



Trends in medication management

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Content outline

- i. Drug therapy class insights 2021
- ii. Adherence analysis
- iii. Canadian biosimilar landscape
- iv. Legislative update
- v. COVID 19 insights
- vi. Drug pipeline





Drug therapy class insights 2021

Top 10 drug classes by eligible amount | Canada

Rank	Therapeutic class	\$	#	Rank 2020	Change
1	Inflammatory disease	12.6%	0.7%	1	=
2	Diabetes	12.0%	8.1%	2	=
3	Skin disorders	7.7%	19.3%	3	=
4	Depression	5.2%	19.9%	5	▲
5	Asthma	4.9%	15.4%	4	▼
6	Stimulants (ADHD)	4.5%	5.2%	7	▲
7	Cancer	4.2%	1.6%	6	▼
8	Multiple sclerosis	3.4%	0.2%	8	=
9	Blood pressure	2.8%	15.85%	9	=
10	Ulcers	2.6%	15.3%	10	=

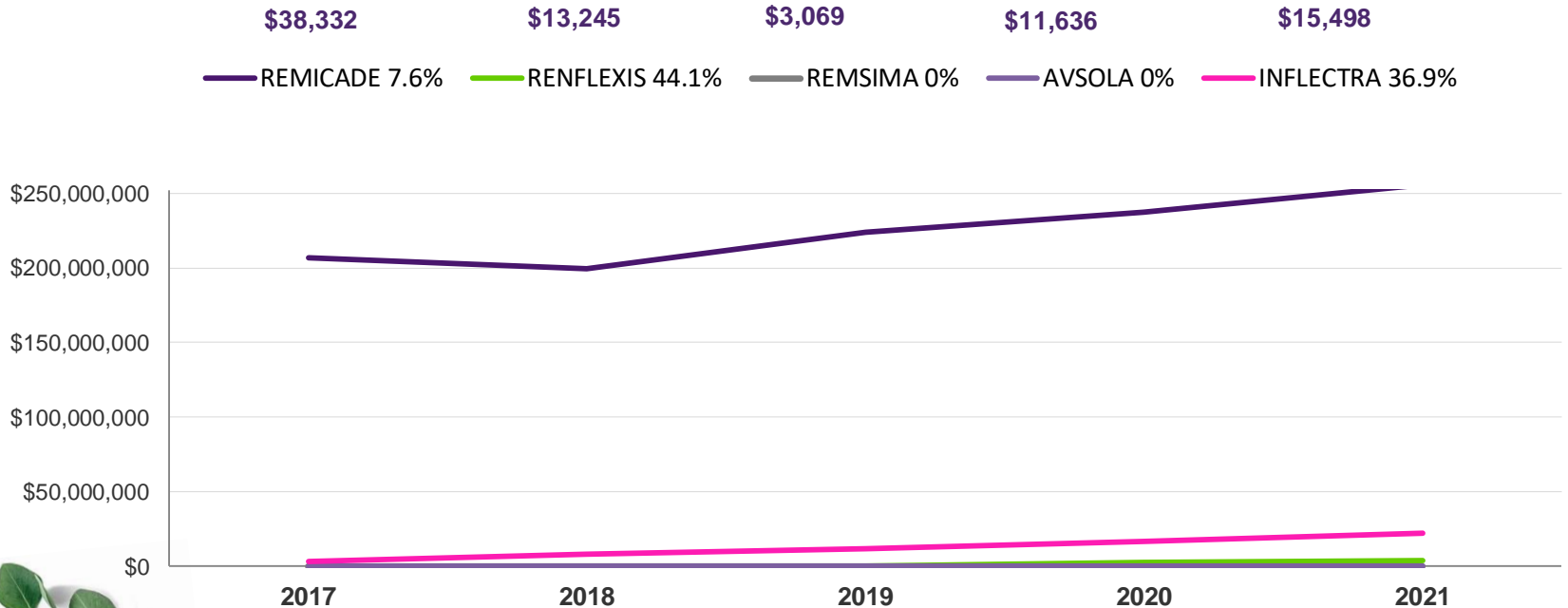
TELUS - Canada:
\$5.3 billion of
eligible cost



Telus BoB, Canada2021 | \$: % of Eligible Cost # : % of claimants

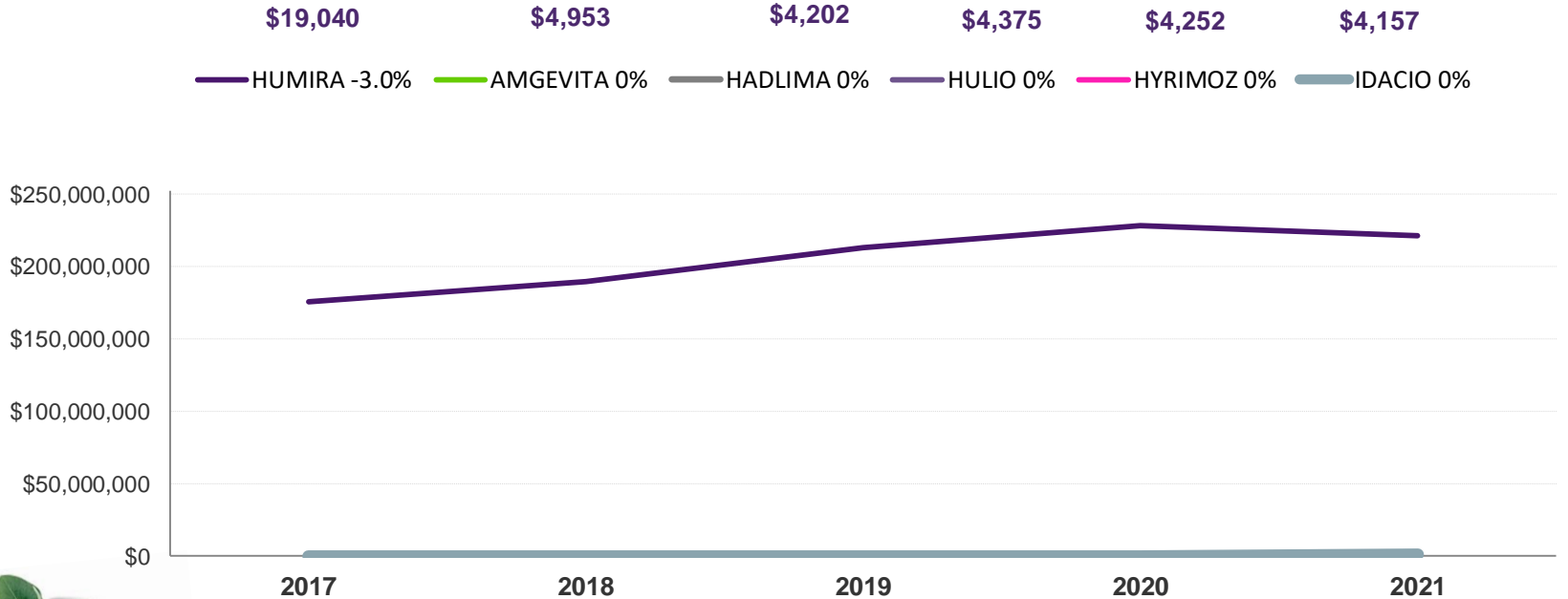
Inflammatory diseases

Total eligible cost 2021: \$674.3M (+5.3%)



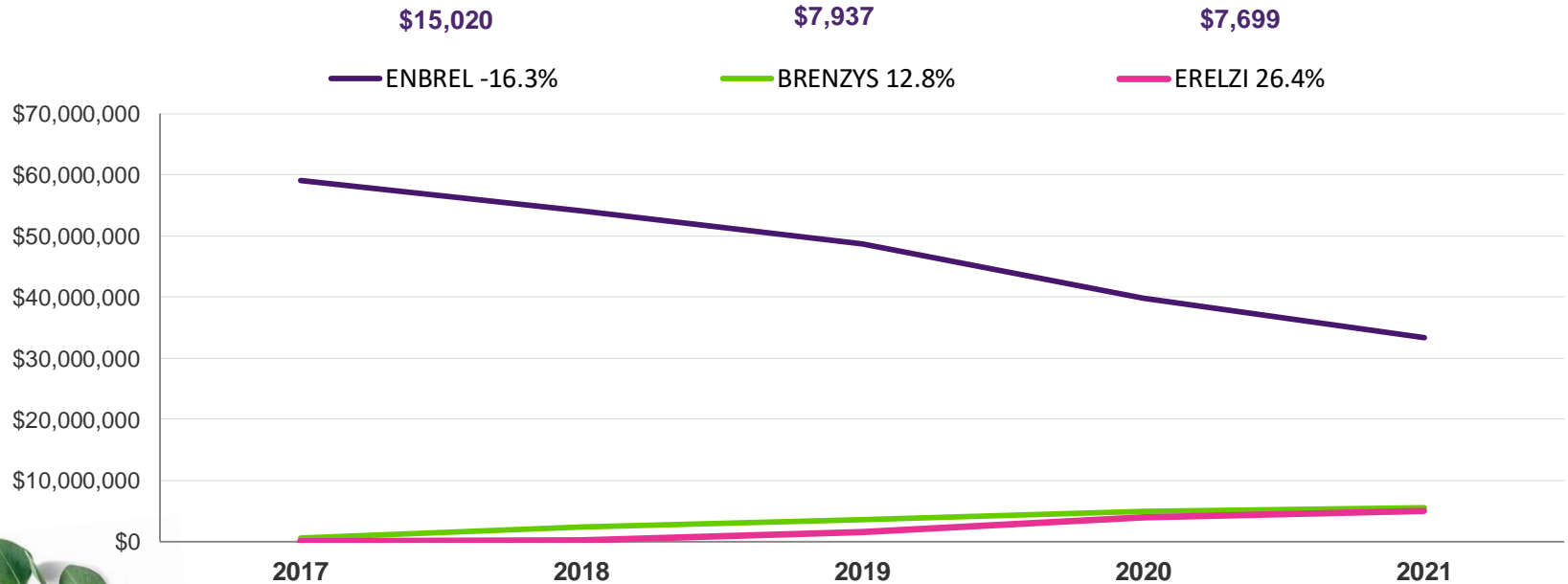
Inflammatory diseases

Total eligible cost 2021: \$674.3M (+5.3%)



Inflammatory diseases

Total eligible cost 2021: \$674.3M (+5.3%)



Specialty drug pipeline in rheumatoid arthritis

Ozoralizumab

TNF inhibitor

Olokizumab

IL-6 inhibitor, joining Actemra and Kevzara



Specialty drug pipeline in rheumatoid arthritis

Otilimab

- New mechanism of action
- Potentially useful in those refractory to other therapies

Fenebrutinib, PF-06650833

- New mechanism of action
- Small molecule, oral therapies



Plan management solutions

Product listing agreements

- Plan member choice
- Co-ordination of benefits considerations

Prior authorization

- Biosimilar first

Biosimilar switching

- Hard switch
- Soft switch

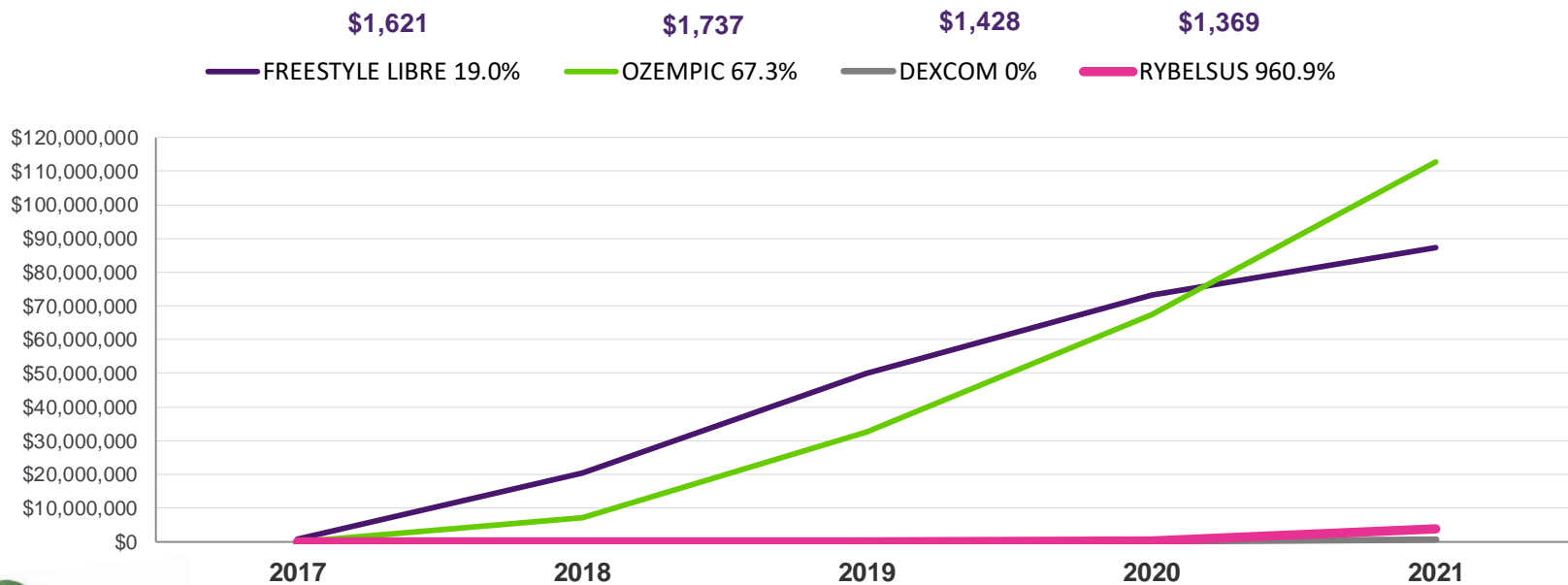


3.82%

Potential savings
represented by plan
management solutions

Diabetes

Total eligible cost 2021: \$639.0M (+9.1%)



Diabetes drug pipeline

Tirzepatide (GLP-1 agonists)

Generic entrants

- DPP-4 inhibitors: Januvia, Trajenta
- SGLT2 inhibitors: Invokana, Forxiga



Plan management solutions

Step therapy Program

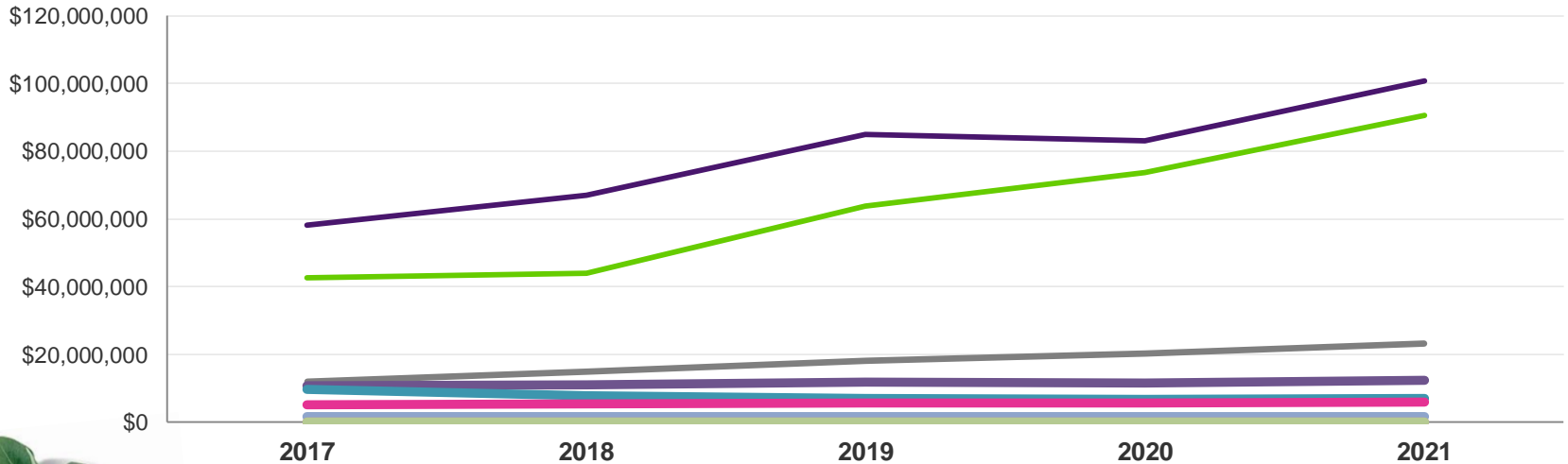
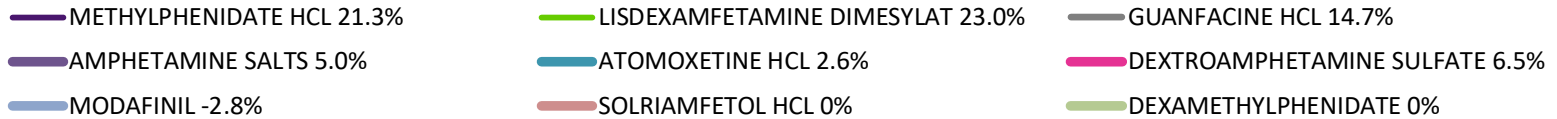


Annual quantity maximums

Medication	Maximum diabetes dose	Annual quantity requirements	Excess usage
Trulicity (dulaglutide)	1.5 mg / week	52	Off-label
Victoza (liraglutide)	1.8 mg / day	36	Weight loss : SAXENDA (3mg/day)
Ozempic (semaglutide)	1 mg / week (potential for 2mg / week)	13	Weight loss: WEGOVI (2.4mg/week)

Stimulants (ADHD) molecules

Total eligible cost 2021: \$241.3M (+19.2%)



ADHD drug pipeline

A focus on manipulation resistant technology

- Evekeo, approved by the US in 2019, Canadian future unclear
- Azstarys, approved in the US in 2021, Canadian future unclear

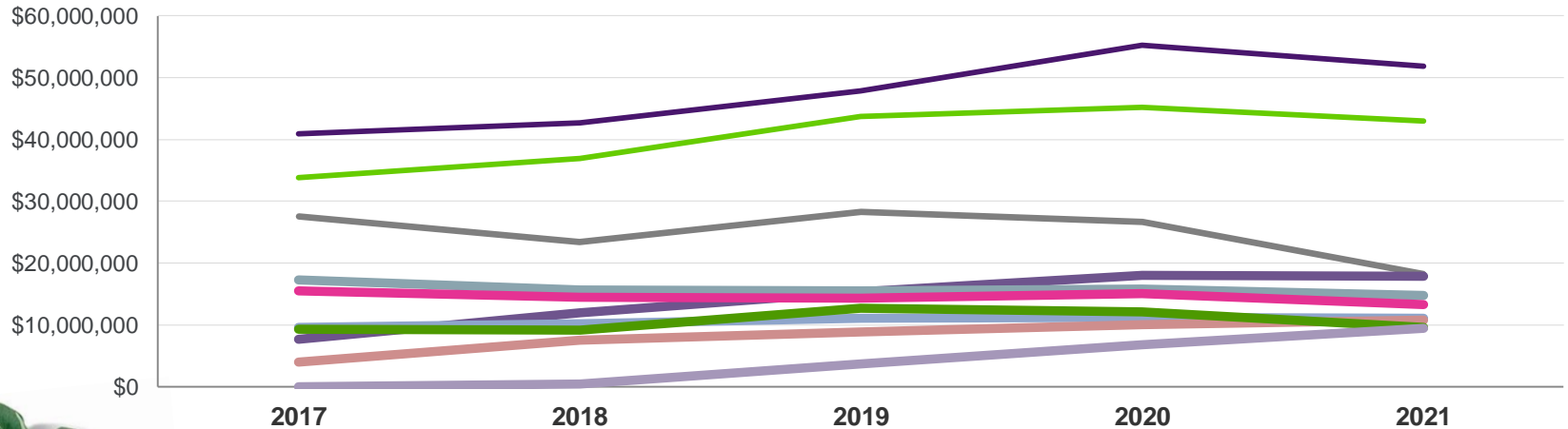
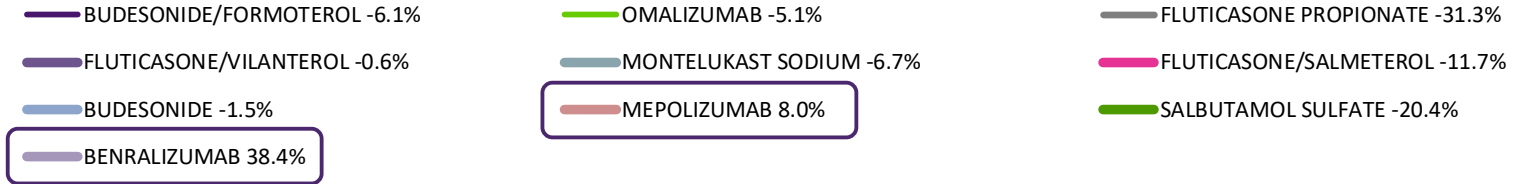
Viloxazine

- Approved by the US in 2021
- Canadian timelines unclear
- Similar place in therapy to Strattera



Asthma molecules

Total eligible cost 2021: \$262.6M (-8.5%)



Top 10 most costly products per claimant | Canada 2021

Drug	Average eligible cost per claimant	Number of claimants	Total eligible cost
Vimizim	\$690,339	10	\$6,903,386
Myozyme	\$649,105	6	\$3,894,631
Elaprase	\$601,119	3	\$1,803,357
Soliris	\$521,280	59	\$30,755,508
Cerdelga	\$441,369	5	\$2,206,844
Aldurazyme	\$426,529	2	\$853,057
Fabrazyme	\$288,037	2	\$576,074
Vpriv	\$261,017	3	\$783,051
Naglazyme	\$233,774	2	\$467,547
Revestive	\$214,087	20	\$4,281,742

Total 2021 eligible costs: \$52.5M





Analysis: Impact of drug adherence

Analysis: Impact of drug adherence

Question: Does adherence impact how quickly a patient progresses from lower cost first line agents to higher cost biologics?

Hypothesis: Patients who are more adherent to their treatment will have a delay in progression of their disease compared to patients who are less adherent.



Analysis: Impact of drug adherence

Focus: Rheumatoid arthritis

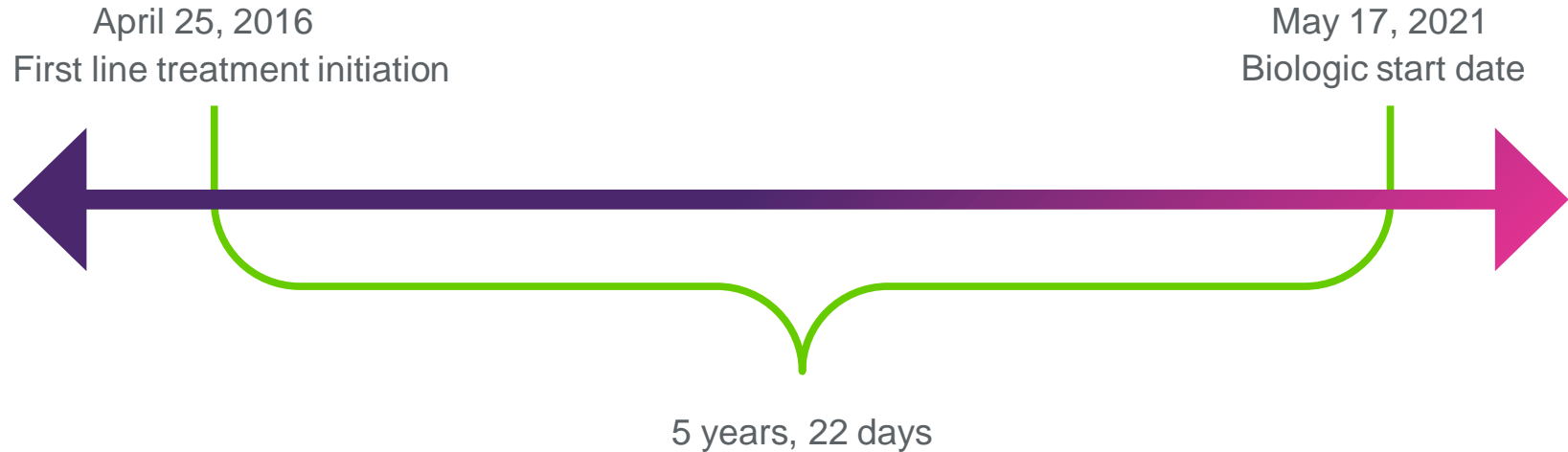
Step 1: Identified patients on biologic treatments for rheumatoid arthritis over the past 2 years.

Step 2: Reviewed up to 7 years of claim history to identify start date for first line treatments (example: methotrexate, DMARDs).

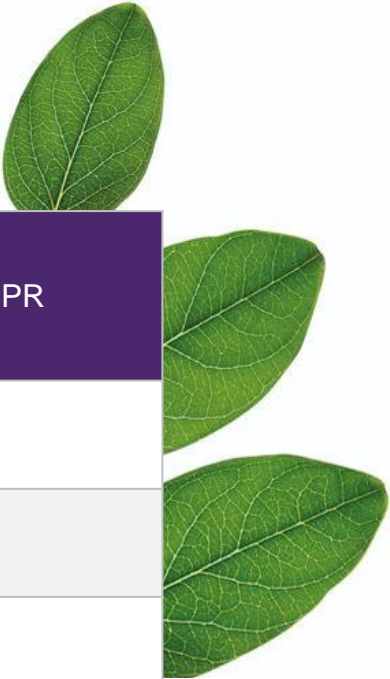
Step 3: Stratified patients into 4 groups and tracked adherence to first line treatments.



Analysis: Impact of drug adherence



Analysis: Impact of drug adherence



Time lag from <u>initial</u> “target drug” fill date to “biologic drug” fill date	Non-adherence rate	Average MPR
6 month to 1 year	19%	0.79
1 year to 2 years	22%	0.77
2 years to 4 years	14%	0.87
4 years to 6 years	4%	0.85

Analysis: Impact of drug adherence

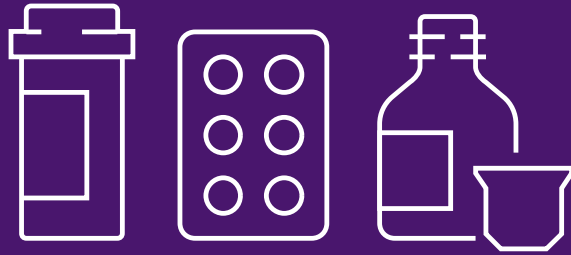
Average cost of treatment

- First line agents: \$195
- Biologic agents: \$15,772

Improving drug adherence

- Case management
- Virtual pharmacy
- Digital/mobile applications





Canadian biosimilar landscape

Biosimilars: Provincial legislative landscape

Pharmacare

Province	Strategy
British Columbia	Mandatory switching
Manitoba	Tiered biologics reimbursement
Saskatchewan	New starts to biosimilar

Non-pharmacare

Province	Strategy
Alberta	Mandatory switching
Ontario	Formulary coverage
Quebec	Mandatory switching (effective April 2022)
New Brunswick	Mandatory switching
Nova Scotia	Mandatory switching
Newfoundland	New starts to biosimilar

Remaining provinces likely to leverage similar policies.





Legislative update

National pharmacare update

“A publicly funded, universal prescription medicine drug insurance plan for all Canadians.”

On July 27, 2021, CADTH assembled a pan-Canadian advisory panel to provide Health Canada with a recommended framework for developing a potential pan-Canadian formulary.

Who is CADTH?

A not-for-profit organization that provides research + analysis to healthcare decision makers to deliver value through the use of health technologies

The mandate of the advisory panel is to:

- Recommend a framework for developing a pan-Canadian prescription drug list
- Recommend an initial list of commonly prescribed drugs
- Consult with key stakeholders and health system partners i.e. Canadian governmental bodies, health care providers, patients, etc.



Advisory panel's non-binding recommendations were shared in early 2022 and the final report has made available publicly by CADTH.

PMPRB updates: Overview

The PMPRB board is a federal regulatory agency established in 1987 with the mandate to ensure that gate prices of patented medicines are not “excessive” and report to Parliament on price trends and R&D.



Patented medicine regulation amendments

To recap:

- **In August 2019**, amendments to the Patent Medicine Regulations was introduced by the PMPRB board
- **The amendments seek to add** new price regulatory factors, add a revised list of reference countries and change the reporting requirement for specific drug categories.

Since then...

- The **coming into force date** of the amendments have been further postponed to **July, 1 2022**

PMPRB guideline updates

In February 2022, the Quebec Court of Appeal:

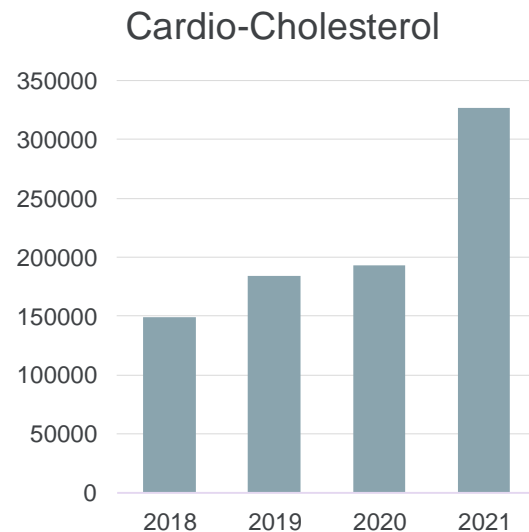
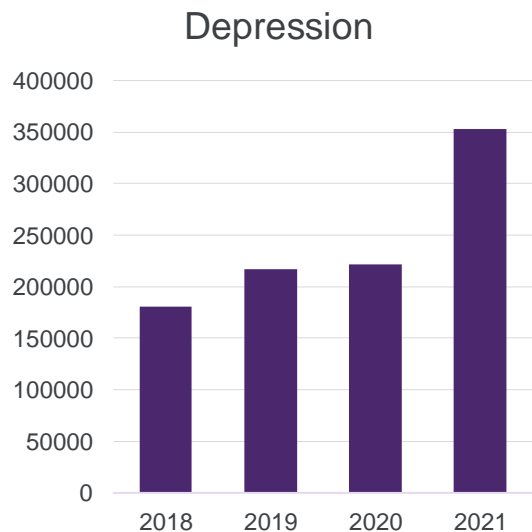
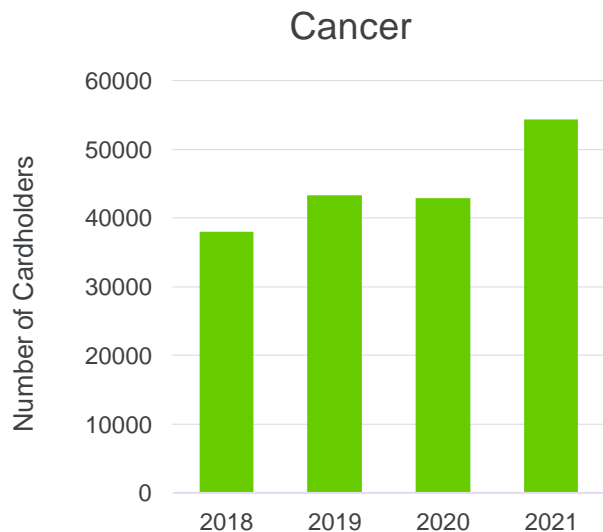
- **STRUCK** the Economic Factors
- **STRUCK** the Disclosure of Product Listing Agreements
- **UPHELD** the Change to the Comparator Countries

April 2022: PMPRB announced that it was preparing a new version of the guidelines



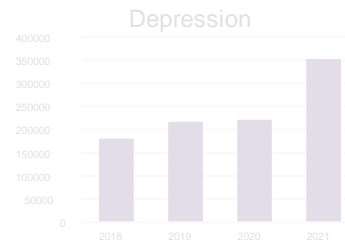
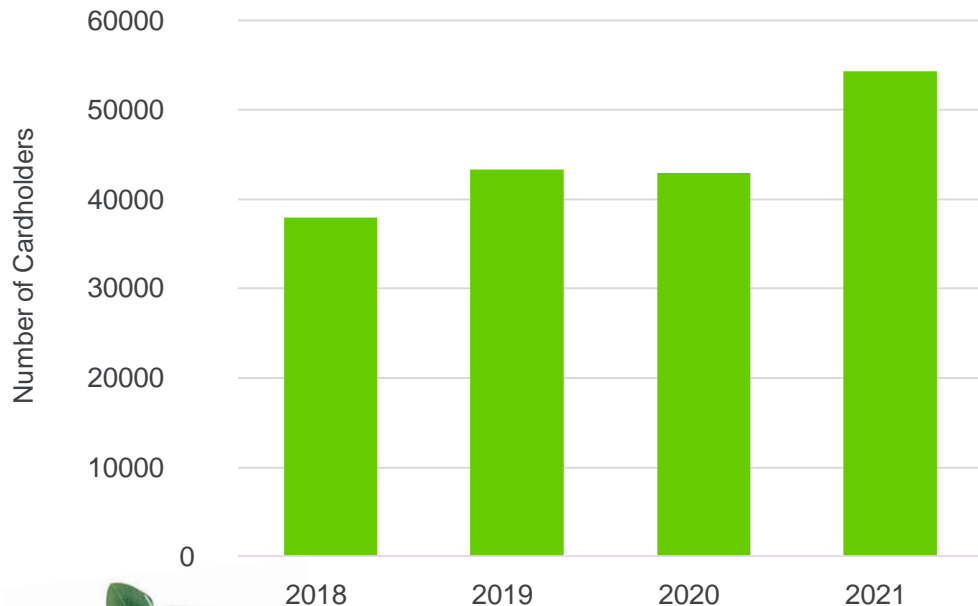
COVID-19 insights

New/delayed diagnosis (new starts)



New/delayed diagnosis (new starts)

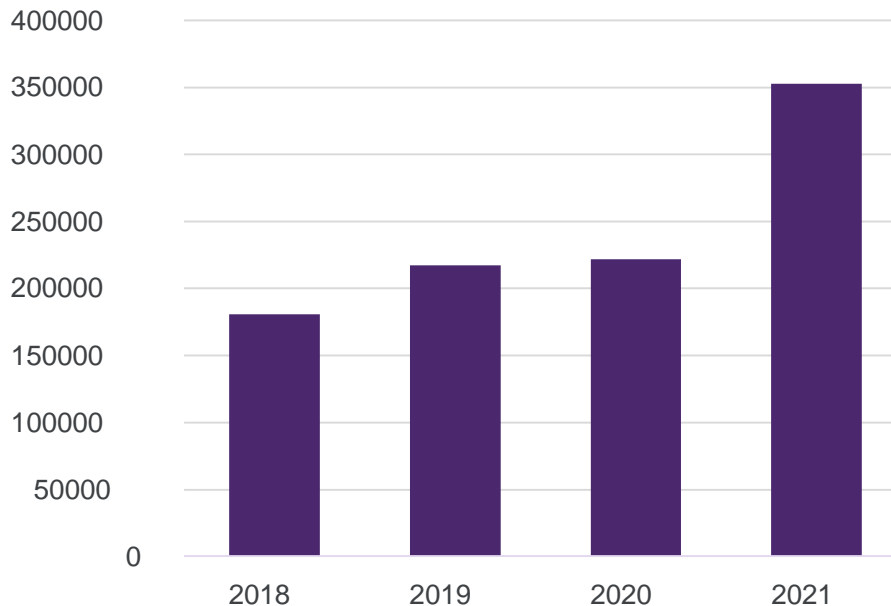
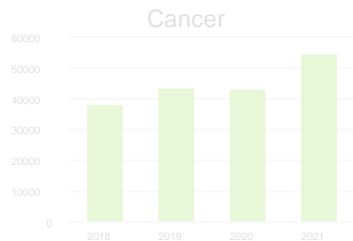
Cancer



New/delayed diagnosis (new starts)

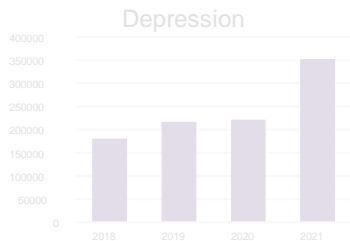
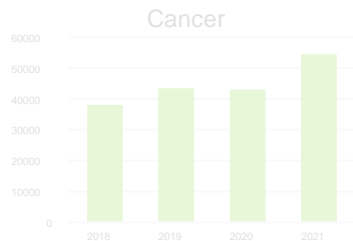
Depression

Number of Cardholders

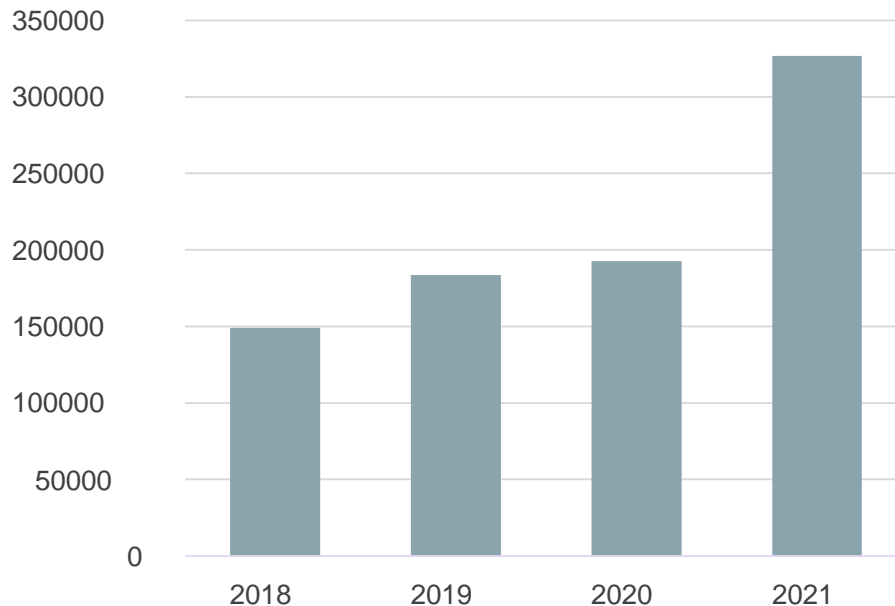


New/delayed diagnosis (new starts)

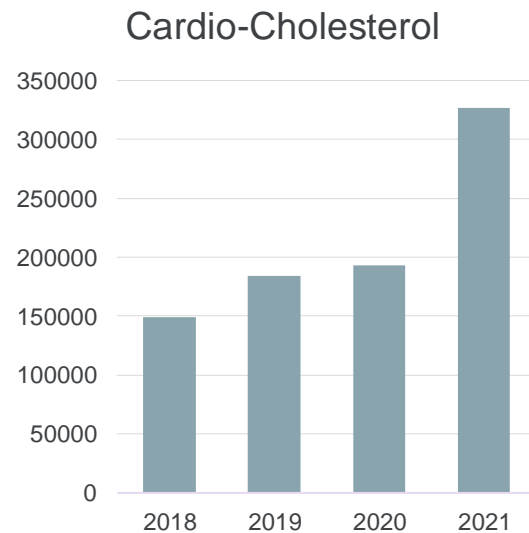
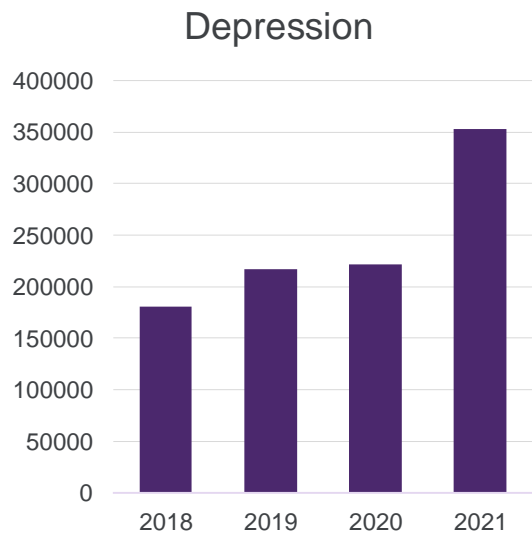
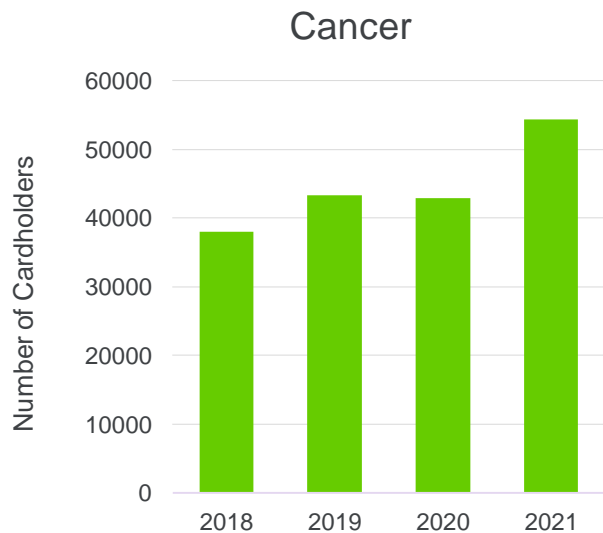
Number of Cardholders



Cardio - Cholesterol

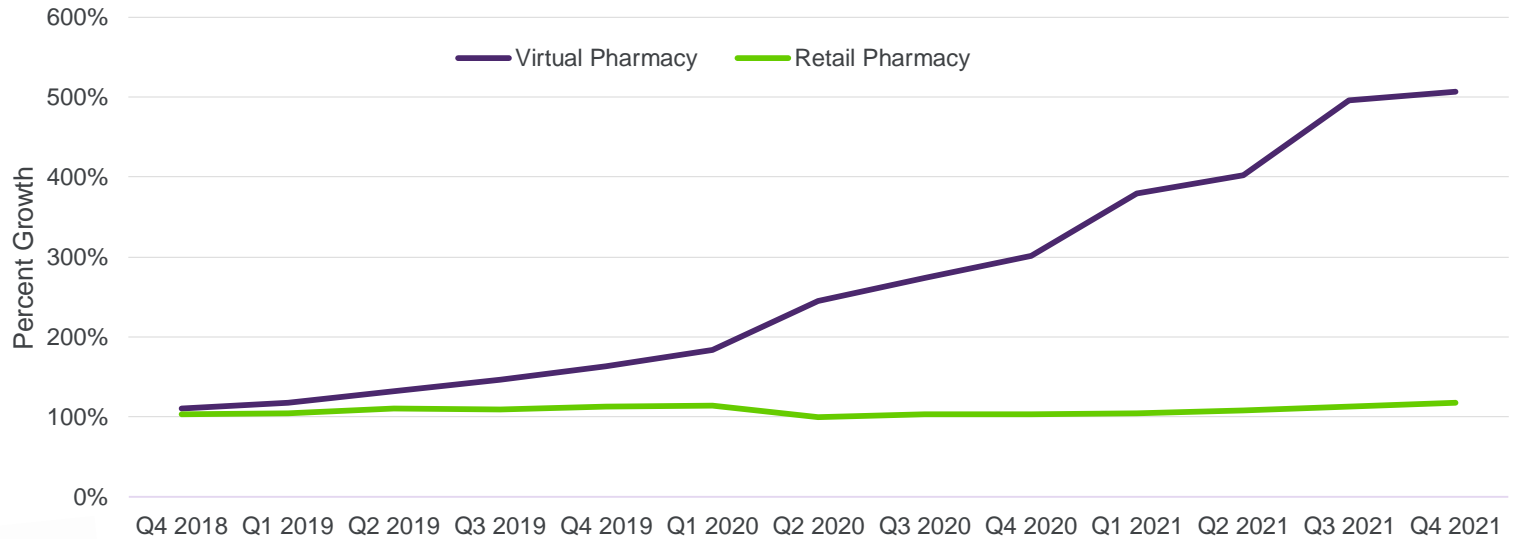


New/delayed diagnosis (new starts)

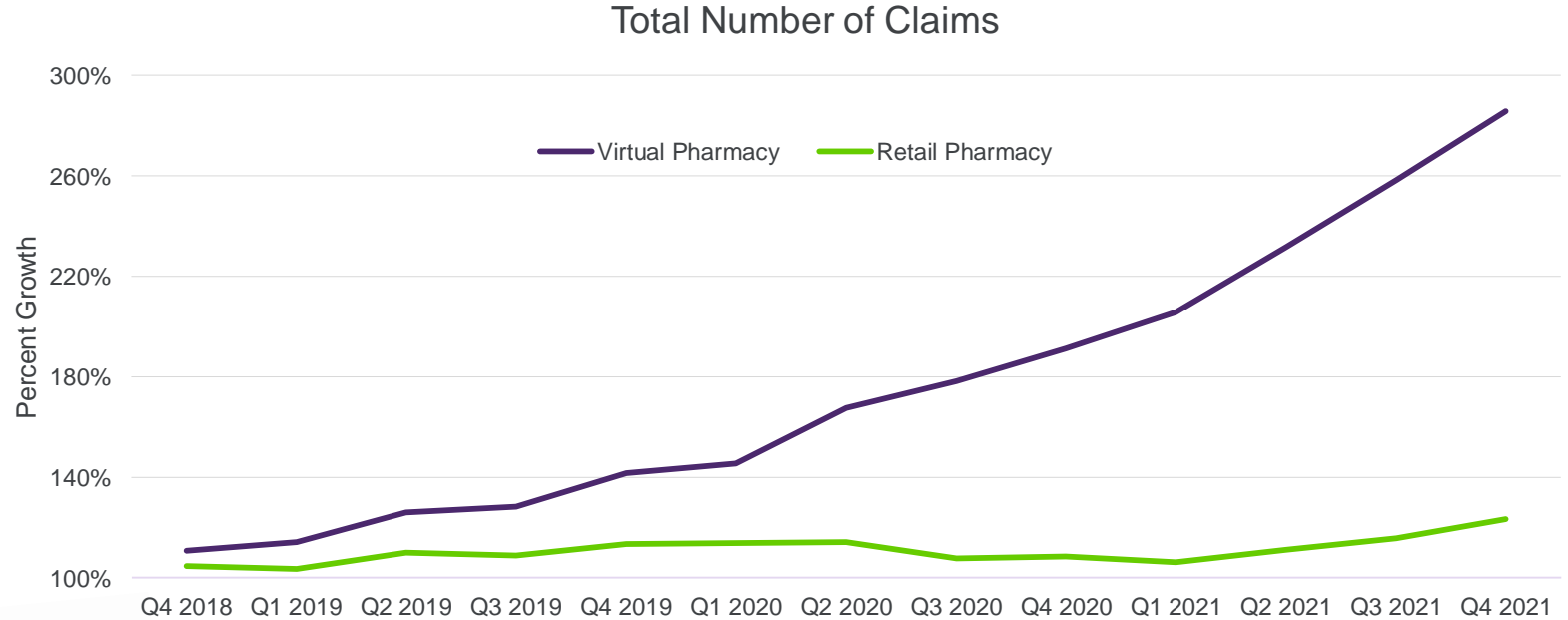


Growth of “virtual” pharmacy

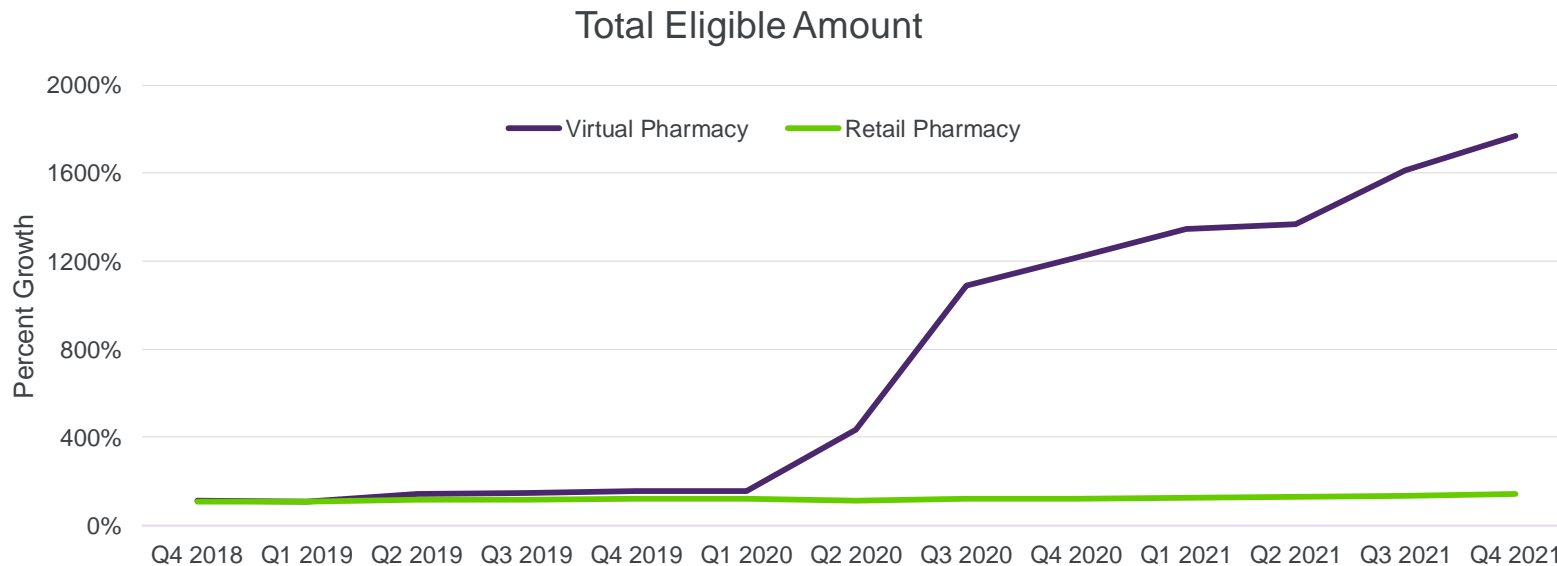
Distinct Claimants



Growth of “virtual” pharmacy



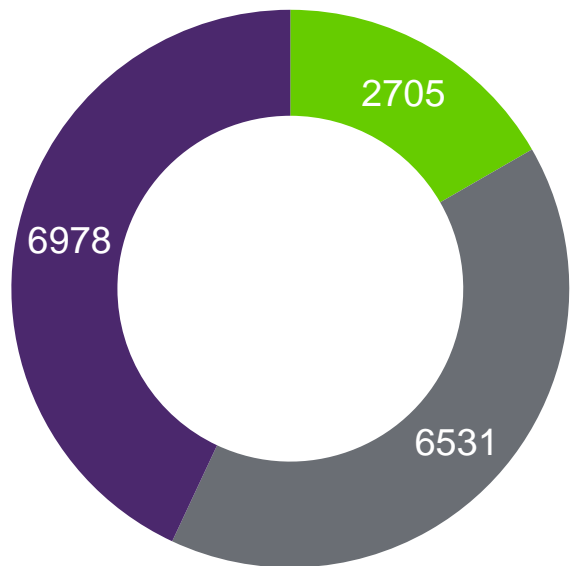
Growth of “virtual” pharmacy





Drug pipeline

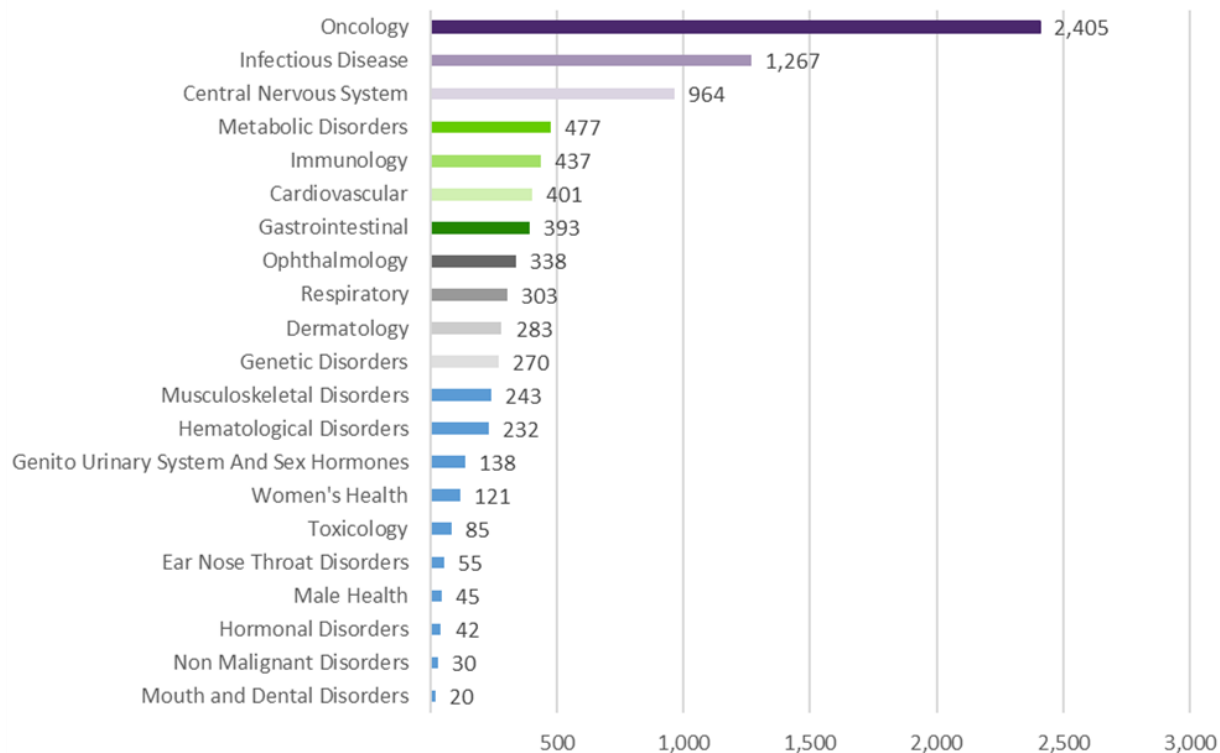
Early drug development pipeline



■ Phase III ■ Phase II ■ Phase I



Drug development by therapeutic area



Follow up... Canada – 2021

Oncology	Total eligible cost		Total number of claimants	
	\$	Growth vs 2020	# patients	Growth vs 2020
Cancer	223.9 M	1.9%	93,225	3.8%
MABs (Keytruda, Opdivo)	20.5 M	-4.9%	7,464	-19.6%
% of category	9.1%		8.0%	
Cancer	223.9 M	1.9%	93,225	3.8%
Targeted (Alecensaro, Lynparza)	45.7 M	21.2%	7,428	-20.6%
% of category	20.4%		8.0%	



Drug pipeline: Alzheimer's disease

Aducanumab (Aduhelm)

- Canadian approval expected late spring/early summer
- FDA approval in June 2021 was highly controversial
- May be used in a younger population with very early disease and mild symptoms
- US cost of reported at US\$56,000 per year

More candidates coming over the next 3-5 years:
Donanemab and Gantenerumab.



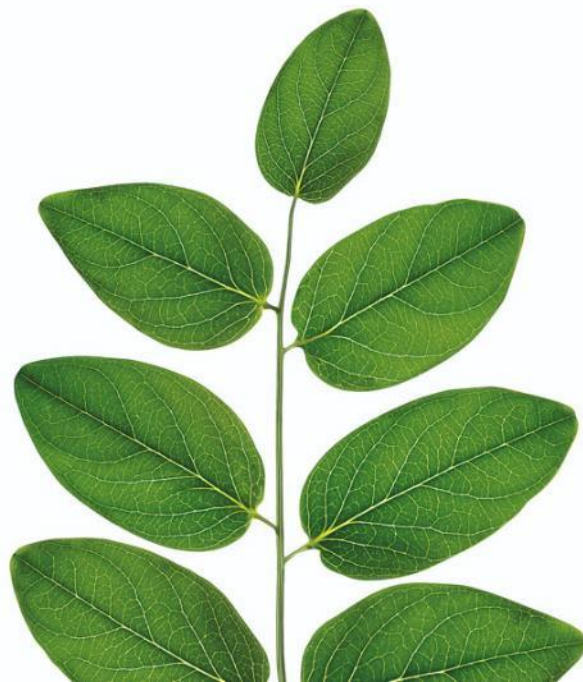
Drug pipeline: Macular degeneration



- Health Canada approved a biosimilar version of Lucentis (ranibizumab) in March 2022
- A biosimilar version of Eylea (aflibercept) is possible in 2024
- Susvimo (ranibizumab) implants could maintain originator market exclusivity if approved in 2022
- Faricimab as another entrant in 2022 with a longer duration of action than current injections

Drug pipeline: Atopic dermatitis

- Recent approvals for Adtralza & Rinvoq
- Early hopes for potential cost savings versus Dupixent were largely dashed when Health Canada approved Rinvoq as a later than expected line of therapy



Drug pipeline: Multiple sclerosis



Arrival of generic versions of Tecfidera (dimethyl fumarate) in late 2021 brought immediate savings.

Vumerity (Diroximel fumarate) seems to have been delayed at Health Canada:

- Reduced incidence of GI side effects
- A possible switching initiative would have negated potential generic savings if approved earlier



Key messages

Key messages

1. Pipeline for top therapy classes remains strong
2. Plan management tools exist to support sustainability
3. Evaluate value of pipeline drugs (clinical & cost effectiveness)
4. COVID-19 impact
5. Adherence matters



Thank you!

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