

**Annual Report**  
**Division of Clinical Epidemiology**  
**Department of Medicine - Jewish General Hospital**  
**January 1 - December 31, 2017**

## **SUMMARY**

### **1. Research and publications:**

Total of new funding awarded this year: \$475,950. A combined total of 39 publications were published in 2017 by Dr. Samy Suissa and Dr. Kristian Filion.

#### **Suissa, Samy**

Dr. Samy Suissa is the Principal Investigator of the Canadian Network on Observational Drug Effect Studies (CNODES), and oversees funding of \$17.5 million received from CIHR for this network. CNODES assembles the top pharmacoepidemiologists in the country and uses a collaborative, population-based approach, exploiting existing healthcare databases across the country and using sophisticated, cutting edge and powerful analytical methods to rapidly evaluate the risks and benefits of medications on the health of Canadians.

Dr. Suissa's research is in pharmacoepidemiology which involves studying the risks and benefits of medications at the within the population at large. He specializes in the exploitation of existing computerized health databases to rapidly evaluate these risks. He has developed, and published extensively on, new methods of data analysis and study design that allow more rapid and accurate assessments of drug safety. He has conducted pharmacoepidemiological studies of several medications used for the treatment of chronic diseases, including asthma and COPD, cardiovascular and rheumatic diseases, and women's health issues. He has lectured extensively throughout the world, and is the author of over 460 peer-reviewed research papers published in scientific journals.

#### **Filion, Kristian**

Dr. Filion has submitted the following research projects to the CIHR Foundation Scheme and Project Grant Competitions in 2017:

1. Cardiometabolic pharmacoepidemiology: a population-based assessment of drug safety (Foundation Competition)
2. SGLT-2 inhibitors and the risk of community-acquired pneumonia (Project Grant Competition)
3. Levothyroxine for the treatment of subclinical hypothyroidism in pregnancy: a population-based assessment (Project Grant Competition)

He is also a co-applicant on 4 submitted grants to the Canadian Institutes of Health Research and the Alzheimer Society of Canada.

Dr. Filion was awarded three grants in 2017 by the CIHR:

- 1) Legalization of recreational cannabis use in Canada: a knowledge synthesis. (Co-Investigator - Catalyst Grant: Population Health Intervention Research on Legalization of Cannabis)
- 2) Pregnancy complications and the risk of subsequent cardiovascular disease. (Principal Investigator - Personalized Medicine Catalyst Competition)
- 3) Tramadol and the risk of adverse cardiovascular events: a population-based study. (Principal Investigator - Project Grant)

In 2017, Dr. Filion had 17 articles published or in press (9 as senior). He has 13 submitted

manuscripts (6 as first or senior).

## 2. Teaching and learning (undergraduate and graduate):

### Suissa, Samy

Dr. Samy Suissa leads the Pharmacoepidemiology Summer Program in the Department of Epidemiology and Biostatistics which holds 4 courses each summer and in which he himself teaches the Advanced Pharmacoepidemiology course. He is currently supervising or co-supervising 2 PhD students, 2 MSc student and 2 Post-doctoral fellows:

#### **Student Supervision 2017 (Samy Suissa)**

- Mr. Farzin Khosrow-Khavar (PhD in Epidemiology) 2013-
- Ms. Tanja Tran (PhD in Epidemiology) 2014-
- Dr. Blanaid Hicks (Post-doctoral fellow) 2016-17
- Mr. Giovanni Giorli (Graduate Research Trainee) 2016-17
- Dr. Antonios Douros (Post-doctoral fellow) 2016-
- Dr. Henok Tadesse Ayele (Postdoctoral Fellow) 2016-
- Dr. Francois Montastruc (Postdoctoral Fellow) 2017-
- Francesco Giorgianni (Visiting Scholar) 2017-
- Guilia Calusi (Graduate Research Trainee) 2017

### Filion, Kristian

Dr. Kristian Filion teaches in the medical school and in the Department of Epidemiology, Biostatistics, and Occupational Health. In the medical school, he taught the Epidemiology Small Groups in Block C to first year medical students (6 hours) and gave a Block C lecture to the first-year medical students entitled “Systematic Reviews and Meta-Analyses” (1 hour). In the Department of Epidemiology, Biostatistics, and Occupational Health, Dr. Filion was the instructor in the course entitled “Knowledge Synthesis” (3 credits) and the co-instructor for the course entitled “Intermediate Pharmacoepidemiology” (2 credits). He was a Guest Lecturer in the following courses: Clinical Epidemiology - EPIB-600B (3 hours) and EPIB-600A (1.5 hours); in Pharmacoepidemiologic Methods – EPIB 639 (1.5 hours); in Population Health and Epidemiology – PPHS 501 (1.5 hours); and Pharmacoeconomics, drug safety and drug policy in Canada - FMED618 (0.5 hours).

Dr. Filion is currently supervising 2 MSc students and co-supervising 1 MSc student in Epidemiology, as well as co-supervising 1 MSc student in the Department of Family Medicine. He is a member of 4 doctoral students’ thesis committees. He is also supervising 1 post-doctoral fellow and co-supervising 1 post-doctoral fellow. In 2017, he supervised 1 medical student and co-supervised 2 medical students on research projects.

## 3. Involvement in the community:

### Suissa, Samy

#### **Internal**

- Member, Search Committee Meeting, CAS (Research) Assistant Professor in Clinical Epidemiology, Department of Medicine, McGill University, 2017
- Member, SPGH Director Search Committee, Department of Medicine, McGill University 2017
- Member, PhD Epidemiology Admissions Committee, Department of Epidemiology,

- Biostatistics, McGill University, 2017
- Member, Departmental Tenure Committee, Department of Epidemiology, Biostatistics, McGill University, 2016-
- Member, Admissions Committee, Department of Epidemiology and Biostatistics, McGill University, 2013-
- Member, Doctoral Curriculum Committee, Dept of Epidemiology and Biostatistics, McGill University, 2011-

#### **External**

- Member, External Advisory Board, PROTECT-European Medicines Agency, 2010-
- Member, Drug Safety and Effectiveness Network (DSEN) Interim Science Advisory Committee (ISAC), Canadian Institutes for Health Research, 2011-
- Associate Editor, Methodological Advisor, European Respiratory Journal, 2007-
- Section Head, Statistical methodologies & health informatics, Faculty of 1000 Medicine, 2005-
- Associate Editor, Pharmacoepidemiology and Drug Safety, 2003-
- Associate Editor, Lancet Respiratory Medicine, 2012-
- Associate Editor, COPD -The Journal of Chronic Obstructive Pulmonary Disease COPD, 2012-

#### **Filion, Kristian**

##### **Internal:**

- Ad-hoc Committee on Teaching Loads, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, Member, 2017-Present
- McGill Pharmacoepidemiology Working Group, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, Faculty Co-Facilitator, 2017-Present
- Ad-hoc Working Group for Pharmacoepidemiology Programs, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, Member, 2017-Present
- Admissions Committee, Epidemiology PhD Program, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, Member, 2017-Present
- Pharmacoepidemiology Option, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, PhD Advisor, 2016-Present
- Comprehensive Exam Committee, Epidemiology PhD Program, Department of Epidemiology, Biostatistics, and Occupational Health, McGill University, Montreal, Quebec, Member, 2016-2017
- Joint MD-PhD Program Advisory Committee, Faculty of Medicine, McGill University, Montreal, Quebec, Member, 2015-Present
- McGill Pharmacoepidemiology Journal Club, Centre for Clinical Epidemiology, Lady Davis Institute, Jewish General Hospital, Montreal, Quebec, Faculty Co-Facilitator, 2011-Present
- Epidemiology Seminar Series, Centre for Clinical Epidemiology, Lady Davis Institute, Jewish General Hospital, Montreal, Quebec, Coordinator, 2017-2018
- Lady Davis Institute/TD Studentship Review Committee, Lady Davis Institute, Montreal, Quebec, 2017-Present

##### **External:**

- Fonds de la Recherche du Québec – Santé, Junior I chercheurs-boursiers cliniciens, volet clinique et épidémiologique (Clinician-Scientist, Clinical and Epidemiology), 2017-
- Project Scheme Competition (Phase 2, Cluster 18), Canadian Institutes of Health Research, 2017
- Project Scheme Competition (Phase 1), Canadian Institutes of Health Research, 2017 Science Advisory Committee, Drug Safety and Effectiveness Network, Member, 2017-Present
- Scientific Committee, AstraZeneca Chair in Respiratory Health, University of Montreal, Member, 2017-Present

- 2018 International Conference for Pharmacoepidemiology and Therapeutic Risk Management Mid-Year Meeting Program Committee, Member, 2017-Present
- 50th Anniversary Program Committee, Society for Epidemiologic Research, 2015-2017
- Canadian Network for Observational Drug Effect Studies (CNODES) (2011-Present)
  - Member, Steering Committee (2016-Present)
  - Co-Lead, Clinical Practice Research Datalink (CPRD) Site (2016-Present)

**4. Partnerships:**

[Suissa, Samy](#)

- Summer Course on Pharmacoepidemiology and Drug Safety. Utrecht, Netherlands.
- Research and training collaboration, Clalit Health, Israel

**5. Milestones:**

N/A

**6. New hires, promotions, and retirements:**

N/A

**7. Honors, awards and prizes:**

[Suissa, Samy](#)

Fellow – Distinction, Canadian Academy of Health Science (2013-Present)

[Filion, Kristian](#)

Fellow of the American Heart Association (2012-Present)

**8. Fundraising:**

N/A

**SECTION I - DIVISION STATUS UPDATE**

**1. Mission and objectives of the Division**

The Division of Clinical Epidemiology, a recent addition to the JGH Department of Medicine includes two members, Dr Kristian Filion and Dr Samy Suissa, the Chief of the Division.

**2. A nominative list of academic staff, their academic rank**

*Dr. Kristian Filion – Associate Professor - active*

*Dr. Samy Suissa – Professor - active*

## SECTION II - GRANTS, PUBLICATIONS, AND SERVICE OUTSIDE OF MCGILL

### 1. Grants and awards received

#### Suissa, Samy

**Source:** Canadian Institutes for Health Research

**Title:** Canadian Network for Observational Drug Effect Studies (CNODES)-renewal.

**Amount/Year:** \$17,500,000/2016-21

**Role:** Principal Investigator

**Source:** Canadian Institute for Health Research, Rapid Funding for DSEN Targeted Research.

**Title:** Access to electronic medical record (EMR) data for CNODES studies of drug effects and as a platform for pragmatic trials.

**Amount/Year:** \$248,634/2015-16

**Role:** Principal Investigator

**Source:** Canadian Institute for Health Research, Rapid Funding for DSEN Targeted Research – Capacity Building.

**Title:** Prince Edward Island Canadian Network for Observational Drug Effects Studies (CNODES) Demonstration Project

**Amount/Year :** \$99,861/2015-16

**Role:** Principal Investigator

**Source:** Canadian Diabetes Association

**Title:** Type 2 diabetes, its treatment with metformin and the incidence of viral-induced cancers.

**Amount/Year:** \$169,315/2016-18

**Role:** Co-Investigator **PI:** Paul Brassard

**Source:** Canadian Institute for Health Research, Operating Grant

**Title :** Efficacité des nouveaux anticoagulants oraux dans la fibrillation auriculaire: Étude de cohort en population générale.

**Amount/Year:** \$123,018/2015-17

**Role:** Co-Investigator **PI:** Christel Renoux

**Source:** Canadian Institute for Health Research, Foundation Scheme 2014

**Title:** Statistical Methods in Pharmacoepidemiology and Perinatal Epidemiology.

**Amount/Year:** \$1,071,717/2015-22

**PI:** Robert Platt **Role:** Program Expert

**Source:** Alzheimer Society Research Program (ASRP)

**Title:** Influence of the structural differences of statins on the risk of incident Alzheimer's disease.

**Amount/Year :** \$137,993/2015-17

**Role:** Co-Investigator **PI :** Paul Brassard

#### Filion, Kristian

**Source :** Canadian Institutes of Health Research.

**Title :** Legalization of recreational cannabis use in Canada: a knowledge synthesis (Catalyst Grant: Population Health Intervention Research on Legalization of Cannabis)

**Amount/Year :** \$100,000/2018-2019

**Role :** Co-Investigator, **PI:** Mark J. Eisenberg MD MPH

**Source :** Canadian Institutes of Health Research.

**Title :** Pregnancy complications and the risk of subsequent cardiovascular disease (Personalized Medicine Catalyst Competition)

**Amount/Year :** \$200,000/2017-2019

**Role :** Principal Investigator

**Source :** Canadian Institutes of Health Research.

**Title :** Tramadol and the risk of adverse cardiovascular events: a population-based study (Project Grant)

**Amount/Year :** \$175,950/2017-2019

**Role :** Principal Investigator

**Source :** Canadian Institutes of Health Research.

**Title :** Canadian Network for Observational Drug Effect Studies (DSEN Collaborating Centre for Observational Studies)

**Amount/Year :** \$17,500,000/2016-2021

**Role :** Co-Investigator **PIs :** Samy Suissa PhD, Colin R. Dormuth ScD, David A. Henry MD, Robert W. Platt PhD, Ingrid Sketris PharmD

**Source :** Canadian Institutes of Health Research.

**Title :** Improving long term outcomes after venous thromboembolism (VTE) (Foundation Scheme)

**Amount/Year :** \$2,050,825/2015-2022

**Role :** Project Expert **PI:** Susan Kahn MD MSc

**Source :** Canadian Institutes of Health Research.

**Title :** Evaluating the efficacy of e-cigarette use for smoking cessation (E3) Trial (Operating Grant)

**Amount/Year :** \$829,350/2014-2019

**Role :** Project Expert **PI:** Mark J. Eisenberg MD MPH

## 2. Scholarly works published in the 2017 calendar year:

### [Samy Suissa](#)

1. **Suissa S**, Azoulay L. Sulfonylureas and the risks of cardiovascular events and death: A methodological meta-regression analysis of the observational studies. *Diabetes care* [in press]
2. Renoux C, Coulombe J, **Suissa S**. Revisiting sex differences in outcomes in non-valvular atrial fibrillation: A population-based cohort study. *Eur Heart J* 2017 May 14;38(19):1473-1479.
3. Larivée N\*, **Suissa S**, Eberg M, Joseph L, Eisenberg MJ, Abenhaim HA, Filion KB. Drospirenone-containing combined oral contraceptives and the risk of arterial thrombosis: a population-based nested case-control study. *BJOG* 2017 Mar 9 [Epub ahead of print].
4. **Suissa S**, Dell'Aniello S, Ernst P. Long-acting bronchodilator initiation in COPD and the risk of adverse cardio-pulmonary events: A population-based comparative safety study. *Chest* 2017;151(1)60-67.

5. Renoux C, Dell'Aniello S, Brenner B, **Suissa S**. Bias from depletion of susceptibles: the example of hormone replacement therapy and the risk of venous thromboembolism. *Pharmacoepidemiol Drug Saf.* 2017 May;26(5):554-560.
6. Qian C\*, Coulombe J, **Suissa S**, Ernst P. Pneumonia Risk in Asthma Patients using Inhaled Corticosteroids: A Quasi-Cohort Study. *British Journal of Clinical Pharmacology* 2017 Mar 28 [epub ahead of print].
7. Azoulay L, **Suissa S**. Sulfonylureas and the Risks of Cardiovascular Events and Death: A Methodological Meta-Regression Analysis of the Observational Studies. *Diabetes Care.* 2017 May;40(5):706-714.
8. **Suissa S**, Dell'Aniello S, Ernst P. Concurrent use of long-acting bronchodilators in COPD and the risk of adverse cardiovascular events. *Eur Respir J.* 2017 May 23;49(5).
9. **Suissa S**. Metformin to treat cancer: Misstep in translational research from observational studies. *Epidemiology* 2017 May;28(3)455-458.
10. **Suissa S**. Run-in randomised trials: the case of COPD medications. *Eur Respir J.* 2017 June 22;49(6).
11. **Suissa S**, Gonzalez A, Shrier I. Sex, breathing and statistics. *Eur Respir J.* 2017 May 25;49(5).
12. Hicks BM, Yin H, Sinyavskaya L, **Suissa S**, Azoulay L, Brassard P. Metformin and the incidence of viral associated cancers in patients with type 2 diabetes. *Int J Cancer.* 2017 Jul 1;141(1):121-128.
13. Larivée N\*, **Suissa S**, Coulombe J, Tagalakis V, Filion KB. Drospirenone-containing Oral Contraceptive Pills and the Risk of Venous Thromboembolism: An Assessment of Risk in First-time Users and Restarters. *Drug Safety* 2017 Jul;40(7):583-596.
14. Gonzalez AV, Coulombe J, Ernst P, **Suissa S**. Long-term Use of Inhaled Corticosteroids in COPD and the Risk of Fracture. *Chest.* 2017 Jul 14.
15. **Suissa S**, Ernst P. Precision Medicine Urgency: The Case of Inhaled Corticosteroids in COPD. *Chest.* 2017 Aug;152(2):227-231.
16. Yu O, Azoulay L, Yin H, Filion KB, **Suissa S**. Sulfonylureas as Initial Treatment for Type 2 Diabetes and the Risk of Severe Hypoglycemia. *Am J Med.* 2017 Oct 12 [epub ahead of print]
17. Douros A, Yin H, Yu OHY, Filion KB, Azoulay L, **Suissa S**. Pharmacologic Differences of Sulfonylureas and the Risk of Adverse Cardiovascular and Hypoglycemic Events. *Diabetes Care.* 2017 Nov;40(11):1506-1513.
18. Simon TA, Kawabata H, Ray N, Baheti A, **Suissa S**, Esdaile JM. Prevalence of Co-existing Autoimmune Disease in Rheumatoid Arthritis: A Cross-Sectional Study. *Adv Ther.* 2017 Nov;34(11):2481-2490.
19. Sinyavskaya L, Gauthier G, Renoux C, Dell'Aniello S, **Suissa S**, Brassard P. Comparative effect of statins on the risk of incident Alzheimer's disease. *Neurology* 2017 Dec 15 [epub ahead of print].
20. Wu JW, Azoulay L, Majdan A, Boivin JF, Pollak M, **Suissa S**. Long-Term Use of Long-Acting Insulin Analogs and Breast Cancer Incidence in Women With Type 2 Diabetes. *J Clin Oncol.* 2017 Nov 10;35(32):3647-3653.
21. Douros A, Renoux C, Coulombe J, **Suissa S**. Patterns of long-term use of non-vitamin K antagonist oral anticoagulants for non-valvular atrial fibrillation: Quebec observational study. *Pharmacoepidemiol Drug Saf.* 2017 Dec;26(12):1546-1554.

### [Kristian Filion](#)

1. \*\*Mottillo S, **Filion KB**, Joseph L, Eisenberg MJ. Defining optimal activated clotting time for percutaneous coronary intervention: a systematic review and Bayesian meta-regression. *Catheter Cardiovasc Interv.* 2017; 89:351-366.

2. \*Larivee N, Suissa S, Eberg M, Joseph L, Abenhaim H, Eisenberg MJ, **Filion KB**. Drospirenone-containing combined oral contraceptives and the risk of arterial thrombosis: a population-based nested case-control study. *BJOG* 2017;124:1672-1679.
3. \*\*Mottillo S, **Filion KB**, Joseph L, Eberg M, Forgetta V, Mancini JV, Eisenberg MJ. Unfractionated heparin prior to primary percutaneous coronary intervention: an evaluation of fixed-bolus dosing. *Am J Cardiol*. 2017; 119:178-185.
4. \*\*Sterling LH, **Filion KB**, Atallah R, Reynier P, Eisenberg MJ. Intravenous beta-blockers in ST-segment elevation myocardial infarction: a systematic review and meta-analysis. *Int J Cardiol*. 2017; 228:295-302.
5. \*Shin J, Eberg M, Ernst P, **Filion KB**. Statin potency and the risk of hospitalization for community-acquired pneumonia: a population-based nested case-control study. *Br J Clin Pharmacol*. 2017;83:1319-1327.
6. \*Suissa K, Lariviere J, Eisenberg MJ, Eberg M, Gore GC, Grad R, Joseph L, **Filion KB**. The efficacy and safety of smoking cessation interventions in patients with cardiovascular disease: a network meta-analysis of randomized controlled trials. *Circ Cardiovasc Qual Outcomes*. 2017;10(1). pii: e002458. doi: 10.1161/CIRCOUTCOMES.115.002458.
7. \*\*Khosrow-Khavar F, **Filion KB**, Al-Qurashi S, Torabi N, Bouganim N, Suissa S, Azoulay L. Cardiotoxicity of aromatase inhibitors and tamoxifen in post-menopausal women with breast cancer: a systematic review and meta-analysis of randomized controlled trials. *Ann Oncol* 2017; 28:487-496.
8. \*Eberg M, Platt RW, **Filion KB**. The estimation of gestational age at birth in database studies. *Epidemiology*. 2017 28:854-862.
9. \*Secrest M, Udell JA, **Filion KB**. The cardiovascular safety trials of DPP-4 inhibitors, GLP-1 agonists, and SGLT2 inhibitors. *Trends Cardiovasc Med* 2017;27:194-202.
10. \*\*Gaffar R, Habib B, **Filion KB**, Reynier P, Eisenberg MJ. Optimal timing of complete revascularization in acute coronary syndrome: a systematic review and meta-analysis. *J Am Heart Assoc* 2017 Apr 10;6(4). pii: e005381. doi: 10.1161/JAHA.116.005381.
11. \*\*Larivee N, Suissa S, Khosrow-Khavar F, Tagalakis V, **Filion KB**. Drospirenone-containing oral contraceptive pills and the risk of venous thromboembolism: a systematic review of observational studies. *BJOG*. 2017; 124:1490-1499.
12. \*Larivee N, Suissa S, Coulombe J, Tagalakis V, **Filion KB**. Drospirenone-containing oral contraceptive pills and the risk of venous thromboembolism: an assessment of risk in first-time users and restarters. *Drug Saf*. 2017; 40:583-596.
13. \*Moresoli P, Habib B, Reynier P, Secrest MH, Eisenberg MJ, **Filion KB**. Carotid stenting versus endarterectomy for asymptomatic carotid artery stenosis: a systematic review and meta-analysis of randomized controlled trials. *Stroke* 2017; 48:2150-2157.
14. \*Grandi SM, Vallee-Pouliot K, Reynier P, Eberg M, Platt RW, Arel R, Basso O, **Filion KB**. Hypertensive disorders in pregnancy and the risk of subsequent cardiovascular disease. *Paediatr Perinat Epidemiol* 2017;31:412-421.
15. Dayan N, **Filion KB**, Okano M, Kilmartin C, Reinblatt S, Landry T, Basso O, Udell JA. Long-term risk of cardiovascular disease following fertility therapy: systematic review and meta-analysis. *J Am Coll Cardiol* 2017; 70:1203-1213.
16. \*Ait Ichou J<sup>†</sup>, \*Larivée N<sup>†</sup>, Eisenberg MJ, Suissa K, **Filion KB**. The effectiveness and safety of the Impella ventricular assist device for high-risk percutaneous coronary interventions: a systematic review. *Cardiac Catheter Interven* 2017 Sep 20. doi: 10.1002/ccd.27316 [Epub ahead of print].
17. Douros A, Yin H, Yu OH, **Filion KB**, Azoulay L, Suissa S. Pharmacologic differences of sulfonylureas and the risk of adverse cardiovascular and hypoglycaemic events. *Diabetes Care* 2017; 40:1506-1513.
18. Yu OH, Azoulay L, Yin H, **Filion KB**, Suissa S. Sulfonylureas as initial treatment for type 2 diabetes and the risk of severe hypoglycemia. *Am J Med*. 2017 Oct 12. pii: S0002-9343(17)31030-6. doi: 10.1016/j.amjmed.2017.09.044. [Epub ahead of print]



**3. Academic and community engagement service outside of McGill by individual members of the unit**

Submitted by:

A handwritten signature in blue ink, appearing to be 'SS', written over a light blue horizontal line.

Samy Suissa, PhD  
Chief, Division of Clinical Epidemiology