty drugs are biologics, not all biologics are specialty medications. Biologic drugs include insulin and vaccines, which are relatively low in cost. In addition, some specialty drugs are not biologics: for example, drugs to treat hepatitis C are high cost, but not biologics.

The number of non-biologic specialty drugs has grown an average of 15% per year since 2008, which is a much faster pace than the growth rate of 11% for specialty drugs overall, and 6.5% for biologic drugs only.

Even though the overall number of specialty drugs has increased, each new drug does not always treat a new disease category. Many of these drugs compete against each other and are prescribed for an existing treatment area. In these situations the size of the market won't necessarily grow, but rather there will be internal shifts between competing products.

High-cost, biologic specialty drugs, on the other hand, jumped by 15.4% in 2016 to reach 26.4% of eligible claim costs among brand single-source drugs, up from 24.3% in 2015. Their share of claims increased by 13.1%, to reach 1.6% of all claims.

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Chart 3 | Brand Single-Source, TELUS Book of Business

% Percent of all Brand Single-Source

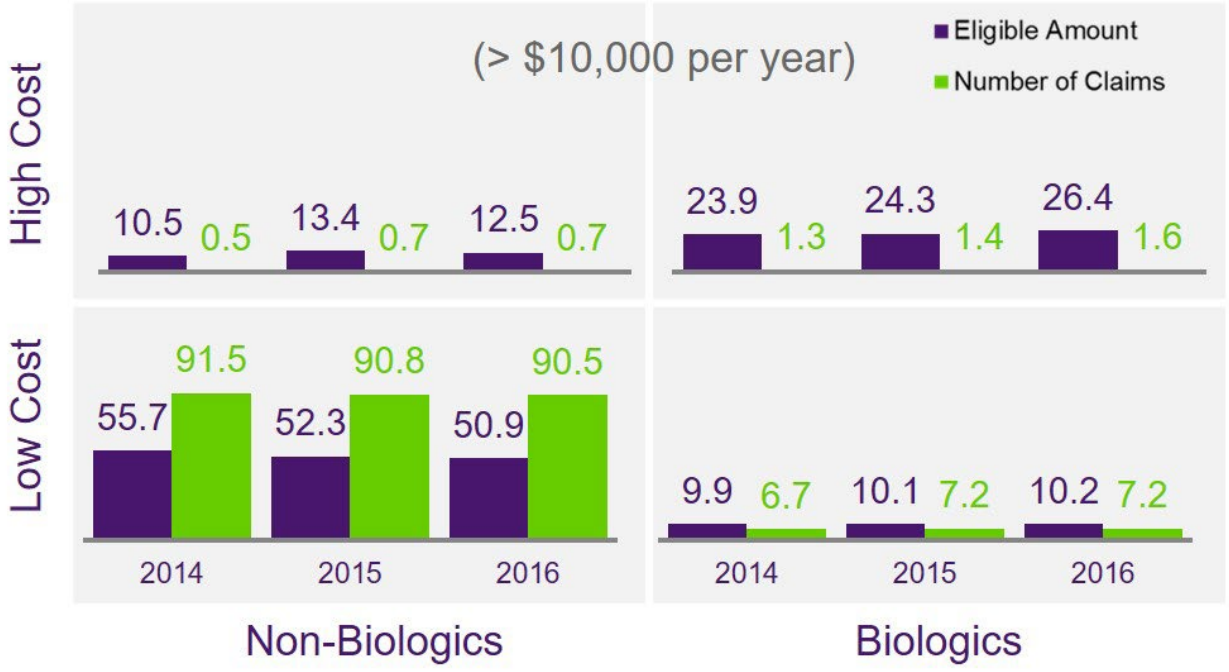
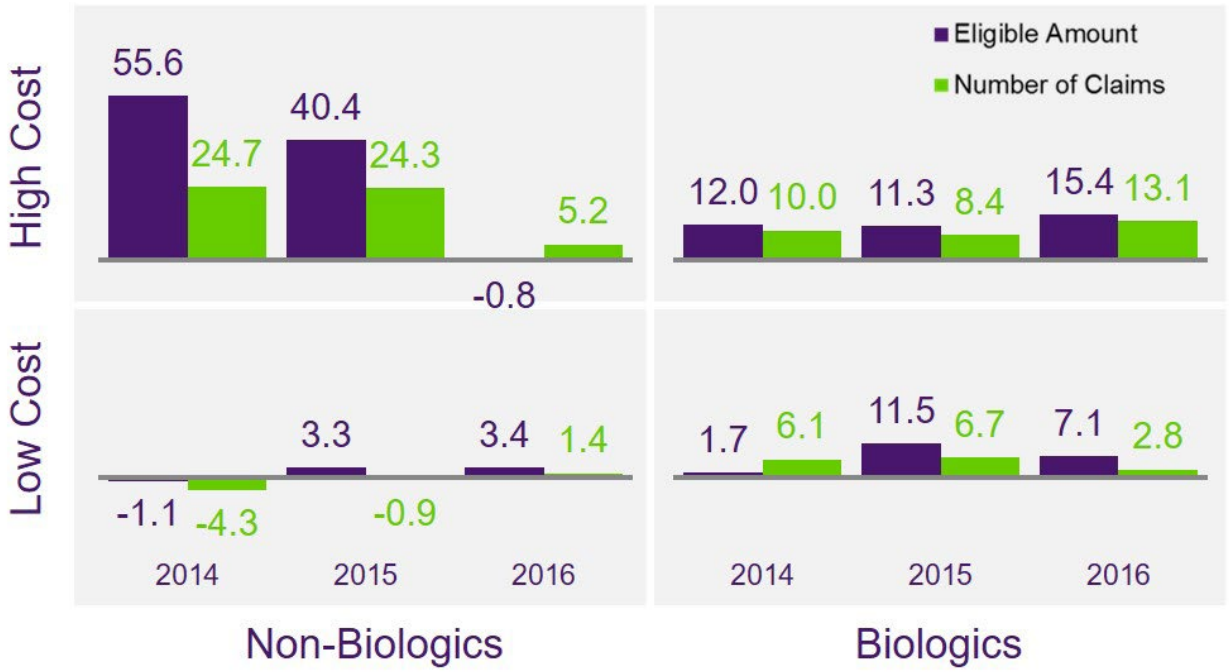


Chart 4 | Brand Single-Source, TELUS Book of Business

% Change Over Previous Year



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Although specialty drugs have a significant impact on growing drug plan costs, they represent only a small portion of claimants with complex diseases that have few other treatment options. There are, however, a large number of plan members whose claim costs for non-specialty drugs can be mitigated by innovative plan design features without causing major impact on the plan member experience.

For more information please read Medication Management article

Impact of specialty claims on eligible cost per claimant

In 2016, high-cost specialty drugs accounted for 25.9% of overall total eligible costs, representing just under 1% of all claimants.

Chart 5 | Specialty drug share of eligible costs and claimants

Plan members who made claims in 2016 submitted an average of $680 in total eligible costs, up 2% from $666 in 2015. These costs are a blend of specialty and non-specialty drug claims. When specialty claimants are separated out, representing less than 1% of all claimants, the average eligible amount submitted per claimant was $18,549 (down slightly from $18,915 in 2015). The average amount for the 99% of non-specialty drug claimants, meanwhile, was $509 (virtually unchanged from 2015).

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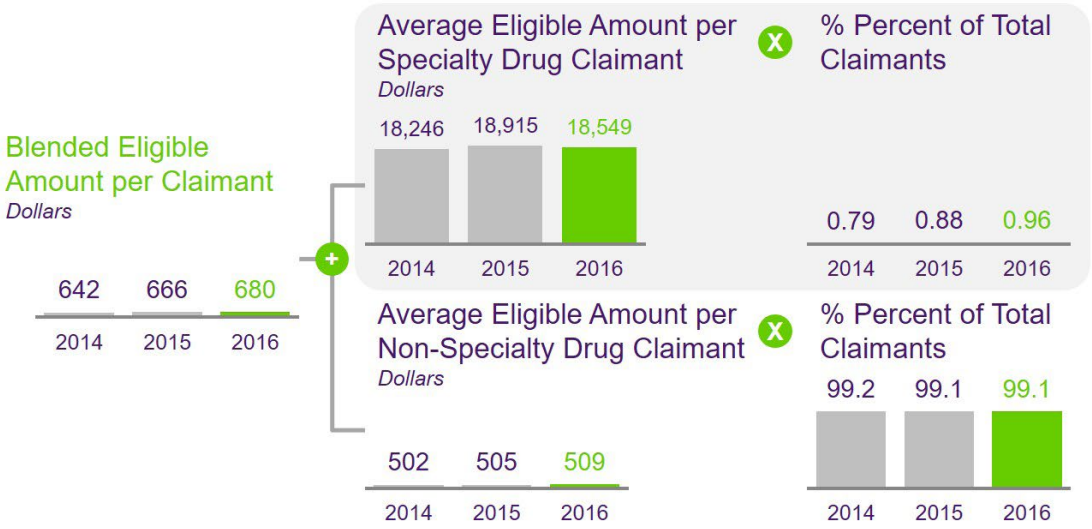
Chart 6



Trends in drug utilization

Adjudicated amounts for the top therapeutic classes and top brand single-source drugs provide insights into the cost drivers for drug plans. Chart 5 in particular illustrates the impact of high-cost specialty drugs, despite very low utilization rates. 2016 also saw a few shifts worth noting:

- Hepatitis C drugs were ranked ninth in 2015 and fell off the top ten list to 19th in 2016. [See Hepatitis Treatment Costs Started to Stabilize in 2016 page 10]
- Cholesterol drugs were ranked tenth in 2015, and also dropped off the list to 12th in 2016. [See Cholesterol Treatment Costs Were Steady in 2016 page 11]
- Although the actual amounts of adjudicated claims for cholesterol drugs remained about the same, the amounts for multiple sclerosis and attention deficit disorder (ADD)/narcolepsy overtook them in the rankings.

Chart 7 | Top 10 Drug Classes by Adjudicated Amount

Therapeutic Class	Rank (by Adjudicated Amount)		% Percent of Total Adjudicated Amount	
	2016	2015	2016	2015
Immunomodulators (*e.g.* RA)	1	1	11.7%	11.0%
Diabetes	2	2	8.8%	8.3%
Depression	3	3	5.7%	6.0%
Asthma	4	4	5.6%	5.5%
Skin Disorders	5	7	4.7%	4.2%
Blood Pressure	6	5	4.5%	4.5%
Antibiotics/Anti-Infectives	7	6	3.8%	4.4%
Ulcers	8	8	3.6%	4.1%
Multiple Sclerosis	9	11	3.3%	3.1%
ADD/Narcolepsy	10	12	3.1%	2.9%
Share Of Total Adjudicated Amount			**54.7%**	**54.0%**

Drugs to treat immunological conditions such as rheumatoid arthritis, psoriasis, and Crohn's disease maintained their top rankings in 2016. With the introduction of biosimilars for many of these treatments, some shifts may be seen over the next few years. [See Possible savings from biosimilars page 12]

2016 saw a few significant changes in the number of claimants, most especially for Harvoni (-52%), used to treat hepatitis C. [See Hepatitis Treatment Costs Started to Stabilize in 2016 page 10]

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Chart 8 | Top 15 Brand Single-Source by Adjudicated Amount

Trade Name	Disease Name	% Percent of Adjudicated Amount	Avg. Eligible Cost/ Claimant	% Percent Change in Claimants over 2015
Remicade	Rheumatoid Arthritis	7.2	27,590	4
Humira	Rheumatoid Arthritis	5.6	16,525	13
Enbrel	Rheumatoid Arthritis	2.2	14,020	-3
Stelara	Skin Disorders	1.7	19,456	15
Advair	Asthma	1.4	463	-9
Symbicort	Asthma	1.4	290	4
Concerta	ADD/Narcolepsy	1.4	692	9
Coversyl	Blood Pressure	1.4	300	12
Harvoni	Hepatitis	1.3	58,608	-52
Vyvanse	ADD/Narcolepsy	1.3	775	24
Cymbalta	Depression	1.2	735	-17
Xolair	Asthma	1.2	16,269	29
Victoza	Diabetes	1.1	1,875	4
Janumet	Diabetes	1.1	892	11
Abilify	Mental Disorders	1.0	883	15
Total		**30.4**	**$1,400**	**4.1**

Hepatitis treatment costs stabilizing

Hepatitis C treatments had a significant impact on private drug plans in 2015, which started to stabilize in 2016. The spikes in claimants and cost per claimant in 2015 reflect the introduction of Harvoni and other oral treatments. As well, patients held off on other possible treatments while waiting for the new treatments, resulting in a dip and then a spike in claimants—a practice often referred to as warehousing. Now that these patients have received treatment, the number of claimants has gone back to historical levels, but at a higher cost per claimant.

In March 2015, some provincial drug plans began to cover Harvoni. Declining costs on the private side can in part be attributed to a shift to public plans, especially among the Pharmacare provinces in Western Canada.

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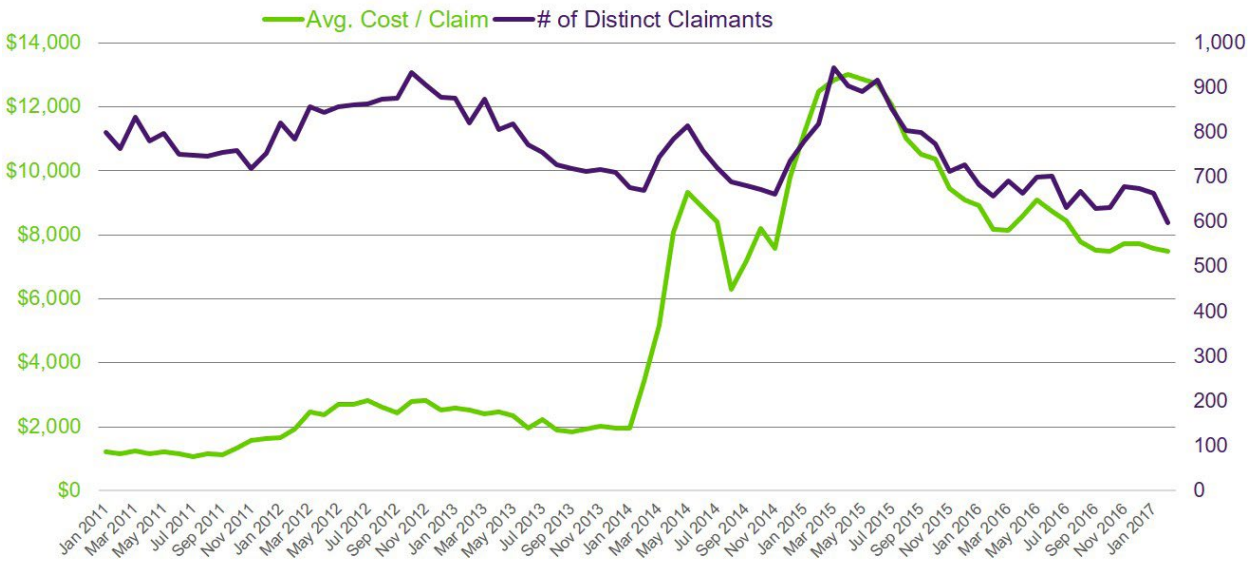
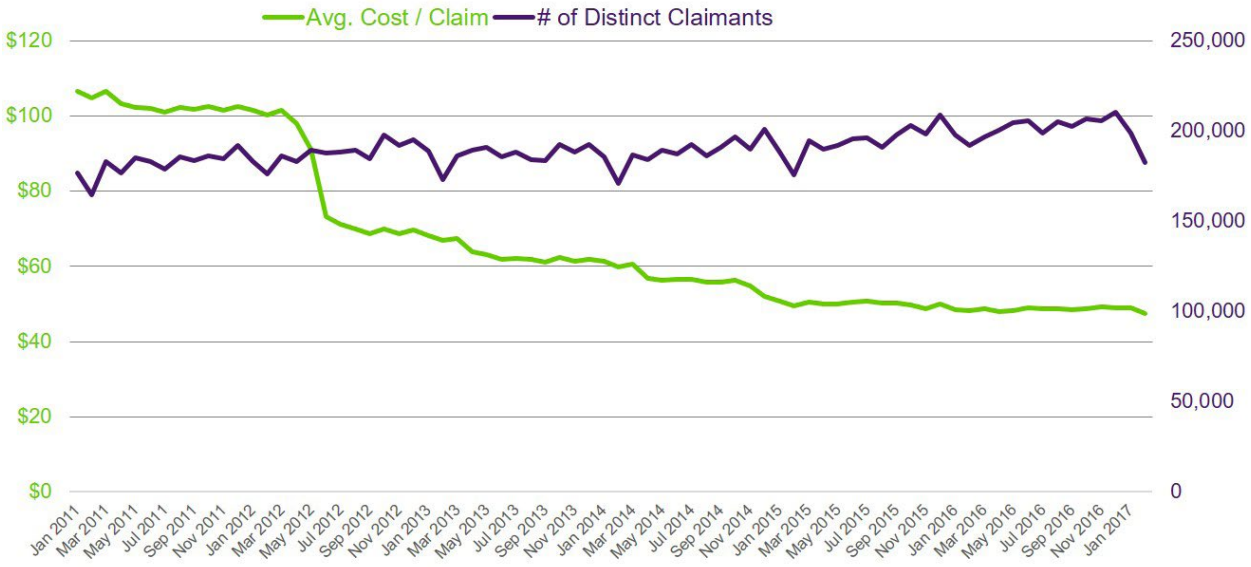
Chart 9 | Hepatitis Treatment Costs



Cholesterol treatment costs steady

Although the number of claimants for cholesterol treatments has remained steady, the average drug cost has decreased by over 50%, due mainly to the fact that many of the most common drugs, such as Lipitor and Crestor, have been genericized and drug reform has driven down generic prices. The introduction of PCSK9 Inhibitors in 2015 and 2016 did not drive up costs in this therapeutic class, as was expected. This is likely due to the unique patient profile for this medication and the use of effective prior authorization criteria to ensure only appropriate patients get access to this additional line of therapy. Clinical outcome studies are now available, however it is yet to be seen whether this new evidence will lead to a change in the treatment guidelines and the clinical practice of physicians.

Chart 10 | Cholesterol Treatment Costs



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Trends in medication management

Generic drug plans

The number of cardholders who have a drug plan that includes generic pricing continues to climb steadily. In 2016, 79.2% had a generic drug plan, compared to 77.5% in 2015. Perhaps more tellingly, 50.1% had mandatory generic plans, up from 46.9% in 2015 and 44.2% in 2014.

Chart 11

In a generic drug plan, if a brand name drug has a lower-cost generic alternative, the reimbursement amount will be limited to the generic product price, which generally results in the plan member choosing the generic alternative. The plan member can request the brand name drug instead of the generic and pay the difference in cost.

In a regular generic plan, if the doctor indicates "no substitution" on the prescription, the plan member can receive the brand name drug and not have to pay the difference in cost. In a mandatory generic plan, the plan will not pay for the brand even if the doctor indicates "no substitution" on the prescription. Some plans will make exceptions, however, if the doctor provides medical evidence that the plan member cannot tolerate the generic drug.

Possible savings from biosimilars

In the specialty drug category, high-cost biologic drugs consistently post double-digit growth rates in eligible claims. The introduction of biosimilars offers an opportunity to generate savings for private drug plans. Six biosimilar drugs are currently available in Canada, and four of them are immunomodulators for conditions such as rheumatoid arthritis, currently the number-one drug class in terms of adjudicated claim costs.

Biosimilars overview

- Biosimilars enter the market after a biologic reference drug's patents have expired.
- They come to the market at a lower list price than the reference drug and offer the potential to generate savings.
- Both biosimilars and reference biologics are created from living cells, which means a biosimilar medication is similar but can never be identical to the reference biologic.
- Health Canada's approval process for biosimilars is different from its process for generic drugs.
- Health Canada does not consider biosimilars interchangeable with their reference biologic drug, therefore a patient stabilized on the reference biologic cannot easily be switched to the biosimilar.

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Chart 12 | Biosimilar Drugs Currently Available

Biosimilar	Reference Product	Biosimilar Indications	Product Availability
OMNITROPE (somatropin)	GENOTROPIN	Growth Hormone Deficiency	2009
INFLECTRA (infliximab)	REMICADE	Rhumatoid Arthritis / Ankylosing Spondylitis Plaque Psoriasis / Psoriatic Arthritis Crohn's Disease / Ulcerative Colitis * Not indicated for pediatric patients	September 2014
BASAGLAR (glargine insulin)	LANTUS	Type 1 / Type 2 Diabetes	December 2015
GRASTOFIL (filgrastim)	NEUPOGEN	Neutropenia	March 2016
BRENZYS (etanercept)	ENBREL	Rhumatoid Arthritis / Ankylosing Spondylitis * Not indicated for Plaque Psoriasis / Psoriatic Arthritis ** Not indicated for pediatric patients	September 2016
ERELZI (etanercept)	ENBREL	Rhumatoid Arthritis / Ankylosing Spondylitis Juvenile Idiopathic Arthritis (4-17 y.o.) * Not indicated for Plaque Psoriasis / Psoriatic Arthritis	TBC

Although Inflectra, the first biosimilar for Remicade, was introduced in late 2014, the impact remains limited in private drug plans. In 2016, Inflectra represented less than 0.5% of total eligible costs and less than 1% of all claimants versus its reference biologic. Some reasons behind the slow uptake may include:

1. Physicians' lack of familiarity with biosimilars, which may result in limited prescribing.
2. The presence of product listing agreements that reduce the price of the biologic to the same price as the biosimilar (or perhaps lower).
3. The fact that biosimilars are not considered interchangeable, which limits the number of current patients who can be switched from the biologic to the biosimilar.

Plan design can be used to drive savings by encouraging new patients to start treatment with the lower-cost biosimilar. When we examine data for new claimants, Inflectra's share of the market increases to almost 4%.

Chart 13 | 2016 Biosimilars Share of Claims vs Reference Biologic

	INFLECTRA (infliximab)	BASAGLAR (glargine insulin)	GRASTOFIL (filgrastim)	BRENZYS (etanercept)
$	0.37 %	0.25 %	0.41 %	Too soon to tell
Claimants	0.84 %	0.61 %	0.99 %	
New Claimants Only	**3.75 %**	**2.5 %**	**1.2 %**	

We can expect more biosimilars in the next few years. Those most relevant to private drug plans include biosimilars for HUMIRA and Lucentis, which are expected in 2018.

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Chart 14 | Biosimilar Pipeline Update

Reference Drug	Indications	Manufacturers (Biosimilar Name)	Anticipated Approval Date
AVASTIN (bevacizumab)	Cancer (many indications)	Pfizer (PF-06439535)	Health Canada is currently reviewing a submission for bevacizumab
NEULASTA (pegfilgrastim)	Neutropenia	Mylan	Health Canada is currently reviewing a submission for pegfilgrastim
HUMIRA (adalimumab)	Rhumatoid Arthritis / Inflammatory Diseases	Amgen (ABP501) Also: Sandoz, BI et Merck	Q1-Q2 2018
LUCENTIS (ranibizumab)	Macular Degeneration	Pfenex (PF582) Also: Hospira, Novartis et Valeant	Potentially 2018
HERCEPTIN (trastuzumab)	Breast Cancer	Celltrion (CT-P6) Also: Pfizer	Potentially 2018
RITUXAN (rituximab)	Lymphoma (RA – phase 3)	Sandoz (GP2013)	Potentially late 2018

Drug Pipeline Update

It is important to monitor the drug pipeline in order to anticipate the impact some drugs may have on private drug plans. For example, three pipeline drugs that could have a significant impact on drug plans are expected in the therapeutic areas of liver disease (for two indications: one that's quite rare and one that affects two to five percent of the population), migraines and atopic dermatitis (eczema).

For more information on the drug pipeline: Perspectives article

Conclusion

While it may be tempting to assume that high-cost specialty drugs are the main reason why eligible costs per cardholder increased 5.8% in 2016, the TELUS Health 2016 Drug Data Trends and National Benchmarks Report reveals there is more to this story. Perhaps most significantly, more cardholders submitted claims for prescription drugs—64.3% did so in 2016, a 3.6% increase, compared to virtually no change in 2015 (0.3%) and a slight decline of 1.0% in 2014.

It's also important to keep in mind that the 1% of claimants who take specialty drugs often have complex medical conditions such as cancer, multiple sclerosis and rheumatoid arthritis, which can no longer be managed by traditional drugs. Coverage for these medications delivers tremendous peace of mind for these plan members, and their improved health leads to greater productivity and reduced disability for plan sponsors.

Whether cardholders' claims are for specialty or traditional drugs, the high and growing utilization of drug plans underscores how important it is for plan sponsors to clearly define the objectives of their health benefit plan in order to gain a richer understanding of what is happening within their own drug claims data. With these objectives firmly in place, plan sponsors are in a better position to consider all the drug plan management tools available to better manage not only their costs, but also, and perhaps more importantly, plan members' utilization of drug benefits.

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