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ResearchMatch: A National Registry to Recruit Volunteers for Clinical Research

Paul A. Harris, PhD,

is director, Office of Research Informatics, Vanderbilt University, Nashville, Tennessee

Kirstin W Scott, MPH,

was program manager, Vanderbilt Institute for Clinical and Translational Research, Nashville, Tennessee

Laurie Lebo, PhD,

is research consultant, Vanderbilt Institute for Clinical and Translational Research, Nashville, Tennessee

NikNik Hassan,

is health systems analyst, Department of Biomedical Informatics, Vanderbilt University, Nashville, Tennessee

Chad Lighter, and

is health systems analyst, Department of Biomedical Informatics, Vanderbilt University, Nashville, Tennessee

Jill Pulley, MBA

is director, Vanderbilt Institute for Clinical and Translational Research, Nashville, Tennessee

Abstract

The authors designed ResearchMatch, a disease-neutral, web-based recruitment registry to help match individuals who wish to participate in clinical research studies with researchers actively searching for volunteers throughout the United States. In this article, they describe ResearchMatch's stakeholders, workflow model, technical infrastructure, and, for the registry's first 19 months of operation, utilization metrics. Having launched volunteer registration tools in November 2009 and researcher registration tools in March 2010, ResearchMatch had, as of June 2011, registered 15,871 volunteer participants from all 50 states. The registry was created as a collaborative project for institutions in the Clinical and Translational Science Awards (CTSA) consortium. Also as of June 2011, a total of 751 researchers from 61 participating CTSA institutions had registered to use the tool to recruit participants into 540 active studies and trials. ResearchMatch has proven successful in connecting volunteers with researchers, and the authors are currently evaluating regulatory and workflow options to open access to researchers at non-CTSA institutions.

Correspondence should be addressed to Dr. Harris, Vanderbilt Institute for Clinical and Translational Research, 2525 West End Avenue, Suite 674, Nashville TN 37203; telephone: (615) 322-6688; fax: (615) 936-8545; paul.harris@vanderbilt.edu.

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Ethical approval: ResearchMatch has active approval from the Vanderbilt IRB as a recruitment tool.

Challenges to recruiting participants for research studies obstruct the progress of clinical and translational research,¹ slowing the pace of research, frustrating investigators and participants, resulting in statistics too weak to support efficacy or safety conclusions, and possibly exposing participants to unnecessary risks with no compensatory societal benefit.² Despite campaigns to raise the rates of enrollment and retention in research studies, approximately three-fourths of the public report having little or no knowledge about the clinical research enterprise and how to participate.³ Further, only an estimated 2% of the U.S. population participates in clinical research each year.⁴

In sharp contrast, 83% of Internet users have searched online for medical information, with 66% seeking information on specific diseases or medical problems.⁵ ClinicalTrials.gov, the U.S. Library of Medicine's registry of over 110,000 clinical trials in 174 countries (created in 2000 in response to the 1997 FDA Modernization Act), reports over 65,000 visitors each day, revealing the public's interest in accessing information about clinical trials.^{6,7} Potential participants, however, face difficulties in finding relevant information on specific research studies. Many are simply unaware of the available resources,⁸ and those who have found the resources may lack a familiarity with the complex medical terminology necessary to understanding the purpose and scope of many research studies.⁹

Study recruitment is of interest not only for the public sector, but also a necessity for research teams at academic medical centers. In 2008, motivated by, among other things, these challenges to recruitment, the Clinical and Translational Science Awards (CTSA) consortium established a framework for what would eventually be five strategic goals deemed necessary to set a national research agenda and guide consortium-wide activities.¹⁰ The stated mission of the CTSA National Clinical and Translational Research Capability Strategic Goals is to improve all processes related to the development, approval, activation, *enrollment*, and completion of clinical trials.¹¹

A Novel Recruitment Model for the CTSA Consortium

Recruitment registries have traditionally been local, connecting researchers at a particular institution with participants from the surrounding community,^{12–15} or disease-specific, encouraging individuals with certain health conditions to participate in clinical research.^{16–20} Some registries are developed by academic medical centers; others are commercial ventures.

ResearchMatch design

We proposed ResearchMatch as the first registry to support research teams across the national CTSA consortium and to benefit all U.S. residents regardless of medical condition. Vetted by the CTSA Informatics Key Function Committee and approved for supplemental funding by the National Institutes of Health's National Center for Research Resources, the project was launched in December 2008. We convened a group of 43 regulatory, recruitment, and informatics experts from across the CTSA consortium to serve as key informants in defining ResearchMatch's design requirements, data confidentiality framework, and governance model.

In devising ResearchMatch, our primary considerations were generalizability and equitable access for all participants. Consequently, the registry's design is institution- and disease-neutral, allowing anyone residing in the United States to register as a potential participant. The registry is available at no cost to volunteers and also to researchers at CTSA institutions that have joined the ResearchMatch network.

Another key consideration was the protection of volunteers' contact information and health data. We devised a clearinghouse model that blocks identifying information on a researcher's screen until the volunteer specifically gives approval to be contacted for a specific study. Even after receiving such approval, researchers using ResearchMatch must agree to treat all identifying information as confidential.

ResearchMatch was developed and is hosted at Vanderbilt University. Vanderbilt's institutional review board (IRB) provides human-subjects protection oversight for the overall project; specific studies recruiting through ResearchMatch must receive approval from their own IRBs.

Because individual CTSA generally include a collaborating group of hospitals and academic medical centers, we designed ResearchMatch to accommodate researchers from any institution associated with an award, as long as that institution joins the ResearchMatch network. Joining the network requires signing a legal document of participation (the Master Institutional Registry Agreement) and assigning at least one institutional liaison (see below) to coordinate the local IRB's involvement and facilitate researchers' and participants' awareness and engagement.

Stakeholders

The two primary stakeholders for ResearchMatch are the study volunteers and the researchers seeking study participants. Given our objective to create registry access for any researcher at any CTSA institution, we recognized the need for a third stakeholder, the institutional liaison, who monitors and manages local requests to access ResearchMatch. The following definitions clarify the stakeholders' roles and responsibilities.

- *Volunteers* are individuals who have an interest in being considered for participation in research studies or trials. All U.S. residents over the age of 18 are eligible to register themselves or children and disabled or elderly family members for whom they are parent, guardian, or caretaker.
- *Researchers* are employees or affiliated staff at academic medical centers or hospitals that have joined the ResearchMatch network. Once registered as a researcher, principal investigators and designated research study coordinators may search the registry to find volunteers matching their study's inclusion/exclusion requirements.
- *Institutional liaisons* are individuals appointed by participating institutions to authorize local research teams to use ResearchMatch. Liaisons typically have a strong interest in community engagement and study recruitment. They also maintain familiarity with their IRBs' regulatory procedures and have access to the IRBs' approval letters and study status information. They actively engage with the registry oversight team at Vanderbilt University via bi-weekly conference calls and a liaison e-mail listserv. Liaisons may also participate in the local marketing and promotion of ResearchMatch.

Implementation of ResearchMatch

Technical infrastructure

ResearchMatch's software application and back-end infrastructure are built on a PHP and MySQL technology framework.^{21,22} All data are securely stored on web servers maintained within the Vanderbilt University firewall. All research subject recruitment data sent between web server and browsers are encrypted using Secure Sockets Layer protection. Furthermore,

all identifiable health and contact information is stored within the database in encrypted format.

Registering volunteers

Volunteers wishing to participate in studies and trials may register at the ResearchMatch website (www.researchmatch.org). The registration process takes approximately five to ten minutes. Volunteers must first review and accept IRB-approved consent language. After creating a unique username and password, they provide contact (name, address, phone, email) and demographic (date of birth, height, weight, gender, race, ethnicity, tobacco use, multiple birth status) information. Age, body-mass index, and travel distance to participating institutions are automatically calculated from these data.

Volunteers then provide details about their medical conditions and current medications. If a volunteer has been diagnosed with a medical condition, she types a description (e.g., “high blood pressure,” “Parkinson’s disease”) into a text box, triggering an algorithm that matches text input to diseases and conditions described in the Unified Medical Language System (UMLS) metathesaurus.²³ If an exact match is not found, the volunteer is presented with suggestions based on synonymy and partial keyword matching. The volunteer may enter as many conditions as applicable. The volunteer then provides information on prescription and over-the-counter medication following a similar process. All entries are recorded using standardized UMLS coding terminology. This mapping of text to UMLS atomic unique identifiers and concept unique identifiers is essential so that researchers, whose technical terminology may differ from volunteers’ lay language (e.g., “hypertension” versus “high blood pressure”), can still find matches.

Finally, volunteers indicate their travel preferences (e.g., “only contact me for studies requiring travel < 50 miles”). Although ResearchMatch allows volunteers (and researchers) to specify acceptable distances for studies that require travel, it does not preclude volunteers from participating in behavioral survey studies that do not require travel or rare disease studies that typically enroll participants who travel great distances. Volunteers may also suggest quality improvement ideas for the ResearchMatch registration process. They receive e-mail confirmation of their registration and can access their ResearchMatch profile to modify or update information at any time by logging into the site. The system logs usage by volunteers; it contacts volunteers who have not logged in for 12 months to ensure continued interest and up-to-date contact, demographic, and health information.

Registering researchers

Researchers from any participating institution may use ResearchMatch to recruit study participants. Researchers must first agree to ResearchMatch’s rules of use, including maintaining volunteers’ confidentiality and stipulating that all activity will be approved by local IRBs. After creating their ResearchMatch profile (contact information plus username/password), researchers must electronically submit an IRB-approval letter for at least one actively recruiting study.

Researchers’ access requests are automatically routed to the appropriate institutional liaisons, who confirm the requests’ legitimacy and accuracy using local IRB approval letters. Once access is approved, the liaison sets an access expiration date that corresponds to the study’s local IRB expiration date; the liaison can extend the access expiration date upon receiving proof that the local IRB has extended its approval. ResearchMatch allows more than one authorized researcher to access the same protocol (e.g., a principal investigator plus multiple study coordinators). Access by other researchers in the same study requires permission from the principal investigator and the institutional liaison.

Researchers may request “feasibility-only” access without submitting active IRB study documentation if they wish to determine the approximate number of ResearchMatch volunteers who meet theoretical study requirements. Generally used to generate study hypotheses or to determine the usefulness of ResearchMatch for a particular study, feasibility-only access does not permit contact with volunteers.

Matching researchers and volunteers

Once their access requests have been authenticated and approved, researchers may recruit potential study participants. ResearchMatch’s intuitive interface lets researchers filter the list of volunteers by specifying one or more of the following criteria: geographical constraint (by maximum distance from their institution and/or state of residency); demographic data (age, height, weight, BMI, gender, race, ethnicity, tobacco use, multiple birth status); medical conditions (by choosing volunteers who reported no medical conditions or by using text strings, which undergo the same process of being matched to terminology in the UMLS metathesaurus); and medications (similar in process to medical conditions). They may use clustering of conditions and Boolean logic when specifying filter criteria (e.g. [myocardial infarction OR congestive heart failure] AND [asthma] BUT NOT [prostate cancer]). Researchers may save the filtering criteria for repeated use within the same study.

The search module systematically narrows the pool and displays a de-identified list of matched volunteers. Researchers may examine each de-identified health profile to further refine the list. Once they have a final list, ResearchMatch sends each volunteer an e-mail, which contains IRB-approved language notifying them that a researcher at a named institution believes a particular study might be of interest to them. The e-mail notification asks the volunteers to indicate, by clicking on hypertext links, whether or not they are interested in being contacted with further information about the research study. When a volunteer indicates such an interest, ResearchMatch notifies the researcher. If the volunteer indicates no interest (by clicking “No” or by taking no action), ResearchMatch maintains the volunteer’s anonymity and logs the response. Volunteers who click “No” are presented with a list of options through which they may delineate the reasons for their lack of interest. Researchers may also set ResearchMatch to automatically contact new (or updating) volunteer registrants who match the researcher’s filtering criteria. They then receive notifications when new “Yes” volunteers are found. Researchers may access a study-specific ResearchMatch dashboard to observe general response trends to their recruitment e-mails.

Researchers who receive notification of an interested volunteer may access the study-specific dashboard to see the volunteer’s contact information. They may then follow up by contacting interested volunteers by e-mail, phone, or surface mail. Further steps, such as study education and consent processes, are performed outside the purview of ResearchMatch. Researchers are encouraged, though, to use their study-specific dashboard to track the status of interested volunteers as they are contacted and then enrolled or deemed ineligible for a study. This tracking mechanism is provided as a service to research teams and also serves as the primary method for ResearchMatch to collect enrollment statistics for volunteers.

ResearchMatch’s First 19 Months

Volunteers

In the 19 months following ResearchMatch’s launch on November 10, 2009, 15,871 volunteers registered at the site. With the exception of several jumps in registration that followed large-scale press releases and registry announcements, ResearchMatch has steadily grown at a rate of approximately 21 new volunteers per day (Figure 1). Of the 15,871 registered volunteers as of June 1, 2011, 14,707 (92.7%) registered themselves and 1,164

(7.3%) were registered by a parent or guardian. Table 1 provides descriptive data for the volunteer population. Volunteers from all 50 states have registered, but regional rates are heavily influenced by the outreach and awareness campaigns conducted by participating institutions. States with the most volunteers are Tennessee (17.0% of ResearchMatch's 15,871 volunteers), Ohio (14.7%), New York (8.1%), Texas (7.6%), Alabama (6.2%), North Carolina (4.8%), Oregon (3.9%), Illinois (3.5%), Minnesota (3.4%), and California (2.8%).

Researchers

We delayed the release of the researchers' search and contact tools by approximately four months to allow time to form a critical mass of volunteers. Since March 2009, the number of researchers using ResearchMatch has steadily increased (Figure 1), with 751 researchers registering from 61 participating institutions. Of those, 511 have full access for searching and contacting volunteers for a total of 540 specific studies, and 240 have limited, feasibility-only access.

When researchers register for study recruitment access, they provide basic information regarding their study, including protocol type and population of interest (adult, pediatric, or both). Table 2 breaks down the 540 studies by protocol type. Roughly half (55%) of the studies using ResearchMatch are clinical trials. Table 3 breaks down the studies by population of interest.

Positive interest

During the first 19 months of ResearchMatch's operation, researchers sent 68,673 e-mails to 13,462 volunteers. Some research teams surgically filtered their lists before sending the bulk messages, while others cast wider nets, assuming that the volunteers' response patterns would compensate for a lack of specificity. Figure 2 plots the total number of volunteers contacted against the number of volunteers who responded with interest for each individual study. The positive response rate appears linear, with approximately one of every five contacted volunteers expressing interest. Tables 2 and 3 show numbers of contacts, interested responses, and enrollment categorized by study type and population of interest.

Negative interest

Approximately 7.3% of contacted volunteers clicked the "No" option, actively indicating a lack of interest in the studies laid out in the bulk e-mails they received. Reasons they gave for non-participation included: "I do not think I meet the requirements for this study" (3.8% of all contacted volunteers); "I am not interested in this research study" (1.1%); and "I do not have time to get involved" (0.6%). Other common reasons, given as free-text feedback, included: concerns about distance; recent changes in health status (often pregnancy); and commitments to participate in other, concurrent studies. Research teams have access to this feedback to help them improve their volunteer-selection filters and compose more effective study advertisement language.

Analysis, Limitations, and Projected Work

Subscribing to the philosophy that "used systems get better," we constantly evaluate ResearchMatch and evolve it to better serve the needs of all stakeholders. Volunteers, researchers, and liaisons can, via e-mail, submit questions, problems, and suggestions; the ResearchMatch team reviews and logs these submissions for immediate or future action. In this section, we analyze the experience gained in building and operating ResearchMatch to date, as well as plans for growing and evolving the project for the future.

Volunteer population diversity

ResearchMatch has attracted more than 15,800 volunteers from all 50 states. Racial and ethnic balances are important considerations for a national recruitment registry. In ResearchMatch's volunteer pool, relative to the national census, whites are overrepresented (81.2% ResearchMatch versus 75.1% U.S.), while African Americans (9.9% versus 12.3%) and Hispanic/Latinos (4.7% versus 12.5%) are underrepresented.²⁴ The gender gap is even larger: females are clearly overrepresented (72.7% versus 50.9%).²⁴

Given our previous experience with Vanderbilt's local web-based recruitment registry, we did not find these gaps surprising, but we think they are important and warrant further exploration.¹⁵ We believe that exploring alternative ways to promote ResearchMatch in diverse racial and ethnic communities, especially in collaboration with the CTSA's Community Engagement and Communications Committees, can help narrow these gaps. We are also considering a Spanish-language version of ResearchMatch. While promotion and the development of additional tools may help, we anticipate that racial and ethnic gaps may always exist due to well-documented issues of socio-economic disparity, web-based recruitment, and self-reporting biases.^{25–28} Still, we look forward to leveraging the recruiting expertise of many of our 141 institutional liaisons and to devising and testing recruitment plans that reach diverse geographic and cultural environments.

Volunteer population quantity

ResearchMatch's single largest limitation at the end of 19 months of operation is the relatively small pool of volunteers. The registry currently has more than 16,000 volunteers, but this is a minute fraction of the U.S. population. While all 50 states are represented, 74% of the volunteers reside in only 10 states; 25 states have fewer than 100 volunteers each. This heterogeneity is best explained by the variability of effort that local liaisons expend in marketing and raising awareness of ResearchMatch within their communities.

A registry is effective only if stakeholders know and use the system, so we have enlisted the liaisons to create and share low-cost marketing tools for local advertising of ResearchMatch. These tools have included participating in local health fairs, advertising on public video displays around medical center campuses, posting a YouTube video that describes the benefits of volunteering for research, starting a program in which community health organizations exchange URL links, partnering with national organizations to promote national health awareness days, and sponsoring community fun runs. For a nominal fee of \$50, one CTSA institution negotiated the placement of the ResearchMatch logo on t-shirts for a local race. ResearchMatch also makes daily updates to its Facebook and Twitter accounts, "liking" (Facebook) and "following" (Twitter) all CTSA institutions and other health-related organizations such as Special Olympics, The American Cancer Society, and St. Jude Children's Research Hospital. The daily postings focus on providing health education, recognizing National Health Awareness days, and finding opportunities to participate in research. These social marketing methods are already paying off in terms of increasing awareness and recruitment in underrepresented areas.

Volunteer health information

We devoted significant time to ensuring that the registration process enables volunteers to accurately and conveniently enter their known medical conditions and medication usage. Volunteers type in their conditions and ResearchMatch automatically searches for and suggests standardized terms found in the UMLS metathesaurus. ResearchMatch maps all free-form entries to coded terminology mapping procedural operations. When we first launched ResearchMatch, we found that approximately 10% of registrants had problems finding standardized matches for their conditions or medications. Because the majority of

these problems came from spelling mistakes, we added an auto-completer function to assist during data entry; this has reduced reported problems to less than 5%.

Approximately half (45.5%) of ResearchMatch volunteers reported having no medical or health conditions and a similar number report taking no medications. The participation of this subgroup of motivated, healthy volunteers, who can be recruited as healthy participants or control subjects for studies, is likely due to ResearchMatch's disease-neutral promotion (e.g., "everyone can join"), in contrast to other registries that focus on a particular disease or condition. The medical conditions and medications reported by the remaining volunteers seem representative of those of the overall population. The top five medical conditions reported by ResearchMatch volunteers are hypertension, depression, asthma, anxiety, and migraine headache. The most commonly listed medications are Synthroid, vitamin D, aspirin, Lisinopril, and Zyrtec.

Researcher activity and study matching

ResearchMatch has proven itself an effective tool for matching volunteers with researchers conducting clinical and translational research. The enrollment data in Tables 2 and 3 is most likely a very conservative estimate given that we ask but do not require researchers to let us know when ResearchMatch volunteers are enrolled. More and more researchers are using the tracking tools we provide and, if necessary, we may add stronger incentives for reporting the status of volunteers. Table 2 shows that a high percentage (74%) of known enrolled study participants are enrolled in behavioral studies, but nearly 500 volunteers are known to have enrolled in other types of studies.

Approximately 20% of the volunteers contacted with specific study messages indicated that they were interested in the study (Figure 2). Within the ResearchMatch network, we are considering "research on research" examinations of outlier studies that have much higher or lower response rates than the measured "normal" rate. By studying these overachieving and underachieving studies, we hope to characterize useful best practices for searching and contacting volunteers.

Sustainability and potential for future growth

The CTSA program was designed to support diverse scientific research and to leverage the collective power of 60 top-tier research institutions. We are indebted to all the institutions of the CTSA consortium, which has been essential in building both the technical workflow and regulatory permissions model for ResearchMatch. The cost of maintaining ResearchMatch is small in comparison to the value derived across the network, and we anticipate continuing to support and grow the program indefinitely.

While the CTSA consortium is substantial, it serves only a subset of research teams conducting research in the U.S. today. We are also currently exploring ways to expand ResearchMatch network access to academic institutions beyond the CTSA consortium.

Conclusion

ResearchMatch has proven successful as a national, disease-neutral, institution-neutral, web-based tool for recruiting study participants. The project has built collaborative bridges between 61 academic research institutions and helped recruit participants for many studies. Volunteers have reacted positively to the secure, self-service model that allows them to actively manage their health histories, and research teams have found the tool's model for permissions and self-service search and contact effective. As we continue to invest in the program, we look forward to improving and growing it to meet the ever-evolving needs of the volunteer and researcher communities.

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Figure 1. Growth in the populations of volunteers and researchers who registered with ResearchMatch during its first 19 months of operation (November 2009 – June 2011). ResearchMatch did not start registering researchers until about four months after starting to register volunteers in order to first build a pool of volunteers who might fit researchers search criteria.

Figure 2.

Volunteer response rate to researcher-initiated study contact messages during ResearchMatch's first 19 months of operation (November 2009 – June 2011). Each data point represents, for a single study, the number of volunteers contacted by researchers (x-axis) and the number of volunteers who expressed interest in receiving more information about that particular study (y-axis). Overall, approximately one of every five volunteers responded positively.

Table 1

Demographic and Health Data of 15,871 Volunteers Who Registered at ResearchMatch.com from November 2009 to June 2011

Demographic/health data	Total*	Men	Women
Total: no. (%)	15,871 (100)	4,322 (27.2)	11,536 (72.7)
Age: mean (SD)	38.2(15.5)	38.6(18.0)	38.0(14.5)
Body Mass Index: mean (SD)	27.1(7.3)	26.8 (6.7)	27.2(7.6)
Race			
American Indian/Alaska Native: no. (%)	69 (0.4)	17 (0.4)	52 (0.5)
Asian: no. (%)	508 (3.2)	177 (4.1)	331 (2.9)
Black or African American: no. (%)	1,571 (9.9)	348 (8.1)	1,221 (10.6)
Multiracial: no. (%)	464 (2.9)	144 (3.3)	319 (2.8)
Native Hawaiian/Pacific Islander: no. (%)	31 (0.2)	9 (0.2)	22 (0.2)
Other: no. (%)	338 (2.1)	105 (2.4)	223 (1.9)
White: no. (%)	12,890 (81.2)	3,522 (81.5)	9,358 (81.1)
Ethnicity			
Hispanic: no. (%)	745 (4.7)	225 (5.2)	519 (4.5)
Non-Hispanic: no. (%)	15126 (95.3)	4097 (94.8)	11017 (95.5)
Tobacco user: no. (%)	1961 (11.4)	653 (14)	1302 (10.4)
Multiple birth status			
Single: no. (%)	15,474 (97.5)	4,195 (97.1)	11,267 (97.6)
Twin: no. (%)	383 (2.4)	121 (2.8)	262 (2.3)
Triplet: no. (%)	14 (0.1)	6 (0.1)	7 (0.1)
Medical conditions			

Demographic/health data		Total*	Men	Women
No medical conditions: no. (%)		7,224 (45.5)	2,154 (49.8)	5,064 (43.9)
Medical conditions		8,647 (54.5)	2,168 (50.2)	6,472 (56.1)
Most frequent conditions [†]				
1	Hypertension	1,389 (16.1)	437 (20.2)	Depression
2	Depression	1,250 (14.5)	213 (9.8)	Hypertension
3	Asthma	813 (9.4)	167 (7.7)	Asthma
4	Anxiety	518 (6.1)	151 (7.0)	Migraine headache
5	Migraine headache	510 (5.9)	Hypercholesterol	Anxiety
Medication usage				
No medications: no. (%)		7,408 (46.7)	2,471 (57.2)	4,933 (42.8)
Medications		8,463 (53.3)	1,851 (42.8)	6,603 (52.7)
Most frequently taken medications [‡]				
1	Synthroid	396 (4.7)	Aspirin	Synthroid
2	Vitamin D	331 (3.9)	Lisinopril	Vitamin D
3	Aspirin	328 (3.9)	Metformin	Zyrtec
4	Lisinopril	298 (3.5)	Simvastatin	Calcium
5	Zyrtec	293 (3.5)	Zyrtec	Wellbutrin
Type of registration				
For self: no. (%)		14,707 (92.7)	3,719 (86.0)	10,975 (95.1)

Demographic/health data	Total*	Men	Women
For child or dependent: no. (%)	1,164 (7.3)	603 (14.0)	561 (4.9)

* Overall column contains data for 13 additional volunteers self-registered as transgender.

† Percentages are of numbers of people who had medical conditions/took medications.

ResearchMatch Volunteers Contacted, Interested, and Enrolled in 540 Studies from November 2009 to June 2011, by Study Type

Table 2

Type of studies	No. of studies	No. of volunteers contacted	No. of volunteers interested	No. of volunteers enrolled
Clinical trials	299	16,207	1,987	83
Socioeconomic outcomes	3	472	48	0
Investigational device	7	403	12	0
FDA-approved device	9	950	33	1
Investigational procedure	16	745	50	4
Standardized procedure	25	826	167	5
Investigational drug	137	8,546	1,078	42
FDA-approved drug	102	4,265	599	31
Community-based research	6	1,491	351	139
Applied social research	8	1,896	620	0
Epidemiological study	8	3,063	288	39
Observational study	36	5,402	445	27
Bench/basic science	35	1,625	398	50
Behavioral or psychosocial	83	32,936	7,266	1,371
Other	65	6,053	1,636	132
Total	540	68,673	12,991	1,841

Table 3

ResearchMatch Volunteers Contacted, Interested, and Enrolled in 540 Studies from November 2009 to June 2011, by Study Population

Study population	No. of studies	No. of volunteers contacted	No. of volunteers interested	No. of volunteers enrolled
Adult	511	58,875	11,873	1,773
Pediatric *	14	1,473	151	33
Pediatric and adult *	15	8,325	967	35
Total	540	68,673	12,991	1,841

* Pediatric volunteers must be registered by their parents or guardians.