The prevalence of inflammatory bowel diseases (IBD), Crohn's disease and ulcerative colitis, in Canada, is over 0.75% in 2021. Many individuals with IBD are immunocompromised. Consequently, the World Health Organization's declaration of a global pandemic uniquely impacted those with IBD. Crohn's and Colitis Canada (CCC) formed the COVID-19 and IBD Taskforce to provide evidence-based guidance during the pandemic to individuals with IBD and their families. The Taskforce met regularly through the course of the pandemic, synthesizing available information on the impact of COVID-19.
on IBD. At first, the information was extrapolated from expert consensus guidelines, but eventually, recommendations were adapted for an international registry of worldwide cases of COVID-19 in people with IBD. The task force launched a knowledge translation initiative consisting of a webinar series and online resources to communicate information directly to the IBD community. Taskforce recommendations were posted to CCC’s website and included guidance such as risk stratification, management of immunosuppressant medications, physical distancing, and mental health. A weekly webinar series communicated critical information directly to the IBD community. During the pandemic, traffic to CCC’s website increased with 484,755 unique views of the COVID-19 webpages and 126,187 views of the 23 webinars, including their video clips. CCC’s COVID-19 and IBD Taskforce provided critical guidance to the IBD community as the pandemic emerged, the nation underwent a lockdown, the economy reopened, and the second wave ensued. By integrating public health guidance through the unique prism of a vulnerable population, CCC’s knowledge translation platform informed and protected the IBD community.

Keywords: Crohn’s disease; Ulcerative colitis; SARS-CoV-2; Coronavirus

Introduction

Roughly 300,000 people are living with inflammatory bowel disease (IBD) in Canada in 2021, and this number is expected to exceed 400,000 by 2030 (1–3). The prevalence of IBD in Canadians is estimated to have risen roughly 50% in the last 10 years (from 0.55% of the Canadian population in 2010 to 0.76% in 2020), and is expected to increase to 1% of the Canadian population by 2030 (Figure 1) (2,4). Seniors (those aged 65+) with Crohn’s disease or ulcerative colitis represent the fastest-growing group of Canadians with IBD and face complications associated with longer disease duration alongside other age-related comorbidities (5,6). On the opposite end of the age spectrum, children with IBD are at risk of unique disease complications, such as impairment of linear growth, and may respond differently to treatments or be at greater risk of related side effects as compared to adults (7).

The World Health Organization (WHO) declared the novel SARS-CoV-2 outbreak a global pandemic on March 11, 2020 (8); this immediately raised concerns among individuals suffering from immune-mediated diseases and their healthcare providers. Given the paucity of knowledge early in the pandemic, the rapid dissemination of information, and the potential susceptibility of immunocompromised people living with IBD, the Scientific and Medical Advisory Council (SMAC) of Crohn’s and Colitis Canada (CCC) instituted a task force to make evidence-based recommendations to people with IBD. In order to deliver expert recommendations and answers to the IBD community, CCC launched a knowledge translation initiative consisting of a webinar series and online resources.

In this article, we detail the dynamic and iterative process of the knowledge translation initiatives developed to inform and protect the IBD community during the first year of the pandemic.

CROHN’S AND COLITIS CANADA’S COVID-19 AND IBD TASKFORCE

On March 12, 2020, the SMAC of CCC met to discuss the COVID-19 pandemic and its potential impact on the IBD community. Together with CCC leadership, the Council agreed that a broader group of experts was necessary to determine recommendations for the IBD community considering the general lack of knowledge on risk factors and scarcity of supporting scientific evidence. On March 17, 2020, the COVID-19 and IBD Taskforce convened via videoconference with representatives from across Canada, including: adult and pediatric gastroenterologists (GIs), IBD nurses, infectious
diseases experts, scientists, public health officials, communications and government relations experts, and patient advisors (Figure 2). The Taskforce met weekly from March 17, 2020 through June 16, 2020 during the first wave of the pandemic in Canada, and reconvened with monthly meetings in September 2020 to address the second wave. The main deliverable of this group was guidance for the IBD community with the caveat that COVID-19 knowledge was evolving rapidly, and recommendations would be reviewed and revised regularly. Topics covered during these online videoconferences largely reflected questions and concerns posed directly by the IBD community and informed the knowledge translation campaign championed by CCC.

Over the course of the pandemic, it became clear that Canada’s COVID-19 epidemiology differed by region. The central prairie region (Manitoba and Saskatchewan) and most of the Atlantic region (New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador) initially had low to medium case counts, but were able to limit the spread of the virus early on and experienced fewer total cases (9). In order to respect the local epidemiology of the pandemic in different jurisdictions within Canada, an emphasis was placed on providing the most up-to-date information available, and encouraging the IBD community to assess their personal risk. However, viewers were urged to contact their own healthcare providers for individual health advice. The general guidance provided considered factors such as age, medications, and comorbid conditions.

**TASKFORCE RECOMMENDATIONS**

Recommendations were based on available evidence that included guidelines from gastroenterology societies (e.g., the International Organization for the Study of IBD [IOIBD]), experience from prior viral outbreaks, and current public health guidance modified for the needs of the IBD community (9–11). Recommendations were dynamic as knowledge and global penetrance of SARS-CoV-2 was expanding rapidly; thus, recommendations were frequently updated to reflect new data and were communicated to the IBD community in almost real-time. The Taskforce determined that recommendations should be presented within the context of various risk factors such as: age, comorbidities, status of disease (i.e., new diagnosis, current or recent flare, or remission), and medications (e.g., corticosteroids, biologics). The goal was to offer guidance to the IBD community so that individuals could assess their own IBD profile and minimize their own personal risk.
Recommendations were posted to CCC's website. An explicit statement that the recommendations should supplement, but not replace, the recommendations made by an individual's physician or local public health authority was included in all communication. Detailed information made available included FAQ sheets and video clips from a weekly webinar series (Table 1). Over the first six months of the pandemic, recommendations evolved. New evidence emerged regarding risk factors, transmissibility, and medications that may exacerbate negative outcomes from agencies like the Public Health Agency of Canada, the WHO, and Centers for Disease Control in the United States (9,12,13). The breadth of knowledge regarding COVID-19 and IBD-specific risk factors also grew (14,15).

Our understanding of COVID-19 outcomes specific to the IBD community came through multiple data sources (16,17), including the Surveillance Epidemiology of Coronavirus Under Research Exclusion (SECURE-IBD) registry (14,15). SECURE-IBD is a physician self-report database that collects information on global cases of COVID-19 occurring in people with IBD (14,15). The registry data includes: disease type (Crohn’s disease or ulcerative colitis), disease activity (remission, mild, moderate/severe, unknown), age, sex, medications for IBD, country of origin, and outcomes of COVID-19.
(recovery, hospitalization, death). An online interactive map displays the data captured in SECURE-IBD (18). The first case was reported to the registry on March 13, 2020, and as of March 19, 2021, 5596 cases have been reported to the registry. Based on the SECURE-IBD data, the most significant risk factors for negative outcomes of COVID-19 were identified as age, active disease (defined by physician global assessment), and prednisone use (14,15). Moreover, people with IBD on biologics did not have increased risk of severe complications of COVID-19 (i.e., need for hospitalization, intensive care, or death).

The evidence from the registry supported a central message of the CCC COVID-19 and IBD Taskforce: People with IBD in clinical remission on medications and without infectious symptoms should not stop their treatments. This message was consistently delivered through the three waves of the pandemic that saw daily cases of COVID-19 diagnosis in Canada peak at over nearly 9000 cases per day in April 2021 (Figure 3).

WEBINAR SERIES

The core strategy of the knowledge translation initiative was a weekly webinar series moderated by the co-chairs of the CCC COVID-19 and IBD Taskforce (GGK & EIB). These webinars were developed as the primary mechanism to communicate critical information directly to the IBD community in a manner that was accessible to a broad audience. The webinars were promoted through email membership and volunteer lists compiled by CCC, as well as CCC’s social media network (Facebook, Twitter and Instagram). As with the topics for Taskforce discussion, content was developed based on questions received directly from the IBD community in a questionnaire filled out during registration for the webinars, from the live chat during the webinar broadcast, or from the post-webinar surveys deployed to all webinar registrants. The direct connection to people with IBD and their families addressed the critical requirement for effective knowledge translation with information directly relevant to the audience (19).

Questions and concerns were discussed by Taskforce members who collectively determined suitable experts to participate in upcoming webinars as panellists (Figure 2). An illustrative example was the concerns expressed by many individuals regarding infusion clinics very early on in the pandemic: Were they safe, and should those scheduled for infusions keep their appointments? The Taskforce gathered a panel of representatives from infusion clinics across the country to share how they were working together to ensure everyone’s safety through measures that include: Physical distancing (the removal of some infusion chairs to allow for physical distancing during treatment), sanitation, and pre-screening. The resulting webinars were well-received and encouraged the IBD community to express further

Figure 3. Daily cases of COVID-19 diagnosed in Canada from January 2020 to May 2021 alongside a Table showing the cumulative number of diagnosed COVID-19 in the world, across Canada, and in the Surveillance Epidemiology of Coronavirus Under Research Exclusion (SECURE) IBD registry. Source: Gov. of Canada, Coronavirus disease (COVID-19): Outbreak update—Canada.ca: https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html
| Title | Description | Web-link |
|-------|-------------|----------|
| General information on COVID-19 | Explanation of COVID-19, epidemiology, symptoms and outcomes. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/What-is-COVID-19](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/What-is-COVID-19) |
| Visiting clinics and testing | Discusses visiting physicians, diagnostic investigation (e.g., bloodwork) and infusion clinics. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Clinic-Visits-and-Testing](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Clinic-Visits-and-Testing) |
| Diet and nutrition | Reviews diets and nutritional needs for persons with IBD, as well as grocery shopping and restaurants during the pandemic. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Diet-and-Nutrition](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Diet-and-Nutrition) |
| Your wellbeing | Overviews mental health and wellness, including mechanism for coping with stress and anxiety. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Mental-Health-and-Wellness](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Mental-Health-and-Wellness) |
| Information for health professionals | Section for healthcare professionals including an overview of the SECURE-IBD Registry and resources for their persons with IBD. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/For-Professionals](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/For-Professionals) |
| Guidance/Recommendations | | |
| Travel and physical distancing | Discusses restrictions on travel and appropriate physical distancing during the pandemic. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Travel-and-Physical-Distancing](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Travel-and-Physical-Distancing) |
| Risk profile | Provides self-assessment risk profile with corresponding recommendations. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Are-you-at-Risk](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Are-you-at-Risk) |
| Medications for IBD | Explains the risk associated with medications for IBD. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Medications](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Medications) |
| Children and teens | Reviews the risk associated with COVID-19 for children and adolescents with IBD. Discussion of risks associated with returning to in-person school. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Children-with-IBD](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Children-with-IBD) |
| Reopening of the economy | Provides guidance for adults and seniors with IBD as the lockdown ended and the economy re-opened. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Reopening-of-the-Economy](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Reopening-of-the-Economy) |
| Essential work and services | Discusses special considerations for persons with IBD who are involved with essential work (e.g., healthcare providers). | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Essential-Work](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Essential-Work) |
| Tested positive for COVID-19 | Information for individuals with IBD who test positive for COVID-19. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/If-you-have-COVID-19](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/If-you-have-COVID-19) |
| Pregnancy and newborns | Overviews recommendations for persons with IBD who are pregnant or have a newborn. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Pregnancy-and-Newborns](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Pregnancy-and-Newborns) |
| Family members of patients with IBD | Explains actions that family members can take to support their household member with IBD. | [https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Family-Members-of-People-with-IBD](https://crohnsandcolitis.ca/About-Crohn-s-Colitis/COVID-19-and-IBD/Guidance/Family-Members-of-People-with-IBD) |
concerns and topics of importance, including: Mental health; children; pregnancy; risk factors of specific medications; and what to do as businesses, the economy and schools reopened.

The format of every webinar included an introduction by CCC; an update on the epidemiology of COVID-19 by SMAC Chair, Dr. Gilaad Kaplan; an update of the Taskforce recommendations and review of changes to the website by SMAC Chair-Elect, Dr. Eric Benchimol; followed by the topic segment, usually a guest presentation on the topic and a panel discussion with experts. After each webinar, a pertinent discussion was selected to produce two-to-five-minute segments and posted online.

The epidemiologic update included weekly presentations using data from Johns Hopkins University to illustrate the global epidemiology of COVID-19 (20), data from Public Health Agency of Canada that illustrated the details (including health outcomes) of confirmed Canadian cases of COVID-19 (9), and an update from the SECURE-IBD registry that illustrated IBD-specific cases of COVID-19 (14,15,18). The epidemiology update was usually followed with one or two case studies prepared for a lay audience to illustrate a key piece of evidence, such as projected possible waves of COVID-19 in comparison to the 1918 influenza pandemic, or case studies that highlight risk of virus transmission. After the epidemiology and Taskforce recommendation updates, webinars focused on a particular topic in an episodic nature where a panel of experts was invited to give presentations to the audience or have a virtual round-table discussion. The topics covered in each of the webinars, as well as the confirmed COVID-19 cases globally, in Canada, and in SECURE-IBD at the time of each webinar are presented in Table 2.

A detailed Frequently Asked Questions document was developed from the webinar presentations that was curated into a web-based information source on the CCC website. The answers to the questions contained links to pertinent clips from webinars in order to provide more detailed information and an alternate form of information delivery. The webinars were archived on CCC’s YouTube channel, and on CCC’s webpage. View counts of the archived videos were typically four to five times those of the live webinars (Table 2). For specific topics related to recommendations made on the guidance webpages, webinar videos were spliced into segments of 5 min or less and embedded next to the recommendations on the webpage; this allowed readers of the webpage to watch the related webinar segment with experts discussing the reasoning and scientific evidence behind the recommendations.

**IMPACT**

The webinars and digital CCC resources were promoted through social media and email notifications to the IBD
community across Canada. The 15 weekly, seven monthly webinars, as well as the one French-language webinar saw a total of 24,778 registrations with one-third (33%) registering for more than one COVID-19 webinar. Links to the recorded webinars were provided on the CCC website 24 h after the live event and added to the organization’s YouTube page. Archived webinars were also captioned in French and recent webinars offer live French translations. A further 35,814 views of the full recordings of the webinars have been tallied to date (April 1, 2021). The ability to select pieces of each video to augment COVID-19 information on the CCC website has proven to be exceptionally impactful with a further 78,862 views of individual clips (Table 2). As of April 1, 2021, there have been 54,136 views of the webinars (live or recorded full webinars) and 78,862 views of individual webinar segments for a total of 126,187 views. Traffic on CCC’s website increased dramatically since COVID-19, with 484,755 unique views to the COVID-19 web pages. The visitors spent between 0.10 and 28.29 min on the pages with a mean duration of 40.29 s.

**CONCLUSION**

CCC was able to quickly assemble the COVID-19 and IBD Taskforce at the outset of the global pandemic. The Taskforce members have met and continue to meet regularly in an effort to ensure that the IBD community has the best available information to support them as they navigate a new reality with COVID-19. Direct communication from the Taskforce and the expert community in Canada to people with IBD and caregivers through a webinar series was an effective and efficient knowledge translation vehicle. The spring webinars ably guided the vulnerable IBD community from a population-wide lockdown in March 2020 through to an understanding of risk and appropriate measures to ensure physical and mental health during the re-opening of the country over the summer and through the

| Date          | Topic                                                                 | Registrants* | Live Views | Archived Video Views* |
|---------------|-----------------------------------------------------------------------|--------------|------------|-----------------------|
| 19/3/2020     | COVID-19 and IBD: What You Need to Know                               | 2679         | 1558       | 8775                  |
| 26/3/2020     | Infusion Clinics, Pregnancy and Newborns                             | 1269         | 667        | 2697                  |
| 2/4/2020      | COVID-19 Risk Factors, Live Q&A                                     | 2169         | 987        | 2483                  |
| 9/4/2020      | COVID-19 Updates, Mental Health, Diet and Nutrition                  | 992          | 480        | 1364                  |
| 16/4/2020     | Modeling COVID-19 to Prepare for the Future                          | 762          | 342        | 795                   |
| 23/4/2020     | Monitoring COVID-19 in IBD Persons (SECURE IBD registry)             | 843          | 409        | 1210                  |
| 30/4/2020     | Telemedicine in the Pandemic                                         | 710          | 346        | 515                   |
| 7/5/2020      | Families and Children with IBD                                       | 751          | 369        | 764                   |
| 14/5/2020     | COVID-19 Risk Factors, Reopening of School and the Economy          | 557          | 293        | 678                   |
| 21/5/2020     | COVID-19 Updates, Q&A with IBD Nurses                                | 551          | 275        | 540                   |
| 28/5/2020     | Mental Health and Wellness                                           | 439          | 204        | 429                   |
| 4/6/2020      | Washroom Access and Reopening of Businesses                          | 382          | 174        | 433                   |
| 11/6/2020     | IBD Clinic of the Future                                             | 420          | 174        | 367                   |
| 18/6/2020     | IBD Medications and COVID-19 Risk                                     | 500          | 220        | 2347                  |
| 25/6/2020     | Separating COVID-19 Myths from the Facts                             | 524          | 195        | 1690                  |
| 10/9/2020     | Returning to school for families with IBD                            | 598          | 251        | 802                   |
| 8/10/2020     | Vaccinations and IBD                                                 | 1542         | 541        | 1867                  |
| 19/11/2020    | SECURE-IBD Registry                                                  | 710          | 253        | 641                   |
| 07/12/2020    | Les MII et la COVID-19 : Ce que l'on a appris et les questions qui restent | 573          | 315        | 606                   |
| 17/12/2020    | Vaccines and “Home” for the Holidays                                 | 2672         | 1058       | 1611                  |
| 21/01/2021    | New Recommendations: COVID-19 Vaccine for IBD                        | 3112         | 1360       | 3054                  |
| 18/02/2021    | COVID-19 Updates and Hitting the Pandemic Wall                       | 968          | 471        | 926                   |
| 18/03/2021    | A Year in Review and Vaccine Updates                                 | 1209         | 604        | 1220                  |

*Estimates as of April 1, 2021. Total registrants: 24,778; total live audience: 11,511; total archived video views: 35,814
second wave of the pandemic. On March 18, 2021, the one-year anniversary of the webinar series, CCC completed the twenty-third webinar that addressed questions by the IBD community on vaccination. As future waves of the pandemic unfold in Canada, the Taskforce is prepared to guide the IBD community.

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CONFLICT OF INTEREST
Eric Benchimol has acted as a legal consultant for Hoffman La-Roche Limited and Peabody & Arnold LLP for matters unrelated to medications used to treat inflammatory bowel disease and has received honoraria from McKesson Canada. He is Chair of the Scientific and Medical Advisory Council of Crohn’s and Colitis Canada. Charles Bernstein is supported in part by the Bingham Chair in Gastroenterology. He is on Advisory Boards for AbbVie Canada, Amgen Canada, Bristol Myers Squibb, Janssen Canada, Pfizer Canada, Roche Canada, Sandoz Canada, Takeda Canada. He is a Consultant for Mylan Pharmaceuticals and Takeda. He has received educational grants from AbbVie Canada, Pfizer Canada, Takeda Canada, Janssen Canada. He is on the speaker’s panel for AbbVie Canada, Janssen Canada, Pfizer Canada, Takeda Canada, and Medtronic Canada. Received research funding from AbbVie Canada, Pfizer Canada, Sandoz Canada. Alain Bitton has participated in advisory boards with AbbVie, Janssen, Pfizer, Takeda, Hoffman-LaRoche, Amgen. He has received research support from AbbVie. He has received educational support from Fresenius Kabi, Takeda. Usha Chauhan has served on nurses advisory board for AbbVie Canada, Janssen Canada, Takeda Canada, Pfizer Canada, Merck Canada. Sharyle Fowler has received honoraria for speaking and consulting for AbbVie, Janssen, Pfizer, Shire, Takeda, Roche, and Novartis. Jean-Eric Ghia is a scientific analyst for the Canadian Broadcasting Corporation / Radio-Canada and acted as a scientific director for La Liberté. Anne Griffiths holds the Northbridge Financial Corporation Chair in IBD, has been a consultant for AbbVie, Amgen, Bristol Myers Squibb, Janssen, Lilly, Merck, Pfizer, has received speaker fees from AbbVie, Janssen, Nestle, and investigator-initiated research support from AbbVie. Jennifer Jones has received honoraria for speaking and consulting for AbbVie, Janssen, Pfizer, Shire, and Takeda. Gilaad Kaplan has received honoraria for speaking or consultancy from AbbVie, Janssen, Pfizer, and Takeda. He has received research support from Ferring, Janssen, AbbVie, GlaxoSmith Kline, Merck, and Shire. He has been a consultant for Gilead. He shares ownership of a patent: TREATMENT OF INFLAMMATORY DISORDERS, AUTOIMMUNE DISEASE, AND PBC. UTI Limited Partnership, assignee. Patent WO2019046959A1. PCT/CA2018/051098. 7 Sept. 2018. Reena Khanna has received consultancy fees from Alimentiv; AbbVie, Encycle Innomar, Lilly, Janssen, Merck, Pfizer, Roche, Takeda, Amgen; Speaker fees from AbbVie, Lilly, Janssen, Pendorpharm, Roche, Shire, Takeda; Research study fees from Roche. Peter L Lakatos has been a speaker and/or advisory board member: AbbVie, Amgen, Arena Pharmaceuticals, Fresenius Kabi, Genetech, Gilead, Janssen, Merck, Mylan, Pharmacosmos, Pfizer, Roche, Takeda,Tillots and Viatris and has received unrestricted research grant: AbbVie, Takeda and Pfizer. John Marshall has consulted or been on the advisory board for: AbbVie, Allergan, Amgen, Bristol Myers Squibb, Ferring, Fresenius Kabi, Janssen, Lilly, Lupin, Novartis, Organon, Paladin, Pfizer, Pharmascience, Roche, Sandoz, Shire, Takeda, Teva, Viatris; and has been a speaker for AbbVie, Allergan, Amgen, Ferring, Janssen, Lupin, Organon, Pfizer, Pharmascience, Roche, Shire, Takeda, Viatris. Remo Panaccione reports consultant work for: AbbVie, AGI Therapeutics, Alba Therapeutics, Amgen, Astellas, Athletics, Atlantic Healthcare, BioBalance, Boehringer-Ingelheim, Bristol-Myers Squibb, Celgene, CoMentis, Cosmo Technologies, Coronado Biosciences, Cytokine Pharmasciences, Eisai Medical Research, Elan, EtiGene, Eli Lilly, Enteromedics, Ferring, Flexion Therapeutics, Genentech, Genzyme, Gilead, Given Imaging, GlaxoSmithKline, Human Genome Sciences, Ironwood, Janssen, Merck & Co, Merck Research Laboratories, Merck Serono, Novo Nordisk, NPS Pharmaceuticals, Optimer, Orexin, PDL Biopharma, Pfizer, Procter and Gamble, Santarus, Shire Pharmaceuticals, Sigmoid Pharma, Sirtris (a GSK company), Sandoz, S.L.A. Pharma (UK), Targacept, Teva, Therakos, Tillotts, TxCell SA, Speaker’s fees for AbbVie, Amgen, Celgene, Ferring, Janssen, Merck, Novartis, Pfizer, Prometheus, Sandoz, Shire, Takeda Advisory board attendance for AbbVie, Abbott, Allergan, Amgen, Biogen Idec, Eisai, Ferring, Genentech, Janssen, Merck, Shire, Elan, GlaxoSmithKline, Hospira, Pfizer, Bristol-Myers Squibb, Takeda, Cubist, Celgene, Salix, Roche. Research/educational support from AbbVie, Ferring, Janssen, Shire Takeda. Cynthia Seow has been on advisory boards for Janssen, AbbVie, Takeda, Ferring, Shire, Pfizer, Sandoz, Pharmascience, and a speaker for Janssen, AbbVie, Takeda, Ferring, Shire, Pfizer, Pharmascience. Laura Targownik has received research funding from AbbVie Canada, Takeda Canada, Sandoz Canada, Amgen Canada, Gilead Canada, Roche Canada and Pfizer Canada, and has been on Advisory Boards for Janssen Canada, AbbVie Canada,
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