



Social Media & Clinical Trial Recruitment

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This white paper explores the efficacy of social media advertising, Facebook in particular, as an engine for clinical trial recruitment. Learn how to leverage the platform's advanced targeting capabilities and massive audience to improve enrollment outcomes while simultaneously reducing operational costs.

Introduction

For years, members of the clinical trials community have been waging an ongoing battle not only against chronic illnesses, but also against skyrocketing R&D costs—and unfortunately in the case of the latter, it's largely been a losing fight.

Today, approximately 30% of new drugs clear Phase I trials, 14% clear Phase II trials, and a mere 9% make it through Phase III trials. Moreover, the approval process can take up to 11 years, which doesn't even include the pre-clinical research phase (Figure 1).¹

A recent study tallied R&D spending from 12 leading Pharma companies between 1997 and 2011, which amounted to a whopping \$802 billion for 139 new drugs—or about \$5.8 billion per drug.²

Of course, these problems can't be traced back to a single cause—a variety of factors, such as increasingly stringent regulations, problems with patient retention and adherence, and IT inefficiencies can contribute to the untenably high cost of securing FDA approval. However, patient recruitment remains one of the largest obstacles to keeping costs under control.

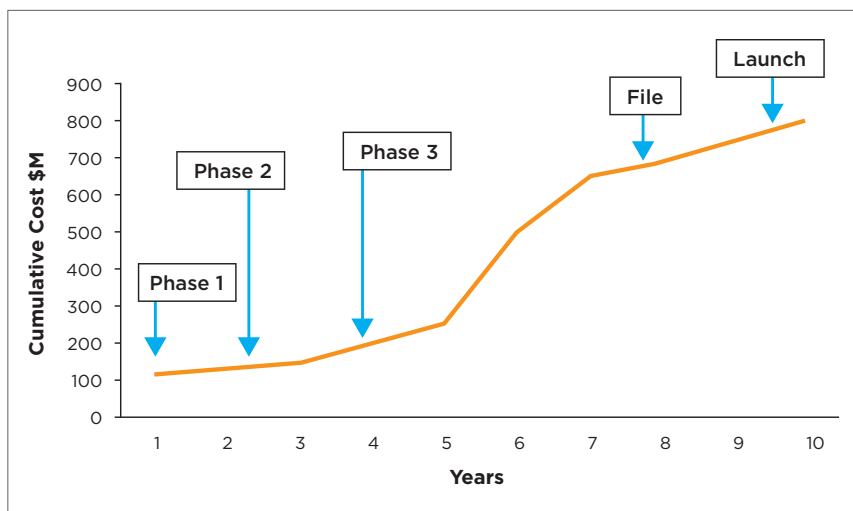
Approximately 29% of a given study's total expenses can be attributed to the enrollment process. Moreover, each day that a drug development program is delayed can cost sponsors as much as \$37,000 and between \$600,000 and \$8 million in lost sales opportunities.³

What's clear is that inefficient patient enrollment practices are diminishing profit margins for pharmaceutical companies and increasing the overall cost of care for patients. At MD Connect, we have extensive experience running digital recruitment campaigns for clinical trials across a wide range of online advertising platforms.

To date, we've generated billions of impressions running social media marketing campaigns aimed at medical audiences, and we've found it's quickly cementing itself as one of the most impactful, cost-effective channels for digital patient recruitment available today.

FIGURE 1:

Cost of Clinical Trial Development vs. Number of Years



CLINICAL TRIAL PARTNERSHIPS

In this white paper, we'll explain why social media is so ideally suited for clinical trial recruitment and how sponsors and CROs can leverage its unique characteristics and capabilities to alleviate long-standing enrollment-related issues.

Reaching the Masses

The Ubiquity of Social Media

As social media usage continues to soar, marketers in nearly every industry have started to recognize its potential as an impactful advertising channel. Today, approximately 69% of U.S. adults are active on at least one social media site, representing a 64% spike over the past decade (Figure 2).

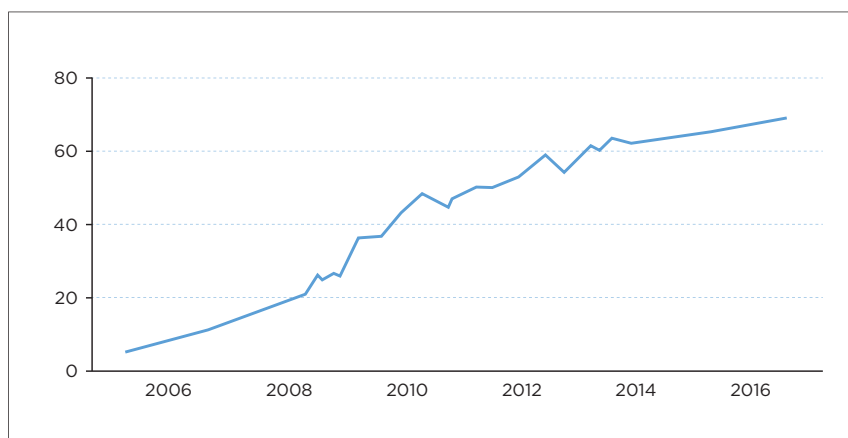
The sheer volume of social media users alone is a compelling argument for investment; however, users rely on different sites for different purposes, meaning that not every social platform is ideally suited for every marketing scenario.

For sponsors and CROs looking to leverage social media to improve clinical trial recruitment outcomes, the key will be investing only in those platforms that allow for highly targeted advertising, efficient and flexible scaling of ad spend, and advanced campaign performance tracking and optimization capabilities.

Facebook's advertising platform checks all three of these boxes, making it an invaluable tool for generating qualified patient referrals and improving ROI. In the next few sections, we'll outline some of Facebook's key capabilities in the context of clinical trial recruitment, and provide several examples of results we've seen on the platform.

FIGURE 2:

Percentage of U.S. Adults Who Use At Least One Social Media Site



PEW RESEARCH CENTER

Source: Surveys conducted 2005-2016.

Why Facebook?

Audience Size

The first argument for investing in Facebook advertising is the platform's absolutely massive user base—as of December 2016, Facebook had approximately 1.86 billion active monthly users and 1.23 billion active daily users.⁴ Its current rate of growth is approximately 20%, YoY.⁵ Experts anticipate that the U.S. user base alone will reach 162.2 million by 2018.⁶

In fact, Facebook and its subsidiary brands represent the three most popular social media platforms (four of the top seven):



Facebook's user base has become so large that today, the vast majority of patients with a given condition (and their caregivers) are now on the platform. The chart below highlights several examples of conditions and their associated patient populations.

Condition	Prevalence (US)	Facebook	Notes
Alzheimer's	5,200,000	8,000,000	100% coverage — 3 million extra likely represents caregivers or prospective patients (genetic history)
Parkinson's	1,000,000	1,100,000	100% coverage.
Type 2 Diabetes	21,000,000	13,000,000	62% coverage.

Demographic Makeup

From the perspective of sponsors and CROs, one of Facebook’s biggest advantages is the diversity of its user base. Facebook users cover the entire spectrum in terms of age, gender, and race.

Age ⁷	Gender	Race ⁸
<ul style="list-style-type: none">• 82% of 18-to-29-year-olds online use Facebook• 79% of 30-to-49-year-olds online use Facebook• 56% of those ages 65 and up who are online use Facebook	<ul style="list-style-type: none">• 76% of all female-identified internet users are on Facebook• 66% of all male-identified internet users are on Facebook	<ul style="list-style-type: none">• 73% of all Latinos online use Facebook• 67% of all African Americans online use Facebook• 71% of all Caucasians online use Facebook

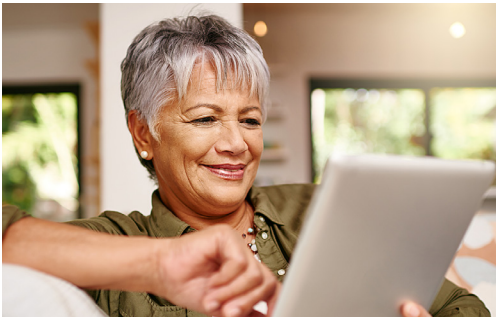
In light of the FDA’s increasing emphasis on ethnically representative patient populations, Facebook’s wide demographic reach makes it an ideal tool to help manage participant diversity and secure approval quickly and efficiently.

Facebook vs. Search: How Are They Different?

Technical considerations aside, the key differences between advertising on Facebook and advertising on a search engine have to do with user mindset and intent. The way patients utilize the two platforms varies considerably, which not only necessitates differing strategies in order to achieve optimal outcomes on each, but also presents the opportunity to accomplish a wider range of recruitment goals.

Broadly speaking, search engine advertising involves targeting “active” patients, or those patients who have taken control of the decision-making process and are actively seeking information and/or treatment options for an existing condition.

Conversely, patients generally rely on social networks like Facebook for community support and sharing information or receiving advice from their peers. But while they typically aren’t using Facebook as an active research tool, that doesn’t mean they won’t ultimately be receptive to an offer to participate in a study.



Facebook Users Are All Ages

Many within the clinical trial industry view Facebook as a primarily Millennial-centric network, making it unsuitable for geriatric recruitment; however, this is no longer the case. The latest available data suggests that there are more than 18.4 million seniors who are active on the platform each month.⁹

In fact, the platform presents an opportunity for sponsors and CROs to tap into an audience that may not even be aware of clinical trials as a viable treatment option. In other words, you can bring the information directly to the patients, rather than waiting for them to come to you (i.e. by entering a relevant query into a search engine).

For example, according to the National Institute of Health, approximately 85% of cancer patients remain unaware of clinical trials as a practical path to treatment. However, 75% would be willing to participate if they knew that they existed.¹⁰ When you consider the general lack of awareness about clinical trials, then couple it with Facebook’s immense audience and powerful targeting capabilities (which we’ll discuss below), it’s not difficult to see the potentially enormous impact of Facebook advertising from a recruitment perspective.

Regulatory Concerns

User Commenting

Many sponsor and CROs remain concerned over the potential for Facebook comments to surface adverse events, product feedback, and other items requiring pharmacovigilance. Fortunately, Facebook offers a number of ways to both minimize and manage these concerns:

- Ability to disable user comments on Facebook page
- Ability to easily monitor any remaining comments (typically on the ads or posts themselves, which are much less frequent)

A strong media partner can even manage comment monitoring for you. Managed tightly (as above), the actual frequency of ad commenting and the likelihood that those comments come from actual clinical trial participants is, in our experience, quite low.

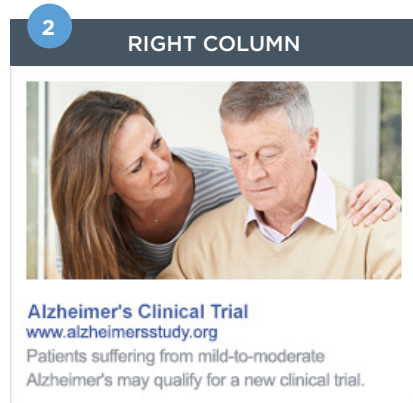
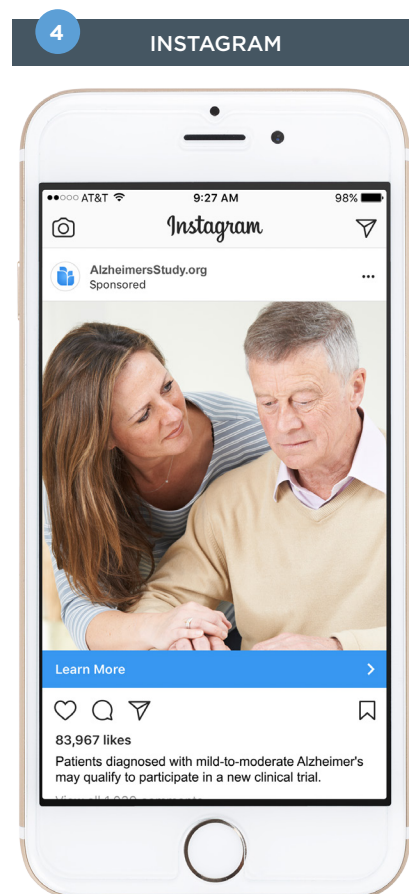
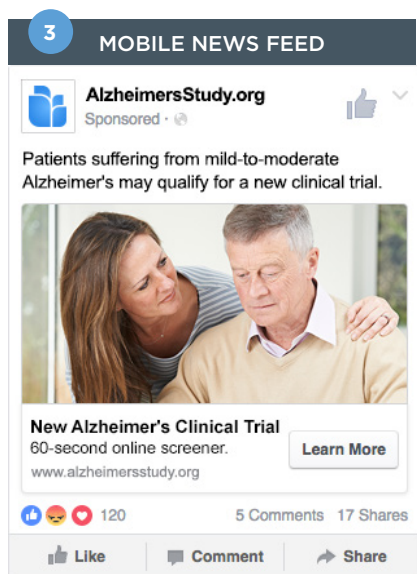
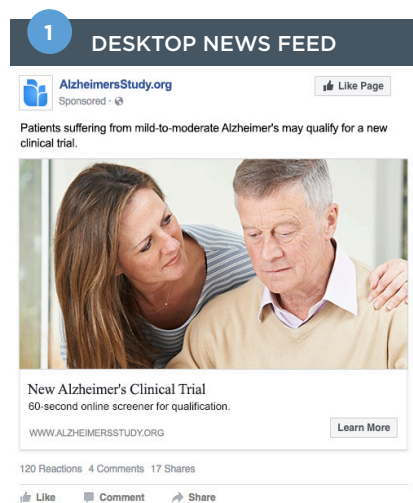
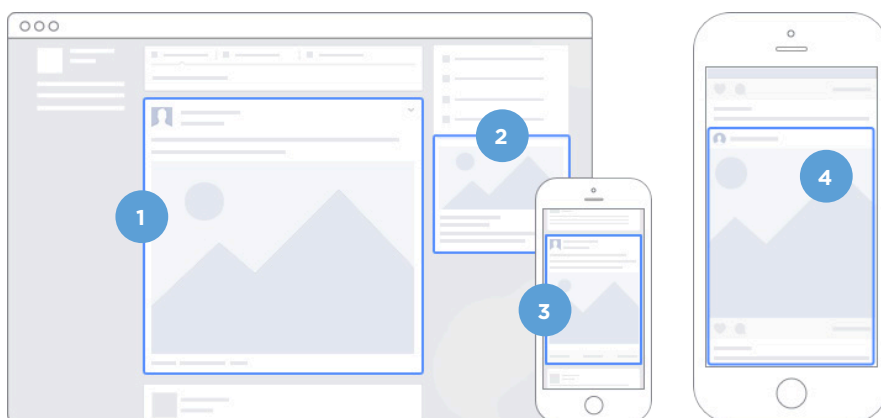
Study	Number of Ads Served (90 Days)	Comment Frequency	Total Ad Comments	~ SPAM Deletions from Comments	~ Known Enrolled Patient Comments
Sample 1	2,158,126	0.01%	227	10	0
Sample 2	2,212,526	0.004%	83	5	0

For example, of the 3.3 million impressions we served for clinical trial campaigns in the example above, not a single known comment has been posted by an actual trial participant.

Technical Overview

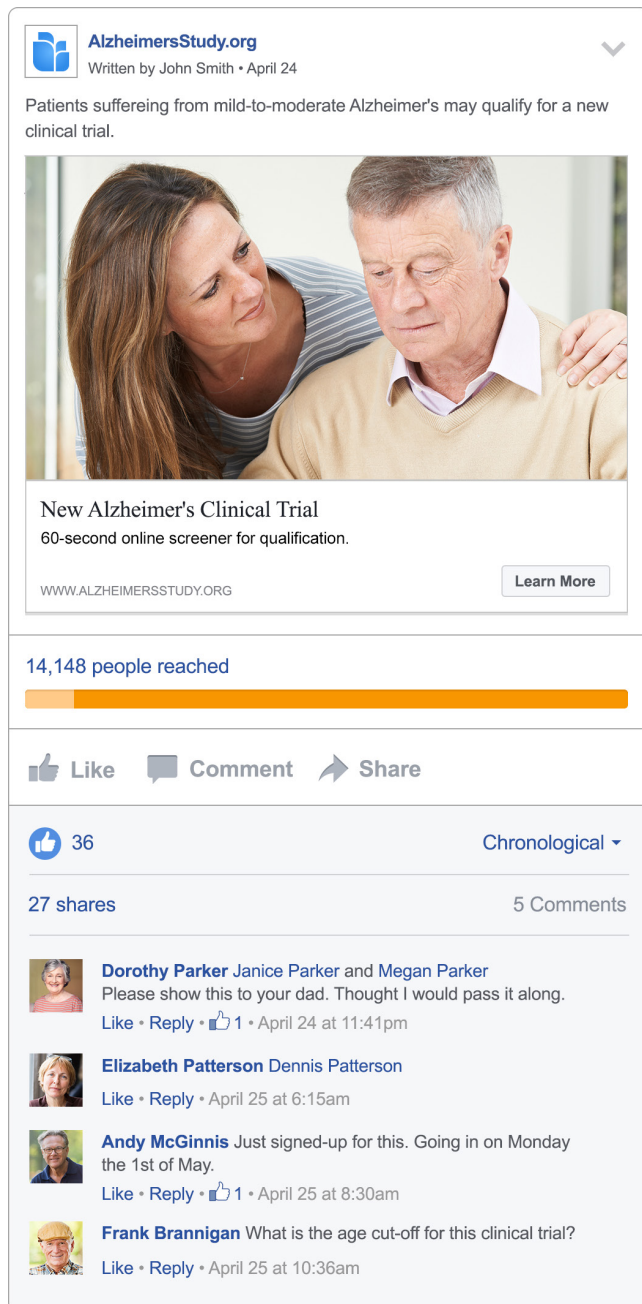
Ad Types & Placement Options

Facebook provides four placement options for ads—on a user's desktop News Feed, on their mobile News Feed, on their Instagram account, and in the right column of their desktop or laptop page (see screenshots below). Ads are automatically placed in all four locations as a default setting, but you can choose to manually place your ads using the Power Editor or Ads Manager. Facebook also allows for external advertising on the Facebook Audience Network, which we'll discuss later on.



Ad Blueprint

Ads on Facebook are composed of four elements: a header, an image, a call-to-action (CTA), and user engagement options (specifically, Like, Comment, and Share). The ad header, comprised of a page logo, page link, and headline, accounts for about 15% of user responses. The CTA, which is responsible for the other 85%, links to URLs outside of Facebook like the trial's patient portal or a localized micro-site.



The image shows a Facebook advertisement for Alzheimer'sStudy.org. The ad header includes the logo and text: "AlzheimersStudy.org", "Written by John Smith • April 24", and "Patients suffering from mild-to-moderate Alzheimer's may qualify for a new clinical trial." The main image shows a woman and an older man. Below the image is the headline "New Alzheimer's Clinical Trial" and subtext "60-second online screener for qualification." A "Learn More" button is present. The ad shows "14,148 people reached" with a progress bar. Below the ad are engagement options: "Like", "Comment", and "Share". The ad has 36 likes and 27 shares. The comments section shows 5 comments, with the first one from Dorothy Parker.

AD HEADER:
Comprised of 3 elements: page logo, page link, headline. Link and logo area is “clickable”—resolves to Facebook “landing page.” MD Connect performance benchmarks show 15% of users who respond to an ad by clicking, respond in the ad header area.

AD IMAGE:
Customized images within Facebook size specs. Text limited to no more than 15% of the ad (subject to Facebook review).

CALL TO ACTION:
MD Connect performance benchmarks show 85% of users who respond by clicking the ad, respond in the call to action area. Call to action area resolves to URLs outside of Facebook (web site or landing page, sub page, etc.)

USER ENGAGEMENT OPTIONS:
Like | Comment | Share
All actions are specific to the ad and do not post to the Facebook business page.

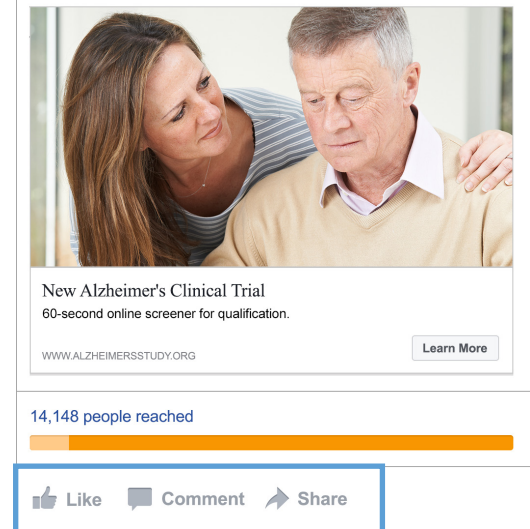
Engagement Blueprint

On Facebook, “engagement” is defined as the number of actions your target audience takes in response to seeing your ad. This would include likes, comments, shares, video views, and link clicks. Here is a basic overview of all of a Facebook ad’s engagement-related components:


User Engagement Options:

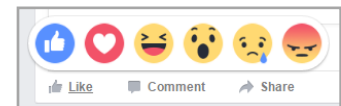


Each selection gives the user specific interaction capability (outlined below):




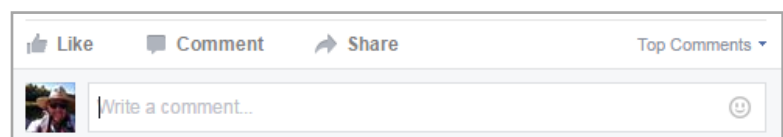
Like

 Reveals reaction options, including the iconic “thumbs up” like. The reaction is posted & logged to the ad itself (# of likes count). Depending on Facebook algorithm and ad console settings, as a result of the user’s “reaction” a user’s friend may receive the ad in their news feed as a “suggested post.”



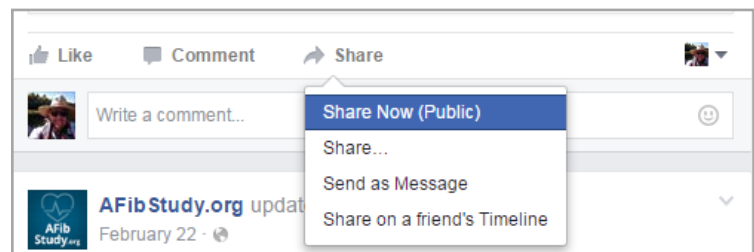
Comment

 Reveals an input window to the user. A submitted comment is posted specifically to the ad itself. Dependent on user settings, a user’s friends may see the comment in their news feed.



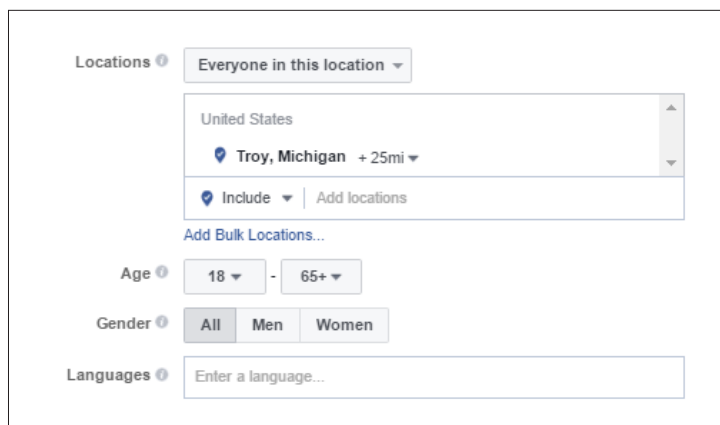
Share

 User has three options. **Share Now (Public)** instantly posts the ad to the user’s news feed, viewable to whomever (setting dependent) has access to the user’s Facebook page. **Share...** gives the user several discreet options before sharing, such as adding a comment, or sharing with specific people prior to posting to the user’s news feed. **Send as a Message** allows users to share the ad via Facebook instant messenger. **Share on a Friend’s Timeline** enables the user to post the ad to a specific friend’s timeline.



Targeting Capabilities

Facebook’s advertising platform offers a wide variety of targeting capabilities—many of which are ideally suited for online patient recruitment—and can’t be utilized on search engine ad platforms like Google and Bing due to privacy restrictions. Here are some key areas of interest for clinical trial recruitment.

A screenshot of the Facebook targeting interface. It shows several sections: 'Locations' with a dropdown set to 'Everyone in this location', a search bar containing 'United States', a location pin for 'Troy, Michigan + 25mi', and buttons for 'Include' and 'Add locations'; 'Age' with a range from '18' to '65+'; 'Gender' with buttons for 'All', 'Men', and 'Women'; and 'Languages' with a text input field labeled 'Enter a language...'. There is also a link for 'Add Bulk Locations...'.

Demographic Targeting



Location: enter one or more countries, counties, cities, ZIP/postal codes, addresses, or designated marketing areas to show your ad to people within those defined locations



Age: select the minimum and maximum age of your audience—especially useful for trials with age-related inclusion/exclusion criteria



Gender: if your trial has gender-specific criteria or enrollment quotas, you can target your ads to women, men, or all



Ethnicity: Facebook can target users based on their “ethnic affinity”—e.g., African American, Asian American, Caucasian, Hispanic, etc.—which it determines using an algorithm that analyzes user behavior



Language: on a similar note, you can target specific audiences based on their language preferences. For example, you might select “Spanish” if you’re targeting potential participants within a primarily Latino community.

Community and Interest-Based Targeting

Interest-based targeting allows you to target audiences based upon their interests and the specific Pages they like. Facebook identifies these interests based on information users add to their profile, Timelines, keywords and categories associated with the Pages they like, as well as other ads they've clicked on in the past.

For example, if you're conducting an Alzheimer's trial, you can target users who have liked highly relevant community Pages, such as the "Alzheimer's Association" or "Alzheimer's Awareness," which have respective audiences of approximately 781,000 and 567,000.

The diagram illustrates the process of Facebook interest-based targeting. On the left, two boxes define the targeting criteria. The first box, titled "Interests > Additional Interests", lists several interests related to Alzheimer's: "Alzheimers Association", "Alzheimers and Dementia Caregivers", "Alzheimer's disease awareness", "Alzheimer's disease clinical research", "Alzheimer's Disease Foundation", "Living With Alzheimers", and "Alzheimer's Support group". The second box, titled "Audience Definition", features a gauge with a needle pointing towards the "Broad" end, indicating that the audience selection is "fairly broad". It also states a "Potential Reach: 1,100,000 People". Arrows from these boxes point to a central representation of a Facebook post. This post is from "AlzheimersStudy.org" and is a sponsored advertisement. The text of the ad reads: "Patients suffering from mild-to-moderate Alzheimer's may qualify for a new clinical trial." Below the text is a photograph of a woman supporting an elderly man. The ad also includes the title "New Alzheimer's Clinical Trial", a description "60-second online screener for qualification.", the website "WWW.ALZHEIMERSSTUDY.ORG", and a "Learn More" button. At the bottom of the post, it shows "120 Reactions 4 Comments 17 Shares" and buttons for "Like", "Comment", and "Share". To the right of the Facebook post is a computer monitor displaying a Facebook profile page, which serves as a visual reference for the platform where the targeting is applied.

In Facebook's ad platform, the Interests section will offer keyword suggestions and provide an estimated audience size for each. Facebook has also indicated it will enable targeting based on third-party website visits and app usage in the near future.

Custom Audiences, Lookalike Targeting, and More

If you have an existing database of prospective participants, you can upload those contacts into Facebook's ad platform as a Custom Audience. Facebook then allows you to further leverage these Custom Audiences through Lookalike targeting. Put simply, Facebook's algorithms extend the reach of your campaign by using the attributes (demographic profile, interests, behaviors, etc.) of your Custom Audience to identify and serve ads to similar users. Additionally, a targeted user's interaction with an ad and ad set, such as a like and share, will direct those same ads to other members of that individual's personal network.

Retargeting

Unlike Google AdWords, Facebook offers retargeting capabilities for medical ads. Sometimes a patient will visit a trial's website after clicking an ad, but not complete an action or provide their contact information. Facebook allows you to create and embed a pixel in your site that will automatically add them to a new Custom Audience. You can also use these retargeted users to create new Lookalike Audiences, thereby further extending the reach of your campaign in a highly targeted manner.

Facebook Audience Network

On a related note, the Facebook Audience Network (FAN) allows you to serve ads to designated users beyond the confines of Facebook itself, while still using the same targeting data and tools employed in your on-site Facebook campaign.

Refining Your Audience

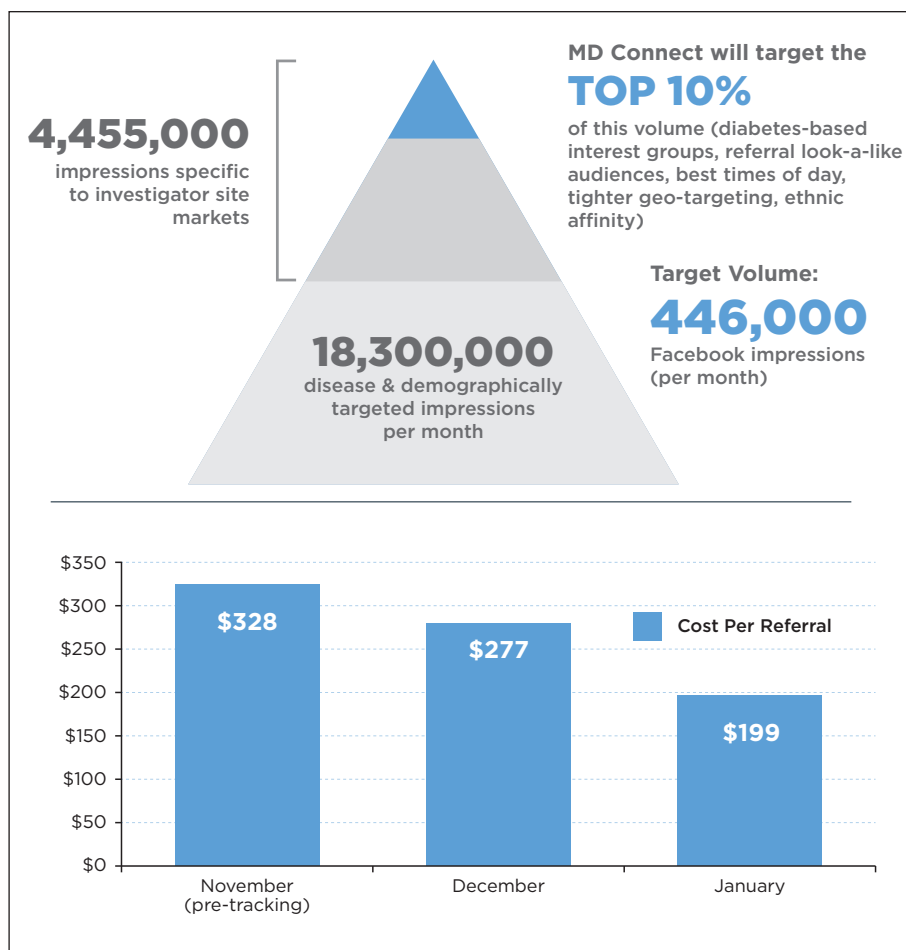
In order to maximize your ROI, you'll need to narrow your initial audience to only the most qualified users. When running Facebook campaigns, we utilize real-time and historical performance data, highly relevant interest groups, ethnic affinity, geo-targeting, and more in order to refine a given audience to the top 5 to 15% in terms of relevancy.

For example, in a recent Type 2 Diabetes Trial, we started off with 18.3 million available monthly impressions based on general disease and demographic targeting. We then refined that initial volume to the trial's specific investigator site markets, which brought the number of

monthly impressions to approximately 4.5 million. Finally, we leveraged Facebook's targeting capabilities to narrow that audience even further, resulting in a target volume of 446,000 impressions per month (Figure 3). Using this tactic (in combination with our advertising efforts across a variety of other channels), we were able to lower the overall CPR by nearly 40% in two months.

FIGURE 3:

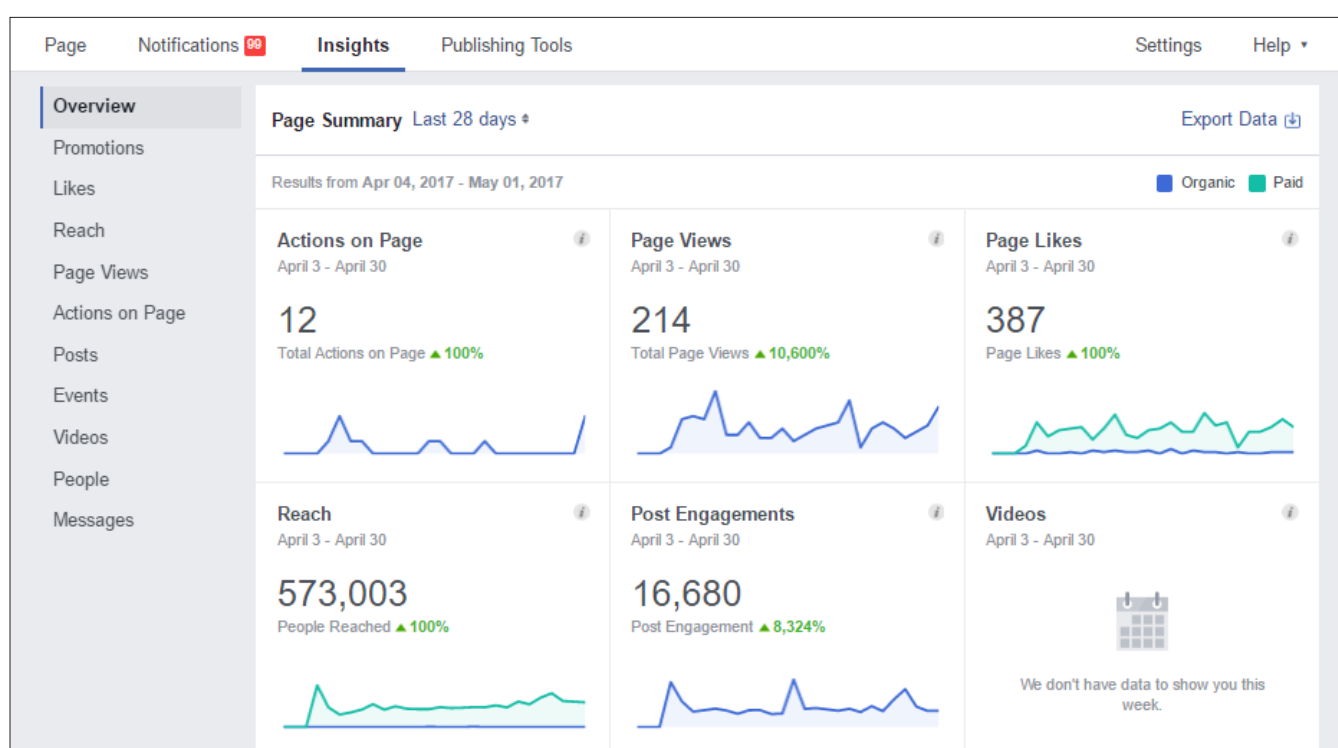
Social (US): Volume Estimate



Performance Monitoring

Facebook offers a powerful set of data analytics and performance monitoring tools. The Insights Dashboard provides a comprehensive view of ad performance across Facebook, Instagram, and the Audience Network. You can also customize your dashboard so it displays only the information that is most relevant to your campaign.

Breakdowns include audience age, where they are viewing your ads, what devices they are using, what time of day, and much more. This information is incredibly useful when it comes to optimizing your audience and improving targeting for future recruitment campaigns.



Available metrics include, but are not limited to:

- **Performance:** includes metrics such as results, reach, frequency, and impressions
- **Engagement:** includes metrics related to page posting, ad messaging, media, clicks, and general awareness
- **Conversions:** includes metrics like website conversions, cost per website conversion, etc.
- **Settings:** includes metrics like start date, end date, ad set name, ad ID, delivery, bid, and objective

Of course, all advertising materials will need to be submitted in advance for IRB approval; however, through proactive performance monitoring and campaign management (e.g., A/B testing, modifying targeting based on real-time data, scaling spend in accordance with demand, etc.), sponsors and CROs often see total cost savings to the tune of 64%.¹¹

Facebook Ad Performance

When it comes to success metrics, medical ads on Facebook tend to perform relatively well compared to their counterparts in other industries:¹²

- Average click through rate is .83% (average across all industries is .90%)
- Average cost per click is \$1.32 (average across all industries is \$1.72)
- Average conversion rate is 11% (average across all industries is 9.21%)
- Average cost per action is \$12.31 (average across all industries is \$18.68)

In our trials, we often see an ad response rate (impressions to clicks) ranging of up to 1.2%—this is a major improvement over the industry standard banner ad response rate, which is between .1% and .3%.

In the table below, we compare Facebook and Google ad performance data from two recent clinical trial recruitment campaigns with very different spend levels:

In example 1, the total spend on Google far exceeded the spend on Facebook; however, Facebook ads generated nearly four times the traffic with a significantly lower CPC. And while it generated fewer referrals, the CPR on Facebook was 32% less than Search. Alternately, in example 2, the Facebook budget was higher, and yet it yielded fewer visitors and a higher CPC. That said, it still managed to generate more referrals with a 35% lower CPR.

	Example 1		Example 2	
Duration	3 Months		6 Months	
Condition	Emphysema		Acne	
Platform	Google	Facebook	Google	Facebook
Total Spend	\$11,018	\$6,400	\$298,836	\$378,533
# of Visitors	1,238	4,855	279,174	132,984
Avg. Cost Per Click	\$8.90	\$1.32	\$1.07	\$2.85
# of Referrals	43	28	1399	2743
Avg. Cost Per Referral	\$337	\$229	\$214	\$138
Avg. Cost Per Enrollment	\$5,687		\$3,011	

Cost Per Click (CPC): the price paid for each click in the Facebook advertising campaign.

Cost Per Referral (CPR): the price paid for each patient who has clicked an ad, visited the trial's micro-site, and qualified through an online screener.

Cost Per Enrollment (CPE): the cost of each patient enrolled in the trial based on total digital marketing spend.

Conclusion

The key takeaway here is that every digital recruitment strategy is going to be different. Each study and condition has unique considerations that must be taken into account, and as such, the performance of a specific media channel may vary from trial to trial.

When outsourcing digital recruitment, sponsors and CROs should make sure their vendor has experience running clinical trial campaigns using all of the most up-to-date tactics, media formats, and online advertising channels. Achieving optimal results demands a media mix custom-tailored to your trial's target audience and qualification criteria—not a one-size-fits-all approach.

When it comes to clinical trial recruitment, Facebook's audience and targeting capabilities make it an invaluable resource—however, it's only one piece of the overall puzzle. In an increasingly competitive digital landscape, capturing the attention of your target audience depends on not only maximizing your trial's visibility across as many channels as possible, but also your ability to do so in a cost-effective and non-invasive manner. Only once you've got a firm grasp on each digital advertising platform's unique considerations—both in terms of the typical user mindset and its technical capabilities—will you be able to build a comprehensive digital strategy that really delivers.

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1. <http://www.clinicaltrialpartnershipsblog.com/2016/11/hype-or-hope-can-mhealth-accelerate.html>
 2. <http://www.forbes.com/sites/theapothecary/2012/04/24/how-the-fda-stifles-new-cures-part-i-the-rising-cost-of-clinical-trials/#6f47751e3ded>
 3. <http://www.prnewswire.com/news-releases/clinical-trial-delays-cost-pharmaceutical-companies-55044607.html>
 4. <https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>
 5. <https://zephoria.com/top-15-valuable-facebook-statistics/>
 6. <https://www.emarketer.com/Article/Instagram-Will-Top-100-Million-US-Users-by-2018/1012148>
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 8. <http://www.pewresearch.org/fact-tank/2015/02/03/social-media-preferences-vary-by-race-and-ethnicity/>
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 10. <http://www.nih.gov/health-information/nih-clinical-research-trials-you-need-awareness-clinical-research>
 11. http://www.mdconnectinc.com/hs-fs/hub/291282/file-737881553-pdf/docs/md_connect_-_case_study_6_-_clinical_trial.pdf?t=1491882098271
 12. <http://www.wordstream.com/blog/ws/2017/02/28/facebook-advertising-benchmarks>
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