Common Drug Review
Patient Group Input Submissions

alirocumab (Praluent) for primary hypercholesterolemia (non-familial and heterozygous familial), mixed dyslipidemia.

Patient group input submissions were received from the following patient groups. Those with permission to post are included in this document.
FH Canada Patient Network — permission granted to post.
Heart and Stroke — permission granted to post.

CADTH received patient group input for this review on or before February 2, 2016.

CADTH posts all patient input submissions to the Common Drug Review received on or after February 1, 2014 for which permission has been given by the submitter.

The views expressed in each submission are those of the submitting organization or individual; not necessarily the views of CADTH or of other organizations. While CADTH formats the patient input submissions for posting, it does not edit the content of the submissions.

CADTH does use reasonable care to prevent disclosure of personal information in posted material; however, it is ultimately the submitter's responsibility to ensure no personal information is included in the submission. The name of the submitting patient group and all conflict of interest information are included in the posted patient group submission; however, the name of the author, including the name of an individual patient or caregiver submitting the patient input, are not posted.

FH Canada Patient Network

Section 1 — General Information

Name of the drug CADTH is reviewing and indication(s) of interest		Praluent (alirocumab)
Name of the patient group		FH Canada Patient Network
Name of the primary contact for this submission:		[redacted]
Position or title with patient group		[redacted]
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Name of author (if different)		
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Permission is granted to post this submission		Yes

1.1 Submitting Organization

The FH Canada Patient Network is a volunteer-led national non-profit organization. The FH Patient Network was organized with the direct assistance of clinicians in Montreal and Vancouver, with outreach through the FH Canada Registry Network and the FH Foundation in the USA. The purpose of the FH Canada Patient Network to raise awareness about Familial Hypercholesterolemia (heterozygous and homozygous), to promote screening and diagnosis, to provide education about the condition, to improve access to appropriate treatment and care, and to provide a forum for advocacy and support. The FH Canada Patient Network receives organizational and administrative support from the Consumer Advocare Network, a not-for-profit network that promotes the capacity of patient organizations to participate in healthcare policy and decision-making. The FH Patient Network participates in the establishment of FH International and FH Europe

1.2 Conflict of Interest Declarations

The FH Canada Patient Network receives unrestricted educational grants from Sanofi Canada, Pfizer Canada, Amgen, and Aegerion. It receives organizational and administrative support from the not-for-profit Consumer Advocare Network at no cost. There are no other conflicts of interest.

Section 2 — Condition and Current Therapy Information

2.1 Information Gathering

The FHCPN had previously collected patient feedback to submit in support of a CDR appraisal for Repatha. Subsequent outreach was conducted from October to December 2015 to collect additional data, targeting patients who could be appropriate candidates for Praluent (based on the clinical trials and anticipated regulatory approval by Health Canada). We reached out through various sources to

patients based on two characteristics: diagnosis or family history of FH or high cholesterol, in particular, low-density lipoprotein cholesterol (LDL-C), currently or previously not well controlled on lipid-lowering agents (other than PCSK9), with or without a history of cardiovascular events.
We used a variety of sources to recruit participants, namely:

- Patients, families and providers who had direct contact with FHCHN
- Institutional sites in Canada conducting clinical trials and extension trials with Praluent (12 sites)
- FH Patient advisory group (hosted by 3rd party)
- FH Canadian Patient Network patient forum (October 2015)
- Social media including sites for FH Canada Patient Network, FH Patient Canada Facebook, FH Foundation, The Familial Hypercholesterolemia (FH) Foundation Patient Discussion Group, Familial Hypercholesterolaemia (FH) Discussion Group, PCSK9 Forum, and Twitter.

The following methods were used to collect information: One-on-one interviews; small group discussions via webcast, teleconference, or face-to-face, survey posted on Survey Monkey, survey sent to individuals, and questions posed in online forums.

Patient characteristics. We received input from a total of 282 respondents, mostly patients but also caregivers. Respondents varied in terms of their genetic risk factors, with about one-tenth reporting no history or symptoms of FH, about one-half diagnosed with FH (mostly HeFH but also eight with HoFH), about one-third reporting a family history of FH (but not [yet] a personal diagnosis of FH) and the remainder (about 12%) said they were not sure if they were FH-implicated). Slightly more than 90% identified themselves as residing in Canada, about 30% in Quebec, 35% in BC, 25% in Ontario, and the remainder in Manitoba, Alberta, Nova Scotia, and Newfoundland. The remainder identified as residing in the USA, UK, or "unspecified."

About one-fourth of the total set of respondents (n=72) said they were "very well" or "well" managed on their current drug therapy (statins and/or ezetimibe). Conversely, three-fourths (n=210) said they currently or previously had by high cholesterol that was " at higher than target levels." Because the numbers of nonFH are small, the responses across familial and nonfamilial were combined.

In terms of other risk factors, about 55% reported that they had been diagnosed as being "overweight" or weight was a risk factor. About two-fifths had been diagnosed with cardiovascular disease and another one-fourth said that they believed CD was a risk. One one-half were diagnosed with diabetes or had been told that diabetes was a risk. Finally, near 50% were diagnosed with or at risk for other health conditions, including kidney, thyroid, or liver conditions. In terms of lifestyle factors, nearly three-fourths reported they did "little or no" exercise and a similar proportion said that they had "poor" diet habits. about two-fifths said they smoked now or in the past. Finally, in terms of family history, about one-third said they had a parent who had experienced a serious cardiovascular event.

2.2 Impact of Condition on Patients

What aspects of this condition are more important to control than others? Regardless of whether their cholesterol was currently well-managed or not, these participants were all conscious of the importance of "keeping their cholesterol low or "getting their numbers to target." Almost all mentioned that they had experienced challenges in achieving their goal. A maor frustration was due to cholesterol levels that were not at target, despite medications, low-fat diet, exercise, and other interventions. A second cluster of challenges were side effects or intolerance of their prescribed medications (mostly statins) namely, muscular pains in legs and ankles, chest pains, constipation, headaches, fatigue and

weakness, anxiety and depression. Most have tried several treatment regimens, including different statins and statin combinations, niacin, ezetimibe, natural foods, and homeopathic therapies.

How does this condition affect day-to-day life? Almost all patients said high cholesterol (FH or nonFH) affected their life on a daily basis, regardless of whether they were well controlled or not. Nearly four-fifths said it had affected their relationships with their family, work, social life, and/or daily activities. The specific day-to-day challenge most frequently reported (by three-fourths of respondents) was the need to change their diet, while with one-fourth expressed concern about the "pressure to exercise." In terms of clinical management, more than one-third felt challenged by the daily medication regimen (remembering to take the pills) and the frequent doctors' appointments. Nearly half of those who reported being unable to achieve their cholesterol target levels said they also experienced stress and anxiety and even depression.

Three-fourths of the FH patients and about half of the nonFH patients reported having had at least one cardiovascular intervention, that is, angioplasty, bypass and/or stent. Many have had multiple events requiring multiple interventions. Nearly two-fifths of patients with FH said they experienced "severe" symptoms related to cardiovascular disease and another two-fifths said they had them regular or occasionally. These include shortness of breath, fatigue, muscle, joint and chest pain, and headaches. *"My brother and I have both been diagnosed with FH: we get extremely short of breath with any type of physical activity, chest pains and severe headaches. Our 19-year-old brother is also likely to have FH."*

Awareness and concerns are greatest among those with a family history of FH or cardiovascular disease. Even those not experiencing symptoms directly related high LDL said they lived with the stress and fear of a cardiovascular event, which could be "devastating" or "fatal." *"My mother had her first MI when she was just 36-years-old and had two stents inserted. She didn't know it was FH at the time but in hindsight it was obvious, since her father had died of a heart attack. I haven't been tested but am on statins and get worried whenever my cholesterol levels are too high."* Overall, many patients with high cholesterol and with heterozygous FH report they are well managed on statins or other therapies. However, a significant number are also experiencing "very serious" or "somewhat serious" challenges to achieving or maintaining low cholesterol. The following summarizes their feedback.

First, patients reported stress, anxiety, and even depression with not being able to get or keep their cholesterol to target levels. They reported being "accused" by their health professionals of not adhering to their medications. *"I know I need to lose weight and probably get more aerobic exercise, but when I talk to my doctor and I know he doesn't believe I am trying, it just makes me more discouraged."* They express frustration with the attitudes of family and co-workers. *"Whenever I have to miss a day, I feel like everyone is judging me, as if I am not trying hard enough or just taking advantage of my condition. It doesn't help that I don't look like I'm sick."* For those with a history of FH, patients are also concerned about their children. *"Our children are only 5 and 7, and we don't know whether we should get them tested. We want to know in case we need to do something about it, but we also don't want to have the diagnosis on their health record."*

A second category of expressed concerns focused on the implications of the "high numbers" for their health, especially the risk of stroke or other cardiovascular event. Some have had cardiovascular surgery (angioplasty, bypass, and/or stents), For those patients with FH, the fear of death is very real, since many reported that they had a parent, grandparent, and/or other relatives who have died of heart attacks, often at a very early age (pre-40's or 50's). *"Both my father and his father died of heart attacks before they were 50 years old. At the time, they didn't know it was FH, so at least we can get a diagnosis now, but I don't know whether that helps." "I've been on three different statins and now on a statin with another drug but I can't seem to get my cholesterol level below 15."* "*My doctor says I just need to lose*

weight and eat better but I don't think that will help. My numbers were high when my weight was much lower."

For many patients, a third type of on-going challenge is not the condition but the side effects of the (statin) therapy. *"I had switched statins and found myself spiralling into the worst depression. My doctor didn't believe it was related but switched me back and things are back to normal. I'd rather struggle with the cholesterol than experience that again." "I thought I was having a heart attack but it turns out to be panic attacks; I switched to ezetimibe and that worked for a while." "I've tried every statin, high dose and low dose, but the pains in my legs, especially my calves, were so bad that I couldn't walk even as far as the bus stop. What else can I do?" "I switched from atorvastatin to rosuvastatin because I was having extreme pains in my legs and hips. The pain has gone, but now I'm just exhausted all the time. Someone suggested taking CoQ10 and vitamin D but that brings me up to 11 medications."*

Overall, among patients not on PCSK9, about one-fourth say their current therapies are working to lower cholesterol but three-fourths reported their cholesterol is not being managed sufficiently. Most express frustration with trying different regimens with limited success and are fearful of potentially serious CV events. Finally, some are experiencing significant side effects (muscle pains) with their current therapies (mostly statins) and are seeking more tolerable alternatives.

2.3 Patients' Experiences With Current Therapy

We interpret "current therapy" as nonPCSK9, since almost all respondents are currently or have been on statins, and PCSK9 was available only through clinical trials. As noted previously, about one-fourth reported being well managed on statins and/or ezetimibe, although we believe this underestimates the percentage of individuals in real life who are adequately controlled with current (nonPCSK9) therapies. Of the three-fourths who reported cholesterol "not adequately controlled", about one-fourth had switched to other medications, one-fourth were taking no medications (primarily because of the side effects), and about one-tenth were being managed with nondrug therapies, although the results were not experienced as satisfactory. *"I go for plasma exchange every couple of weeks, but it is just keeping me alive and is very time-consuming."*

Almost all of the patients reported having experienced some side effects that were likely related to statins or a statin combination, either currently or in the past. Some said these lessened over time as they adjusted to the medicines. About three-fourths of the patients said they were not managed sufficiently on the statins or had serious adverse reactions with their other therapies. Overall, the most frequent and difficult side effect to statins was muscle pains (myopathy), which were sometimes significant enough to require lowering the dosage, taking a break from treatment, discontinuing the statin altogether, switching statins, or switching to another therapy with or without a low-dosage statin. Some patients reported that the "drug holiday" or the switch was effective; others continued to have side effects (with the same or another statin) or experienced insufficient response to the alternative therapy.

Other side effects attributed to statins were anxiety and depression, fatigue, and chest pains. However, as several respondents pointed out, it is hard to know whether the symptoms were due to their primary condition [of high cholesterol], to the drugs, or to wrong dosage. Several patients discussed the challenges of switching therapies. Some couldn't convince their doctors to let them try something else (at least initially) and others said their meds were switched without their knowledge. *"I told the doctor I was experiencing some side effects (dizziness, bladder control, and anxiety) from my new meds, and he said that was not possible. He said he had just moved me from the [brand] statin to the same generic version. I convinced him to switch me back, and the side effects went away."*

Some patients also reported that adhering to a strict diet was very difficult with FH and that healthcare professionals were "clueless" and unsympathetic about the challenges. Moreover, patients reported that the dietary restrictions varied depending on which healthcare professional they talked to. *"I also have diabetes so was referred to a dietician, since I needed a diet that was low-carbohydrate as well as low-fat. I can't say it is easy."*

In summary, it is important to emphasize that we do not know how many Canadian patients with familial or nonfamilial hypercholesterolemia are unresponsive to, intolerant of, or contra-indicated for statins. We do know that many are at high cardiovascular risk, having had a heart attack or other intervention (stent or bypass surgery). We also know many high cholesterol patients simply reduce or stop taking statins when the side effects become intolerable. Some will ask for an alternative but others will not do anything until they experience a cardiovascular event.

2.4 Impact on Caregivers

Many of the caregivers we heard from were parents of children diagnosed with or at risk for FH. Some of the children were as young as 3 years of age. They expressed mixed feelings about getting an actual diagnosis. While they were willing to make dietary or other lifestyle changes, some expressed "horror" at the thought of starting a child on statins. Some were anxious to start therapy when necessary and were optimistic about the long-term outcomes. Some caregivers expressed frustration with getting their spouses or older children to stay on therapy, especially when they seemingly experienced no immediate benefit or negative outcome when not followed. Caregivers supporting or managing patients with multiple conditions, including Lupus, MS, Parkinson's, and diabetes, found the multiple medications and the dietary recommendations especially difficult. *"I started with the statins but when another doctor prescribed the drugs for Parkinson's, no one checked to see whether they were compatible. And then I had to add drugs for constipation and bladder control which were side effects of the other drugs." "Thank goodness for my pharmacist, who took the time to readjust and combine medicines to make the whole schedule at least manageable."*

Section 3 — Information about the Drug Being Reviewed

3.1 Information Gathering

Same sources and methods as described as in Section 2.1

3.2 What Are the Expectations for the New Drug or What Experiences Have Patients Had With the New Drug?

For those with no experience using any PCSK9 (alirocumab, evolocumab or bococizumab), about 60% were aware of the new therapy. Among FH patients, almost four-fifths were anticipating approval. And among those who reported not being well controlled on older therapies, about 53% had experience with one of the PCKS9s. (NB: we targeted patients who had been in PCSK9 clinical trials and recruited through social media, others with uncontrolled high cholesterol.) All participants, regardless of their cholesterol levels, said that PCSK9 could be a valuable alternative to current therapies. There were several reasons for this expectation. First, some believed that all "cholesterol lowering" therapies were effective only for a limited period of time, whether it was because their bodies had adapted to the therapy, they developed resistance to the specific therapy, or their condition had changed necessitating a different therapy. *"When I started on statins, I was excited to get my cholesterol levels down to normal but after a while my doctor had to double the dosage (increase the frequency) to get the same effect. Then he added another drug (ezetimibe). He said I could be a candidate for PCSK9, based on my history of increasing resistance." "I started getting side effects [to the statin] almost right away but my*

doctor said to give them a chance and they may go away. Not only didn't the side effects improve, my cholesterol levels didn't change very much. I am not sure how the PCSK9s work, but I am ready to try something else if it works and is easier to handle." "When I was diagnosed with Lupus, I had to start two other medications, so my doctor took me off the statins temporarily. When I started back, they just didn't seem to have the same effect and my cholesterol was stuck well over 30. I like the fact that you don't have to take the PCSK9 every day so it might not be a problem with my other medications." "My wife has diabetes and Parkinson's Disease in addition to FH, so we would look for anything that could reduce the number of medicines she has to remember to take every day."

Those participants currently not at target levels had the highest expectations for PCSK9 to lower cholesterol levels, possibly more effectively and without the side effects experienced with statins. Most did not know about the expected long-term benefits or risks but felt it would provide an alternative, even if only for a while. Most parents were unsure as to whether they would start a child (who needed medication) on statins (which had a long history of effectiveness and safety), or on the PCSK9, which may be more effective and require less dosing.

Most participants (about 80%) indicated that they were not concerned or only somewhat concerned about administering an injection. Similarly, they did not feel it would be difficult to remember to take the therapy either once or twice a month. These reactions were irrespective of age of respondent.

Most were aware that the injections had potential stomach or digestive risks but felt they were willing to try them, if they worked better or had fewer side effects than statins. Among the few who had heard about the warnings of cognitive risks, most said they would like to see more data but would probably accept the PCSK9s, with monitoring. The other risks were remote and possible while the negatives of statins and/or high cholesterol were current and real.

For patients who have received PCSK9s (in Canada almost exclusively through clinical trials while elsewhere also through prescription), all were satisfied or very satisfied with the impact on their cholesterol level. They spoke of both physical and emotional (psychological) benefits. *"For me, the difference was noticeable in my energy levels and muscle pains. Even my doctor could not believe my cholesterol numbers. " "My husband and children says it's like I returned from a long absence." "I told the clinic nurse I knew I was on the "real" drug because I just felt so much more alive. I just worry about when the clinical trials are over."* Among the patients who have been on any of the PCSK9s, all said they were still on therapy, although some were also taking statins. All said their cholesterol levels have remained close to target or lower than before taking PCSK9. *"At first, I was worried I wouldn't be able to manage the injections, but it was actually quite easy, especially with those new injection devices." "I had no idea how liberating it would be not to have to remember statins four times a day. A monthly injection is almost like being drug free." "With my cholesterol at target, I physically and emotionally more ready to take on the challenges of managing my diet and exercise."*

Most of the patients experienced few or no lasting adverse reactions to PCSK9s and commented on how they appreciated being free of the side effects they had experienced with statins. *"I had some soreness with the injections initially but that has gone away almost completely." "It was such a relief to be able to walk without pain; I've even lost weight now that I am back to regular exercise." "I thought it would be difficult to give myself an injection but I got the hang of it pretty quickly."* None of the respondents had discontinued PCSK9s. *"I can't imagine going back to statins or something else. Maybe, now that my cholesterol is down, they would work but I don't want to take the chance."*

In summary, all participants, regardless of their statin experience or their exposure to PCK9s, were overwhelmingly positive about PCKS9 as an important alternative for managing high cholesterol. While we would not suggest that these responses are representative of the entire hypercholesterolemia

population, there is no doubt that patients feel PSCK9 should be available as an important alternative, especially for patients who have had challenges in lowering their cholesterol levels with other therapies, who have had serious adverse reactions to statins or statin combinations, or who have a history of FH. When asked directly whether they would choose a daily pill or an injection if both worked equally, there were preferences on both sides. Most of those well managed on statins (three-fourths) said they would not want to switch at this time. However, when asked if they would choose a monthly injection over a pill if the injection "worked better" or if there were fewer serious side effects, all chose the injection.

Section 4 — Additional Information

Most FH patients are undiagnosed, and most people with high cholesterol are not members of patient groups. Moreover, we found that many clinicians, even those conducting the clinical trials, were reluctant to refer the patients to our survey. They do not understand the Common Drug Review process and do not appreciate the importance of the patient submission. For the purposes of this submission, we were fortunate to have access to patients attending the first FH Canadian patient forum, to patients taking part in a "patient journey" experience, and to a FH advisory group, as well as patients recruited through the FH Foundation Facebook in the USA, where two PCSK9s have been approved by the FDA.

Heart and Stroke Foundation

Section 1 — General Information

Name of the drug CADTH is reviewing and indication(s) of interest		Praluent / alirocumab
Name of the patient group		Heart and Stroke Foundation
Name of the primary contact for this submission:		[redacted]
Position or title with patient group		[redacted]
Email		[redacted]
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Name of author (if different)		
Patient group's contact information:	Email	cadth@hsf.ca
	Telephone	(613) 691-4062
	Address	1402-222 Queen Street, Ottawa, ON
	Website	www.heartandstroke.ca
Permission is granted to post this submission		Yes

1.1 Submitting Organization

The Heart and Stroke Foundation of Canada (HSF), a volunteer-based health charity, leads in eliminating heart disease and stroke and reducing their impact. Its mission is to prevent disease, save lives, and promote recovery.

The Heart and Stroke Foundation is one of Canada's largest and most effective health charities. Over the last 60 years we have invested more than $1.39 billion in heart and stroke research, making us the largest contributor in Canada after the federal government. In that time, the death rate from heart disease and stroke has declined by more than 75 per cent.

The Foundation's health promotion and advocacy programs across the country are saving lives every day. Working together, our employees, volunteers, donors and world-class researchers have made the Heart and Stroke Foundation what we are today: Canada's most widely recognized and trusted authority on cardiovascular health. Our vision is healthy lives free of heart disease and stroke. Together, we will make it happen.

The Heart and Stroke Foundation is a national organization led and supported by a force of about 125,000 volunteers.

1.2 Conflict of Interest Declarations

a) We have the following declaration(s) of conflict of interest in respect of corporate members and joint working, sponsorship, or funding arrangements:

The Heart and Stroke Foundation of Canada (HSF) and the individuals involved in the preparation of this submission have no conflict of interests to declare. While the majority of HSF funding comes from

individual donors, HSF has received unrestricted financial support from pharmaceutical companies to help us achieve our mission of preventing disease, saving lives and promoting recovery. This financial support is used for the development of educational materials; education, awareness and community engagement activities; and funding of research awards across the country. Over the past five years, HSF has received unrestricted financial support from: Aegerion Pharmaceuticals, Amgen, Apotex, AstraZeneca, Bayer, Boehringer Ingelheim, Bristol-Myers Squibb Canada, Eli Lily Canada, GlaxoSmithKline Inc., Janssen, McKesson Canada, Merck, Merz Pharma Canada, Novartis, NovoNordisk, Pfizer Canada Inc., Sanofi, Servier, Takeda, and Valeant.

b) We have the following declaration(s) of conflict of interest in respect of those playing a significant role in compiling this submission:
There is no conflict of interest to report.

Section 2 — Condition and Current Therapy Information

2.1 Information Gathering

The information on impact of familial hypercholesterolemia on patients and caregivers was gathered by HSF through an online survey using the online survey tool: 'Survey Monkey'. Access and links to the survey were advertised using targeted, promoted posts through Facebook and pop-ups on cholesterol risk factor information pages of the English and French HSF public websites (www.heartandstroke.ca and www.fmcoeur.ca). The survey was made available to the public from December 23, 2015 to January 26, 2016. The survey, FB promoted posts and pop-ups were developed in English and French languages.

In total, 83 individuals started the online survey. Participants were not obligated to complete all questions in the survey. Participants were asked whether they have ever been told by a healthcare professional that they have familial hypercholesterolemia. Of the 83 individuals who responded, 60 individuals indicated that they had been told by a healthcare professional that they have familial hypercholesterolemia. Participants were also asked whether they are a caregiver for someone who has familial hypercholesterolemia. Five respondents indicated that they were a caregiver for someone with this condition. Responses from participants that answered yes to a diagnosis of familial hypercholesterolemia and/or yes to being a caregiver of someone with familial hypercholesterolemia (n=65) were used to inform this submission.

Information to complete Section 2 was also generated through literature searches from peer reviewed publications, Heart and Stroke Foundation health information and guidelines and policies from credible organizations such as the Canadian Cardiovascular Society. The Heart and Stroke Foundation develops guidelines, policies and position statements that are based on scientific evidence. These guidelines, policies and position statements form the basis of the health information that is provided by HSF to the public, health professionals and the media in various formats (print, web, CPR training materials, media releases, etc.).

Limitations: This survey was not a population based survey. A small number of responses were obtained through the online survey which provides limited data to inform this submission. This submission reflects the views and/or experiences of a small number of survey respondents and is not representative of the views of all patients with familial hypercholesterolemia or their caregivers living in Canada.

2.2 Impact of Condition on Patients

Heterozygous familial hypercholesterolemia affects approximately 1:500 Canadians, and the more serious homozygous form affects approximately 1:1,000,000 Canadians, although these numbers might be underestimated. Approximately 83,500 Canadians are estimated to have familial hypercholesterolemia yet most are undiagnosed.i

Survey participants were asked if they had ever been told by a healthcare professional that they have familial hypercholesterolemia. A total of 60 survey participants identified themselves as having a diagnosis of familial hypercholesterolemia. Responses from these individuals are reported below. Respondents were not required to complete all questions in the survey.

Forty-eight survey participants responded to the question: how does familial hypercholesterolemia affect your day to day life. Fourteen patients reported that this condition does not affect their day to day life. Twenty-seven patients said that it has affected their day-to-day life because they have to take medication at specific times. Ten patients reported they have to manage their condition with other forms of therapy, eight reported they have to visit a healthcare provider frequently as a result of this condition, three indicated that they have to take medication multiple times per day and two reported they have to take time off work. One patient commented “I have negative effects to statins”, one reported “I don’t tolerate the medication – causes memory lapses”, and another noted “I worry about taking a drug every day, and the arguments for and against the use of statins”.

When asked if there are activities that patients are unable to do as a result of familial hypercholesterolemia, 46 patients of a possible 48 who responded to this question indicated that having familial hypercholesterolemia has not affected their ability to do activities. One individual stated that they are unable to work with headache when blood pressure is terribly high and a second stated they are unable to “Eat grapefruit, which I love!!”

When asked about symptoms related to this condition, thirteen patients reported that they have experienced symptoms. Six reported experiencing fatigue, five reported joint pain or pain, two reported swelling or swelling in the ankles, one reported “difficultés de marcher de courtes distances” and one reported xanthalmia in both eyelids. One patient stated: “More than anything, I find if my blood pressure gets too low, I am dizzy and if it gets too high I am tired”.

2.3 Patients’ Experiences With Current Therapy

Forty-six patients with familial hypercholesterolemia indicated that they have been prescribed medication to control their blood cholesterol levels (two patients indicted they had not been prescribed any medication to control their condition).

Of respondents who had been prescribed medication, twenty-three indicated they currently take a statin to control their condition, with 13 reporting they last took their statin medication today and 9 reporting they last took the medication yesterday. One patient reported they last took their statin in the previous month. Fifteen patients indicated the statin helped control their blood cholesterol levels, while eight were unsure. All patients were able to access their statin medication without difficulty. Seventeen patients indicated they experienced side effects as a result of taking a statin with most common side effects being muscle pain (n=8) and headache (n=4). Other reported side effects included elevated liver count (which was resolved after being prescribed a smaller dose) (n=1), heart burn (n=1), ‘crampes douloureusses’ (n=1) and stomach or intestinal problems (including upset stomach, stomach cramps, constipation, flatulence or diarrhea) (n=2).

Two respondents are currently (actively) taking niacin to control their condition with both reporting they last took their medication today. Both were unsure whether niacin helped to control their condition and both had no difficulty accessing their medication. One experienced flushing (redness or a burning or itching sensation) as a side effect of taking niacin.

Four respondents are currently taking etzimibe to control their blood cholesterol levels with all respondents actively taking the medication (having last taken their medication 'today' or 'yesterday'). All four patients reported this medication helped control their blood cholesterol level, with one indicating difficulty in accessing the medication, though the respondent did not provide additional information or further explanation for why the medication is difficult to access. One patient reported experiencing headaches and fatigue as a result of taking ezitimbe.

One patient was taking a resin to control high blood cholesterol and indicated they last took the medication today. The patient was unsure as to whether the resin was helping control cholesterol levels, and experienced no difficulties with accessing the medication, nor any side effects.

Other medications patients reported taking for familial hypercholesterolemia included Aspirin/acetylsalicylic acid (n=3), homeopathic cholesterol-sterol and co enzyme Q10.

2.4 Impact on Caregivers

There were five respondents who identified themselves as a caregiver for someone with familial hypercholesterolemia. Three caregivers indicated no impact on their routine or lifestyle, nor any challenges as a caregiver in dealing with adverse effects related to current therapy. One caregiver reported having to provide medication multiple times a day and one indicated having to provide medication at specific times in the day as challenges to providing care to someone with familial hypercholesterolemia.

Section 3 — Information about the Drug Being Reviewed

3.1 Information Gathering

Information to complete Section 3 was gathered in the same way as Section 2. Please refer to section 2.1 for further information on this process.

3.2 What Are the Expectations for the New Drug or What Experiences Have Patients Had With the New Drug?

a) Based on no experience using the drug:

Eighteen patients responded to the question 'Other than being cured, what would be the best course of treatment look like for you?" Seven respondents indicated therapy that did not include medication, or included medications with little to no side-effects. Sample responses include: "diet, exercise, I don't' tolerate pills very well", "supervised diet and exercise program free and long-term", "Exercices physiques, alimentation, maintien d'un bon niveau!", "l'alimentation", "nutrition et activités", "getting off the statin", "something that does not give me muscle ache", "medicine I could tolerate that would lower my levels without any side effects", and "getting off the statin and controlling FH with diet or natural drugs". Other responses included: "continue with medication", "continue doing what I'm doing", "no further progression of disease", "I have no symptoms as a result of high cholesterol", "celu qui procure le moins d'effets secondaires", and "something to lower cholesterol that is not compromised by grapefruit".

b) Based on patients' experiences with the new drug as part of a clinical trial or through a manufacturer's compassionate supply:

Of respondents who had been prescribed medication to control their blood cholesterol levels, two had been prescribed Praluent either by their healthcare provider or as part of a clinical trial. The patients prescribed Praluent are currently using the medication, having last used or taken it 'today or within the previous week'. Both patients indicated that Praluent is helping to control blood cholesterol and that no additional medication is needed to help control the condition. One patient on Praluent reported the following side effects: throat, nose or sinus infection; flu or cold-like symptoms (high temperature, sore throat, runny nose, cough and/or chills); and reactions at the injection site (redness, swelling, bruising or pain). Patients taking Praluent provided no additional comment on the new drug compared to their previous therapy.