Health Information

# Learning from marketing: Rapid development of medication messages that engage patients

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ABSTRACT

*Objective:* To adapt marketing approaches in a health services environment.
*Methods:* Researchers and advertising professionals partnered in developing advertising-style messages designed to activate patients pre-identified as having chronic kidney disease to ask providers about recommended medications. We assessed feasibility of the development process by evaluating partnership structure, costs, and timeframe. We tested messages with patients and providers using preliminary surveys to refine initial messages and subsequent focus groups to identify the most persuasive ones.
*Results:* The partnership achieved an efficient structure, $14,550 total costs, and 4-month timeframe. The advertising team developed 11 initial messages. The research team conducted surveys and focus groups with a total of 13 patients and 8 providers to identify three messages as most activating. Focus group themes suggested the general approach of using advertising-style messages was acceptable if it supported patient–provider relationships and had a credible evidence base. Individual messages were more motivating if they elicited personal identification with imagery, particular emotions, active patient role, and message clarity.
*Conclusion:* We demonstrated feasibility of a research-advertising partnership and acceptability and likely impact of advertising-style messages on patient medication-seeking behavior.
*Practice implications:* Healthcare systems may want to replicate our adaptation of marketing approaches to patients with chronic conditions.

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## 1. Introduction

Chronic conditions account for the majority of preventable adult morbidity and mortality [1]. Effective use of medications may delay or halt disease progression, yet they are frequently under-utilized. Chronic kidney disease—which affects 15% of U.S. adults [1]—is representative of this sizable missed opportunity [2]. Nearly half of persons with CKD having stage 3 ("moderate") disease, a critical juncture during which patients are at increased risk for progression to end-stage disease (i.e., need for dialysis or transplantation) [1,3] but also have the potential to benefit from secondary prevention [4–6]. Use of recommended, inexpensive medications is a proven strategy of preventing or delaying CKD

progression [3,7–11]. Yet low-cost generic medications for CKD go largely under-prescribed [7,9–11].

Practice guidelines and patient education campaigns generally have failed to increase initiation of indicated CKD medications [7]. Even among high-risk patients with stages 3–4 CKD and concurrent diabetes mellitus and hypertension, only 60% are taking an inhibitor of the renin-angiotensin system (angiotensin-converting enzyme (ACE) inhibitor or angiotensin II receptor blocker (ARB))—despite evidence that these medications help protect the kidneys from further deterioration [12]. In the current study, we focus on ACE inhibitors because they are generally well-tolerated and inexpensive, and numerous guidelines endorse their use [7,13].

Interventions that boost patient activation for self-care of chronic conditions improve outcomes [14,15]. Priming patients with specific materials prior to clinic visits increases discussion with providers and the likelihood that specific medications will be prescribed [14,16]. Nevertheless, patient activation efforts are only as effective as their ability to capture attention and overcome

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behavioral barriers that hinder engagement [17,18]. Behavioral barriers are both cognitive (knowledge-based, "rational") and affective (emotions-based) [19]. Examples of the latter include avoidance, denial, and uncertainty [5,20–22]. Patients are more likely to overcome behavioral barriers if they are explicitly addressed [23]. Clinical and public health interventions often have focused solely on overcoming cognitive, but not affective, barriers [24].

Marketing and social psychology approaches have successfully overcome affective barriers by directly targeting emotions [14,25,26]. A majority of customers choose products based on emotions [27]. Pharmaceutical companies have leveraged this propensity in direct-to-consumer (DTC) advertising: 67% of DTC advertisements appeal to emotions rather than knowledge [28]. Their impact on patient medication requests and initiation is well documented. For example, providers report that their patients regularly inquire about medications they have seen in advertisements [29]. Eight percent of consumers who see a specific medication advertised then request it from their physicians, and 73% of those physicians prescribe it [30].

Healthcare systems have a notable benefit not available to pharmaceutical companies—access to patient health records. They can search these to identify patients who are most likely to benefit from medical interventions and yet are not receiving them. Rather than needing to launch a mass marketing campaign to reach just the few patients for whom the intervention is relevant, they have the potential to target patients selectively. But healthcare systems face considerable challenges when contemplating development of marketing materials. They may have limited time, money, or expertise [31]. Furthermore, medication marketing in the U.S. is dominated by pharmaceutical companies whose goals are increased market penetration and profit. In contrast, medication promotion by healthcare systems must first and foremost support the therapeutic alliance between patients and providers. However, patients or providers may conflate DTC-style messages sent by health systems with pharmaceutical marketing and become concerned that health systems are pursuing secondary gain rather than patient well-being. In short, healthcare systems are well positioned to perform medication marketing but to do so require resources, expertise, and assurances that the approach is likely to be effective and will not undermine the patient–provider relationship.

We sought to develop digital marketing materials—"advertising-style messages"—capable of overcoming emotional barriers preventing adoption of recommended medications by patients with chronic conditions, in this case ACE inhibitors by patients with moderate CKD. We predicted that our health services research team could partner successfully with medical advertising professionals to produce advertising-style messages that would be both acceptable as a general approach and individually persuasive. In summary, our goals were to assess (a) the feasibility of the partnered development process and (b) the acceptability and potential impact of advertising-style messages designed to prompt patient activation and patient–provider communication regarding initiation of recommended medications.

## 2. Methods

We describe below our partnership, development process, and how we assessed them for feasibility and the messages for acceptability and impact.

### 2.1. Feasibility issues

Our health services researcher team ("research team") partnered with two medical advertising professionals ("advertising team"). The partnership structure was designed to bring together complementary areas of expertise but minimize overlap of responsibilities and workflow. The research team—one primary care internal medicine physician (principal investigator (PI)) and two research assistants (RAs) pursuing their masters' degrees in public health—encompassed expertise in clinical care, chronic disease management, health communication, patient activation/behavior change, and mixed methods research. One RA had expertise in graphic design. The advertising team members were selected for experience in creative direction of pharmaceutical marketing campaigns. Both work with a non-profit established to inform medical decision-making with balanced information (www.rxbalance.org). Once partnered, research and advertising teams co-designed project responsibilities and workflow.

The research team assessed the feasibility of the partnership for future replication by others according to its structure (necessary expertise, responsibilities, workflow), costs (for materials, fees, and personnel time), and timeframe. It collected the cost and timeframe data to guide health systems potentially interested in budgeting for and replicating the partnered development process rather than as something it is arguing should—or even can—be linked to clinical outcomes data, which are not available in the current study.

### 2.2. Defining campaign characteristics

The research team defined characteristics essential to any advertising campaign—first, the target audience, patients with moderate CKD. The ideal target patient population for an intervention promoting medication initiation is one with a chronic condition that can be defined with specificity, has a strong evidence base favoring medication use, and yet has persistent underutilization. Second, the anticipated context of the messages was as part of a larger, direct-to-patient campaign, within which they would be combined with each other and educational materials. Third, the content objective of each message was to overcome at least one emotional barrier to patient activation. Finally, the team wanted the messages to be sent electronically but to retain flexibility in the exact mechanism of delivery (e.g., via webpage, smartphone, or email). Thus, it chose a message format that could be applied across a variety of digital platforms—a primarily pictorial one containing static visual components ("imagery") combined with short phrases/sentences ("text").

### 2.3. Development of advertising-style messages

The teams co-developed the advertising-style messages in an iterative fashion described further below. Briefly, the advertising team developed the initial 11 messages. The research team used a preliminary survey to evaluate these and identified five for refinement and further testing in focus groups. Focus group feedback then informed the selection of the final three messages.

#### 2.3.1. Evidence identification and synthesis

The advertising team began its standard creative process by familiarizing itself with research evidence of five types:

- Disease—the condition (CKD) and how providers manage it.
- Therapeutic—perceived benefits and limitations of treatment options (e.g., ACE inhibitors).
- Company—how specific pharmaceutical companies approach marketing medication for the condition within the context of their product portfolio or competing products.
- Brand—how medications for the condition are typically promoted.
- Market—patient and prescriber knowledge and attitudes about the condition and its medications.

The PI identified and synthesized the first two types of evidence, while the advertising team did the same for the latter three.

### 2.3.2. Translating evidence into persuasive messages

The advertising team then generated the creative work plan, which identified the learning objectives of the advertising campaign and specific barriers to initiation of the promoted medication. The research team reviewed and revised it. The final version served as a consensus document to guide the development process (Appendix 1). The advertising team crafted overarching creative themes that would engage patients. They separately brainstormed message ideas that fit these themes and then deliberated together—discussing message feedback and modifications—until they generated 11 initial messages for testing by the research team.

The research and advertising teams co-developed brief educational information (on CKD and ACE inhibitors) written in simple, patient-appropriate language (Appendix 2). It was designed to be packaged with the messages, read after patient attention was already engaged, and support patients at the rational level by building knowledge. The information was tested in focus groups only.

### 2.4. Inclusion and exclusion criteria and recruitment

For patients, inclusion criteria for the preliminary survey were more permissive than those for focus groups. Survey patients were required to have one or more of these conditions: CKD stages 3–4 (estimated glomerular filtration rate (eGFR) 15–59 mL/min/1.73 m$^2$) [8], type 2 diabetes, or hypertension (because the latter two conditions are the most frequent etiologies of CKD). Patient focus group inclusion criteria were Stage 3b CKD (eGFR 30–44 mL/min/1.73 m$^2$) or Stage 3a (eGFR 45–59 mL/min/1.73 m$^2$) [8] with additional risk factors for progression (specifically, poorly controlled diabetes and/or hypertension), no current use of ACE inhibitors or ARBs, and no allergy or contraindication to ACE inhibitors. For providers, inclusion criteria for the survey and focus groups were the same—being a practicing primary care provider in outpatient general internal medicine, family medicine, or geriatrics at the main campus of Stanford Health Care ($n = 32$). Exclusion criteria for both patients and providers were non-English speaking and, due to the rapid timeframe of the study, inability to complete the preliminary survey within 1 week of request or inability to attend focus groups at the pre-set times offered. The research team used EHR data to identify eligible patient participants and, among these, the sub-set ($n = 28$) who had given prior consent, as members of the Stanford research registry, to be contacted directly about research projects. The research team recruited among these patients using an invitation e-mail or phone call, whichever the registry listed as their preferred contact method, and among primary care providers by email invitation letter.

### 2.5. Preliminary surveys and message refinement

The research team used a short hardcopy survey to collect feedback on the 11 initial messages from a convenience sample of six patients and two providers. While the survey has not been independently validated, the advertising team has applied it regularly on prior work and quantitative questions rate messages according to marketing criteria shown individually to predict patient engagement and activation [32–38] (Table 1, upper right). Research personnel administered surveys, while respondents viewed messages on a computer screen. Respondents were told that messages would be delivered electronically to patients by healthcare systems or providers. Survey goals were (a) for patients,

to identify three to five messages that were most compelling to proceed to focus group testing and determine refinements to be made prior to that, and (b) for both groups, to identify negative reactions to specific messages or the approach in general, which would suggest that they be discarded.

After determining that patient quantitative and narrative feedback were aligned (e.g., high Likert scale scores aligned with positive narrative feedback), the research team used survey responses to identify the most persuasive messages. For each patient, messages were ranked from favorite to least favorite based on the sum of their scores (possible range 5–25) and their top-5 lists were recorded. The research team determined that there was consistency regarding highest-ranking messages across patients, identified the five highest-ranking messages to proceed in testing, and used narrative feedback to refine them.

### 2.6. Focus groups and message testing

The research team PI facilitated two semi-structured focus groups with patients and two with providers. RAs collected field notes using a template grid [39] and performed digital MacBook audio-capture. Patient focus groups lasted 90 min., while provider sessions were 60 min. A professional transcriptionist transcribed audio-capture. Participants received $20 gift cards as compensation.

Prior to group discussion, participants performed a silent self-reflection activity—using paper printouts of the advertising-style messages—that was designed to prepare them to share their perspectives during group discussion (Table 1, upper rows). Patients were asked to consider whether the messages were compelling (using the same marketing criteria as the preliminary survey). Providers were asked whether the messages would influence their work with patients. Participants were encouraged to write notes for their own use.

During group discussion, messages were projected on a large screen. The facilitator asked questions using a funnel approach (Table 1) [39]. For patients, discussion began with general reactions to each message followed by targeted questions on its motivational nature. For providers, questions focused on aspects of the message that would help, hinder, or otherwise affect their interactions and relationships with patients.

Participants from one patient and two provider focus groups were asked about the educational information. (Table 1) In the second patient focus group, participants were not shown the information because of time constraints but were asked to describe what educational information, if any, they would like to receive with the messages.

### 2.7. Data analysis and selection of final messages

Research team members (V.Y., E.T., and J.P.) independently applied content analysis to focus group transcripts and field notes to identify inductive codes [39,40]. They then iteratively developed thematic categories (themes) from the codes [39]. Next, each team member independently returned to original quotes to review and modify how they were mapped to themes and to confirm and refine themes. Circulation of individual notes on these processes followed by group discussion confirmed agreement on final themes [39].

The research team next identified and grouped together themes related to the general approach of using advertising-style messages. The team felt it was important to assure that the approach did not undermine the therapeutic alliance between patients and providers. The team also identified themes related to individual messages. It felt it was important to better understand why individual messages were (or were not) persuasive to add to

**Table 1**
Focus groups: format and questions.

| Topics covered (in listed order) | Used in focus group (X = yes) | | Questions |
|---|---|---|---|
| | Patient | Provider | |
| **Self-reflection activity** | | | |
| Advertising-style messages[a] | | | |
| Impact on patients and patient actions | X | | *Used 5-point Likert scales to answer questions on marketing criteria assessing likely impact of each advertising-style message on patients*[b]: |
| | | | How likely would you be to stop and read this message? |
| | | | How believable is the message conveyed here? |
| | | | How relevant to your health and life is this message? |
| | | | How clearly does this message communicate? |
| | | | How likely would you be to take action in some way after seeing this message? |
| Impact on patient-provider relationship | | X | *Were encouraged to write down thoughts, if desired:* |
| | | | Is there anything about the message that would help, hinder, or otherwise affect your work with a patient? |
| **Group discussion** | | | |
| Advertising-style messages[a] | | | |
| Reactions to each message | X | X | Can you tell us what aspects of this message you particularly liked, disliked, or had a strong reaction to? |
| Impact on actions | X | | Imagine that you saw this message in your daily life. Ask yourself, would it motivate you to take action in any way? |
| | | | If so, how would you take action in your life? |
| | | | If not, can you imagine changes to it that would make it more likely to motivate you personally? |
| Impact on patient-provider relationship | | X | Is there anything about the message that would help, hinder, or otherwise affect your work with a patient? |
| **Educational information** | | | |
| General reactions and impact on patient-provider relationship | X | X | *Patient question*[c]: Can you comment on aspects of the information that stand out in your mind? |
| | | | *Provider question:* Is there anything about the information that would help, hinder or otherwise affect your work with a patient? |
| Other materials desired | X | X | *Patient question:* Can you tell us what additional information would be most useful for you to know? |
| | | | *Provider question:* Are there other materials you might want the patient to bring into a conversation they initiated with you? |

[a] Patient focus group participants viewed all five advertising-style messages. Provider focus group participants viewed only the final three advertising-style messages.
[b] During the preliminary survey stage of testing, survey questions included these five questions (with accompanying 5-point Likert scales) but also open-ended questions. All respondents were asked, "Do you have additional comments about this message?" Providers only were asked, "Do you think it is acceptable for patients to receive such messages?" The Likert scale anchors used for the marketing criteria questions were the following: stopping power *[very unlikely, very likely]*, believability *[not at all believable, very believable]*, relevance *[not at all relevant, very relevant]*, clarity *[not at all clear, very clear]*, and motivation *[very unlikely, very likely]*.
[c] This question was asked only in patient focus group 1.

the nascent literature on medication marketing within healthcare systems and ensure that selected messages were complementary, but not duplicative, in the emotional barriers they overcame and their means of doing so (if elucidated). Finally, the research team used themes on individual messages to select those with the highest potential for impact in real-world settings.

The Stanford Institutional Review Board approved the study protocol. Participants provided written informed consent.

## 3. Results

### 3.1. Feasibility of partnership

The research and advertising teams agreed on the basic partnership structure (necessary expertise, responsibilities, and workflows), fees, and timeframe prior to project initiation and made only minor modifications subsequently. The project was completed relatively rapidly and inexpensively (Fig. 1).

### 3.2. Preliminary surveys

Five of 11 initial messages had cumulative survey scores that placed them on the top-5 lists for three or more of six (≥50%) patients and one or more of two (≥50%) providers. Narrative feedback suggested specific modifications to improve message impact: avoid wordiness and jargon (e.g., "what does 'therapy' mean?") and make stronger visual connections between imagery

and text components (e.g., "move words closer to picture"). Neither patient nor provider feedback identified objections to the general approach or highest-ranking messages.
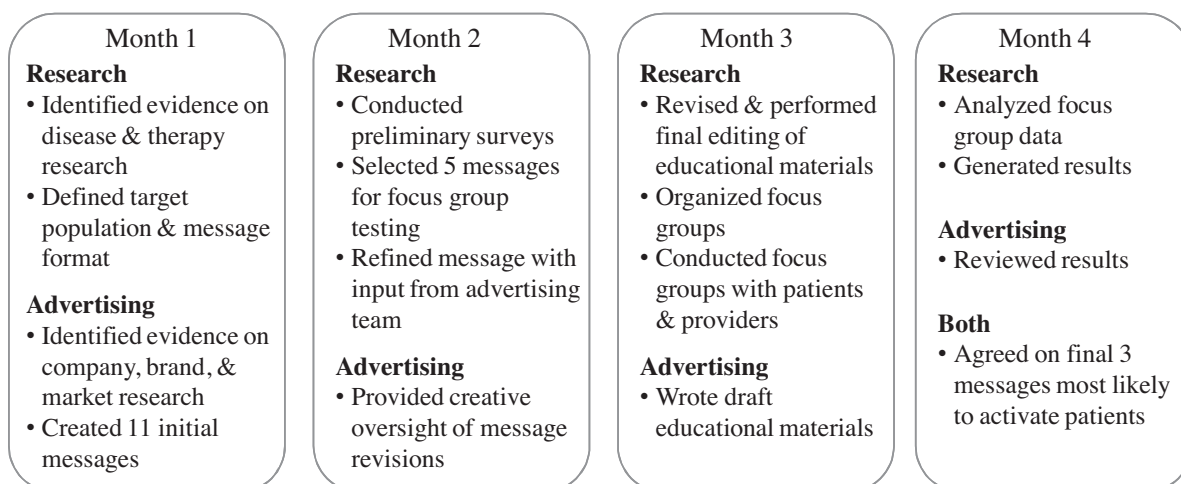
### 3.3. Focus groups

The research team attempted contact with 28 patients deemed eligible for focus groups. Focus groups were only offered at two times occurring within 2 weeks of attempted contact. Nine patients were not reachable, four were not interested, and eight had scheduling conflicts. Seven of 28 (25%) eligible patients participated in two focus groups: mean age was 59 years (range 51–69), five (71%) were men, four (57%) had diabetes, and six (86%) had hypertension. Two provider focus groups were conducted with 6 of 32 (19%) eligible primary care providers: three general internal medicine and three family medicine physicians.

#### 3.3.1. Acceptability of general approach

Patient and provider themes were similar. Some patients expressed a general suspicion of messages that were sent or appeared to be influenced by the pharmaceutical industry, while providers were skeptical of medication requests that did not have "good science" supporting them. (Table 2A, Row 2A.iv) But if certain conditions were met, both groups favored the general approach of using advertising-style messages to engage patients (Rows 2A.i–iii). Acceptable messages were those that supported a positive, therapeutic patient–provider relationship (Row 2A.i) and

## A. Partnership Responsibilities, Workflow, and Time Frame

**Month 1**

**Research**
- Identified evidence on disease & therapy research
- Defined target population & message format

**Advertising**
- Identified evidence on company, brand, & market research
- Created 11 initial messages

**Month 2**

**Research**
- Conducted preliminary surveys
- Selected 5 messages for focus group testing
- Refined message with input from advertising team

**Advertising**
- Provided creative oversight of message revisions

**Month 3**

**Research**
- Revised & performed final editing of educational materials
- Organized focus groups
- Conducted focus groups with patients & providers

**Advertising**
- Wrote draft educational materials

**Month 4**

**Research**
- Analyzed focus group data
- Generated results

**Advertising**
- Reviewed results

**Both**
- Agreed on final 3 messages most likely to activate patients

### B. Costs

| Expenditure Category | Cost |
|---|---|
| Research team personnel costs[a] | $ 8,090 |
| Advertising team fee[b] | $ 6,050 |
| Focus group incentives, transcriptions, and food | $   410 |
| **Total** | **$14,550** |

[a]Research team personnel costs = salary+benefits of principal investigator (5% effort) & research assistants (30% total effort) over 4 months.
[b]The charged advertising team fee was actually 50% lower than what is listed here (due to a reduced fee). But we believe the listed amount is more accurate for those interested in replicating our approach—and is indeed what the advertising team fees are on a current, similar project being co-developed by the same research and advertising teams.

**Fig. 1.** Feasibility: partnership responsibilities, workflow, timeframe, and costs.

had a credible evidence base (Row 2A.iii). Patients characterized them as a kind of public service announcement, while providers characterized them as a useful means of priming patients for clinic visits.

Both groups endorsed having educational information accompany the messages, viewing it as further preparing patients for productive medication discussions. (Table 2B, Row 2B.i) But they highlighted the importance of matching message content to the level of patient sophistication and adding even more medication information—on drug names and possible side effects.

### 3.3.2. Potential impact of messages

*General themes*: Patient and provider themes identified individual message characteristics that predicted greater impact in real-world settings (Table 3). Messages were more likely to capture attention if their imagery resonated with the viewers, particularly in a positive manner—through identification with people or positive associations with symbols or objects (Table 3, Rows 3.i, ii, and iv). Second, the emotional tone of the messages elicited complex responses: a tone that was too scary or negative was experienced as a barrier to engagement (Row 3.iii), but one that was positive or had a sense of urgency was felt to be a strong motivator for action (Rows 3.iv and v). Finally, messages that promoted a sense of patient self-advocacy and were clear (vs. confusing) were more likely to be compelling (Rows 3.vi and vii).

*Message-specific themes and selection of final messages*: Patients identified messages that provoked positive associations of familiarity, family relationships, responsibility, winning, or a sense of urgency (but without too much fear) as the most compelling ones (Table 4, Rows 4.i–iii). Messages that prompted emotions of avoidance or confusion were not well received. (Rows 4.iv and v) The research and advertising teams used these themes, in combination with the general themes on potential impact, to identify the three final messages most likely to capture attention and motivate action (Rows 4.i–iii).

When patients were asked what they would actually do following receipt of such messages, most stated they would make a "mental note" to have a medication discussion during the next clinic visit (e.g., "I use a sticky note… so that way I would remember to ask her [my doctor]") or would contact their provider immediately. Some also would seek information from other sources (e.g., online, from friends or family).

## 4. Discussion and conclusion

### 4.1. Discussion

This study demonstrated the feasibility of a partnership between research and advertising teams and the acceptability and potential impact of advertising-style messages directed at patients with chronic conditions (here, moderate CKD) who are not yet taking indicated medications (ACE inhibitors). The most persuasive messages boosted patient activation by capturing attention and harnessing patient emotions to overcome affective barriers—in ways that could increase their engagement in chronic disease self-care. Other teams with similar goals may want to replicate our partnership and development approach to develop messages of their own.

When we began this project, there was little published evidence on comparable projects that had developed advertising-style messages directed at specific patients with chronic conditions. Interestingly, we independently developed a partnership structure and process similar to those recently outlined by Kravitz et al.

**Table 2**
Acceptability of general approach of using advertising-style messages and educational information with patients.

| Themes: general approach of materials is acceptable if they do this | Sub-themes and representative quotes | |
|---|---|---|
| | Patients | Providers |
| **2A. Advertising-style messages** | | |
| *Support patient-provider relationship* | | |
| Row 2A.i | *Prompt good conversation/collaboration* | *Prompt good conversation/collaboration* |
| | "… It would motivate me to talk to my doctor about ACE inhibitors and what it would do to protect my kidneys." | "I like… the concept of embracing treatment, it gives a cooperative type of—it makes me think of a cooperative relationship between the patient and the physician. It's like, oh, I saw this and I'm ready! I'm open now to taking this treatment. I heard about this and I'm open to it if you want to suggest it to me…." |
| | "Yes, I would talk to my doctor, you know, I would ask – at least I would ask what ACE inhibitor is and does it apply to me? Can it help me?" | "I actually really appreciate the fact that they [patients], I assume, looked into many things. You know a lot of patients will do a lot of individual research on their own and they seem very – like they've thought about the science, all these different things. I appreciate that, so then we have a very good conversation." |
| | "The next doctor's visit… I would say, "Hey, doc. What do you think about my kidneys?…" It would make me ask questions." | |
| Row 2A.ii | *Do not undermine patient trust in provider* | *Do not undermine patient trust in provider* |
| | "I assume already that my doctor is giving me the best stuff that he can give me now, you know, that's available, and I have a great deal of admiration for my doctor. I mean, he's a wonderful person, and that just kind of said, "I've got to ask him, why didn't he tell me about it? He knows I'm ignorant and, you know, as far as anything in that category, for sure, you know." | Exchange between providers regarding the ACE of Kidneys message: |
| | | P1: "… Seeing playing cards, you know, you think like poker and you think of someone sort of surreptitiously keeping this thing like up his sleeve…. I was thinking maybe the patient would come in with a little bit more distrust…." |
| | | P2: "Yeah, I had similar thoughts. I just felt like [this message] made me uncomfortable because it makes it seem like the doctor has not been telling them about something." |
| *Have appropriate evidence base* | | |
| Row 2A.iii | *Credible source (patient depends on credible/trustworthy source— e.g., person, web site—for knowledge translation)* | *Medical evidence favorable (provider comes to own determination regarding evidence—e.g., studies)* |
| | "I would want to know if I could corroborate that this medication actually does have a positive effect. There may be some websites I can go to…. As long as I feel it's a trusted source, it would be fine for me…. If it's at Stanford or Columbia, you know, Harvard – you know those kinds of things would make me believe it's probably more credible." | "Sometimes I'm very grateful for what the patients might bring up. You could use the example of immunizations. As much as I want to be on the ball all the time, sometimes I do forget to recommend the shingles vaccination to somebody…, and I'm grateful – I'm so glad you brought this up! This is absolutely appropriate. I think it – some of the difference between the negative and positive emotions, the resistance versus the gratitude or relief or whatever, is the level of appropriateness of the request." |
| | "I think that if the doctor handed it to me, I would value that." | |
| Row 2A.iv | *Suspicious/untrustworthy source* | *Medical evidence unfavorable* |
| | "I feel a little suspicious of [some information] because it all is coming from the—like the pharmaceutical industry is influencing them to send it to me kind of thing." | "I think my response to a request like that really depends on how appropriate it is. I've had requests that are just really out there or that don't have a lot of good science behind them." |
| **2B. Educational materials** | | |
| *Prime patient with basic information* | | |
| Row 2B.i | *Prime patient with basic information* | *Prime patient with basic information* |
| | "To put that in the ads also? Yeah, I think that would be a great idea. I think most people would just talk to their doctor, just when they see the message. But for those who want more, if there's a source that looks credible and you could put that in the message, it's terrific." | "I think that this information—these informational materials would help my work with a patient…. It's just enough and good background information." |
| | | "I like all of these. I like [other provider's] idea, sort of prime the patient." |
| | | "It's one of those things where I think it has a very positive bent to it where, as a patient, I would be really willing to talk to that, consider that." |

[41]. The Kravitz research team partnered with a marketing team at a for-profit communications company to develop four public service announcement (PSA)-style video clips (2.5 min long) designed to prompt patients to discuss depression symptoms with their primary care providers. The PSAs all were iterations of the same message concept but included different actors chosen to resemble four targeted demographic groups. Kravitz project costs totaled $200,000, and the timeframe was 3 years. In comparison, current project total costs were $14,550, the timeframe was 4 months, and we produced three separate digital but static messages (i.e., using a pictorial- rather than video-based delivery format) to be used in a campaign on a single medication class. While costs accrued in the Kravitz project and in our project are not directly comparable because the

marketing-style messages developed by each have different delivery formats, our development costs were considerably lower than those of the Kravitz project and also were much lower than the typical pharmaceutical campaign budget, in which development of a single pictorial advertisement like the ones we developed costs in the range of $40,000–60,000.

In the current project, both patient and provider respondents indicated that the general approach of advertising-style messages would be acceptable in real-world settings as long as certain criteria were met. In prior research, consumers usually have reported neutral to positive attitudes toward DTC advertising [42]. In contrast, providers more often disapprove of DTC advertisements [43], perhaps due to concerns about biased information or patients making inappropriate medication requests [44]. Yet some

**Table 3**
Potential impact: general message characteristics that are suggestive of higher real-world impact.

| Themes and sub-themes | Representative quotes | |
|---|---|---|
| | Patient | Provider |
| **3A. Personal identification with imagery** | | |
| Imagery of humans— identification with those pictured is important<br>Row 3.i | "I picture myself with that lady right there,… that picture of somebody that I really—I like."<br>"… We are senior citizens and we have lived a lot of our life already. And I'm not just saying that I am giving up or anything like that, but like to see the kid and say, oh, man, he… needs every chance he can get…. I look at that and there's something there for me that I can relate to. My kids are grown. I just became a grandfather, actually a couple weeks ago…. But, yeah, anytime I see a kid, I've got to kind of put that at the front of the line with me." | "… Let's say this patient reads this and they relate to this person that's looking back at them so they do decide to talk to their doctor…. Because this lady is just—she's concerned and friendly…."<br>"It's a good choice of race, also, because I think the trip to kidney failure among African Americans is actually a lot more progressive than in the rest of the populations." |
| Imagery of symbols and objects— resonance/ associations with these are important<br>Row 3.ii | Exchange between 2 patients:<br>  P1: "I think the red phone is also smart because, you know, like the President, I think, has a red phone and he can talk to the Kremlin anytime, you know, stop the nukes from flying kind of thing. So that's—I can see why they would use a red phone on that."<br>  P2: "Actually, we have a red phone, too, and—… a lot of work that I do have that phone…and disaster."<br>  P1: "Oh, so you have another association with it. Oh."<br>  P2: "Yeah. Don't let that phone ring! I don't want to do nothing with that phone!"<br>  P1: "That would explain why you didn't like it!" | "The phrase 'ACE up his sleeve' reminds me of somebody who is doing a magic trick, right?... And then the other thing is that, you know, the ACE of kidneys, the ace up his sleeve, it makes me a little bit concerned that this is like a miracle cure, like as long as you take this ACE you will never need dialysis. You will never need—you know, it might be this promise that it's definitely going to help but, at this point, might make it seem like this is going to do it. You are going to be fine—cured." |
| **3B. Delicate balance between negative and positive emotional tone** | | |
| Negative/scary emotions are detrimental<br>Row 3.iii | "I had a strong reaction—as I do to commercials on television—'Ask your doctor.' I hate that they are making us believe we have all different diseases...." | "For the anxiety prone, I think that may be a little counterproductive…. I can see having to explain a lot more." |
| Positive emotions can be motivating<br>Row 3.iv | "I don't play cards but I know what an ace is and I know what winning and what the good things of life are, and I can identify this with something good in my life, you know what I mean?" | "It's a great photo of a granddad and his grandchild, and that is a motivator to remain healthy. I think there is just a real warmth to that photo…." |
| Sense of urgency also can be motivating<br>Row 3.v | "Oh, my goodness! My kidneys are failing slowly. You want to take care of something like that." | "The 'quietly failing'… might promote a little bit too much anxiety but, again, that might motivate some people…, so it might be a great motivator for some patients." |
| **3C. Patient role** | | |
| Patient responsibility/ self-advocacy is desirable<br>Row 3.vi | "It [the advertising message] raises the question in your mind right away, and then gives you a very subtle 'there's something you can do about it' and kind of makes you take the responsibility." | "I felt like it built into patient's self-advocacy: there's something you can do about it...I am glad patients feel there is something they can do to change what is going on with them." |
| **3D. Varying degrees of clarity** | | |
| Clear messages engage correct patients vs. confusing messages cause problems/engage wrong patients<br>Row 3.vii | "This time I really liked how ACE was used, with the ACE of kidneys. That made sense to me…. This, to me, just made it clearer that ACE is some sort of medicine and...find out about it, you know…. And I did think the card—like I liked those—well, it looks like kidneys to me."<br>"This [advertising message] was a problem. It didn't kind of tell me what to do and what not to do, you know, … to me, it was confusing." | "The only thing that I could actually think of that might be confusing—… is that they don't realize it's because they have CKD and they show it to everybody in their family…— you know, everybody needs an ACE inhibitor. So, as long as it's targeted and it's clear, like you've got CKD, that's why you're getting a message, I think it would be helpful." |

providers have cited DTC advertising as having a possible benefit of increasing patient–provider communication about treatment options [43,45], which aligns with feedback in the current study.

Patients in the present study indicated that the most persuasive individual messages captured attention, overcame emotional barriers, and empowered them to inquire about recommended medications. Evidence from others has been similar [46] and suggests that this approach has the potential to decrease undertreatment of chronic conditions. However, given the nascent nature of this research, we recommend that healthcare systems considering use of similar messages test them first to identify not just which ones are most likely to activate patients, but also what emotional barriers each message may be overcoming and in what way. Doing so will help identify how their marketing campaign (depending on its goals) may use selected messages to overcome multiple emotional barriers at once or, alternatively, have a single, unified emotional tone. Importantly, it also will identify and eliminate messages that are too scary or negative. This is essential because our evidence suggests that healthcare providers' traditional approach of using "scare tactics" in an attempt to prompt

medication initiation or adherence may well be backfiring— alienating patients instead of motivating them.

Our partnership and development process has several potential challenges and limitations. First, our research team was fortunate to have members with graphic design expertise and an existing relationship with medical advertising professionals. We recommend health services research teams without such expertise or relationships contact marketing departments at their own or related organizations to determine whether they can recommend graphic designers and creative directors with experience in pharmaceutical advertising. Non-profit organizations may seek help from foundations (e.g., Taproot (www.taprootfoundation.org)) that can identify design and marketing professionals willing to do pro bono or reduced-fee work. Second, we recommend use of a 2-person advertising team as a way to keep development costs relatively low while also approximating the creative process that occurs in the ad agency environment—generation of sufficient ideas and discussion to create effective messages. Third, we recommend that research teams encompass expertise in clinical management of the pertinent condition, health communications,

**Table 4**
Individual advertising-style messages: content and examples of themes relevant to potential impact on patients.[a]
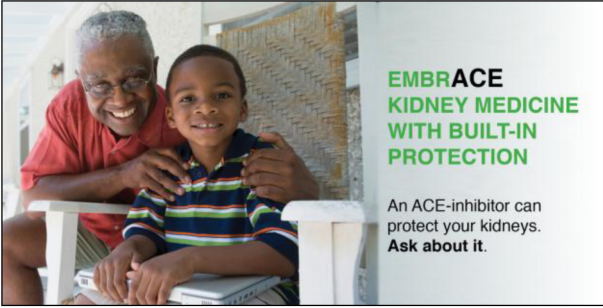
| Type of Imagery and Message | | Message-specific themes | Representative quotes |
|---|---|---|---|
| **4A. Human imagery** | | | |
| "Quietly Failing" [b]  | Row 4.i | Identification with human imagery—(a) positive identification as being familiar and (b) positive emotion of sense honesty | Exchange between 2 patients: P1: "I love the picture of the lady. She has such a sincere, honest look to me…. Do you know that lady? Does anybody know her? She looks familiar." P2: "…. Maybe we'll pass her in the hallway sometime when we come here." |
| | | Patient adoption of responsibility | "It is now my responsibility. It is not the doctor's responsibility. It is your kidneys that are failing you know. And then you go take the action." |
| | | Urgency | "It's telling you the urgency of the message. You and I might not even be aware of it." |
| "EmbrACE" [b]  | Row 4.ii | Identification with human imagery—(a) positive identification with relationship/child and (b) positive emotion of sense of generativity | "Life is too short and if we don't take care of ourself, we don't have a chance to see our children growing up." "You could see, you know, the person who was elderly, spending some time with the kids, wanted to have a valuable time and seeing that, okay, you know I need to start looking at my kidneys, These are children I want to spend my time with." |
| **4B. Symbolic imagery** | | | |
| "ACE of Kidneys" [b,c]  | Row 4.iii | Identification with object—positive association with winning | "Everybody can identify with playing cards, or else going to Reno or Tahoe and, you know, and gaming there. The card has to do with game and winning and understanding, and winning, to my mind, is pretty important." "It's the game playing, ace is always number one so it just makes you feel like this is an important message for me to take a look at." |
| "Phones"  | Row 4.iv | Identification with object—(a) negative association of avoidance and (b) negative emotion of sense of annoyance | Exchange between 4 patients: P1: "This does not attract me at all; number one, telephones. I don't even answer the telephone at home… I avoid telephones all together…." P2: "Telemarketers." P3: "Yeah, oh terrible!" P4: "Just exactly what you said…. I'm just not going to answer it because—dude, just stop calling!" |

**Table 4** (*Continued*)

| Type of Imagery and Message | | Message-specific themes | Representative quotes |
|---|---|---|---|
| 4B. Symbolic imagery | | | |
| "Puzzle"  | Row 4.v | Sense of confusion | "This is really a puzzle. What is it? Something is missing from my kidney protection?" "I don't know, what is that? Because the picture of the kidney, I thought it looks like beans to me…. What is that? Is that a bean or [makes an "I don't know" gesture with hands]." |

<sup>a</sup> The themes and representative quotes are from patient focus groups only.
<sup>b</sup> We identified these three advertising-style messages as those most likely to have an impact in the real world. They will be included in a subsequent randomized controlled trial.
<sup>c</sup> In response to focus group feedback, specifically concerns about the statement, "Your doctor has an ACE up his sleeve," the new wording in the text will be, "A winning choice for kidney disease".

patient engagement/behavior change, and mixed methods research. Fourth, enrollment of subjects in research is always challenging. But we were fortunate to have access to a list of persons who had previously agreed to participate in research, thereby yielding a prospective study sample far more likely to participate than usual. Fifth, our focus groups were relatively small; nonetheless, themes overlapped and converged, and pharmaceutical marketing consultants use similar numbers of participants in their focus groups with resulting good success in the advertisements selected [47]. Finally, because we did not collect participant follow-up data, we could not assess message impact on subsequent patient actions or health outcomes. Health systems may want to examine these—e.g., newly filled prescriptions or changes in disease control.

### 4.2. Conclusion

We demonstrated the feasibility of a relatively rapid and inexpensive research-advertising partnership and the acceptability and likely impact of advertising-style messages on patient engagement and activation for medication initiation among those with chronic conditions.

### 4.3. Practice implications

Healthcare systems may want to replicate our process of adapting marketing approaches for their own high-risk patients to capture attention, overcome emotional barriers, and empower patients to ask for and initiate recommended medications that can improve their health.

### Conflicts of interest

The authors have no conflicts of interest to disclose. Ms. Green is a cofounder of RxBalance.

### Acknowledgments

### Appendices 1 and 2. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.pec.2015.02.016.

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