Trends in Medication Management 2016

Vincent Ng, Health Business Consulting
Senior Manager, TELUS Health
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Specialty drug spending growing faster than non-Specialty

Total Eligible Amount in TELUS Book of Business
Percent change over previous year

Source: TELUS 2016

Trends in Medication Management 2016
Most expensive drugs account for growing share of costs

Top 1% of Drugs by Eligible Amount Per Claimant
Percent of Total Eligible Amount in TELUS Book of Business

1. Top 1% comprise of both Specialty and non-Specialty drugs
2. Other 99% contribute 69% to drug plan costs

Source: TELUS 2016
Specialty drug approvals have surpassed traditional drugs

This trend will continue

1. ~40% of drugs under Health Canada review are specialty
2. >60% of FDA’s new drug approvals expected to be for specialty drugs
...and more now treat chronic conditions common to working-age Canadians

<table>
<thead>
<tr>
<th>Volume</th>
<th>Cost</th>
<th>High Prevalence and Long Duration of Therapy</th>
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<tbody>
<tr>
<td>High</td>
<td>Low</td>
<td>PCSK9 Inhibitors (high cholesterol)</td>
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<td></td>
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<td>Nucala (asthma)</td>
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<td></td>
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<td>Entresto (heart failure)</td>
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<td>mAb drugs for migraine prevention</td>
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<tr>
<td>Low</td>
<td>High</td>
<td>Low Prevalence and/or Limited Duration of Therapy</td>
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<td></td>
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<td>Drugs for rare diseases</td>
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<td></td>
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<td>Some oncology drugs</td>
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<td></td>
<td></td>
<td>Hepatitis C specialty drugs?</td>
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Repatha & Praluent target high cholesterol

1. PCSK9 Inhibitors indicated for those with heterozygous familial hypercholesterolemia (HeFH)

2. Those with HeFH are prone to develop heart disease earlier than the general population (i.e. in their 30s and 40s)

3. Given as subcutaneous injection every two weeks

4. Very effective in clinical trials – reduces LDL by 64%

5. Estimated cost of $9,000/year (recent claims data)
Nucala launched in 2015 and targets severe asthma

1. Indicated for those with uncontrolled, severe eosinophilic asthma in adults (~3% of those with asthma)
2. Reduces the inflammation of the airways caused by high levels of eosinophils
3. Given as subcutaneous injection every four weeks
4. Effective in clinical trials, reducing the rate of exacerbations requiring hospitalization or ED visits
5. Estimated cost of $30,000/year
Entresto approved in late 2015 for heart failure

1. Indicated for those with chronic heart failure (more common in 65+ population) with potential for expanding use for hypertension

2. Taken orally twice daily

3. Reduced risk of death from cardiovascular causes by 20% compared to enalapril

4. Estimated cost of $2,900/year (early TELUS claims data)
Obeticholic acid launch expected in late 2016

1. Indicated for primary biliary cirrhosis (30 patients/million)

2. Treats autoimmune destruction of the bile ducts

3. Current treatments only slow disease progression or manage symptoms (persistent itchiness) – no comparable product on the market now

4. Taken orally twice daily

5. Cost uncertain
Specialty drugs for migraines expected in late 2017

1. 4 monoclonal antibody drugs being developed for migraine prevention
2. Given as once-monthly injections ongoing
3. Current treatments for prevention are inexpensive
4. Cost unknown; one estimate at $7,500/year
5. May reduce use of expensive triptans (e.g. Imitrex) for acute exacerbations
New Hepatitis C drugs are curative, thus long-term utilization likely to reflect prevalence in Canada.

Sovaldi and Harvoni, TELUS Book of Business Counts

<table>
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<tr>
<th>Jan 2014</th>
<th>Jan 2015</th>
<th>Jan 2016</th>
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<tbody>
<tr>
<td>No. of Distinct Claimants</td>
<td>328</td>
<td>639</td>
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<tr>
<td>No. of Claims</td>
<td></td>
<td>2,284</td>
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Hepatitis C drug costs appear to have peaked in 2015.
…but impact of “chronic condition” specialty begins in 2016

Impact of Top 10 Pipeline Drugs on Cost per Life Covered, Ontario
Percent change over previous year

2016
- 0.3
- 0.3
- 0.1
- 0.2
- 0.9

2017
- 1.7
- 0.4
- 0.2
- 0.7
- 3.0

2018
- 1.5
- 0.4
- 0.2
- 1.5
- 3.6

*Next 7 drugs include: Obeticholic acid (primary biliary cirrhosis), MABs for migraine, Tafinlar & Menikist (melanoma), Orkambi (cystic fibrosis), Carbaglu (hyperammonemia), Opdivo (melanoma), new Hep-C drugs (genotypes 5 & 11)

Source: TELUS 2016

Trends in Medication Management 2016
More SEBs expected in Canada in near future

- **Omnitrope®** (Somatropin) Reference: Genotropin®
- **Inflectra®** (Infliximab) Reference: Remicade®
- **Basaglar®** (Insulin Glargine) Reference: Lantus®
- **Grastofil®** (Filgrastim) Reference: Neupogen®
- **? (Etanercept)** Reference: Enbrel®
- **? (Adalimumab)** Reference: Humira®
...but magnitude of savings unclear

1. Subsequent Entry Biologics (SEBs) are similar, but not identical, to the reference drug, nor to other SEBs

2. Not all patients can easily switch to SEBs from the reference drug, if at all

3. SEBs are not generics
Plan sponsors have several levers to manage drug costs

- **Drug Choice**
  - Generic Substitution
  - Prior (Special) Authorization, Step Therapy
  - Clinical Effectiveness Requirements for Coverage

- **Cost Sharing**
  - Co-pays/Plan Maximums
  - Drug Insurance Pooling
  - Coordination of Benefits

- **Claim Cost**
  - Mark-Up, Dispensing Fee caps
  - Product Listing Agreements
…but are under-utilized

1. Despite cost increases, **70%** of plan sponsors did not change plan designs.
2. Only **42%** of plan sponsors anticipate making plan design changes in the next two years.
3. Fully **33%** of plan sponsors do not have programs in place to respond to claims for higher-cost specialty pharmaceuticals.

**Why?**
- Attract and retain employees – benefits are part of compensation package.
- Maintain positive plan member experience; avoid disruptions.
- Ensure employees’ health by enabling access to needed medications.
- Perceive access to healthcare as a “Canadian right.”

Source: TELUS Health Survey 2015; Sanofi Canada 2015 Healthcare Survey.
Plan sponsors should first focus on existing strategies
...but consider emerging trends affecting “upstream” factors
1. Consumer appetite for health self-management is growing

2. Pharmacies are pivoting to become "Health & Wellness" destinations

3. Large technology companies and venture capital are focusing on "disrupting" healthcare
By 2020, 80% of adults will have smartphones

Source: World Bank, GSMA, a16z via Evans 2014
…and they are sophisticated, ubiquitous computers

2-3x more smartphones than PCs by 2020

Personal
Taken everywhere
Frictionless access
Sensors, cameras
Location
Payment
Social Platform
Much Easier to Use

= 10x the opportunity

Source: Evans 2014
40% of consumers plan to buy wearable devices soon

Consumer Intent on Purchasing Wearable Health Devices
Percent of Respondents; N=24,000

- **Wearable fitness monitor**
  - Current ownership: 8%
  - In the next 12 months: 40%
  - 1-3 years: 12%
  - 3-5 years: 11%

- **Smartwatch**
  - Current ownership: 7%
  - In the next 12 months: 41%
  - 1-3 years: 17%
  - 3-5 years: 12%

- **Wearable health device**
  - Current ownership: 6%
  - In the next 12 months: 39%
  - 1-3 years: 16%
  - 3-5 years: 13%

Source: Accenture 2015, MobiHealthNews 2015
Yet “Time to Drawer” is short for many health technologies

1. Novelty wears off
2. Data aren’t insights
3. Healthcare providers “don’t care”
4. Too much work, not enough tangible benefit

Rate of Sustained Utilization of Activity Trackers Over Time

Canadians want to make healthy changes, but can’t stick with it
Enduring positive health outcomes result from sustained behaviour changes

Engaged people with sufficient motivation, ability and triggers (BJ Fogg)

Better data capture and sharing is necessary but insufficient
Innovations evolving to support drivers of behaviour change

Engaged people with sufficient motivation, ability and triggers (BJ Fogg)

1. Enhance, not replace, interactions with healthcare providers
2. Make it easier to do more desirable behaviours, and less undesirable behaviours
3. Help people do hard things that match their current levels of motivation (BJ Fogg)
4. Enable frictionless, ubiquitous, continuous data capture and sharing

What are examples of innovations that combine at least one driver?
Ginger.io provides personalized mental health care through a smartphone app.

1. Assigns a coach to talk (chat or phone) and create a personalized care plan
2. Provides self-care tools 24/7
3. Connects to a licenced therapist via video visit
4. Sends basic information from smartphone (e.g. movement, calling, texting frequency) to enable check-ins
5. Shares information with a physician to support informed prescribing

Source: ginger.io
Propeller aims to improve chronic respiratory disease management

1. Users attach a sensor to the top of their inhalers and then use inhalers as usual
2. Sensor records when inhaler is used to monitor symptom triggers, provide adherence reminders
3. Clinical studies demonstrate Propeller users have more than 2X higher adherence rates, better asthma control
4. U.S. plan sponsors and healthcare providers have deployed Propeller programs

Source: propellerhealth.com
Proteus’ sensor-enabled pills help patients and healthcare professionals monitor adherence

1. Patients take pills prescribed by their doctors that contain ingestible sensors
2. Patients wear a patch that records when each sensor-enabled pill is taken, along with contextual information
3. Patients can keep track of medications, steps, activity, rest, heart rate and set medication schedules and reminders
4. With permission, healthcare providers can access data and use information to improve conversations with the patient

Source: proteushealth.com
All three examples enhance collaborative care

Common Themes

1. Combine four drivers of sustainable behaviour change
2. Target specific patient populations requiring more intensive monitoring
4. Adoption spurred by shift from Fee-for-Service to Fee-for-Value payment models in the US
Insurers launching programs to reward healthy behaviours

1. Plan members set personalized health goals and log their activities online and from activity trackers.
2. They earn reward points for healthy behaviours, which can be redeemed for discounts at corporate partners or for premium discounts.
3. Use health check-ins to increase number of contact points with plan members.
4. Walgreens connects plan members with pharmacists to provide coaching and advice.

Source: walgreens.com; manulife.com
Pharmacies started with simplifying prescription management

Order prescription refills

Automate prescription delivery

Source: poprx.com; pillpack.com
…but evolving to emphasize pharmacist interventions
…including equipping pharmacists with pharmacogenomic data to guide appropriate and safe medication use

1. Pharmacists already drug-interaction experts and advise physicians when dosages need to be adjusted due to liver and kidney function – advising due to genetic predispositions appears like a logical extension

2. UBC and BCPhA Trial – 200 patients have provided saliva samples at 33 community pharmacies for genetic tests conducted at UBC. Pharmacists review results and implications with patients and physicians.

3. Geneyouin offers “pill check” test online and in some private clinics and pharmacies in Ontario

Source: [http://www.bcpharmacy.ca/genome](http://www.bcpharmacy.ca/genome); The Globe and Mail Feb. 14, 2016

Clinical benefit still to be determined
Final Words

1. The most expensive medications are driving drug plan costs disproportionately, and are increasingly focused on common, chronic conditions.

2. Existing strategies to manage drug plan costs are under-utilized.

3. Innovations in medication management are increasingly focused on sparking and supporting the sustained behaviour changes required for enduring positive health outcomes.
Questions?