

The Voice of the Patient

A series of reports from the U.S. Food and Drug Administration's (FDA's)
Patient-Focused Drug Development Initiative

Alopecia Areata

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Table of Contents

Introduction	3
Meeting overview	3
Report overview and key themes	5
Topic 1: Disease Symptoms and Daily Impacts That Matter Most to Patients.....	6
Perspectives on most significant symptoms.....	6
Overall impact of alopecia areata on daily life	8
Topic 2: Patient Perspectives on Treatments for Alopecia Areata	11
Perspectives on current treatments	11
Perspectives on ideal treatments for alopecia areata	13
Summary of Comments Submitted to the Public Docket	14
Conclusion.....	17
Appendix 1: Meeting Agenda.....	19
Appendix 2: Patient and FDA Panel Participants.....	21
Appendix 3: Meeting Polling and Scenario Questions.....	22
Appendix 4: Incorporating Patient Input into a Benefit-Risk Assessment Framework for Alopecia	27

Introduction

On September 11, 2017, FDA held a public meeting to hear perspectives from patients with alopecia areata, caregivers, and other patient representatives regarding the symptoms of alopecia areata that matter most to patients and current approaches to treating this disease. FDA conducted the meeting as part of the Patient-Focused Drug Development initiative, an FDA commitment under the fifth authorization of the Prescription Drug User Fee Act (PDUFA V) to more systematically gather patients' perspectives on their condition and available therapies to treat their condition. As part of this commitment, FDA held 24 public meetings between Fiscal Years 2013–2017, each focused on a specific disease area. The alopecia areata public meeting was the Agency's 23rd Patient-Focused Drug Development meeting.

More information on PDUFA V and Patient-Focused Drug Development can be found at <http://www.fda.gov/ForIndustry/UserFees/PrescriptionDrugUserFee/ucm326192.htm>.

Overview of Alopecia Areata

Alopecia areata is an autoimmune disease which targets the hair follicles, causing hair loss. The hair loss usually occurs on the scalp, but can also affect the beard, eyebrows, and other areas of the body. In the United States, approximately 500,000 individuals have alopecia areata. Alopecia areata tends to occur in three different patterns: focal, totalis, and universalis. Focal pattern alopecia consists of one or multiple hairless patches on the scalp. Alopecia totalis consists of total hair loss on the scalp. Alopecia universalis consists of complete hair loss on all parts of the body. Patients with alopecia may experience periods of hair regrowth and hair loss throughout the course of the disease. Alopecia primarily affects hair follicles, but it can also affect fingernails, causing small indentations and roughness. Most individuals experience onset of alopecia by the age of 40, with nearly half experiencing onset before the age of 20. For patients with alopecia totalis and universalis, onset is typically before the age of 30. In children, the mean age of onset is between 5 and 10 years of age.

There is no cure and there are no FDA-approved treatments for alopecia. However, there are several treatments used off-label to manage alopecia areata. The most common treatment option is corticosteroid use, either administered as an injection intradermally into the skin, or applied topically as a cream, ointment, or gel. Second-line treatment options include calcineurin inhibitors, immunotherapies, and hair-growth-stimulating solutions. In scientific literature, there are reports of other types of treatments that are used to manage alopecia areata, including prostaglandin analog solutions, platelet-rich plasma patches, topical retinoids, cryotherapy, and light-based therapy, such as excimer light. Local treatments are usually used either as a first-line treatment or as a treatment for people who have limited hair loss. Systemic therapies are considered for patients who have more extensive hair loss, or who have a rapid progression of alopecia.

Meeting overview

This meeting provided FDA the opportunity to hear directly from patients, caregivers, and other patient representatives about their experiences with alopecia areata and its treatments. The discussion focused on two key topics: (1) health effects and daily impacts of alopecia and (2) patients' perspectives on current approaches to treating alopecia areata. FDA was particularly interested in hearing patients' insights on treatment benefits and risks and on the availability of treatments. The questions for

discussion (Appendix 1) were published in the [Federal Register](#) notice that announced the meeting.

For each topic, a panel of patients and caregivers (Appendix 2) shared comments to begin the dialogue. Panel comments were followed by large-group facilitated discussions inviting comments from other patients, caregivers, and patient representatives in the audience. An FDA facilitator led the discussion, and a panel of FDA staff (Appendix 2) asked follow-up questions. Participants who joined the meeting via the live webcast (referred to in this report as web participants) were also able to contribute comments. In addition, in-person and web participants were periodically invited to respond to polling questions (Appendix 3), which provided a sense of the demographic makeup of participants and how many participants shared a particular perspective on a given topic.

Approximately 100 patients with alopecia areata or patient representatives attended the meeting in-person. Approximately 200 people attended the meeting through the live webcast, with around 50 of them identifying themselves as patients with alopecia areata or patient representatives. According to responses to polling questions, participants ranged in age from younger than 6 years old to 50 years and older, with roughly half of participants under the age of 30. The majority of participants, almost 75%, were female. Participants represented a range of experiences with alopecia areata, with over 60% of respondents indicating they had experienced total body hair loss (alopecia universalis). Others reported hair loss which was limited to their scalp, eyebrows, or eyelashes, or reported other findings associated with alopecia areata such as nail change. Although participants in this meeting may not fully represent the diverse population living with alopecia areata, the input reflected a diverse set of experiences with the symptoms and treatments for this disease.

To supplement the input gathered at the meeting, alopecia patients and others were encouraged to submit comments on the topic to a public docket,¹ which was open until November 13, 2017. In total, 136 comments were submitted to the public docket, the majority by individual patients and caregivers.

More information, including the archived webcast and meeting transcript, is available on the meeting website: <https://www.fda.gov/ForIndustry/UserFees/PrescriptionDrugUserFee/ucm554443.htm>.

¹ A *docket* is a repository through which the public can submit electronic and written comments on specific topics to U.S. federal agencies such as FDA. More information can be found at www.regulations.gov.

Report overview and key themes

This report summarizes the input shared by patients and patient representatives during the meeting or through the webcast. It also includes a summary of comments submitted to the public docket. To the extent possible, the terms used in this report to describe specific alopecia symptoms, impacts, and treatment experiences reflect the words used by in-person, web participants, or docket commenters. The report is not meant to be representative in any way of the views and experiences of any specific group of individuals or entities. There may be symptoms, impacts, treatments, or other aspects of alopecia that are not included in this report.

The input from the meeting and docket comments provided rich detail on the impact that alopecia areata has on patients. Participants highlighted the physical, emotional, and social toll alopecia takes on daily life, and focused on the need for new treatment options. Several key themes emerged from this meeting:

- Participants emphasized that the impacts of alopecia areata go far beyond hair loss. They described it as a chronic disease that causes physical discomfort, touches every aspect of daily life, and for many leads to anxiety and depression.
- Participants shared in vivid detail the social and emotional impact that alopecia has on their lives. They described how the loss of hair affects their confidence and sense of self-worth, and how it may lead to stigma, bullying, social isolation, and embarrassment. They discussed the impact of alopecia on working and attending school, maintaining personal relationships, and on family members and family life.
- Participants shared their experiences with phototherapy and prescription and non-prescription medicines via various routes of administration, including topical, oral, intravenous, and intramuscular. Participants highlighted the varying degrees of success in managing their symptoms with these therapies. Participants also stressed the need to enhance the treatment armamentarium, given current challenges with variability in effectiveness, tolerability, access to available treatments, and uncertainty regarding long-term effects of available treatments. The discussion also highlighted the unmet medical need for more and better treatments for the pediatric population living with alopecia.

The patient input generated through this Patient-Focused Drug Development meeting and the public docket comments strengthens FDA's understanding of the burden of alopecia areata on patients and the treatments currently used to treat alopecia areata and its symptoms. FDA staff will carefully consider this input during the drug development process, including when advising sponsors on their drug development programs and when assessing products under review for marketing approval. For example, Appendix 4 shows how this input may directly support our benefit-risk assessments for medical products under review. This input may also be of value to the drug development process more broadly. For example, it may help drug developers understand how to develop better endpoints for clinical trials to measure those aspects of alopecia areata that are important to patients. It can help drug developers select or develop questionnaires that measure important concepts and engage with the FDA as they develop treatments. The information from these meetings can also help support the FDA review of clinical trial questionnaires to confirm that they are adequately capturing the individuals' and caregivers' perspective on health outcomes.

Topic 1: Disease Symptoms and Daily Impacts That Matter Most to Patients

The first discussion topic focused on patients' experiences with alopecia and its impact on their daily lives. FDA was particularly interested in hearing participants describe specific symptoms and impacts in their own words. FDA was also interested in learning about how alopecia affects their ability to live normally and perform activities as fully as they would like.

Four panelists (Appendix 2) provided comments to start the dialogue. They included:

- A woman in her 30's with alopecia universalis (hair loss on the entire body). She was diagnosed at age 13 and experienced cyclic hair regrowth and hair loss on her scalp over several years before losing all body hair in her 30's.
- A mother representing her 7-year-old son with alopecia universalis. Her son has experienced cycles of hair regrowth and hair loss since his initial diagnosis.
- A 34-year-old mother of three with alopecia universalis. She started losing her hair at age 14, going from a small, penny-sized bald spot to total body hair loss over six months.
- A 40-year-old woman with alopecia universalis. She experienced her first bald spots at age 21, which then progressed to total hair loss on the scalp by age 30, and then to alopecia universalis at age 35. Her comments were read by the moderator as she was unable to attend in person.

The panelists' statements provided a vivid depiction of the burden of alopecia areata on many aspects of daily life. They described the physical symptoms and discomfort they experienced and the impacts of alopecia on their personal, family, and social lives. Panelists emphasized that to them alopecia is more than a cosmetic condition; it is a condition with significant emotional and psychological impacts. In the large-group facilitated discussion that followed the panel discussion, nearly all the patients and caregivers in the audience indicated by a show of hands that their own experiences (or those of their loved ones) were reflected in the panelists' comments.

Perspectives on most significant symptoms

Participants represented a range of experiences with alopecia areata. More than half of participants had experienced total hair loss (alopecia universalis). Some participants had only experienced scalp hair loss, either partial or total (alopecia areata or totalis). Many participants stated that their alopecia had progressed over time, going from scalp hair loss to eventual total body hair loss. Almost every participant who spoke shared their experiences with hair loss in general. Many participants also described how their alopecia affected specific body areas and caused other symptoms besides hair loss. In polling questions (Appendix 3, Q6, Q7), pediatric and adult participants were asked to identify what aspects of their alopecia are most bothersome to them. The top three bothersome aspects of the condition, in order of responses received, were 1) hair loss, either patchy, widespread, or affecting a specific body area, 2) repeated cycles of hair loss and regrowth and unpredictability of hair loss, and 3) skin sensitivity and other associated health effects. The large-group facilitated discussion provided insight into how these aspects of alopecia affect patients. The range of symptoms discussed with in-person and web participants are described further below.

Patchy or total scalp hair loss

Almost all participants identified scalp hair loss as one of the most significant and bothersome symptoms of their condition, in part because it is the most noticeable area of hair loss. For some participants, their scalp hair loss took the form of small, patchy bald spots or extensive hair loss with small remaining patches of hair. The location and size of the bald spots differed for each person. For example, one participant described a quarter-sized bald patch on the back of the head. Another stated that their bald spots were “small and sporadic” and changed locations periodically. Others described bald patches localized to the top of their head, behind the ears, and at the nape of the neck. Some participants experienced large bald spots covering most of the head.

Many participants described undergoing changes in their alopecia over time, initially experiencing one or more bald patches before losing all their scalp hair. Other participants experienced complete scalp hair loss from the onset, with or without total body hair loss. Participants also described cycles of hair loss and regrowth. Descriptions of hair regrowth ranged from “very patchy and random” to full regrowth, which was often followed by loss of some or all of the newly regrown hair. One participant stated that although she experienced limited hair regrowth, it was enough to enable her to use hair extensions, which was a significant improvement in her view.

Participants’ depictions of their experiences with total scalp hair loss touched upon the emotional impact of alopecia areata on daily life. For example, one participant commented, “When I looked in the mirror, I did not recognize the person looking back at me.” Another participant said, “There hasn’t been a day since I found that first patch 19 years ago that I have not wanted to scream or cry when looking in the mirror.” For many participants, their hair was described as part of their identity and sense of self-worth, and the loss of their hair as one of the defining aspects of their life after alopecia. The emotional impacts of alopecia are discussed in more detail below.

Hair loss in other areas

Several participants discussed the significance of hair loss in other parts of the body, including leg hair, arm hair, pubic hair, armpit hair, nose hair, eyebrows, and eyelashes. Of these, participants discussed the loss of nose hair, eyebrows, and eyelashes the most. One participant stated she experienced “a lot of issues with runny nose and sneezing” because of her loss of nose hair. Other participants described getting water, sweat, sand, and other debris in their eyes because of the lack of eyebrows and eyelashes. For some participants, the loss of their eyebrows and eyelashes had an emotional and psychological effect on their health. One participant said she experienced an “identity crisis” after losing her eyebrows and eyelashes because they “add character, definition, and expression to your face. Without eyebrows, your entire face changes and becomes unrecognizable.” Another participant said she was “devastated” after losing her eyebrows because they were “the last defining feature on my otherwise bald head.” One male participant also addressed the loss of beard facial hair, saying he “missed it very much” and that his alopecia made it impossible to have.

Sunburns

Several participants identified sunburns as being one of their significant physical burdens associated with their alopecia. Some participants stated that they were particularly susceptible due to their light, fair skin. Most participants who discussed sunburns said that they had to be particularly vigilant, as their heads became sunburnt easily even when wearing sunscreen. One participant called it “one of my

biggest issues beyond the hair loss . . . I am extremely sensitive to the sun.” Parents of children with alopecia stated that their children were at risk for sunburns during the school day, and they said they relied on teachers to apply and reapply sunscreen. Parents shared that an additional effect of needing to apply sunscreen in school was the increased, unwelcome attention their child received as a result.

Comorbid conditions & Other symptoms

Participants described several comorbid conditions and other symptoms they experienced that they attributed to their alopecia, including:

- Skin sensitivity, which some participants stated led to hives or rashes when exposed to certain fragrances, lotions, or soaps.
- Sweating, which a few attendees also said impeded their ability to perform physical activities.
- Thyroid disease, specifically Hashimoto’s Syndrome. Multiple participants shared that they or their children suffered from this condition.
- Eczema and other skin conditions such as chronic hives.
- Other conditions mentioned include asthma, Celiac disease, chronic anemia, endometriosis, and irritable bowel syndrome.

Overall impact of alopecia areata on daily life

Both in-person and web participants shared numerous perspectives on the impact that alopecia has on daily life. Participants described the physical, emotional, and social impacts of alopecia, highlighting the burden of their hair loss on numerous aspects of their lives. The most commonly mentioned impacts on daily life included:

- **Severe emotional impact.** Almost every participant who spoke referenced the emotional toll alopecia took on their lives. For many participants, this emotional impact was the most significant aspect of their alopecia. Participants described experiencing anxiety and depression because of their alopecia. Participants found the loss of their hair to be “traumatic,” stating that alopecia heavily impacts their self-confidence, self-esteem, and sense of self-worth. Several participants said the loss of their hair was a loss of a core part of their identity and a defining aspect of their lives. One participant stated, “[alopecia] changed my life, my mind, and my heart. It made me weak and vulnerable, battered my self-esteem, and heightened my insecurities.” Another participant stated that she “would give anything to get my hair back.” One participant shared that she had frequently been mistaken for a boy, including being asked on occasion if she was in the correct bathroom. This participant described these incidents as “simple things,” adding, “they hurt me so much. It strikes me emotionally a lot and sometimes I can't handle the pain.”

Several participants said that their alopecia had led to severe depression. One participant called the mental effects of alopecia “more detrimental than the alopecia itself.” For some of those participants, their depression led to thoughts of self-harm. One participant stated, “The amount of times I have thought about self-harm and just not existing in general is unexplainable.” Other participants shared struggles with depression, including some who stated that they had previously attempted suicide. These participants emphasized that alopecia is more than a cosmetic disorder, that it is a condition that takes a significant

emotional toll on patients.

Participants also stated that the impact of alopecia areata was lifelong, going beyond the initial period of hair loss. One participant described her alopecia as a constant battle: “[Every day] since I found that first patch . . . [I have thought] I am damaged, abnormal, unfeminine, or ugly because of my hair loss.” Another participant described their experiences with alopecia by stating, “I cannot express to you how much developing alopecia totalis delivered a blow to my self- esteem, my self-image, and my ability to focus on schoolwork as a teen. Even as an adult, it has had a fundamental effect on my personality and the way I carry myself in public.”

Several participants also focused on the emotional impact of alopecia areata on children and young adults, stating that alopecia had a particularly severe impact on this population. Participants described feeling different from their peers. One parent stated that she was worried her son “will fundamentally believe that he is sick and is less capable than other people around him.” Another shared that she went through high school “always worried that someone would pull my wig off or find out about my hair loss.” One current high school student stated that she no longer felt confident without her hair, saying “not a day goes by that I don't wish I had my hair again. . . it would help me every day just to go to school.”

- **Stigma and social isolation.** Participants shared several experiences with stigma and social isolation, often in the form of bullying and being misunderstood by classmates and coworkers. Participants described being treated differently, shunned, or being viewed as being ill or having a communicable disease. For example, one participant said that she avoided going out in public because “people stare, ask personal questions, I've been asked to remove my scarf at airline security . . . these experiences create fear.” Other participants said that they were afraid that people would shun them after finding out about their condition, including one woman who shared, “I spent many years in constant fear of being discovered as a bald woman, fearing being thought of as sick, bizarre, ugly, or worse.” Another participant said that before she went out in public, she needed to “mentally prepare [her]self for people to stare at [her].” Other participants described avoiding social gatherings and meetings with friends because they felt uncomfortable or different. One teenager said that her best friend had told her “I don't want to be your friend because you're bald,” describing this hurt as “unexplainable.” Another participant said she avoided social gatherings because she “was so scared about how people would judge [her].”

Several participants also discussed their experiences with bullying, especially during their time at school. Participants described being teased, having wigs and hats snatched off, being excluded at school events and while playing sports, and being insulted or mocked by classmates. One parent shared that her daughter's classmates didn't want to sit by her, and that when she was younger, a student had to be moved out of her kindergarten class. Another parent focused on the impact on a normal school life, saying, “You don't go to school to get bullied, you go to school to get an education.” One participant summarized her experiences with bullying by saying, “I can't even begin to describe the impact that it had on me growing up, the amount of bullying and torment I faced, and I still deal with a lot of anxiety and depression.” One participant characterized alopecia as a condition that “not only alters the way you see yourself, but the way the outside world sees you and treats you.”

- **Relationship impacts.** Participants described the impact that alopecia had on their personal relationships. Adult participants with alopecia areata shared their experiences with difficulty finding and maintaining personal and romantic relationships, with some calling it one of the biggest impacts of alopecia for them. One participant said that she was “living in fear of being rejected, not found to be attractive, unfeminine . . . without [a wig], they don’t find me sexually attractive.” This participant stated that it was “devastating to experience and hear these things, and makes the entire prospect of having a healthy sexual relationship seem impossible and stress inducing.” Another participant shared, “My biggest worry is. . . no one is going to find me attractive, and personality will mean nothing.” Other participants shared that they had experienced failed relationships and marriages due to their alopecia. As one participant put it, “My personal relationships have always depended on the fact that I don't have hair.”
- **The ability to perform activities.** Participants shared that alopecia areata also made it harder for them to participate in physical activities. For some participants, this was the result of sunburns and sweating. One parent said that her child could not wear helmets, as they did not fit and caused excessive sweating, especially when combined with sunscreen. Others noted that activities that involved swimming or that caused excessive sweating were difficult, as they had no eyelashes or eyebrows to help keep water out of their eyes. Other participants said they avoided activities that may cause them to lose their wigs, such as going to the beach, riding roller coasters, and participating in sports and outdoor activities.
- **Emotional impacts on parents.** Several parents shared the emotional difficulties they encountered raising children with alopecia. Some parents described a feeling of powerlessness and anguish about not being able to help their children. One parent called the experience “terrifying.” Another parent described watching a child go through alopecia as “one of the hardest things you'll ever go through,” saying, “it tears you apart watching your son get in the bathtub and the hair just . . . go[es] down the drain, and you can't do anything about it.” Some adult participants with alopecia also expressed worry about the future and the possibility of passing alopecia to their children. One participant said that her greatest fear was that “my three beautiful daughters will one day lose their hair and Mommy won't be able to explain why.”

In addition to describing the emotional, social, and physical impacts of alopecia, some participants focused on developing personally to overcome the emotional burden of alopecia. One participant said that the bullying and stigma of alopecia “made me the most confident person in the room because I was stronger than that.”

Topic 2: Patient Perspectives on Treatments for Alopecia Areata

The second discussion topic focused on patients' experiences with therapies used to treat their alopecia. Five panelists (Appendix 2) provided comments to start the dialogue:

- A young teenage woman who was diagnosed with alopecia at age 10, who experienced a wide range of prescription drug and nondrug therapies in her search for an effective treatment.
- An 18-year-old young woman who was first diagnosed around age 13, who also experienced a range of prescription drug therapies.
- A 33-year-old man who has had alopecia areata since age 13, and who has only received treatment for his eyebrows.
- A woman in her 20's who has had alopecia since age 4, and who has visited numerous dermatologists and other doctors while looking for effective treatments.
- A 37-year-old woman who was diagnosed with alopecia at age 17, and initially sought medical treatment, but who then did not seek treatment for 11 years.

In the large-group facilitated discussion that followed, patients and patient representatives discussed their experiences with prescription drugs, medical procedures, and non-drug therapies. Overall, participants reported feelings of frustration at the lack of treatment options available for alopecia. Participants described most of the existing treatment options, especially corticosteroids, as being either ineffective or only temporarily effective, and paired with too many downsides. Participants emphasized the need for additional treatment options for their condition. Participants' perspectives on the benefits and downsides of their therapies, as well as what they would look for in an ideal treatment, are summarized below.

Perspectives on current treatments

Participants described a range treatment approaches they used when looking for a method to help manage their alopecia. Almost all participants reported (Appendix 3, Q11) use of prescription drugs such as corticosteroids or other topical treatments (such as minoxidil, anthralin, immunotherapy (such as diphencyprone/DPCP). In addition, participants reported using cosmetic and nondrug therapies such as wigs, hats, and sunscreen as part of their treatment regimen.

Prescription Drugs: Corticosteroids

The most commonly used type of prescription medication participants reported using was corticosteroids. This included topical, injectable, and oral corticosteroids. Many of the participants who reported using corticosteroids stated that they often were ineffective and caused significant downsides. Many participants shared receiving injections of corticosteroids soon after their diagnosis, and would receive large numbers of injections, typically directly to the scalp. Some participants reported temporary success slowing or halting the rate of hair loss with these treatments. Other participants stated that corticosteroids were the only treatment option that worked for them, and that they experienced some regrowth after receiving injections. Many of the participants, however, had little or no response to

corticosteroid use. These participants called corticosteroids “ineffective,” and “not a viable treatment option,” saying they left their alopecia “not well managed.”

Participants also discussed some of the downsides of their corticosteroid use, focusing primarily on the downsides associated with the injectable corticosteroids. Participants described needing dozens of injections monthly, frequently causing significant pain. One participant described the process as “torture,” saying she “couldn't sleep because I couldn't lie my head on the pillow [after].” Another participant said her injections sometimes came “hundreds at a time” and were “incredibly painful.” Other downsides participants mentioned were difficulty getting to hospitals to receive shots, needing to leave class or work every month to get the injections, and difficulty knowing if treatments were helping.

Other prescription & nonprescription medication

Participants reported using a number of other prescription and nonprescription drug treatment options, including:

- **Topicals** – Several participants stated that they had tried topical ointments, shampoos, and other treatments besides topical corticosteroids. Participants reported trying several different kinds of topical treatments with little success. One participant said that she and her mother had “slowly worked down the line of topical that were offered by our dermatologists” but did not achieve significant results. Most participants did not report experiencing significant side effects or downsides as a result of their topical medications, although one participant said that the smell of topical shampoos was particularly bad. Several participants briefly mentioned using Rogaine, but none mentioned experiencing success with hair regrowth.
- **Immunosuppressants** – Several participants reported trying various kinds of immunosuppressants, such as methotrexate and tacrolimus. Few participants stated that these treatments were highly effective, although one participant said that after a year of treatment that he had regrown “maybe a fourth of an inch growth scattered around my head.” Some parents shared their reluctance to administer immunosuppressant or chemotherapy drugs to teenage children, but stated they were “left with no other options” after other treatments failed to work. Several participants experienced side effects as part of their treatment regimen, including severe itching, blistering and pus, fatigue and lack of energy, stomach pain, and constantly feeling sick and drowsy.
- **Xeljanz** – Several participants noted that they had achieved some success in hair regrowth with the drug Xeljanz. Some participants described their experiences in a positive light, saying that they had regrown scalp hair, eyebrows, and eyelashes to varying degrees. One participant called it “a chance to live like a normal teenager.” Another said that for the first time, “I have hope again that I will have my hair back.” Other participants addressed the potential downsides of Xeljanz, including two participants whose doctors did not prescribe the drug due to risk of infection, and one participant who is taking the drug but requires monitoring to ensure serious side effects do not occur.
- **Other medications** – Other medications participants mentioned include antidepressants, adrenaline, cryotherapy, and triamcinolone acetonide.

Cosmetics (Wigs, hats)

Many of the participants who attended the meeting discussed their experiences with cosmetic enhancements, including the use of wigs, hats, makeup (such as drawing on eyebrows), and other concealment devices. In response to a polling question (Appendix 3, Q12), 71% of participants reported using temporary cosmetic measures such as wigs and hats. Many participants used these methods regardless of if they were seeking prescription drug therapy. Participants had mixed reactions to wigs. For some, wigs were an essential aspect of their treatment regiment, helping them to go outside and interact with people. As one participant put it, “wearing a wig was the only real solution.” Another participant called her scarves and fabrics “lifesavers.” Two other participants shared their experiences using hair extensions after experiencing regrowth, calling them important aspects of their cosmetic options. However, participants also highlighted a number of downsides to using wigs. The most commonly mentioned issue was that wigs are not perfectly secure, and often patients risk having them fall or be pulled off. Participants described being unable to participate in activities due to the risk of losing their wigs. Other participants focused on non-physical downsides, such as logistical difficulties of needing to buy and carry around wigs at all times.

Perspectives on non-drug therapies

In response to a polling question (Appendix 3, Q12), many participants indicated they used one or more non-drug therapies in addition to or in place of wigs and hats in order to manage their alopecia. Several participants talked about getting emotional support or therapy as part of their treatment regimen. Some participants described a support system consisting of friends and family. One woman said she was focused on ensuring her son’s “emotional, social, and spiritual health . . . [in order for him] to feel empowered, not victimized, by this ailment.” Others sought professional counseling in order to treat depression or to try and become “very strong . . . emotionally and psychologically,” as one participant put it.

Participants also discussed using oils and sunscreen to manage symptoms of alopecia and protect it from sunburns. Sunscreen in particular was identified as being “necessary” but “annoying,” in order to avoid the high risk of sunburns. Participants stated that they didn’t like sunscreen, particularly when sweating, as it runs into their eyes due to lack of eyebrows to protect them. Other non-drug therapies mentioned included dietary changes, which several participants had tried with some experiencing positive effects unrelated to hair regrowth, supplements, light-based therapy, and other contemporary and alternative therapies.

Perspectives on ideal treatments for alopecia areata

Participants provided a range of perspectives on attributes of an ideal treatment for alopecia areata. Given the current lack of effective treatments for alopecia areata, many participants spoke to a desire for treatments that regrow their hair. One participant said that he would want full regrowth of scalp hair, eyebrows, eyelashes, and facial hair before he would consider his condition “well-managed.” Other participants echoed this, saying that simply stopping the additional loss of hair and maintaining what they currently have would not count as meaningful benefit to them. One participant said she wouldn’t consider a new treatment unless it would produce 90% hair regrowth.

Some participants also stated that they wanted to avoid some of the downsides of current treatments, especially the need for injections and numerous visits to doctors’ offices. Participants stated that they

would prefer oral medications with fewer side effects. One parent expressed this sentiment by saying, “We don't want an injection. I don't want to put something in my child's head that's going to hurt him.” Another participant stated that they would prefer an oral treatment “with limited doctor visits so I don't have to miss too much school.”

To help guide the discussion, participants were asked to imagine a scenario in which they were invited to participate in a clinical trial to study an experimental treatment for alopecia areata (see full text in Appendix 3). This experimental treatment is a weekly self-injection. Early research in animals and people show that this treatment may reduce patchy hair loss on the scalp by up to 30% in some people. More common side effects of this therapy may include fatigue, headaches, weight gain, sore throat, and gastrointestinal issues. Rarer but more serious side effects may include liver problems, cancer, stroke, infertility, or birth defects.

Participants were asked to comment on the first thoughts that came to mind as they heard this scenario. Overall, participants expressed little interest in the hypothetical trial. The primary reason participants gave for this was that 30% reduction in patchy hair loss was not very clinically meaningful for them. In addition, participants did not want to have to take weekly injections, especially not for pediatric patients with alopecia. Finally, several patients expressed significant concerns about the list of both common and rare side effects. FDA then followed up by changing the scenario to be a 50% reduction in patchy hair loss. Participants generally had the same response to this new scenario as the original scenario. Participants also wanted more information about this hypothetical trial, including how serious the potential risks were and how likely it was to experience them.

Summary of Comments Submitted to the Public Docket

One hundred and thirty-six comments were submitted to the public docket that supplemented the Patient-Focused Drug Development public meeting on alopecia areata. Most comments were submitted by patients and caregivers; some comments were submitted by health care providers, professional organizations, patient groups and expert researchers, including: National Alopecia Areata Foundation (NAAF; including a survey), LEO Pharma, Pediatric Dermatology Research Alliance, Bald Girls do Lunch (including comments from thirty individuals), and the American Academy of Dermatology Association. The submitted survey² examined patients’ and caregivers’ perspectives on their most significant symptoms, the impact of alopecia on quality of life, and treatment options.

Overall, the comments received in the docket reflected the experiences and perspectives shared during the public meeting via web and in-person. The following highlights of these comments, with a focus on experiences or perspectives that were not raised or addressed in detail at the meeting.

² Survey comments may be viewed within the Federal Register Public Docket Comments: <https://www.regulations.gov/docket?D=FDA-2017-N-3067>. FDA has not conducted a thorough review of the design, conduct or analysis of these surveys. This report may reference select survey results, which should be considered illustrative of results either reiterated or expanded upon input from the September 11, 2017 meeting.

Submitted comments on symptoms of alopecia areata

Comments submitted to the public docket emphasized the psychological, physical, and economic impact of alopecia. Docket commenters identified all the symptoms of alopecia that were discussed during the public meeting as well as the additional symptom of nail changes and pitting. Symptoms were also addressed through the submitted surveys. For example, as in the public meeting, hair loss from the scalp and eye area, as well as emotional and psychological impacts such as anxiety and depression, were identified as significant burdens in the National Alopecia Areata Foundation survey. Docket commenters provided many insightful descriptions of the specific ways in which their symptoms manifest. A few select examples are presented below:

- **Scalp hair loss.** Commenters described patchy, progressive, and complete scalp hair loss. Two-thirds of respondents to the NAAF survey named scalp hair loss as their most bothersome symptom. Initial hair loss was often described as sudden and rapid, such as for one commenter: “I lost all the hair on my head in 10 days, 9 months ago. It was the most traumatic experience of my life.” Many commenters talked about cycles of hair loss and regrowth, often getting progressively worse. For example, one commenter talked about hair loss after the death of her father, the birth of her children, and a traumatic accident.
- **Eyebrow, eyelash and nasal hair loss.** Several commenters described losing eyelashes and eyebrows and the cosmetic and surprising impact of this loss. One commenter stated, “most people don’t realize it but God gave us eyebrows and eye lashes for a reason, along with nasal hair.” From another commenter, “Eyelashes protect your eyes from foreign matter. Nasal hair protects your nose from pollens, etc. When you lose it all nothing is ever the same again.”
- **Anxiety and depression.** A significant number of commenters described developing anxiety and depression after developing alopecia. From the NAAF survey, approximately a third of alopecia patients surveyed received mental health treatment. One commenter described the condition as follows: “Most sufferers would acknowledge that the mental health burdens that alopecia carries could be disproportionate to the disease itself, but there is a real argument for the psychological impact in fact being the disease.” From another commenter: “From fear of being revealed to anxiety over relapse to depression to suicidal ideation, the mental [issues] are the most important part of this disease.”

Submitted comments on the overall impact of alopecia areata on daily life

The docket comments reflected the input received during the meeting related to the debilitating emotional impact of alopecia on patients’ daily lives, and its significant toll on patients and their families.

- **Emotional.** Almost every commenter described an emotional impact, both on the individual and on their family members. For example:
 - “This condition has devastating effects on self-image and emotional well-being.”
 - “Sadness, anxiety, and deep feelings of helplessness have impacted not only [my daughter], but our entire family.”
 - “This disease is one of constant humiliation, which creates a deep sense of sadness and depression.”
 - “But the biggest tragedy of alopecia is that it can rob children of their true potential.”

- “It is extremely difficult to see your loved ones being affected by the disease to the point that it affects all their interactions and who they are as a person to the core.”
- **Stigma and bullying.** Commenters, including patients and caregivers of patients of all ages, described stigma and bullying because of alopecia. Several pediatric patients reported withdrawing from school because of stigma and bullying, but adult patients also described forms of bullying. For example, one commenter said, “I am a mom of young kids. Moms on the playground gossip.”
- **Impact on social life and relationships.** Several commenters mentioned avoiding social interaction and romantic relationships because of anxiety surrounding hair loss. One commenter stated, “In adulthood, I feel restricted from fully engaging in and pursuing intimate relationships due to the unsightly nature of my condition.” Several expressed gratitude for already having a partner: “Luckily for me I am older and I am in a relationship with a man who loves me for who I am.”

Submitted comments on current treatments for alopecia areata

The submitted comments about experiences with treatments were similar to those expressed at the public meeting. There was a high degree of frustration with the ineffectiveness of current treatments, especially given the cost and negative side effects. From one commenter, “one of the worst aspects to this disease is, because there is no cure, there's also no shortage of scammers online pedaling their snake oil.” In the NAAF survey, more than half of respondents reported using no treatment or only dietary changes and supplements.

- **Steroids.** Corticosteroids, including cortisone, was the most commonly mentioned oral or injected medication, although most commenters felt they were ineffective and had significant risks and downsides including pain, skin thinning, and more serious side effects. For example, “I started to lose my hair in patches and went to the doctor for corticosteroid shots. They worked for a while and my hair grew back. It then fell out faster than it could grow back so I gave up.” From another commentator, “I have had some regrowth of pure white hair (it was salt and pepper when it fell out) but hair did not regrow in the areas where I received the most steroid injections. The skin on those sections of my scalp is very thin as a side effect of the injections.”
- **Topical.** Some commenters reported successful regrowth, but most communicated that the available topical treatments were ineffective, became less effective over time, hair loss would return after stopping the treatment, or there were negative side effects. For example, “I used a noxious purple creme prescribed by my Emory treating dermatologist. It was intended to irritate my scalp and encourage new hair growth. It was so unpleasant I stopped it and let the bald patches run their course.” Use of topical minoxidil was also reported, although most commenters stated that it was ineffective.
- **Wigs and makeup.** Most commentators wrote about using wigs, false eyelashes, and makeup. Many talked about the negatives of wearing a wig in addition to frustration with the cost—particularly because some insurance companies cover wigs for hair loss associated with other conditions. Commentators also did not see wigs as optional. For example, “It is critical I look put together and professional for my job, which means money spent on efforts to hide my

disease with wigs, fake lashes and brows, alternative as well as prescription treatments—these all cost money, most of it out of pocket.”

- **Other therapies.** Commenters described several other drug and non-drug treatments consistent with those described during the in-person meeting. Off-label use of Xeljanz (tofacitinib) and other JAK inhibitors was frequently mentioned. Commenters described significant improvement in their condition but some also expressed unease at the possible side effects. Many other commenters mentioned JAK inhibitors only to recommend FDA approval and expanded insurance coverage.

Non-drug treatments mentioned included dietary and lifestyle changes, supplements, and light-based therapy. Several commenters were willing to adopt extremely restrictive diets, particularly gluten free diets, in the hopes of hair regrowth. Some reported success but many did not.

Submitted comments on ideal treatments

Commenters were generally in agreement on the ideal treatment effect—full or close to full regrowth and prevention of future hair loss—however, commenters differed in tolerance for side effects and treatment downsides. On efficacy, “Unless it provides enough regrowth for her to not have to wear a wig, it is not worth potential side effects - what good is a little bit of regrowth, if you still have to cover your head or go out with a black and white patchy appearance on our head.”

Risk tolerance varied significantly among commenters. Some commenters were very tolerant of risk: “The level of acceptable side effects for a new drug should be the same threshold that might be applied to pharmaceutical treatments for unipolar depression with suicidal ideation.” Others, including many caregivers of pediatric patients, were more cautious. For example, “I’m not interested in risking side effects by shutting down my immune system so my hair will grow back,” and, “as a mother of a young child, I am making decisions now on her behalf – for the benefit of her future self. Certain treatments I would wait until she is old enough to decide for herself.”

Many commenters expressed a preference for oral or even injected medication over topicals: “The ideal treatment is in a pill. Even an injection once a month would be okay for me. Topical creams aren’t really ideal as you can’t cover up the scalp until they dry. And creams make the scalp “slimy” which causes wig slippage.”

Conclusion

This Patient-Focused Drug Development meeting on alopecia provided FDA the opportunity to hear from patients and caregivers directly about the symptoms and the health effects that matter most to patients, the impact that alopecia areata has on daily life, and what factors patients consider when selecting a treatment. Alopecia areata is a serious condition with physical, emotional, and social impacts. Patient perspectives play a critical role when considering how to best facilitate drug development. FDA recognizes that patients have a unique ability to contribute to our understanding of their condition and treatment management, which is important to our role, and that of others, in the drug development process.

The perspectives shared by participants, both adult and pediatrics, at this meeting provided a vivid examination of the challenges and burdens facing patients with alopecia. These discussions clearly conveyed that alopecia areata can have a debilitating emotional and psychological impact on patients which goes beyond the loss of hair. They also conveyed the clear need for more therapeutic options for all age groups.

FDA is grateful to the patients and caregivers who thoughtfully and bravely provided such personal insight into their lives. Through this meeting, FDA learned more about what matters most to patients and caregivers regarding the alopecia on daily life. As Dr. Tatiana Oussova voiced during her closing remarks, “FDA looks forward to incorporating what we have learned today into the agency's thinking and understanding of how patients feel benefits and risks of alopecia areata treatments.” FDA shares the patient community’s desire and commitment to advancing the development of safe and effective treatment options.

Appendix 1: Meeting Agenda

Public Meeting on Patient-Focused Drug Development for Alopecia

September 11, 2017

12:00 – 1:00 pm	Registration
1:00 – 1:05 pm	Welcome Meghana Chalasani <i>Office of Strategic Programs (OSP), Center for Drug Evaluation and Research (CDER), FDA</i>
1:05 – 1:10 pm	Opening Remarks Tatiana Oussova, MD <i>Deputy Director for Safety, Division of Dermatology and Dental Products (DDDP), CDER, FDA</i>
1:10 – 1:20 pm	Overview of FDA’s Patient-Focused Drug Development Initiative Theresa Mullin, PhD <i>Director, OSP, CDER, FDA</i>
1:20 – 1:30 pm	Overview of Alopecia Areata and Current Treatment Options Melissa Reyes, MD <i>DDDP, CDER, FDA</i>
1:30 – 1:35 pm	The Road from PFDD Meetings to Clinical Trial Endpoints Michelle Campbell, PhD <i>Clinical Outcome Assessments Staff, OND, CDER, FDA</i>
1:35 – 1:40 pm	Overview of Discussion Format Meghana Chalasani <i>OSP, CDER, FDA</i>
1:40 – 2:00 pm	Panel #1 Discussion on Topic 1: Health Effects and Daily Impacts Topic 1: A panel will provide comments to start the discussion on health effects and daily impacts of alopecia areata
2:00 – 2:45 pm	Large-Group Facilitated Discussion: Topic 1 Patients and patient representatives in the audience will be invited to add to the dialogue
2:45 – 3:00 pm	Break
3:00 – 3:20 pm	Panel #2 Discussion on Topic 2: Current Approaches to Treatment Topic 2: A panel will provide comments to start the discussion on current approaches to treating alopecia areata
3:20 – 4:30 pm	Large-Group Facilitated Discussion: Topic 2 Patients and patient representatives in the audience will be invited to add to the dialogue
4:30 – 4:55 pm	Open Public Comment

4:55 – 5:00 pm

Closing Remarks

Tatiana Oussova, MD
DDDP, CDER, FDA

Discussion Questions

Topic 1: Health effects and daily impacts that matter most to patients

1. Of all the symptoms or disease manifestations that you experience because of your condition, which **1-3 symptoms or manifestations** have the most significant impact on your life? (Examples may include location or type of hair loss [i.e. loss of hair on scalp, loss of eyebrows, loss of all hair on body patchy hair loss], nail changes, hair quality upon regrowth)
2. Are there specific activities that are important to you but that you **cannot do at all or as fully as you would like** because of your condition? (Examples of activities may include daily hygiene, engagement in personal relationships, participation in sports or social activities, completion of school or work activities, etc.)
3. How do your symptoms and their negative impacts affect your daily life on the best days? On the worst days?
4. How has your condition **changed over time**?
 - a) Would you define your condition today as being well-managed?
5. What **worries you most** about your condition?

Topic 2: Patients' perspectives on current approaches to treatment

1. **What are you currently doing** to help treat your condition or its symptoms? (Examples may include prescription medicines, over-the-counter products, and non-drug therapies such as diet modification)
 - a) How has your treatment regimen changed over time, and why?
2. **How well** does your current treatment regimen control your condition?
 - a) How well have these treatments worked for you as your condition has changed over time?
3. What are the most significant **downsides to your current treatments**, and how do they affect your daily life? (Examples of downsides may include going to the clinic for treatment, time devoted to treatment, side effects of treatment, route of administration, etc.)
4. What specific things would you look for in an **ideal treatment** for your condition?
 - a) What would you consider to be a meaningful improvement in your condition that a treatment could provide?
5. What factors do you take into account when making decisions about selecting a course of treatment?

Appendix 2: Patient and FDA Panel Participants

Patient Panel, Topic 1

- Samantha Cunningham - Patient
- Elizabeth (Liz) DeCarlo - Patient
- Sara and Harrison Evans – Caregiver and Patient
- Deirdre Nero - Patient
- Megha Thyagarajan - Patient

Patient Panel, Topic 2

- Andrea Alberti - Patient
- Tyrone Folliard-Olson - Patient
- Katie Krueger - Patient
- Katie - Patient
- Gracielle Palma - Patient

FDA Panel

- Kendall Marcus (Division of Dermatology and Dental Products (DDDP), Office of New Drugs (OND), Center for Drug Evaluation and Research (CDER))
- Jill Lindstrom (DDDP, OND, CDER)
- Melinda McCord (DDDP, OND, CDER)
- Tatiana Oussova (DDDP, OND, CDER)
- Melissa Reyes (DDDP, OND, CDER)
- Neil Ogden (General Surgery Devices Branch 1, Center for Devices and Radiological Health)
- Michelle Campbell (Clinical Outcomes Assessment Staff, OND, CDER)
- Theresa Mullin (Office of Strategic Programs, CDER)

Appendix 3: Meeting Polling and Scenario Questions

The following questions were posed to in-person and web meeting participants at various points throughout the September 11, 2017 Patient-Focused Drug Development on Alopecia Areata public meeting. Participation in the polling questions was voluntary. The results were used as a discussion aid only and should not be considered scientific data.

Demographic Questions

1. Where do you live?
 - a. Within Washington, D.C. metropolitan area (including the Virginia and Maryland suburbs)
 - b. Outside of the Washington, D.C. metropolitan area

2. Have you ever been diagnosed as having alopecia areata?
 - a. Yes
 - b. No

3. What is your age?
 - a. Younger than 6 years old
 - b. 6 – 12 years old
 - c. 13 – 17 years old
 - d. 18 – 29 years old
 - e. 30 – 39 years old
 - f. 40 – 49 years old
 - g. 50 years old or older

4. Do you identify as:
 - a. Female
 - b. Male
 - c. Other

5. Where is your alopecia areata located? **Check all that apply.**
 - a. Scalp
 - b. Beard, side burns or moustache
 - c. Eyebrows
 - d. Eyelashes
 - e. All areas
 - f. Other areas not mentioned (nails)

Questions for Topic 1: Health Effects and Daily Impacts

6. PEDIATRIC AND YOUNG ADULT: What aspects of your alopecia areata are most bothersome to you? **Please choose up to three answers.**
- Patchy hair loss
 - Widespread hair loss
 - Location of my hair loss
 - Repeated episodes of hair loss and regrowth
 - Unpredictability of when or where hair loss will occur
 - Skin sensitivity (such to sun, temperature, or sweat)
 - Itching, burning or stinging
 - Brittle, spotted, pitted, rough, or ridged nails
 - Other health effects that may be associated (e.g., thyroid disease, vitiligo)
7. ADULTS: What aspects of your alopecia areata are most bothersome to you? **Please choose up to three answers.**
- Patchy hair loss
 - Widespread hair loss
 - Location of my hair loss
 - Repeated episodes of hair loss and regrowth
 - Unpredictability of when or where hair loss will occur
 - Skin sensitivity (such to sun, temperature, or sweat)
 - Itching, burning or stinging
 - Brittle, spotted, pitted, rough, or ridged nails
 - Other health effects that may be associated (e.g., thyroid disease, vitiligo)
8. PEDIATRIC AND YOUNG ADULT: What do you find to be the most bothersome impacts of alopecia areata on your daily life? **Please choose up to three answers.**
- Time or cost of daily maintenance
 - Refraining from activities (such as school, work, sports, social activities)
 - Self-consciousness or embarrassment
 - Bullying or discrimination
 - Impact on relationships with family and friends
 - Impact on sexual intimacy
 - Physical impacts (such as pain or difficulty concentrating)
 - Emotional or psychological impacts (such as anxiety, fear, depression, etc.)
 - Other impacts not mentioned

9. ADULTS: What do you find to be the most bothersome impacts of alopecia areata on your daily life? **Please choose up to three answers.**
- a. Time or cost of daily maintenance
 - b. Refraining from activities (such as school, work, sports, social activities)
 - c. Self-consciousness or embarrassment
 - d. Bullying or discrimination
 - e. Impact on relationships with family and friends
 - f. Impact on sexual intimacy
 - g. Physical impacts (such as pain or difficulty concentrating)
 - h. Emotional or psychological impacts (such as anxiety, fear, depression, etc.)
 - i. Other impacts not mentioned

Questions for Topic 2: Current Treatment Approaches

10. PEDIATRIC AND YOUNG ADULT: Have you ever used any of the following medical products (drug therapies or medical devices) to treat your alopecia areata? **Check all that apply.**
- a. Topical corticosteroids
 - b. Injectable corticosteroids
 - c. Oral corticosteroids
 - d. Other topical treatments (such as minoxidil (Rogaine), anthralin, immunotherapy (such as diphencyprone/DPCP))
 - e. Immunomodulatory therapies (such as Xeljanz, Jakafi, etc.)
 - f. Light treatment (laser, phototherapy)
 - g. Other prescription medicine (such as psychiatric or pain medication)
 - h. Other drug therapies or medical devices not mentioned
 - i. I'm not using any drug therapies or medical devices
11. ADULT: Have you ever used any of the following medical products (drug therapies or medical devices) to treat your alopecia areata? **Check all that apply.**
- a. Topical corticosteroids
 - b. Injectable corticosteroids
 - c. Oral corticosteroids
 - d. Other topical treatments (such as minoxidil (Rogaine), anthralin, immunotherapy (such as diphencyprone/DPCP))
 - e. Immunomodulatory therapies (such as Xeljanz, Jakafi, etc.)
 - f. Light treatment (laser, phototherapy)
 - g. Other prescription medicine (such as psychiatric or pain medication)
 - h. Other drug therapies or medical devices not mentioned
 - i. I'm not using any drug therapies or medical devices

12. Besides the therapies mentioned previously, what else are you doing to manage any symptoms or manifestations you experience because of your alopecia areata? **Check all that apply.**

- a. Temporary cosmetic measures (e.g., wig, hat, hair weave, makeup, etc)
- b. Cosmetic procedures (such as hair transplants or permanent makeup)
- c. Dietary and herbal supplements
- d. Diet modifications
- e. Over the counter products
- f. Complementary or alternative therapies
- g. Other therapies not mentioned
- h. I am not doing or taking any therapies to treat my alopecia areata

13. PEDIATRIC AND YOUNG ADULT: For the therapies you use, what do you consider to be the most burdensome downsides? **Please choose up to three answers.**

- a. How the medication is administered (such as a topical cream or an injection)
- b. Difficulty in accessing treatment (for example, insurance)
- c. The treatment only provides minimal benefit
- d. The treatment is effective only for a short-term
- e. Change in the texture or color of my hair
- f. Bothersome side effects of the treatment
- g. Concern about serious risks of the treatment
- h. Uncertainty about long-terms effects of treatment
- i. Other downsides not mentioned

14. ADULTS: For the therapies you use, what do you consider to be the most burdensome downsides? **Please choose up to three answers.**

- a. How the medication is administered (such as a topical cream or an injection)
- b. Difficulty in accessing treatment (for example, insurance)
- c. The treatment only provides minimal benefit
- d. The treatment is effective only for a short-term
- e. Change in the texture or color of my hair
- f. Bothersome side effects of the treatment
- g. Concern about serious risks of the treatment
- h. Uncertainty about long-terms effects of treatment
- i. Other downsides not mentioned

SCENARIO:

Imagine that you have been invited to participate in a clinical trial to study an experimental treatment for alopecia areata. Your doctor believes that you may be a good candidate for this medication.

This experimental treatment is a weekly self-injection. Early research in animals and people show that this treatment may reduce patchy hair loss on the scalp by up to 30% in some people. The purpose of this study is to better understand how well this treatment works and its safety.

More common side effects of this therapy may include fatigue, headaches, weight gain, sore throat, and gastrointestinal issues. Rarer but more serious side effects may include liver problems, cancer, stroke, infertility, or birth defects.

This clinical study will last 18 months and clinic visits will occur every month for the first 12 months, and once every 2 months in the remaining 6 months. Visits will involve routine blood work.

15. Based only on the information presented in the scenario, would you consider participating in this clinical trial? **Please choose one response.**
- a. Yes, I would consider participating in this study
 - b. No, I would not consider participating in this study
 - c. I'm not sure

Appendix 4: Incorporating Patient Input into a Benefit-Risk Assessment Framework for Alopecia

Introduction

Over the past several years, FDA has developed an enhanced structured approach to benefit-risk assessment in regulatory decision-making for human drugs and biologics³. The Benefit-Risk Assessment Framework involves assessing five key decision factors: *Analysis of Condition*, *Current Treatment Options*, *Benefit*, *Risk*, and *Risk Management*. When completed for a particular product, the Framework provides a succinct summary of each decision factor and explains FDA's rationale for its regulatory decision.

In the Framework, the *Analysis of Condition* and *Current Treatment Options* rows summarize and assess the severity of the condition and therapies available to treat the condition. The assessment provides an important context for drug regulatory decision-making, including valuable information for weighing the specific benefits and risks of a particular medical product under review.

The input provided by patients and patient representatives through the Patient-Focused Drug Development Public Meeting for Alopecia and docket comments will inform our understanding of the *Analysis of Condition* and *Current Treatment Options* for this disease.

The information in the top two rows of the sample framework for alopecia below draws from various sources, including what was discussed at the Patient-Focused Drug Development Public Meeting for Alopecia Areata held on September 11, 2017. This sample framework contains the kind of information that we anticipate could be included in a framework completed for a drug under review for alopecia. This information is likely to be added to or changed over time based on a further understanding of the condition or changes in the treatment armamentarium.

³ Commitments in the fifth authorization of the Prescription Drug User Fee Act (PDUFA V) include further development and implementation of the Framework into FDA's review process. Section 905 of the FDA Safety and Innovation Act also requires FDA to implement a structured benefit-risk framework in the new drug approval process. For more information on FDA's benefit-risk efforts, refer to <http://www.fda.gov/ForIndustry/UserFees/PrescriptionDrugUserFee/ucm326192.htm>.

Dimensions	Evidence and Uncertainties	Conclusions and Reasons
Analysis of Condition	<ul style="list-style-type: none"> - Alopecia is an autoimmune disease which targets the hair follicles, causing hair loss. -In the United States, approximately 500,000 individuals have alopecia areata. -Alopecia areata tends to occur in three different patterns: focal, totalis, and universalis. Focal pattern alopecia consists of one or multiple hairless patches on the scalp. Alopecia totalis consists of total hair loss on the scalp. Alopecia universalis consists of complete hair loss on all parts of the body. -Patients with alopecia may experience periods of hair regrowth and hair loss throughout the course of the disease. Alopecia primarily affects hair follicles, but it can also affect fingernails, causing small indentations and roughness. -Most individuals experience onset of alopecia by the age of 40, with nearly half experiencing onset before the age of 20. For patients with alopecia totalis and universalis, onset is typically before the age of 30. In children, the mean age of onset is between 5 and 10 years of age. - Patient input at the September 11 Public Meeting emphasized that alopecia has a significant emotional, psychological, and social burden on daily life. Patients reported feeling depression and anxiety, and described experiencing stigma, isolation, and bullying as a result of their condition. - <i>See the Voice of the Patient report for a more detailed narrative.</i> 	<p>Alopecia is a chronic disease that places a significant burden on daily life and has a severe impact on how patients feel and function.</p> <p>Symptoms can have considerable detrimental effects on a patient’s quality of life, emotional wellbeing, social interactions, and ability to live a normal life.</p>
Current Treatment Options	<ul style="list-style-type: none"> - There is no cure and no FDA-approved treatments for alopecia. - There are several treatments used off-label to manage alopecia. The most common treatment option is corticosteroid use, either administered as an injection intradermally into the skin, or applied topically as a cream, ointment, or gel. - Second-line treatment options include calcineurin inhibitors, immunotherapies, and hair-growth-stimulating solutions. -Local treatments are usually used as a first-line or for people who have limited hair loss. Systemic therapies are considered for patients who have more extensive hair loss, or who have a rapid progression of alopecia. - <i>See the Voice of the Patient report for a more detailed narrative.</i> 	<p>There is a significant unmet medical need for treatments for patients with alopecia. No approved therapies exist, and existing off-label therapies do not adequately manage the condition for most patients.</p> <p>Participants at the public meeting highlighted the lack of approved and effective therapies for alopecia, describing their condition as poorly managed by existing off-label therapies.</p>