Google analytics of a pilot mass and social media campaign targeting Hispanics about living kidney donation

Elisa J. Gordon, PhD, MPH [a,*], Jennifer Shand, MS [b], Anne Black [b]

[a] Center for Healthcare Studies, Comprehensive Transplant Center, Center for Bioethics and Medical Humanities, Feinberg School of Medicine, Northwestern University, Chicago, IL 60611, USA
[b] National Kidney Foundation of Illinois, Chicago, IL 60654, USA

ARTICLE INFO

ABSTRACT

Background: The number of patients waiting for a kidney transplant surpasses available organs. Living donor kidney transplantation (LDKT) can expand the organ pool. However, Hispanics have lower rates of LDKT than non-Hispanic whites, largely due to a lack of awareness and knowledge about LDKT as a treatment option. To reduce this disparity about LDKT, Northwestern University faculty in partnership with the National Kidney Foundation of Illinois, developed a website culturally targeted to Hispanics about LDKT, called *Infórmate*.
Objective: This paper describes a pilot mass media campaign about LDKT which leveraged *Infórmate* to provide additional education about LDKT targeting the Hispanic public in Chicago, IL. We report the impact of the campaign on visits to *Infórmate*.
Methods: The mass media campaign was conducted in Chicago, IL from July 16, 2015 to January 17, 2016 in two waves. The campaign used traditional media, online media, and community-based venues. The campaign's bilingual (Spanish and English) messaging addressed key topics about kidney disease and LDKT, and included a call to action to visit *Infórmate* to learn more. Google Analytics was used to evaluate the effectiveness of the campaign's call to action by measuring the number of visits to *Infórmate*, visit duration, bounce rate, number of pages visited, pages most often visited, user demographics, and media channel.
Results: Infórmate received an average of 1466 sessions per month during the entire campaign period, with a 16.7% return rate. Sessions and visitors increased during the entire campaign period compared to the pre- and post-campaign periods. Visits lasted an average of 1:26 min, with a bounce rate of 73.9% per session. Users visited an average of 1.93 pages, and the pages with the most views were *Immigrant Issues* and *Financial Issues*. Most sessions during this period occurred in the USA (69.57%) out of 100 countries, and in the city of Chicago (13.37%). Sessions were mostly conducted by men (54.1%) and people ages 18–34 (61%). Visitors accessed *Infórmate* primarily through their desktop computer (53.1%), and by typing the website address directly into their browser (32.78%).
Conclusions: Our findings suggest that our pilot mass media campaign's call to action was effective in increasing the Hispanic public's traffic to *Infórmate*. Google Analytics data can help to strategize future campaign messages and outlets. Future research should assess whether a theoretically-driven mass media campaign increases the Hispanic public's knowledge about LDKT, and increases rates of LDKT.

1. Introduction

1.1. Disparities in living donor kidney transplantation (LDKT)

The shortage of kidneys for transplantation and ethnic disparities in LDKT rates are major public health problems (Levey et al., 2007).

Hispanics need disproportionately more kidney transplants (U.S. Renal Data System, 2014), yet receive fewer LDKTs than non-Hispanic whites (U.S. Renal Data System, 2014). Fewer waitlisted Hispanics received a LDKT than non-Hispanic whites in 2014: 4% versus 10% (United Network for Organ Sharing, n.d.).

Factors contributing to Hispanics' low rates of transplantation and LDKT include: lack of knowledge, cultural beliefs, and negative attitudes about LDKT (Gordon et al., 2014; Alvaro et al., 2008; Siegel et al., 2008; Breitkopf, 2009; Siegel et al., 2011; Siegel et al., 2014). Relatively few culturally sensitive interventions have sought to increase Hispanics' knowledge of LDKT, such as a mass media campaign, (Alvaro et al., 2010) or Internet exposure at transplant centers (Gordon et al., 2015a).

1.2. Need for a mass and social media campaign on LDKT

Education about end-stage renal disease (ESRD) treatment options commonly occurs at the individual level through patients' nephrologists, dialysis facilities, or transplant centers. Some Hispanics maintain that learning about LDKT is unnecessary unless a family member has ESRD (Gordon et al., 2014). Consequently, the public remains largely uninformed of the opportunity for LDKT. No national-level mass or social media campaigns have been conducted to increase public knowledge about LDKT. A population level approach is necessary to inform families, friends, and anonymous others about LDKT as an option, as patients are uncomfortable asking others to donate (Gordon, 2001).

Hispanic ESRD patients seeking information about LDKT commonly encounter language barriers as educational materials are written mostly in English, and few bilingual/bicultural transplant providers are available (Gordon et al., 2010; Gordon et al., 2015b). Additionally, websites about LDKT have literacy levels too high for the general population (Moody et al., 2007; Jaffery and Becker, 2004). The few Spanish websites on transplantation present limited content on LDKT or address Hispanic cultural concerns (Moody et al., 2007).

Mass media campaigns may overcome individual-level barriers to learning about LDKT because they "intend to generate specific outcomes or effects in a relatively large number of individuals, usually within a specified period of time, and through an organized set of communication activities" (Rogers and Storey, 1987). The transplant community recently called for national public campaigns on LDKT to increase donation rates (Tan et al., 2015; Allen and Reese, 2016). Systematic reviews show that mass media campaigns are effective in promoting public health (e.g., reducing smoking) by increasing knowledge and healthy behaviors given their wide reach, appeal, and cost-effectiveness (Noar, 2006; Snyder et al., 2004; Randolph and Viswanath, 2004). Incorporating social media into campaigns can increase access to health information and facilitate health practices (Moorhead et al., 2013; Freeman et al., 2015).

1.3. Mass media campaigns on organ donation

Mass media campaigns focused predominantly on deceased donation in the U.S. and internationally have proven to be effective in increasing deceased donation rates by 4%–7% with traditional mass media (television, radio, print) (Aykas et al., 2015; Callendar and Miles, 2010; Feeley and Moon, 2009), and by a 21-fold increase in donor registrations with social media (e.g., Facebook) (Stefanone et al., 2012; Cameron et al., 2013; Brzeziński and Klikowicz, 2015). Of the three organ donation campaigns that targeted Hispanics (Alvaro et al., 2010; Frates et al., 2006; Salim et al., 2010), only one focused on LDKT in Arizona a decade ago without using social media (Alvaro et al., 2010). Social media can enhance traditional approaches in increasing health knowledge about deceased donation (Stefanone et al., 2012) and campaign effectiveness (Cameron et al., 2013). Most organ donation public awareness campaigns use radio, TV, and community health fairs (Downing and Jones, 2008), but none have leveraged a website to encourage the public to learn more.

This paper describes a pilot mass and social media campaign about LDKT targeting the Hispanic public in Chicago, IL that encouraged visits to the website, *Infórmate*, to learn more. The aim of this study was to describe the impact of the campaign on traffic to *Infórmate* using Google Analytics. Google Analytics have been used to report information about website users and utilization for health interventions (Pakkala et al., 2012; Eng and Noonan, 2014; Crutzen et al., 2013; Young et al., 2015).

2. Materials and methods

2.1. Research team

Northwestern University faculty, in partnership with the National Kidney Foundation of Illinois, developed a bilingual website on LDKT that is culturally targeted to Hispanics called *Infórmate* (*Inform yourself about living kidney donation*), as described elsewhere (Gordon et al., 2015c). We previously evaluated *Infórmate* and found that it effectively increased Hispanic patients' and families' knowledge about LDKT above and beyond transplant center education alone (Gordon et al., 2015a). *Infórmate* was not actively promoted during the study period to avoid contamination, except for distributing the URL to intervention arm participants. After the study concluded, we promoted *Infórmate* through a pilot multi-faceted media campaign to provide in-depth education about LDKT to the Hispanic public given that traditional mass media messages are brief and cover few points.

2.2. Mass and social media campaign

We conducted a six-month pilot mass and social media campaign in Illinois in two waves: July 16, 2015–October 25, 2015 and November 30, 2015–January 17, 2016. Our expectation was that a second wave could reinforce campaign messaging. The campaign was devised as a pilot study because of the relatively small funds and time available for purchasing media and carrying out the campaign. Media campaigns are more successful in reaching the target audience if they saturate the market through high frequency and wide reach (Noar, 2006; Snyder et al., 2004; Randolph and Viswanath, 2004). To help saturate the market with our modest resources, our campaign involved diverse media including traditional print and digital media, social media, and community-based venues (Table 1).

2.2.1. Traditional mass media

Traditional media included broadcast radio public service announcements (PSAs), print (Spanish and English local newspapers), and outdoor advertisements (in Chicago Transit Authority L trains). The PSAs were produced in English and Spanish, with male and female voice actor equivalent versions that each lasted 15-, 30- or 60-seconds (Fig. 1). We heavily utilized Spanish radio because the Hispanic population commonly spends time throughout the day listening to the radio, and radio is effective in reaching the Hispanic population (Sonderup, 2004). Spanish newspapers are also an optimal medium for reaching the Hispanic population because

Table 1
Dissemination efforts.

	N	# impressions
Traditional Media		
Radio spots	321	Unknown
Newspaper print	9 ads in 9 papers	Circulation of 708,000 papers
Newspaper online	4 ads over 8 weeks	Estimated at 256,333
CTA train lines	87 cards for 12 weeks	Unknown
	125 cards for 8 weeks	
	260 cards for 4 weeks	
Social media		
Facebook	2 ads over 4 weeks	91,864
Twitter	2 ads over 1 week	31,263
YouTube	6 videos	163 views
Google AdWords	19 ads	123,774
Community outreach		
Dialysis centers	102	n/a
Transplant centers	Illinois: 5	n/a
	Non-Illinois: 4	
Nephrology offices	17	n/a
Hospitals — dialysis units	12	n/a
NKFI KidneyMobile health screenings	11	n/a
NKF independent affiliates	5 verbally agreed to disseminate electronic materials we sent, but all 11 received the materials via email	n/a
Health fairs	4	n/a
Community Organizations	35	n/a

provides the English text of our 60-second PSA.

> When my doctor told me I had kidney failure, I didn't know what to do. He said that more than 98,000 Hispanics and Latinos have kidney failure but fewer get a transplant than non-Hispanics. I didn't know I was at risk, and was nervous about my health.
> After I started dialysis treatments, I felt tired all the time and knew it was not a good long-term solution for me. I was put on the national kidney transplant waiting list, along with more than 100,000 patients across the nation.
>
> Then my son told me about living kidney donation. He went online to **Informate.org** and learned about the benefits and risks to living donors and recipients. He told me that kidneys from living donors last longer and offer a better quality of life than kidneys from deceased donors.
>
> I'm so grateful that my son donated a kidney to me. Visit informate.org to learn more about living donation.

Fig. 1. Provides the English text of our 60-second PSA.

they deliver culturally specific information targeted to the Hispanic community (Sonderup, 2004). Four one quarter-page Spanish-language ads were placed in Spanish newspapers, coinciding with three months of online circulation for the same paper's website (Figs. 2–3) during wave 1. During wave 2, one five quarter-page ads were placed in English newspapers, distributed to local neighborhoods with high densities of Hispanic/Latino residents. These ads also coincided with one month of online advertising for the same paper's website. The Chicago L trains ran indoor advertisements on three train lines (pink, orange, and blue) during both campaign waves (Fig. 4).

Fig. 2. Provides the English text of our DNAinfo newspaper advertisement.

Fig. 3. Provides the Spanish text of our online newsletter advertisement on laraza.com.

2.2.2. Social media

Social media advertising included targeted Facebook promotion, targeted Twitter promotion, and Google AdWords search terms. On Facebook and Twitter, advertisements were in Spanish, and optimized to reach Spanish-speaking users within our target audience.

Fig. 4. Shows the Chicago Transit Authority L train advertisement.

On the NKFI YouTube channel, we posted two Spanish and two English PSAs, and two telenovela videos from *Infórmate* (in Spanish with English subtitles).

2.2.3. Community outreach

Community outreach involved diverse approaches (Table 1). First, the NKFI faxed a letter to all dialysis centers ($n = 212$) and transplant centers ($n = 9$) in Illinois to notify them of the availability of Spanish and English brochures, posters, and pens advertising *Infórmate*. Research staff followed-up by telephone to inquire into each center's interest in receiving the materials for dissemination to their Hispanic patients, and to track the need for additional shipments. Research staff also contacted nephrology offices and local hospitals to inform them of the website, and offer to send materials to their offices. Over the course of the campaign, we shipped materials to 102 dialysis centers, 9 transplant centers, and 17 nephrology offices, disseminating a total of 24,000 brochures (12,000 English and 12,000 Spanish), 650 posters (350 Spanish and 300 English), and 9000 pens. Some dialysis centers requested up to two or three additional orders of materials.

Second, the NKFI CEO sent formal emails to all nephrologists in Illinois, and the study's principal investigator (EJG) sent informal emails to colleagues nationally and internationally about the public availability of *Infórmate*. Third, materials were distributed to other National Kidney Foundation independent affiliates expressing interest in receiving them.
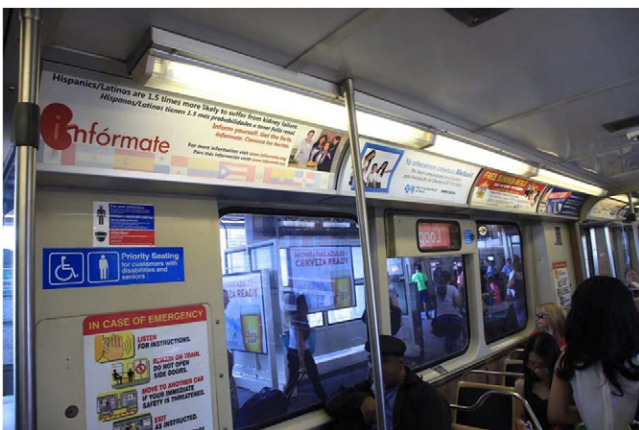
Fourth, NKFI's KidneyMobile® staff members distributed brochures and pens during 11 free health screening events in 2015, which are held in areas deemed most at-risk for kidney disease. Fifth, the NKFI informed its Professional Advisory Board and Board of Directors about *Infórmate*. Sixth, the NKFI and research staff hosted a booth at four Hispanic community-sponsored health fairs (Fig. 5). Further, advertisements about *Infórmate* were included in five Hispanic community centers' online newsletters to their constituents and members. Community outreach activities continued through the interim period between the two waves.

Outside of Illinois, other dissemination activities included: academic presentations, posting a hyperlink to *Infórmate* on 14 websites (e.g., Health Resources and Services Administration, the National Kidney Foundation and two of their affiliates, the American Society of Transplantation, the American Society of Transplant Surgeons, transplant centers, foundations, organ procurement organizations, and community organizations), and distributing campaign materials to locals in San Miguel de Allende, Mexico.

2.3. Campaign waves

The two campaign waves differed by using different advertising sources, investment amounts, and durations:

Wave 1 entailed: (a) radio PSAs ($n = 196$) spanning three stations over 12 weeks, of which approximately half were paid for, and the remaining were free spots broadcast at odd times of the day or night; (b) interior train advertisements inside three different Chicago Transit Authority (CTA) L train lines with 87 cards inside two lines for a 12-week period, and 125 cards inside one line for an eight-week period; (c) publishing in *La Raza* Spanish print magazine once per week for four weeks, combined with online advertisements on laraza.com for three months; (d) targeted social media advertisements on Facebook for four weeks, and Twitter for one week; (e) Google AdWords were set up at no cost through the use of Google Ad Grants, with thousands of potentially relevant keyword search terms; and (f) community outreach. Community outreach activities and Google AdWords continued through the interim period between the two waves.

Wave 2 entailed: (a) radio PSAs ($n = 125$) across two stations over five weeks; (b) interior train advertisements with 260 cards inside three different CTA L train lines for a four-week period; (c) publishing an advertisement once each in five different local DNAinfo neighborhood newspapers, combined with one month of online advertisements on DNAinfo.com and in DNAinfo e-mail newsletters; (d) Google AdWords keyword search terms; and (e) community outreach. There was no paid social media advertising (e.g., Facebook or Twitter).

Fig. 5. Shows a photo of two research team members (EJG, NR) at the NKFI-sponsored, *Infórmate* booth at the *Semanas LatinoAmericanas de Salud* health fair, 10-3-15.

2.4. Mass media campaign messages

The research team developed and translated all bilingual (Spanish and English) campaign messages. Campaign messages addressed key information about kidney disease and LDKT (e.g., "Hispanics and Latinos are 1.5 times more likely than non-Hispanics to suffer from kidney failure," and "Kidneys from living kidney donors work better and last longer than kidneys from deceased donors"). Specific content derived from *Infórmate*, and was refined by the team to best capture attention. All messages included a call to action encouraging the audience to visit *Infórmate* to learn more. Depending on the outlet, messages were either entirely in Spanish (radio PSAs, Spanish newspaper advertisements), or they were dual-language with Spanish and English combined (CTA train advertisements, English newspaper advertisements). The default home page language changed from English to Spanish on August 17, 2015 to better accommodate Spanish speakers.

2.5. Impressions and engagement

The number of impressions, or the potential number of individuals' interactions with a specific media component, was tracked as an indicator of public reach. We calculated mean media impressions for one month separately for radio and print ads.

2.6. Google Analytics (GA)

Google Inc. launched Google Analytics in 2009 (Google Inc., 2009) to enable website analysis. Google Analytics was used to obtain site usage for the overall campaign period (July 16, 2015 to January 17, 2016), the 1 month period before wave 1 started, wave 1, the interim period between both waves, wave 2, and the 1 month period after wave 2 ended. *Infórmate* usage was measured with the following metrics: the number of visits (unique sessions) served as the primary measure of the effectiveness of the campaign's call to action; the duration of visit, bounce rate (percentage of visitors that arrive at the site then leave it without further exploration), pages most often visited, number of pages, entry and exit pages, user demographics (e.g., gender, age range, city, state, and country), and user media (e.g., devices, browser, network, and channels to *Infórmate*). Google Analytics ran all analyses, and provided all results.

3. Results

3.1. Media impressions

The entire campaign potentially reached a broad audience (Table 1). Specifically, Univision's average daily listeners amount to just over 1 million. The *La Raza* print newspaper was distributed to 154,000 people weekly. As we ran one ad for four weeks, our total distribution was approximately 616,000. The online newspaper site, laraza.com, is estimated to have 3000 impressions/month. As our campaign ran for 3 months, we obtained an estimated 9000 total impressions. Similarly, for wave 2, the *DNAinfo* print newspaper has a circulation of 92,000 people total for all five of the individual neighborhood publications that we chose. Advertising through their website, dnainfo.com, provided 247,333 impressions, with 601 website clicks (0.24% click through rate, which is higher than their average of 0.06% for other clients).

Average CTA monthly ridership by train line includes: 4,064,907 people on 414 cars (Blue line), 1,053,766 people on 170 cars (Orange line), and 626,107 people on 46 cars (Pink line). The Blue, Orange, and Pink lines are typically comprised of approximately 25.7%, 24.7%, and 17.5% Hispanics, respectively. During the campaign, *Infórmate* advertisements appeared in just under half of all the available CTA train line cars on these three lines.

Facebook ads reached 91,864 users, and 2267 people clicked on the ad to visit *Infórmate*. Twitter impressions reached 31,263, with 108

clicks to *Infórmate*. Based on Google AdWords information for the entire campaign, there were 123,774 total impressions of our chosen keywords, with 749 total clicks (0.61% click through rate). The top three search terms with the highest clicks to *Infórmate* were: Kidney disease, Donacion de, and Transplantes de riñon (Table 2). The average ad position (our ad's position relative to those of other advertisers) in search results was 5.6.

3.2. Google Analytics

3.2.1. Pre-campaign visits

For the month prior to starting wave 1 (June 15, 2015–July 15, 2015), there were a total of 736 sessions, with 681 people visiting *Infórmate* (Table 3). Returning visitors comprised 8.4% of all users.

3.2.2. Campaign visits during the entire campaign period

Compared to the pre-campaign period, the number of sessions increased during the entire campaign, for a total of 8806 sessions, with 7323 people visiting *Infórmate*, for an average of 1466 sessions and 1221 visitors per 31-day month (Table 3; Fig. 6).

Of all sessions, 83.3% were by new visitors and 16.7% were by returning visitors. Of all visitors, returning visitors increased from the pre-campaign period to 16.7% in the entire campaign period, indicating a growing following. Compared to new visitors, returning visitors viewed more pages per session (1.85 versus 2.33), spent a longer time on the website (1:18 versus 2:08 min), and had a lower bounce rate (75.7% versus 65.2%).

Sessions lasted an average of 1:26 min, which increased from 57 s during the pre-campaign period. Most sessions lasted 0–10 s (76.6%), fewer sessions lasted 11–60 s (7.1%), 1–10 min (11.9%), or more than 10 min (4.4%).

On average, users visited 1.93 pages per session, which increased from 1.82 pages per session during the pre-campaign period. For each session, most users visited 1 page (74.2%), and fewer users visited 2 pages (9.1%), 3–5 pages (10.7%), or more than 6 pages (5.9%). The two most commonly visited pages were *Immigrant Issues* and *Financial Issues*. Users spent the longest time viewing *Donation: Step-by-Step* (in Spanish), *Benefits and Risks* (in Spanish), and *Immigrant Issues* (in Spanish) (Table 4). Overall, the key chapters had virtually the same amount of pageviews in Spanish ($n = 2392$) as in English ($n = 2385$).

The overall bounce rate was 73.9%, which decreased from the pre-campaign. Of all the main pages on the website, the bounce rate was lowest in *Cultural Beliefs and Myths* (in English) (58.33%), and highest in *Cultural Beliefs and Myths* (in Spanish) (81.82%) (Table 4). All English-language main pages of the website had a lower bounce rate than their Spanish counterparts, except the *Immigrant Issues* section, which was the reverse.

3.2.3. User demographics during the entire campaign period

Most users during the entire campaign period were men (54.1%), and ages 18–34 (61.0%) (Table 5). Of all sessions, most were in the United States (69.57%), unknown (6.12%), Mexico (3.74%), Canada (1.92%), China (1.58%), Spain (1.32%), Russia (1.24%), Brazil (1.20%), and the rest were in 92 other countries. The ten leading cities in which all sessions occurred included: Chicago (13.37%), unknown (9.82%), New York (4.44%), Los Angeles (2.58%), Houston (2.52%),

Table 2
Search terms with the highest clicks.

	Impressions	Clicks	Click-through rate	Average position
Kidney disease	27,550	111	0.40%	6.9
Donacion de	7164	50	0.70%	4.1
Transplantes de riñón	752	32	4.26%	1.6
Trasplante de riñón	830	31	3.73%	1.6
Kidney function symptoms	5454	29	0.53%	7.4

Washington, DC (1.35%), Dallas (1.28%), San Diego (1.16%), Sacramento (1.14%), and San Antonio (1.06%).

3.2.4. User media during the entire campaign period

Users accessed *Infórmate* through a desktop (53.1%) or mobile and/or tablet device (46.9%) (Table 6). Mobile and/or tablet devices used included: Apple iPad, Apple iPhone, Samsung GT-P3113, Galaxy Table 2 7.0, or others. Browsers most commonly used were Chrome (58.27%), Safari (12.21%), Internet Explorer (10.67%), or others (18.85%). The channel by which most users accessed *Infórmate* was through direct entrance (32.78%), referral through other websites (e.g., the NKFI, online newsletters, and transplant center websites that linked to *Infórmate*) (29.38%), social media (e.g., Facebook, Twitter, and YouTube) (15.97%), through an organic search (13.37%), or a paid search (e.g., Google AdWords) (8.40%). Of the social media used, Facebook was the most effective in channeling users to *Infórmate*, comprising 99.2% of social media sessions.

3.2.5. Post-campaign visits

For the month after wave 2 ended (January 18, 2016-February 17, 2016), there were a total of 967 sessions and 828 users visiting *Infórmate* (Table 3). Returning visitors comprised 17.3% of all users.

3.2.6. Visits to the National Kidney Foundation of Illinois (NKFI)

Referrals from Informate.org to the NKFI's website, nkfi.org, during the 2015 calendar year included 26 sessions (0.38% of all referral traffic).

4. Discussion

4.1. Key findings

Our pilot mass media campaign witnessed an 8-fold increase in traffic to the *Infórmate* website compared to the pre-campaign period, suggesting that our campaign's call to action was effective. Additionally, the interim period between campaign waves and the post-campaign period had a greater number of sessions and visitors compared to the pre-campaign period, suggesting that the effects from waves 1 and 2 persisted, perhaps contributing to the number of return visitors. Although paid campaign activities did not occur throughout the interim period, community outreach activities and Google AdWords continued, indicating that community outreach contributed to driving website traffic, albeit to a lesser degree than a combined approach. The greater number of website sessions in the post-campaign period than in the pre-campaign period may suggest some enduring effects of the campaign. Further, the increase in visits upon initiating the campaign and the decrease in visits upon completing the campaign suggests that the overall campaign contributed to the visits to *Infórmate*.

During the entire campaign, *Infórmate* had an average of 1466 sessions per month. This metric stands above the recommended minimum metric of 1000 sessions per month (Handal, 2013). However, compared to Internet intervention studies, *Infórmate* had fewer users per month (1221 versus 6500) (Eng and Noonan, 2014), fewer pages per session (1.9 versus 6.5) (Crutzen et al., 2013), a higher bounce rate (73.9% versus 32.9% (Crutzen et al., 2013) or 6% (Makkar et al., 2015)), and shorter visit duration (1:26 min versus 4 min (Crutzen et al., 2013; Makkar et al., 2015) or 8 min (Kent et al., 2011)).

Infórmate's metrics did not fare as well as others' likely because of our campaign duration, topic, and design. Our higher bounce rate may be associated with campaign duration: ours lasted 6 months, while other interventions lasted more than 1 year (Crutzen et al., 2013; Makkar et al., 2015). Longer campaigns may be necessary for word of mouth to spread for those seeking this information. According to a systematic review, "Three to six months can be long enough for an organization with a well-established web presence to see meaningful data. However, some features like visitor loyalty and geographic data require time to obtain meaningful results" (Kent et al., 2011).

Table 3
User performance indicators, by pre-campaign, entire campaign, wave, and post-campaign periods.

Indicator (duration)	Pre-campaign (31 days)	Entire campaign (186 days)	Wave 1 (102 days)	Interim period (35 days)	Wave 2 (49 days)	Post-campaign (31 days)
Sessions (visits) (n)	736	8806	5235	1418	2153	967
Average sessions (sessions/day)	23.7	47.3	51.3	40.5	43.9	31.2
Users (new and returning) (n)	681	7323	4351	1187	1861	828
Average users (users/day)	22.0	39.4	42.7	33.9	37.97	26.7
New visitors (%)	91.6	83.3	83.3	81.8	84.4	82.7
Page views (n)	1269	16,975	10,514	2538	3923	2253
Average page views (views/day)	40.9	91.3	103.1	72.5	80.1	72.7
Pages per session (n)	1.72	1.93	2.01	1.79	1.82	2.33
Bounce rate (%)	83.56	73.92	71.52	79.55	76.03	62.98
Average duration per session (minutes:seconds)	0:57	1:26	1:29	1:22	1:42	2:21
New visit rate (%)	91.17	82.91	82.73	81.24	84.44	82.63

Page views = total number of pages viewed.
Entire campaign period includes wave 1, wave 2, and the interim period.
Dissemination rate — see Pakkala for definition.

Websites designed for targeted audiences will likely have less reach than websites designed for a broad cross-section of the population or that have extensive media buying power to market the website (Randolph and Viswanath, 2004; Hirsch, 2010). For example, websites for research studies that had a high number of visitors had broad public health relevance (e.g., sexual health intervention (Crutzen et al., 2013)), but kidney transplantation has a narrower public health applicability. Our new visitor rate was slightly higher than an Internet intervention designed to increase knowledge about spinal cord injury (83.3% versus 77.6%) (Eng and Noonan, 2014).

The NKFI's website may be more comparable to *Infórmate* because both websites focus on kidney diseases, and target the public in Illinois. In 2015, nkfi.org traffic included 32,016 sessions (mean: 2668 sessions per month). *Infórmate* did not reach the NKFI's monthly average, likely because the NKFI's website has served as an active means of engaging the public in education, public outreach, and fund raising events for over 13 years. Thus, the NKFI has a dynamic and enduring following, which *Infórmate* has only recently begun to establish.

Mass media campaigns are most effective when they follow principles of effective campaign design and implementation (Noar, 2006; Randolph and Viswanath, 2004). However, due to limited resources, we followed a few, but not all principles. For example, we segmented the audience to Hispanics and both Spanish- and English-language speakers over 18 years of age, and placed campaign messages in Spanish media channels. However, we did not use an expert media planner and buyer for strategic ad placement, as recommended (Hirsch, 2010).

4.2. Demographic profile

Infórmate was used almost equally among the sexes, indicating gender neutral appeal. Members of all age groups visited *Infórmate*. However, most (90%) sessions were visited by people below age 55, which
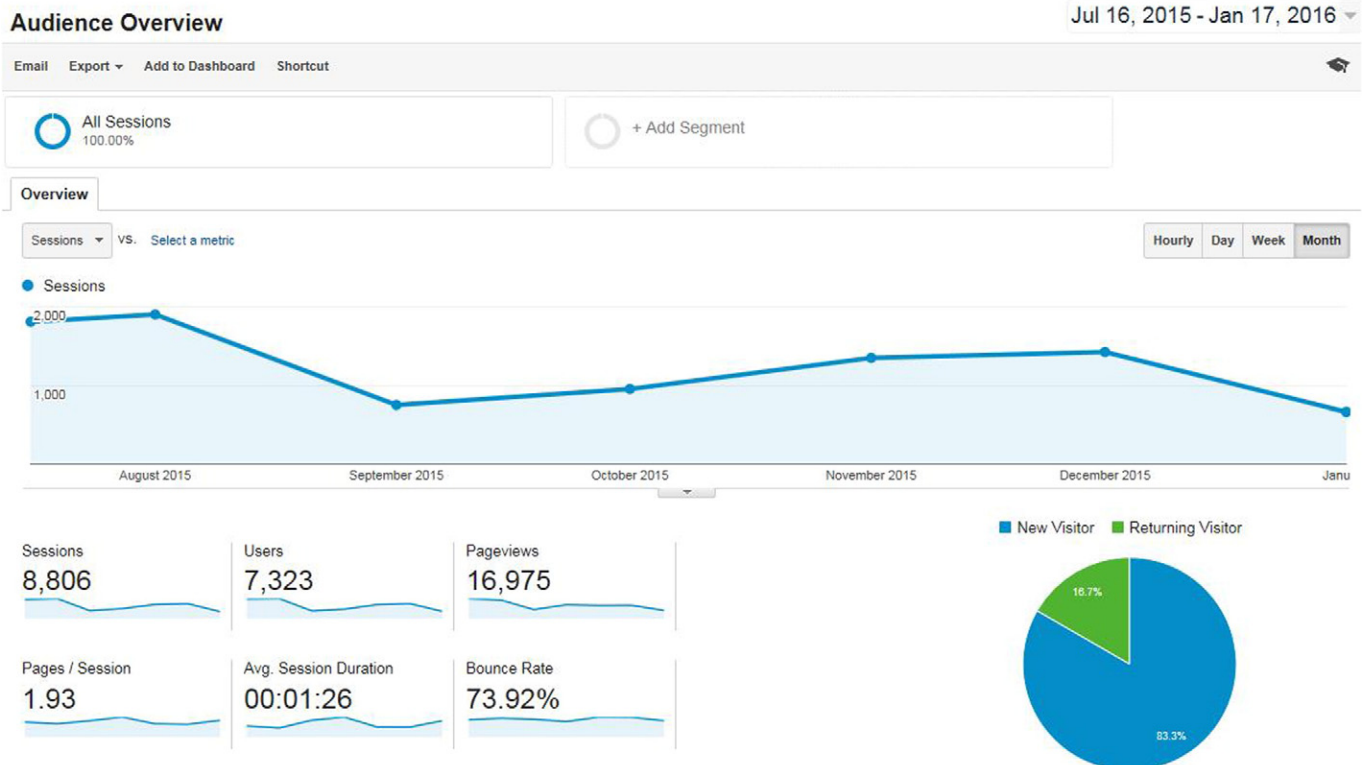

Fig. 6. Shows a screenshot from Google Analytics of visits to *Infórmate* during the entire campaign period.

Table 4
Number of pageviews by *Infórmate* section over the entire campaign period.

Page type	Pageviews (includes repeats) N (%)	Unique pageviews N (%)	Mean time on page	Entrances N (%)	Bounce rate %	Exit %
Total	16,975	13,725	1:33	8779	73.92	51.72
Home page in Spanish	7854 (46.27)	6520 (47.50)	1:35	6399 (72.89)	71.37	68.17
Home page in English	658 (3.88)	480 (3.5)	1:03	138 (1.57)	44.20	25.23
Treatment options in Spanish	375 (2.21)	307 (2.24)	1:53	86 (0.98)	79.07	40.53
Treatment options in English	398 (2.34)	303 (2.21)	1:26	61 (0.69)	63.93	30.90
Benefits & risks in Spanish	278 (1.64)	225 (1.64)	2:05	62 (0.71)	77.42	34.89
Benefits & risks in English	277 (1.63)	217 (1.58)	1:12	21 (0.24)	66.67	24.91
Donation: step-by-step in Spanish	392 (2.31)	302 (2.20)	2:27	92 (1.05)	75.00	42.09
Donation: step-by-step in English	324 (1.91)	260 (1.89)	1:16	68 (0.77)	70.59	35.19
Financial Issues in Spanish	535 (3.15)	366 (2.67)	1:59	101 (1.15)	80.20	29.72
Financial Issues in English	442 (2.60)	343 (2.50)	1:20	90 (1.03)	71.11	37.33
Immigrant Issues in Spanish	545 (3.21)	367 (2.67)	2:02	118 (1.34)	69.49	32.11
Immigrant Issues in English	599 (3.53)	469 (3.42)	1:41	212 (2.41)	81.13	44.91
Cultural Beliefs & Myths in Spanish	267 (1.57)	212 (1.54)	1:45	33 (0.38)	81.82	30.71
Cultural Beliefs & Myths in English	345 (2.03)	275 (2.00)	1:58	36 (0.41)	58.33	33.33

mirrors the age range of living kidney donors in the U.S. (United Network for Organ Sharing, 2015). Accordingly, the website may be delivering its intended support for informed treatment decision making to potential living donors.

Infórmate had wide reach — to at least 99 countries, which is almost four times greater than that of other reported interventions (e.g., 26 countries) (Eng and Noonan, 2014). Since Google Analytics does not report website visitors' ethnicity, it is unknown whether the campaign reached the Hispanic population. However, given that half of all sessions were in Spanish suggests that our campaign reached many Spanish-speakers. While most visitors were from the United States, many were from Spanish-speaking countries, e.g., Mexico. Research into how mass and social media campaigns can best reach people in other countries may help to enhance patients', families', and potential living donors' informed decision making worldwide.

The most commonly viewed website topics were *Immigrant Issues* and *Financial Issues*. Little information is publically available in Spanish about transplantation, and even less is available about policies regarding the politically sensitive topic of immigration status and access to transplantation or donation. Thus, the higher number of visits to these pages may be a reflection of the absence of other competing websites.

4.3. Media channels and future research

It remains to be determined which type of campaign media — traditional, social, or community outreach - drove the most traffic to the website as none can be measured with 100% certainty. But information on each channel can provide insights into the media used. Direct entrance was the most commonly used channel used to access *Infórmate*, which suggests that providing the website address in traditional or print advertising (broadcast PSAs, brochures, posters, pens, newspaper, CTA L trains) was key to driving traffic. Referring websites were the second most commonly used channel, thus, running digital campaigns and providing partners and community groups with the URL link is essential. Accordingly, our data suggest that people are intentionally seeking out *Infórmate* for more information, rather than stumbling upon it as an organic search would suggest. Social media was used by few (16%) visitors to access *Infórmate*. This rate was lower than expected considering that, among Hispanics, the Internet is the primary preferred channel of obtaining health information, although older generations prefer traditional means (e.g., television and newspapers) (Manganello et al., 2015). Additionally, Hispanics have the highest rate of any racial/ethnic group of using social media, specifically, Facebook. Paid searches through Google AdWords were the least commonly used channel. However, when it was used, Google AdWords were quite effective. According to Google, our click through rate of 0.61% was higher than the U.S. national average of 0.11% during our entire study period, signaling high relevance of our AdWords for those who are searching for information (Google, n.d.).

Table 5
Visitor's demographics for the entire campaign[a].

Demographic	%[b]
Sex	
Male	54.1
Female	45.9
Age, range	
18–24	27.5
25–34	33.5
35–44	15.5
45–54	12.5
55–64	5.5
65 +	5.5

[a] The entire campaign period includes wave 1, wave 2, and the interim period.
[b] Percentage of total sessions.

Table 6
Visitor's media used to access *Infórmate* during the entire campaign[a].

Media	N (%)
Device	
Desktop	4675 (53.1)
Mobile	3719 (42.2)
Tablet	412 (4.7)
Browser	
Chrome	5131 (58.27)
Safari	1075 (12.21)
Internet Explorer	940 (10.67)
Other types (n = 17)	1660 (18.85)
Operating system	
Android (mobile)	2555 (29.01)
Windows (desktop)	2443 (27.74)
Macintosh (desktop)	1974 (22.42)
iOS (mobile)	1492 (16.94)
Other types (n = 7)	342 (3.89)
Acquisition channel[b]	
Direct	2887 (32.78)
Referral	2587 (29.38)
Social	1406 (15.97)
Organic search	1177 (13.37)
Paid search	740 (8.40)
Email	9 (0.10)

[a] Of all sessions.
[b] Direct refers to searching for the website directly, Referral refers to landing at *Infórmate* through a link from another website; 'Organic search' refers to landing at *Infórmate* after entering search terms into a browser to run a query.

A large-scale, theoretically-driven mass and social media campaign is needed to increase the Hispanic public's knowledge about LDKT, and increase LDKT rates (Allen and Reese, 2016). Information about the channel used can help to strategize future campaigns that emphasize getting the word out about *Infórmate*. The most common key words used to search for the website were Kidney disease, Donacion de, and Transplantes de riñon. Future campaigns will leverage our pilot study findings to highlight this topic in media messages in order to bring more traffic to the website. Because Google Analytics can track social media marketing (Gurd, 2012) it can contribute to the refinement of future mass media campaigns based on principles of campaign best practices (Noar, 2006).

4.4. Limitations

As a pilot study, we had limited resources. For example, we did not rely upon a media buyer to aid in purchasing ad placements. Thus, future campaigns with greater resources will leverage a media buyer who has relationships with Spanish media to identify and strategize optimal media outlets and opportunities to increase the reach and cost-effectiveness of the campaign. Additionally, CTA ads were not automatically removed at the end of each wave. This may have contributed to greater sessions and visitors in the interim and post-campaign periods as compared to the pre-campaign period.

5. Conclusion

Google Analytics suggest that our pilot mass and social media campaign's call to action was effective in increasing the public's traffic to the *Infórmate* website. Future research should assess whether a theoretically-driven mass media campaign increases the Hispanic public's knowledge about LDKT, and increases rates of LDKT.

Conflict of interest

None of the authors has a financial conflict of interest relating to this manuscript.

References

Allen, M., Reese, P., 2016. Transforming living kidney donation with a comprehensive strategy. PLoS Med. 13 (2), e1001948. http://dx.doi.org/10.1371/journal.pmed.1001948.

Alvaro, E., Siegel, J., Turcotte, D., Lisha, N., Crano, W., Dominick, A., 2008. Living kidney donation among Hispanics: a qualitative examination of barriers and opportunities. Prog. Transplant. 18, 243–250.

Alvaro, E., Siegel, J., Crano, W., Dominick, A., 2010. A mass mediated intervention on Hispanic organ donation. J. Health Commun. 15, 374–387. http://dx.doi.org/10.1080/10810731003753133.

Aykas, A., Uslu, A., Simsek, C., 2015. Mass media, online social network, and organ donation: old mistakes and new perspectives. Transplant. Proc. 47, 1070–1072. http://dx.doi.org/10.1016/j.transproceed.2014.09.182.

Breitkopf, C., 2009. Attitudes, beliefs and behaviors surrounding organ donation among Hispanic women. Curr. Opin. Organ Transplant. 14 (2), 191–195.

Brzeziński, M., Klikowicz, P., 2015. Facebook as a medium for promoting statement of intent for organ donation: 5-years of experience. Ann Transplant. 141–146 http://dx.doi.org/10.12659/AOT.892494 (20(Mar)).

Callendar, C., Miles, P., 2010. Minority organ donation: the power of an educated community. J. Am. Coll. Surg. 210 (5). http://dx.doi.org/10.1016/j.jamcollsurg.2010.02.037 (715–707).

Cameron, A.M., Massie, A.B., Alexander, C.E., et al., 2013. Social media and organ donor registration: the Facebook effect. Am. J. Transplant. 13, 2059–2065. http://dx.doi.org/10.1111/ajt.12312.

Crutzen, R., Roosjen, J.L., Poelman, J., 2013. Using Google Analytics as a process evaluation method for Internet-delivered interventions: an example on sexual health. Health Promot. Int. 28 (1), 36–42. http://dx.doi.org/10.1093/heapro/das008 (Mar).

Downing, K., Jones, L., 2008. Designing an educational strategy for increasing organ donor registration among older adults. Prog. Transplant. 18 (4), 290–296.

Eng, J.J., Noonan, V.K., 2014. Impact of An Online Medical Internet Site on Knowledge and Practice of Health Care Providers: A Mixed Methods Study of the Spinal Cord Injury Rehabilitation Evidence Project. 16(12) p. e296. http://dx.doi.org/10.2196/jmir.3453.

Feeley, T., Moon, S., 2009. A meta-analytic review of communication campaigns to promote organ donation. Commun. Rep. 22, 63–73.

Frates, J., Bohrer, G., Thomas, D., 2006. Promoting organ donation to Hispanics: the role of the media and medicine. J. Health Commun. 11 (7), 683–698.

Freeman, B., Potente, S., Rock, V., McIver, J., 2015. Social media campaigns that make a difference: what can public health learn from the corporate sector and other social change marketers? Res Pract. 25 (2), e2521517. http://dx.doi.org/10.17061/phrp2521517.

Google, d. Display Benchmarks URL: https://www.richmediagallery.com/tools/benchmarks (Accessed February 23, 2016).

Gordon, E., 2001. "They don't have to suffer for me": why dialysis patients refuse offers of living donor kidneys. Med. Anthropol. Q. 15 (2), 245–267.

Gordon, E., Caicedo, J., Ladner, D., Reddy, E., Abecassis, M., 2010. Transplant center provision of education and culturally and linguistically competent care: a national study. Am. J. Transplant. 10 (12), 2701–2707.

Gordon, E., Mullee, J., Ramirez, D., et al., 2014. Hispanic/Latino Concerns about living kidney donation: a focus group study. Prog. Transplant. 24 (2), 152–162. http://dx.doi.org/10.7182/pit2014946.

Gordon, E., Feinglass, J., Carney, P., et al., 2015a. A culturally targeted website for Hispanics/Latinos about living kidney donation and transplantation: a randomized controlled trial of increased knowledge. Transplantation (In press).

Gordon, E., Feinglass, J., Carney, P., et al., 2015b. A website intervention to increase knowledge about living kidney donation and transplantation among hispanic/latino dialysis patients. Progress in Transplantation (In press).

Gordon, E.J., Feinglass, J., Carney, P., et al., 2015c. Development of an interactive, bilingual, culturally targeted website about living kidney donation and transplantation for Hispanics. JMIR Res. Protoc. 4 (2), e42. http://dx.doi.org/10.2196/resprot.3838.

Gurd, J., 2012. Using Google Analytics to Track Social Media Marketing URL: http://www.smartinsights.com/google-analytics/google-analytics-campaign-tracking/using-google-analytics-to-track-social-media-marketing/Smart Insights.

Handal, M., 2013. How Much Traffic Should Your Website Really Get? August 27 URL: http://www.helpeverybodyeveryday.com/websocial-media/2094-how-much-traffic-should-your-website-get (Accessed 10–18-15. 2013).

Hirsch, L., 2010. Five secrets to leveraging maximum buying power with your media project. Facial. Plast. Surg. Clin. N. Am. 18, 525–531. http://dx.doi.org/10.1016/j.fsc.2010.06.010.

Jaffery, J., Becker, B., 2004. Evaluation of eHealthWeb sites for patients with chronic kidney disease. Am. J. Kidney Dis. 44 (1), 71–76.

Kent, M.L., Carr, B., Husted, R., Pop, R., 2011. Learning web analytics: a tool for strategic communication. Public Relat. Rev. 37, 536–543.

Levey, A., Atkins, R., Coresh, J., et al., 2007. Chronic kidney disease as a global public health problem. Kidney Int. 72, 247–259.

Makkar, S.R., Gilham, F., Williamson, A., Bisset, K., 2015. Usage of an online tool to help policymakers better engage with research: Web CIPHER. Implement. Sci. 10, 56. http://dx.doi.org/10.1186/s13012-015-0241-1.

Manganello, J.A., Gerstner, G., Pergolino, K., Graham, Y., Strogatz, D., 2015. Media and technology use among Hispanics/Latinos in New York: implications for health communication programs. J. Racial Ethn. Health Disparities.

Moody, E., Clemens, K., Storlsey, L., Waterman, A., Parikh, C., Garg, A., 2007. Improving online information for potential living kidney donors. Kidney Int. 71, 1062–1070.

Moorhead, S., Hazlett, D., Harrison, L., Carroll, J., Irwin, A., Hoving, C., 2013. A new dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. J. Med. Internet Res. 15, e85. http://dx.doi.org/10.2196/jmir.1933.

Noar, S., 2006. A 10-year retrospective of research in health mass media campaigns: where do we go from here? J. Health Commun. 11, 21–42.

Pakkala, H., Presser, K., Christensen, T., 2012. Using Google Analytics to measure visitor statistics: the case of food composition websites. Int. J. Inf. Manag. 32 (6), 504–512.

Randolph, W., Viswanath, K., 2004. Lessons learned from public health mass media campaigns: marketing health in a crowded MediaWorld. Annu. Rev. Public Health 25, 419–437.

Rogers, E., Storey, J., 1987. Communication campaigns. In: Berger, C., Chafee, S. (Eds.), Handbook of Communication Science. Sage, London, pp. 817–846 (see p.821).

Salim, A., Schulman, D., Ley, E., Berry, C., Navarro, S., Chan, L., 2010. Contributing factors for the willingness to donate organs in the Hispanic American population. Arch. Surg. 145 (7), 684–689. http://dx.doi.org/10.1001/archsurg.2010.110.

Siegel, J., Alvaro, E., Lac, A., Crano, W., 2008. Intentions of becoming a living organ donor among Hispanics: a theory-based approach exploring differences between living and nonliving organ donation. J. Health Commun. 13, 80–99. http://dx.doi.org/10.1080/10810730701807142.

Siegel, J.T., Alvaro, E.M., Hohman, Z.P., Maurer, D., Dec 2011. "Can you spare an organ?": exploring Hispanic Americans' willingness to discuss living organ donation with loved ones. Health Commun. 26 (8), 754–764. http://dx.doi.org/10.1080/10410236. 2011.566831.

Siegel, J.T., O'Brien, E.K., Alvaro, E.M., Poulsen, J.A., 2014. Barriers to living donation among low-resource Hispanics. Qual. Health Res. 24, 1360–1367.

Snyder, L.B., Hamilton, M.A., Mitchell, E.W., Kiwanuka-Tondo, J., Fleming-Milici, F., Proctor, D., 2004. A meta-analysis of the effect of mediated health communication campaigns on behavior change in the United States. J. Health Commun. 9, 71–96.

Sonderup, L., 2004. http://www.ad-mkt-review.com/public_html/docs/fs075.html (Accessed 12-3-15. 2010).

Stefanone, M., Anker, A., Evans, M., Feeley, T., 2012. Click to "like" organ donation: the use of online media to promote organ donor registration. Prog. Transplant. 22, 168–174. http://dx.doi.org/10.7182/pit2012931.

Tan, J.C., Gordon, E.J., Dew, M.A., et al., 2015. Living donor kidney transplantation: facilitating education about live kidney donation — recommendations from a consensus conference. Clin. J. Am. Soc. Nephrol. 10 (8), 1670–1677. http://dx.doi.org/10.2215/CJN.01030115.

U.S. Renal Data System, 2014. USRDS 2014 Annual Data Report: Atlas of Chronic Kidney Disease and End-stage Renal Disease in the United States. National Institutes of Health, Bethesda, MD http://www.usrds.org/adr.htm (Accessed October 15, 2015).

United Network for Organ Sharing, n.d. OPTN. U.S. Transplants Performed: January 1, 1988–July 31, 2015. Based on OPTN Data as of October 23, 2015 URL: http://www.unos.org/data/ (accessed October 31, 2015).

United Network for Organ Sharing, 2015. Living Donors Recovered in the U.S. by Donor Age, Donors Recovered : January 1, 1988–July 31, 2015, Based on OPTN Data as of October 23, 2015. http://optn.transplant.hrsa.gov/converge/latestData/rptData.asp (accessed 10–31-15) .

Young, V., Rajapandian, V., Eley, C., Hoekstra, B., Lecky, D., McNulty, C., 2015. Monitoring web site usage of e-bug: a hygiene and antibiotic awareness resource for children. JMIR Res. Protoc. 4 (4), e131. http://dx.doi.org/10.2196/resprot.4049.