

OPENBIOME

Stool Banking Operations

How to Recruit and Engage Stool Donors
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Abstract

Stool banking depends on a pool of committed and healthy stool donors. Building a sustainable donor pool can be difficult as less than 3% of prospective donors may pass health screenings, necessitating a large recruitment effort. This paper reviews several considerations for recruiting stool donors including guidance on advertising, designing incentives, and maintaining clear communication with prospective and active donors

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Introduction

Like blood banks, stool banks rely on donors to provide material that is processed for medical use. However, the logistics of stool banking differ from those of blood banking in several key ways, listed below, which affect strategies for donor recruitment.

Timing and Commitment: To maximize economy of scale, stool banks require a long-term commitment from stool donors. Unlike blood donors, who are required to wait at least 8 weeks between donations, stool donors may donate once a day, or even multiple times a day, if their schedule permits. Because the cost of donor screening is spread out across the totality of a donor's stool donations, and because aspects of donor screening require multiple interactions with the donor at timepoints before and after donation, stool banks are incentivized to find highly committed donors who are motivated to donate multiple times per week for several weeks.

Donating stool also requires the commitment of changing one's daily routine. Because maintaining appropriate chain of custody requires observed/onsite donations, stool donors must coordinate their bowel movements and schedule to donate at OpenBiome's facility. Common donation times include before and after work, although donors who work nearby may also donate during lunch breaks.

Selectivity: Prospective stool donors must pass rigorous health screening before qualifying to donate stool. Donors are screened for known and potentially transmissible disease. Out of an abundance of caution, any health conditions that are linked to the microbiome—such as autoimmune disease and certain allergies, metabolic disease, or neuropsychiatric disorders—are disqualifying. In most cases, whether the microbiome can cause disease has not been established, but until causality is understood, potentially microbiome-mediated diseases are excluded.

Overall, only 3% of applicants pass OpenBiome's health screening. Because of this selectivity, building a stool bank requires a large recruitment effort and follow-up efforts to maintain relationships with donors for as long as possible. As well, donors should be screened through a phased approach such that only the most promising candidates undergo in-person evaluation and stool and serological testing.

More information on optimizing multiple rounds of donor screening can be found in our white paper titled "Logistics of Donor Screening".

Key Takeaway

Stool donor recruitment should aim to engage applicants who are interested in a long-term commitment that involves making donating stool a regular part of their daily routine. Because finding qualified donors is rare, care should be taken to engage stool donors for as long as possible.

Donor Recruitment Pipeline

Donor recruitment may take several weeks due to health exams and lab testing. During this time, clear communication to prospective donors regarding where they are in the recruitment process and next steps to take is important to minimize application attrition.

The general outline of OpenBiome's donor recruitment process is shared below as an example of how donor recruitment and screening can be coordinated.

Step 1: Initial Engagement via Advertisement and Online Health Screening

- The prospective donor responds to an OpenBiome advertisement. Advertisements can either be physical, such as signage at a bus stop, or digital such as a digital advertisement on social media or search engines. In both cases, applicants were instructed to “sign up” or “learn more” at OpenBiome's stool donor webpage.
- Applicants visiting the stool donor webpage are instructed to take an online health questionnaire designed to gather basic contact information and check for the most common reasons for exclusion. Before taking the online health questionnaire, applicants are informed that their responses will remain protected and will not be shared with another organization.
- The online webpage also provides more information on FMT and *C. difficile* with emphasis on the potential impact a single stool donor can have on hundreds of patients who have exhausted standard treatment options.
- For more information on OpenBiome's Online Health Screening Questionnaire, please consult our “[Clinical Considerations for Donor Screening](#)” White Paper.

Time: Not counting the time required for applicants to visit OpenBiome's webpage and complete the health questionnaire, this step takes between 1-2 days.

Exclusion: About 35 percent of prospective donors pass the online health questionnaire.¹

Follow up: If prospective donors pass the initial online health screening, they receive an email, usually within 24 hours, inviting them to schedule an in-person exam. Prospective donors who do not schedule an exam are placed on a follow-up list with reminders sent weekly for approximately one month. Engagement with those who pass the follow-up form is a priority – in the experience of OpenBiome, as many as 74% of applicants who pass the online questionnaire are lost to follow up.

Step 2: In-person clinical assessment

- The prospective donor visits an OpenBiome facility and meets with clinical staff to undergo a 200+ point clinical assessment.
- During their visit, prospective donors provide informed consent using a Stool Donation Agreement as well as raise any questions or concerns they may have.

Time: Depending on the availability of the clinical staff, prospective stool donors usually schedule an in-person clinical assessment within a week or two of receiving their email invitation. The assessment takes about an hour to complete.

Special Consideration: If the clinical staff is booked out for long periods of time, prospective donors may have to wait three to four weeks before an appointment is available. To maintain communication with donors, it may be helpful to put them on a wait list and notify them when more appointments are available. Additionally, stool banks may also reduce their advertising efforts in step 1 so that fewer applicants take the online health screening and are invited in for a clinical assessment.

Exclusion: About 10 percent of all prospective donors pass the clinical assessment.¹ Common clinical reasons for exclusion include atopy, asthma or allergies, receiving medication and supplements, mental health conditions, and infectious disease history. More information on the clinical assessment can be found in our "[Clinical Considerations for Donor Screening](#)" White Paper.

Follow up: If prospective donors pass the in-person clinical assessment, they are invited to provide a blood and stool sample for laboratory testing. Prospective donors have the option of providing blood and stool after their clinical assessment or scheduling another appointment to do so.

Step 3: Laboratory tests

- Prospective donor blood and stool samples are tested for infectious pathogens and other signs of illness.

Time: Depending on the testing facility, laboratory testing may take between one and two weeks to complete.

Exclusion: About 70% of prospective donors pass laboratory testing.¹ More information on laboratory screening can be found in our "[Clinical Considerations for Donor Screening](#)" White Paper.

Follow up: Prospective donors are now qualified to donate stool.

Special Consideration: Stool banking staff should periodically check in with new stool donors to determine if any steps can be taken to make the stool donation process easier for them. New stool donors may also provide valuable information regarding their motivations for donating stool, what aspects of advertising captured their attention, and how communication during the screening process could be improved.

Step 4: New Donor Orientation

- Before they begin donating, new stool donors attend an orientation led by a member of the bank's Donor Operations team.
- The goal of the orientation is to welcome the new stool donor and make sure that they understand their responsibilities. This meeting allows the Donor Operations team to make a personal connection with the donor and reinforce the impact they can have on patients as well as how exceptional they are to have passed the health evaluation. Donors should also understand how and when they will be compensated, the cadence of additional health evaluations, and the importance of alerting the donor staff to any changes in their health.

Time: The orientation lasts between 30 minutes and an hour. The orientation can be held while prospective donors are waiting for their laboratory test results so that, if they pass the lab screens, prospective donors can begin donating stool as soon as possible

Exclusion: All new stool donors should go through an orientation.

Follow up: Stool donors interact with a stool bank's Donor Operations team each time they make an onsite donation. Donors should feel free to bring up any questions or observations they have during each interaction.

Special Consideration: Stool banks should take particular care to explain their compensation scheme. For example, OpenBiome stool donors are only compensated at the end of a 60-day donation window if they complete a second round of health evaluations. OpenBiome makes sure that donors understand the reasoning behind this payment schedule before the donation windows begin so that donors are not surprised or feel taken advantage of. Many OpenBiome donors provide stool over multiple 60-day donation windows; the median length of a donor's enrollment in the stool banking program is 5.8 months (interquartile range 3.2 months to 12.1 months).

Key Takeaway

Stool donor recruitment is a multi-week process with multiple communications to prospective stool donors. Recruitment should be designed to efficiently eliminate prospective stool donors with health conditions that could potentially be transmitted via FMT. During recruitment, stool banks should analyze their recruitment pipeline for bottle

necks and either devote more resources to that step or reduce activity higher up in the pipeline. Because less than 3% of stool donor applicants qualify to donate stool, stool banks looking to grow their donor pool and account for natural donor attrition should aim to have at least 200 prospective donors complete the initial online health screening each week

Incentivizing Stool Donation

According to an OpenBiome survey of stool donors, compensation for donations is a significant motivating factor. The following is a list of considerations when deciding how to compensate stool donors.

1. Amount and Primary Form of Compensation

In general, compensation for donations should be high enough to fairly remunerate donors for the effort it takes to make an on-site donation and participate in the program for a minimum of 60 days, but low enough to avoid coercing donors into donating stool and sharing private health information.

Compensation should be reviewed and approved by the appropriate regulatory bodies. OpenBiome's compensation protocol was reviewed by the New England (Institutional Review Board) IRB.

For most of its history, OpenBiome reimbursed its stool donors 40 dollars per processed donation. In 2020, during the COVID-19 pandemic, this amount was increased to 60 dollars per processed donation.

2. Stool Requirements for Compensation

Due to size (too small) or composition (too watery or too hard), not all stool donations are suitable for processing into FMT treatments. Stool banks should determine whether they will compensate donors for every donation or only donations that are suitable for processing. Compensating donors for every donation is more costly but may incentivize donors to be more active. An analysis of OpenBiome stool donors found that, depending on the donor, as much as 70% of donations were not usable.² For this reason, OpenBiome only compensates donors for donations that are processed.

3. Timing of Compensation

The timing of compensation can be used to incentivize donors to comply with a stool bank's Quality and Safety program. OpenBiome uses bookend screening, where stool donors undergo health tests, including clinical assessment and laboratory screening, at the beginning and end of a 60-day donation window. FMT units derived from stool donations during this window are only qualified for patient use if the donor passes both sets of health tests, and all testing performed in between. (Some laboratory screening, and random health checks, occur at more frequent intervals.) To ensure that donors

complete the second bookend testing, OpenBiome delays compensation until those tests are completed. Stool banks may also consider other compensation schemes such as providing half of the compensation at the time of donation and the remaining compensation after the second screening.

4. Alternate Forms of Compensation

OpenBiome has used other forms of compensation, described below, to incentivize stool donations. These forms of compensation were supplementary to the \$40 donors received per processed donation and used strategically throughout the year to increase stool donations. Stool banks should work with their IRB (or overseeing regulatory body) to ensure additional compensation is not coercive.

Participation Merchandise OpenBiome has also provided branded gifts, valued at approximately 40 to 100 dollars, to provide a more personal touch. This included OpenBiome-branded water bottles, shirts, fleeces, stickers, framed posters, and thank you letters.

Punch/stamp cards: Like punch cards at a café, stool donors receive a card that is stamped for every donation. After earning a certain number of stamps, stool donors are rewarded with a bonus prize in the form of an Amazon gift card.

Competition: Some donors are interested in “gamifying” stool donation by competing to see who can provide the most stool donations or most grams of stool over the span of a week or month. Such competition can also be adjusted to be more cooperative—by setting a goal for the entire donor pool—or inclusive—by setting personal goals for each donor, such as donating 10% more than their monthly average. In the past, OpenBiome has compensated competition winners with gift cards to local businesses and restaurants.

Newsletter and Testimonials: To cultivate and maintain a more personal connection with donors, OpenBiome began a weekly newsletter in 2020. The newsletter expressed gratitude for stool donors’ efforts and updated them on OpenBiome’s progress in manufacturing FMT preparations and treating patients. Newsletters often included patient testimonials sharing their experience with *C. difficile* and FMT (Figure1) as well as more lighthearted fun facts about bacteria and stool.

5. Donor Lounge

Stool banks can make donating stool a more enjoyable process by offering access to a lounge where donors can comfortably spend time while waiting to use the bathroom. Lounges should be cleaned regularly and stocked with snacks, coffee, and tea. Walls or other areas of the lounge can be adorned with patient testimonials, thank you letters, and fun facts about FMT or the microbiome to help reinforce the impact stool donors have on patients.

Key Takeaway

There are many options and approaches to providing compensation for stool donations. Compensation frameworks should be simple enough for donors to understand and be clearly communicated with donors before they begin donating.

Designing Advertisements

Physical and hyper-local digital advertising are a stool bank's primary method of communicating with the public and encouraging them to consider becoming stool donors. A list of considerations for designing advertisement and examples of ad design are reviewed below.

Core Messaging: Donor recruitment advertisements should emphasize the outsized impact that stool donors can have on patients who have exhausted standard treatment options as well as financial compensation for donating stool (Figures 2 and 3). The majority of OpenBiome designs highlight the altruism or heroism of donating stool through the use of cartoon “pooper heroes” (Figures 2-5).

Tone: The tone of the advertisements should be a positive and upbeat with a clear call to action. Assume that viewers may only spend a few seconds looking at the advertisement; visuals and text should be simple and easily understood. OpenBiome ads use brightly colored cartoon images with minimal text (Figures 2 and 3).

Consistency: Although viewers may not immediately respond to a single advertisement, they may begin to recognize the stool bank and think more about becoming a donor after seeing multiple ads. Because of this, advertisements should have consistent messaging and design elements so that they are recognizable and linked in the viewer's mind. OpenBiome's use of cartoon “pooper heroes” across its advertisements has helped build brand recognition (Figures 2-5).

Timeliness: OpenBiome has found that themed advertisements relevant to a specific time outperform more general ads (Figures 4 and 5). Themed ads can be seasonal (e.g., Spring, Summer, Fall, Winter) or reference a specific event (e.g., The Super Bowl). One of OpenBiome's most successful advertisements was Valentine's Day themed.

Placement and Targeting: Historically, OpenBiome has had the most success with advertisements placed on subway cars passing through stations near its donation facility (Figure 2). This is likely due to the fact that people on subways are already travelling past OpenBiome's facility making it easier for them to incorporate stool donation into their daily routine. Other placements for physical ads include bus shelters, bike stations (e.g., Bluebikes hubs), and bus kings.

OpenBiome has also used digital advertising—mainly Facebook and Instagram ads (Figure 3 and 4)—to supplement its physical advertising. During the Covid-19 pandemic,

OpenBiome relied primarily on digital ads. We used Facebook Business tools to target people who are likely to become stool donors by:

1. Creating “look alike audiences” that resembled viewers who had clicked on the advertisement and completed the online health questionnaire.
2. Creating custom audiences of people with interests in the microbiome, *C. difficile*, or biology.
3. Creating custom audiences of people who worked at pharmaceutical companies located near OpenBiome’s donation facility.

From surveys and interviews with stool donors, we observed that the following groups of people comprised a large portion of our stool donor pool.

1. Graduate students, who may have more flexible schedules and be more incentivized by financial compensation.
2. Scientists or researchers, who may have an interest in the microbiome, the research OpenBiome is performing, and may have more patience for the health screening required to become a stool donor.
3. Athletes or physically active people, who may have a higher baseline of health and are more likely to pass the health screening, and who may incorporate stool donation into their workout routine (running or biking to OpenBiome’s donation facility).

In general, most stool donors described the desire to help patients as a primary motivating factor for donating stool but also stated that, due to the effort required to donate stool, they would not be donating stool without financial compensation.

Key Takeaway

While building a donor pool that ranged from 30-70 donors, OpenBiome spent between five thousand and fifteen thousand dollars a month on advertising. Cost-effective outreach to the public depends on designing ads with the appropriate core messaging, tone, consistency, and timeliness that are targetted towards audiences most likely to respond.

Conclusion

Operating a stool bank depends on recruiting stool donors that are not only healthy enough to pass health screenings but also motivated to make multiple on-site stool donations per week for several weeks. Successful recruitment is a multi-step, multi-week effort that includes initial outreach through physical and/or digital advertising, online and in-person health screening, and continued engagement throughout the stool donation process.

Figures

Yesterday, I had a colonoscopy and FMT. I hope it was successful and I wish I could thank whoever donated their stool. This morning was the first time since the original *C. diff* infection, that I was able to enjoy a cup of coffee without becoming sick. I ate both breakfast *and* dinner, and I am still feeling well! I have not been able to say that I feel great for a very long time. I am even starting to feel hopeful – maybe I will be one of OpenBiome’s many success stories.

Figure 1: Patient Testimonial



Figure 2: OpenBiome Subway Advertisement



Caption: A typical stool donor earns \$250/month while helping patients in need. Sign up today!

Figure 3: OpenBiome Facebook Advertisement

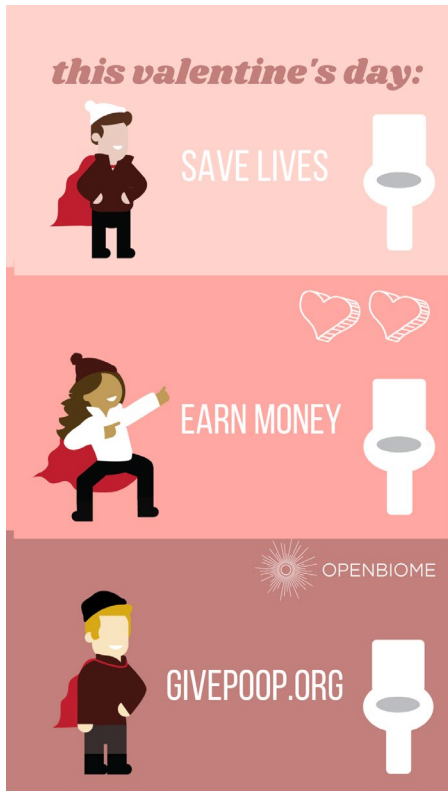


Figure 4: OpenBiome Instagram Advertisement for Valentine's Day



Figure 5: OpenBiome Bus Shelter Advertisement

References

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