



AFFINITY

Finding doctors based on people like you.

Team Members: Necklace Zhang
Chris Jung
Taysser Gherfal
Irene Yuan

TABLE OF CONTENTS

Executive Summary	1
Secondary Research	2
Problem Context	6
Solution	8
Key Interfaces	11
References	18

EXECUTIVE SUMMARY

When searching for a health care provider, many consumers rely heavily on information from friends and family rather than seeking online reviews. Reviews have the potential to provide an exceptionally rich source of information that could help guide patients' critical decisions. However, due to the subjective nature of doctor reviews, research indicates that they are often not trusted by consumers. In order to better utilize reviews, consumers must feel connected to the reviewer in some way. Thus, the goal of this project is to connect consumers with doctor recommendations based on patients with similar values and contexts.

We started our design process by investigating a simple question: what makes people similar? Ultimately, we answered this question by establishing two categories; stable and situational characteristics. These attributes can more generally be described by a combination of who somebody is, and what they care about. By creating a tool that collects information about who somebody is (stable) and what they care about (situational) over time, we are able to propose a concept that delivers more personalized and therefore relevant search results.

We began developing our solution by envisioning an online tool that could operate as a personal medical advisor. By learning about a patient through interactions over time, the tool is able to produce more accurate and relevant results. We believe that by creating a more personalized experience, consumers will find online reviews more useful for finding the right doctor.

SECONDARY RESEARCH

We used our secondary research as an opportunity to gain a baseline understanding of the problem space. We wanted to understand the context of the issues at hand, so we began by researching how recent changes in the healthcare system (via the Affordable Care Act) has impacted consumers in the healthcare industry. With a better understanding of the problem context, we shifted our secondary research focus to better understanding the way patients search for doctors. Throughout our research process, creating frameworks helped us organize our findings visually and identify insights to inform our ultimate solution.

Implications of Affordable Care Act

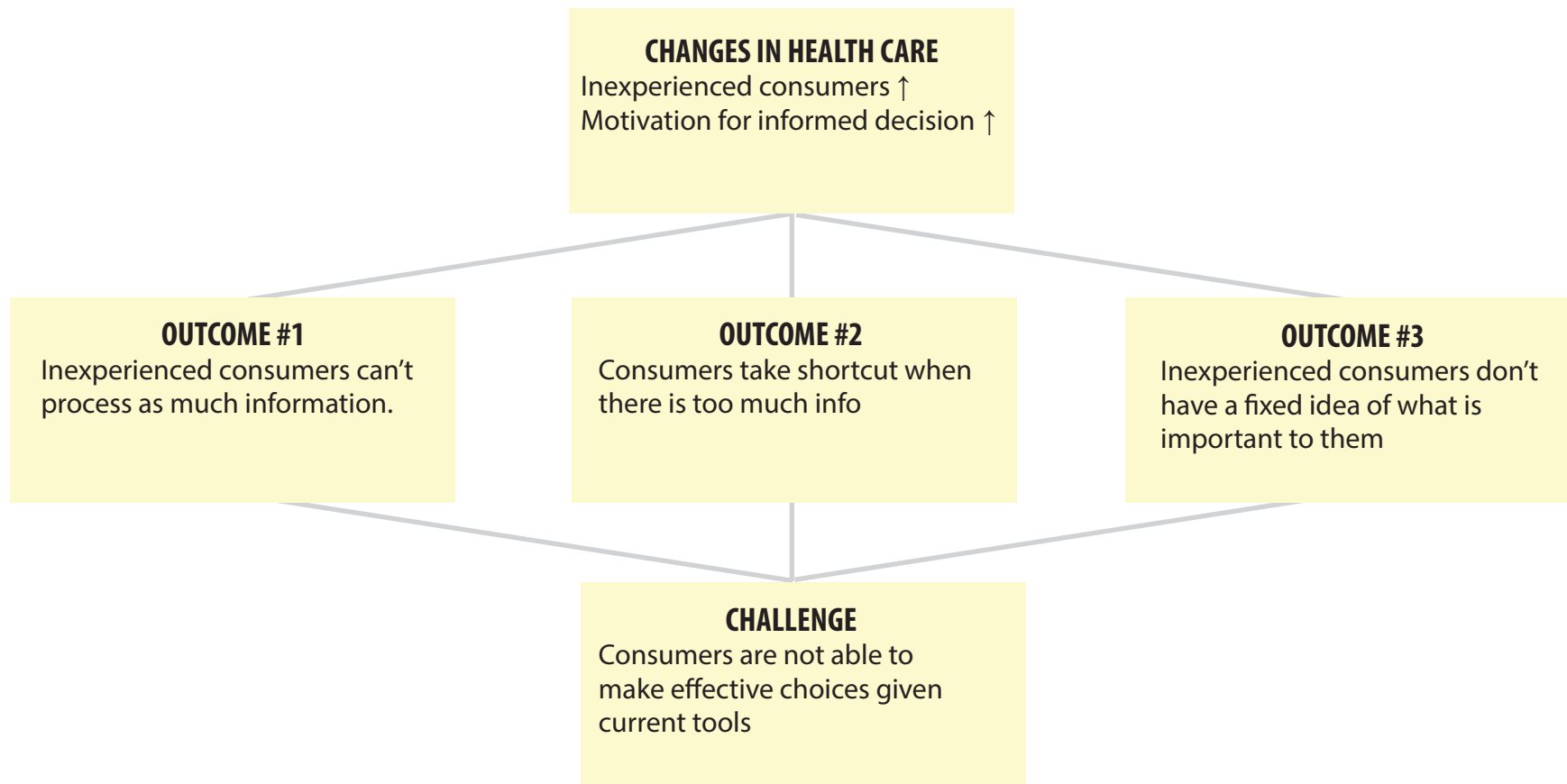
Recent insurance expansions under the Affordable Care Act have caused an increase in number of newly insured consumers who need to make important decisions regarding their health care such as finding medical providers. Research indicates that inexperienced consumers are unsure about what aspects of their health care are most important to them. Furthermore, new consumers are less capable of processing large amounts of provider information effectively compared to consumers with more experience [1]. As a result, newly insured consumers need help identifying and prioritizing important aspects of care. Thus, our ultimate solution would require a method of presenting provider information that is organized and easy to understand. With this in mind, we continued our secondary research by investigating how patients go about finding the right provider and what are important factors in their decision.

What provider attributes do patients care about?

By investigating what steps consumers go through when choosing a provider, we realized that consumers often rely most heavily on information from friends and family rather than external sources; Only 26% of consumers report provider reviews as an important aspect of the decision-making process [2]. Thus, we learned that familiarity with a source is critical in cultivating trust with consumers [3]. Additionally, we learned that in defining provider quality of care, most consumers focus on aspects related to provider interaction style and personality traits rather than the effectiveness of care or actual outcomes [2]. Thus, a successful solution should find a way to make the online process of finding doctors more intimate. In addition, we established the goal of helping patients find doctors based on their desired patient-doctor relationship. With an interest to investigate ways of re-thinking the way consumers learn about providers online, we continued our secondary research by investigating the role of reviews.

How do reviews influence decision-making

Reviews for “search goods” (cameras, for example) are used and interpreted differently than for “experience goods” like medical providers. While “word of mouth” references for providers are considered extremely valuable by consumers, online reviews by anonymous reviewers are not trusted in the same way. This is likely because consumers consider the process of choosing healthcare providers as of high importance and also of high uncertainty (and therefore risk) [4]. Consumers recognize that their experience is highly subjective, and thus they do not place much trust in the perspectives of unknown others. Furthermore, research indicates that perceived similarity between a consumer and the reviewer is extremely important when evaluating experience-based goods [4]. This portion of secondary research was critical in helping us to formulate our ultimate direction: helping Premiera customers find doctors based on recommendations from people like them.



Framework: Influence of Changes in Healthcare

We used this flow diagram to track how recent changes in the healthcare industry are influencing who is searching for providers.

		SUGGESTED	BOTH	REPORTED
Offered by Existing Tools?	YES		INSURANCE (88%) PHYSICIAN CERTIFICATION (77%)	★OTHER CONSUMERS' REVIEWS (26%) LOCATION (50%) WAIT TIME (62%) EXPERIENCE w/ PROCEDURE (80%) MED SCHOOL TRAININGS (52%)
	NO	DRUG COMPANY INFLUENCE ACCESS TO RELEVANT TECHNOLOGY	PERSONALITY (81%) HOSPITAL / STAFF (78%) HISTORY OF MALPRACTICE (70%) VALUE (quality /cost) (70%)	TIME SPENT w/ PATIENTS (80%) SUCCESS RATE (70%)

Framework: Information Existing and Desired

We created this three-by-two diagram to organize our research findings. Aspects of medical care are organized by those that consumers report caring about (green) and that research indicates they should care about (red). This visual representation also helped us track what current provider search tools offer (top versus bottom).

PROBLEM CONTEXT

As indicated through our research, the anonymous and impersonal aspect of reviews make them only marginally helpful to consumers searching for healthcare providers. The subjective nature of finding the right doctor creates uncertainty about evaluations of important provider attributes. In contrast, word of mouth is a highly regarded source of information for finding providers [5]. We assume this is related to the familiarity and increased trust associated with the process. Thus, the most significant problem associated with this space is how to match consumers with providers based on reviews from patients with similar values and preferences across various situations and without requiring reviewers to disclose too much personal information.

Privacy

Personal privacy is the most threatening constraint to our proposed solution. Creating a framework to help patients find providers based on the experiences of similar people requires gathering more personal information. Our proposed solution is largely based on the concept that consumer trust in reviews can be improved by increasing the amount of information that is gathered about users and transparency of that information. The extent to which reviewer information can be made transparent is limited by user's willingness to share information about themselves with others as well as government-supported privacy legislation such as HIPAA.

Information Availability

Another significant limitation taken into consideration is the amount of provider information that is available to the Premiera search tool. Matching patients with the right doctor not only requires gathering detailed information from patients, but also having access to provider information.

Information Overload and Prioritization

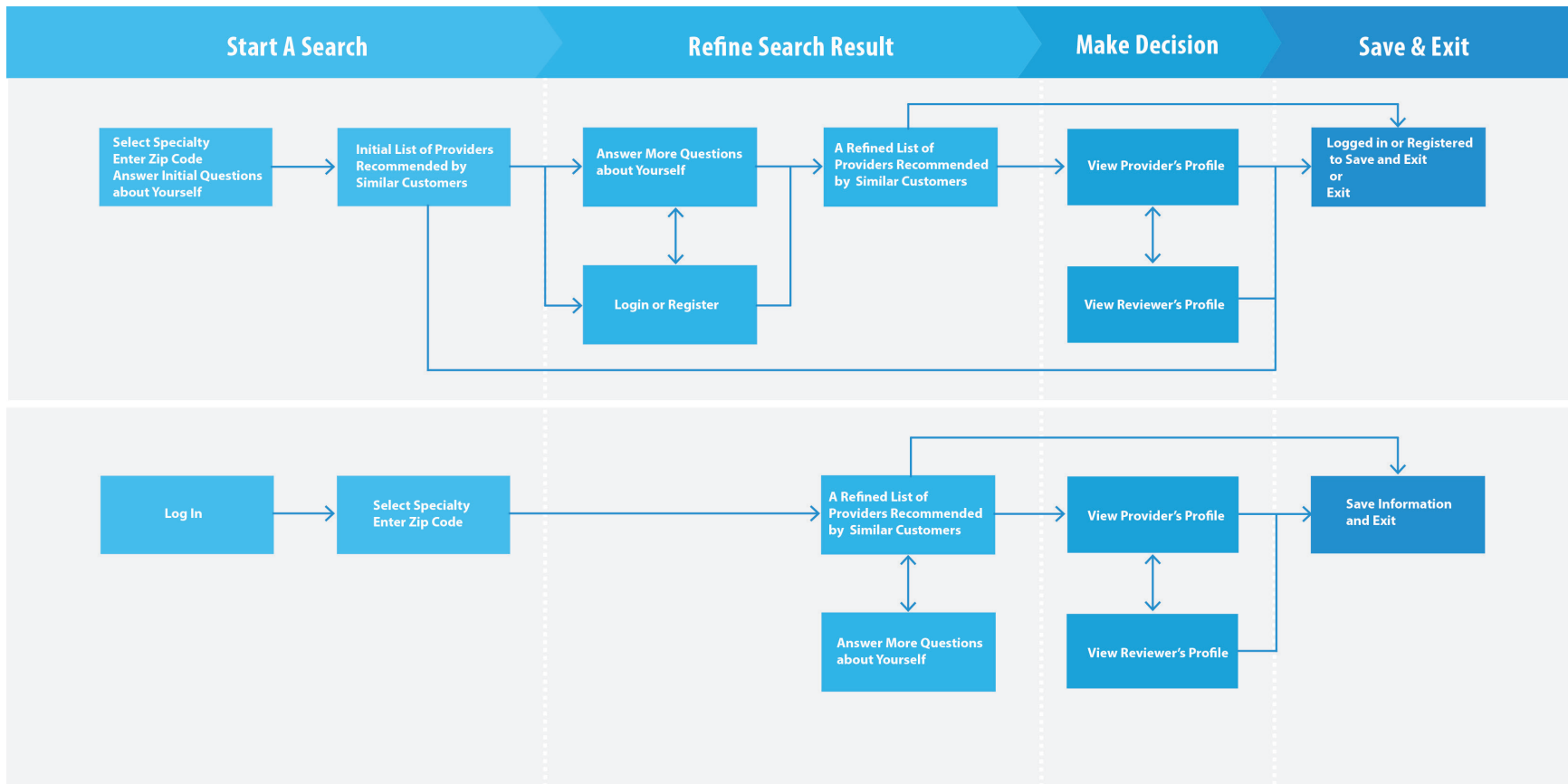
Finding providers based on reviews from similar people

requires that consumers are able to articulate what is important to them in unfamiliar situations. This is especially daunting to inexperienced consumers who may not be familiar with various aspects of medical care or what they should prioritize when searching for a provider. As a result, consumers' ability to sift through and prioritize aspects of provider information effectively is a relevant constraint to our problem space. In this case, helping consumers to weigh relevant provider information can have a significant impact on consumers' final choices.

Other Tools Considered

In developing our solution, we considered several different types of existing tools to gain a better understanding of current solutions to similar problems. For example, we investigated competing doctor search tools in order to evaluate various similarities and differences. In addition to existing provider search tools, we explored various ways of connecting people based on shared values, characteristics, personalities, etc. Dating websites such as Match.com provided valuable insights about methods of gathering personal information and reporting projected similarity scores.

SOLUTION



Our solution is designed to help Premera customers find providers based on recommendations from people who are similar to them. In identifying what makes people “similar”, we were able to group shared attributes into two categories: “who they are” and “what they care about”. Who they are

encapsulates stable demographic information that will remain largely consistent over time (name, age, location, etc.). What they care about reflects personal preferences related to healthcare that are likely to change over time and between situations.

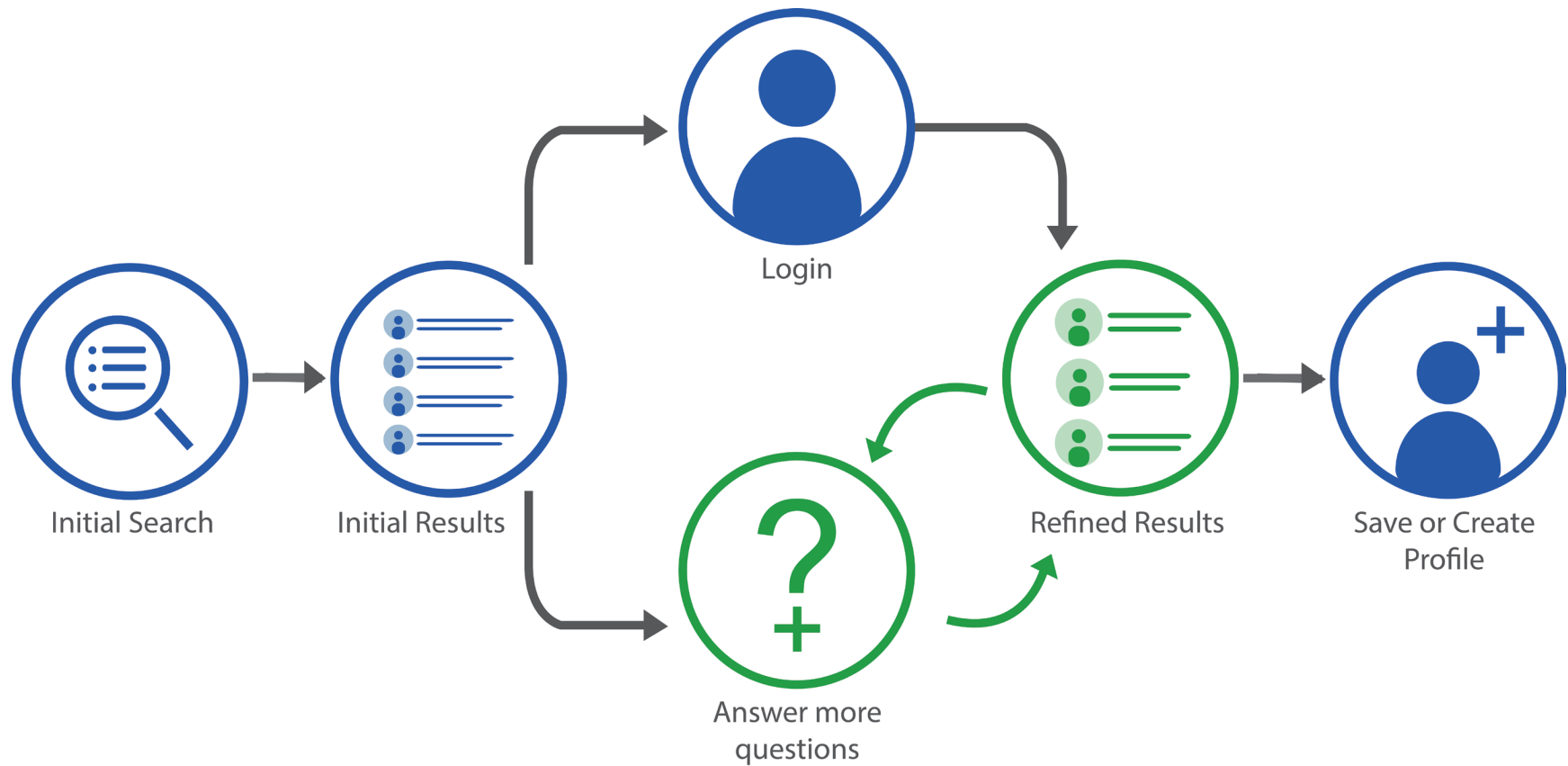
When users arrive at the Premera website to start searching for a health provider, they are asked to identify their location and the type of provider they are searching for. Additionally, the tool asks users two key questions designed to return more personalized search results: 1) What is your expected relationship with this provider and 2) How engaged would you like to be with this provider? The system can use this information to generate an initial set of recommended providers based on reviews from similar people. By logging in first, users only need to search by specialty type and the tool will be able to generate personalized results based on saved previous responses.

From the initial search results page, users are able to view doctor profiles, or refine their search by answering additional questions. The reviewer attribute filters under the questions keep the user informed about how the tool is refining their search. While these filters are automatically generated based on the user's responses, they may be easily removed if the user feels they are not relevant. As users answer additional questions, the recommended list of providers is updated to reflect the tool's increased knowledge about the user, and

new questions are automatically generated. The user can log in at any time, allowing the tool to further personalize the experience.

When the user finds a potential provider from the list, they can see more detailed information by viewing the provider's profile page. Once in a provider's profile page, consumers can view reviews from people with similar provider preferences. Upon exiting, users who have not yet logged in are asked whether they want to log in or create a profile in order to save their preferences for future use.

KEY INTERFACES



Initial Search and Questions

Both first time and logged in users may begin searching for a provider in the same way. First, they must select speciality type (1) and enter their zip code (2). In order to personalize their search, they may answer two initial questions about their ideal provider (3).

PREMERA | BLUE CROSS

Log In

Shop for Plans Health Plan Basics Find a Doctor Healthy Communities Pharmacy Member Services

Find Providers Recommended by People Like You

1 Speciality

2 Zip code 98005

3 What is your expected relationship with this provider?

One Time Short Term Long Term

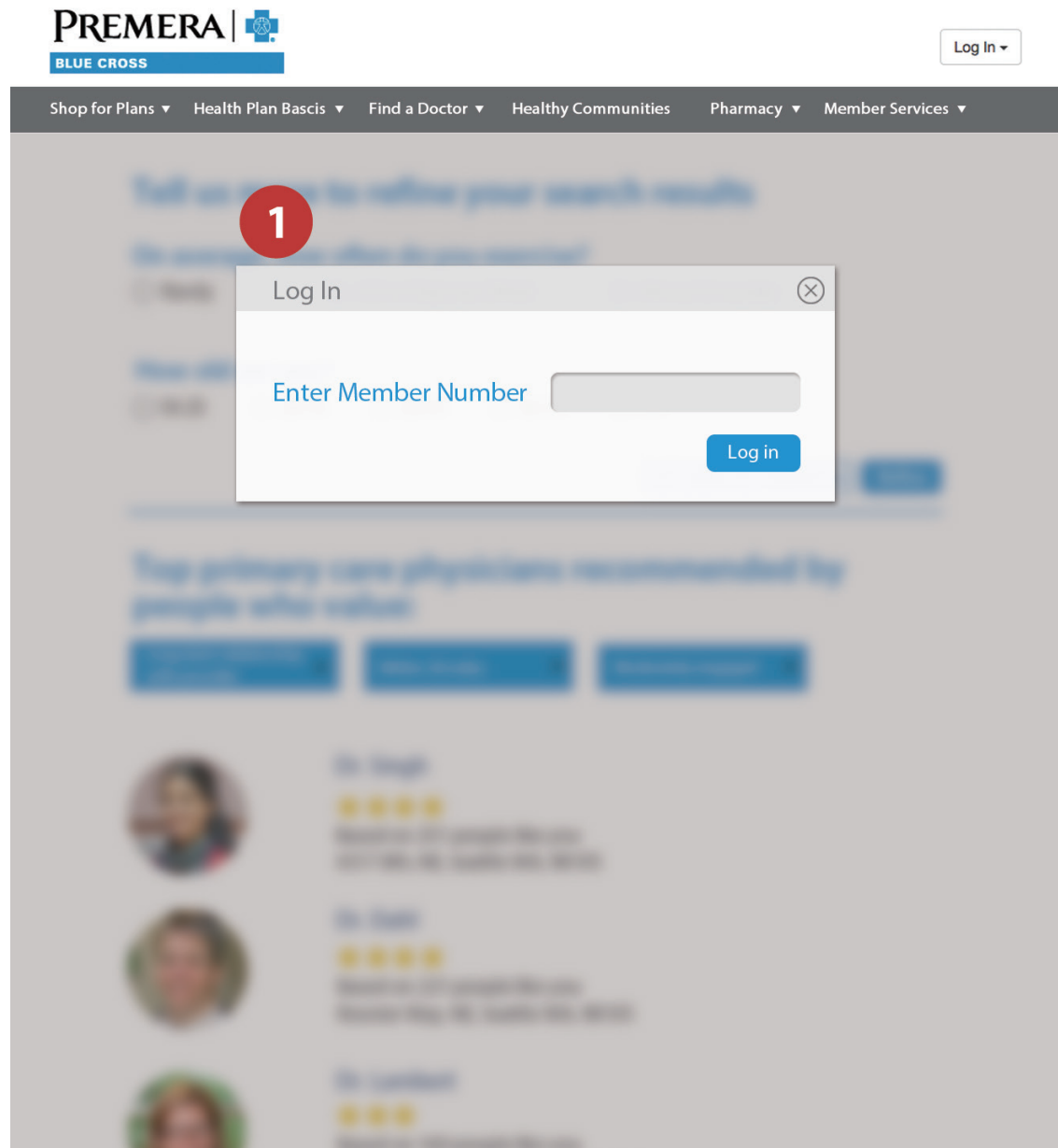
How engaged would you like to be with your health care?

Minimally Moderately Actively

Search

Login Popup


Users can log in to the system at any time simply by entering their member number (1). Doing so will enable the tool to use previous search preference information to provide better results.



Personalized Search Results

Once logged in, users will be addressed by first name (1), further personalizing the experience.

The screenshot shows the Premera Blue Cross website interface. At the top, the logo for Premera Blue Cross is displayed. A navigation bar contains links for 'Shop for Plans', 'Health Plan Basics', 'Find a Doctor', 'Healthy Communities', 'Pharmacy', and 'Member Services'. A 'Log In' button is located in the top right corner. A red circle with the number '1' highlights the main heading: 'Hi, Tayseer! Tell us more about yourself to refine your search further!'. Below this, there are two survey questions: 'Do you like to chat with your doctor?' with radio button options for 'No', 'Sometimes', and 'Yes'; and 'How important is having a short wait time to see this provider?' with radio button options for 'Not important', 'Shorter is better', and 'Critical'. At the bottom of the survey section are two buttons: 'See Different Questions' and 'Refine'. The main content area is titled 'Top primary care physicians recommended by people between 26 and 35 who value:'. Below the title are five filter tags: 'Long term relationship with provider', 'Within 30 miles', 'Moderately engaged', 'Value provider who is taking time', and 'Care about short wait time'. Three physician profiles are listed: Dr. Singh (5 stars, based on 251 people), Dr. Dahl (5 stars, based on 221 people), and Dr. Lambert (4 stars). Each profile includes a circular profile picture, the physician's name, a star rating, and the number of people they are based on.

PREMERA | 
BLUE CROSS

Shop for Plans ▾ Health Plan Basics ▾ Find a Doctor ▾ Healthy Communities Pharmacy ▾ Member Services ▾

1 Hi, Tayseer! Tell us more about yourself to refine your search further!

Do you like to chat with your doctor?

No Sometimes Yes


How important is having a short wait time to see this provider?


Not important Shorter is better Critical


[See Different Questions](#) [Refine](#)

Top primary care physicians recommended by people **between 26 and 35** who value:

- Long term relationship with provider
- Within 30 miles
- Moderately engaged
- Value provider who is taking time
- Care about short wait time

 **Dr. Singh**
★★★★★
Based on 251 people like you
4317 8th, NE, Seattle WA, 98105

 **Dr. Dahl**
★★★★★
Based on 221 people like you
Rooster Way, NE, Seattle WA, 98105

 **Dr. Lambert**
★★★★

Refined Results

Once they reach their initial search results, both logged in and anonymous users may choose to refine (2) their search further by answering an additional two questions. Users also have the choice of refreshing (1) the question set or manually changing the reviewer attribute filters (3) on the left.

The screenshot shows the Premera Blue Cross website interface. At the top, the logo for Premera Blue Cross is visible, along with a 'Log In' button. Below the logo is a navigation bar with links for 'Shop for Plans', 'Health Plan Basics', 'Find a Doctor', 'Healthy Communities', 'Pharmacy', and 'Member Services'. The main content area features a section titled 'Tell us more to refine your search results'. This section contains two questions: 'On average, how often do you exercise?' and 'How old are you?'. The first question has three radio button options: 'Rarely', 'A Few Days per Week', and 'Almost Everyday'. The second question has five radio button options: '18-25', '26-35', '36-45', '46-55', and '55+'. To the right of these options are two red circular buttons labeled '1' and '2'. Below the questions are two buttons: 'See Different Questions' and 'Refine'. Below this section is a section titled 'Top primary care physicians recommended by people who value:'. To the left of this section is a red circular button labeled '3'. To the right of the '3' button are three blue filter buttons: 'Long term relationship with provider', 'Within 30 miles', and 'Moderately engaged'. Below the filters are three physician profiles, each consisting of a circular profile picture, the physician's name, a five-star rating, and a brief description of their location and the number of people who recommended them.

PREMERA | BLUE CROSS

Shop for Plans ▾ Health Plan Basics ▾ Find a Doctor ▾ Healthy Communities Pharmacy ▾ Member Services ▾

Tell us more to refine your search results

On average, how often do you exercise?

Rarely A Few Days per Week Almost Everyday

How old are you?

18-25 26-35 36-45 46-55 55+

1 2

See Different Questions Refine

Top primary care physicians recommended by people who value:

3

Long term relationship with provider × Within 30 miles × Moderately engaged ×

Dr. Singh
★★★★★
Based on 251 people like you
4317 8th, NE, Seattle WA, 98105

Dr. Dahl
★★★★★
Based on 221 people like you
Rooster Way, NE, Seattle WA, 98105

Dr. Lambert
★★★★★
Based on 160 people like you
1750 25th Ave. NE, Seattle WA, 98105

Doctor Profile

Users may get more detailed information about a provider by viewing their profile. From here, the user can view a map (1) of the providers location, read their reviews, and view reviewer profiles (2).

The screenshot shows the Premera Blue Cross website interface. At the top, the Premera Blue Cross logo is on the left, and a user profile for 'Tayseer' is on the right. A navigation bar contains links for 'Shop for Plans', 'Health Plan Basics', 'Find a Doctor', 'Healthy Communities', 'Pharmacy', and 'Member Services'. The main heading is 'Doctor Profile'. Below this is a profile for 'Dr. Singh', featuring a circular profile picture, a 5-star rating, and an 'Add to contact' button. To the right of the profile, it states 'Based on 251 people like you' and 'Education: Medical School - University of Washington'. A red circle with the number '1' is placed over a map of the Northgate area in Seattle, which shows several medical facilities including Northwest Hospital & Medical Center, Meridian Women's Health, Group Health Northgate Medical Center, and Kindred Hospital Seattle - Northgate. A tooltip for Kindred Hospital Seattle - Northgate indicates '1 review rehabilitation center'. Below the map, it shows 'Distance: 0.7 mile' and 'Map | Direction'. A second red circle with the number '2' is placed over the 'Reviews from people like you' section. This section lists two reviews: one from 'Tommy H' with a 5-star rating and a review text: 'Extremely personable and caring. Also very thorough with her exams and walks you through results/diagnosis to ensure you understand.'; and another from 'Jason W' with a 5-star rating and a review text: 'She's awesome - really nice and helpful. Great doctor, would recommend to anyone!'.

Save Responses

When users exit from the search process, they can review their preferences generated throughout their search process. Having logged in, users can tweak their preferences (if necessary) before choosing to save (1) their preferences to their profile to be used for subsequent searches. If they have not logged in, they have the option to do so, or create a profile if necessary.

PREMERA | BLUE CROSS

Tayseer

Shop for Plans ▾ Health Plan Basics ▾ Find a Doctor ▾ Healthy Communities Pharmacy ▾ Member Services ▾

Do you want to save these responses? (X)

What is your expected relationship with this provider?

One Time Short Time Long Term

Ideally, how engaged would you like to be with your health care?

Minimally Moderately Actively

Do you like to chat with your doctor?

No Sometimes Yes

How important is having a short wait time to see this provider?

Not important Shorter is better Critical

On average, how often do you exercise?

Rarely A Few Days per Week Almost Everyday

How old are you?

18-25 26-35 36-45 46-55 55+

1

Don't Save Save

REFERENCES

- [1] Yu-Chen Chen, Rong-An Shang, Chen-Yu Kao, The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment, *Electronic Commerce Research and Applications*, Volume 8, Issue 1, January–February 2009, Pages 48-58, ISSN 1567-4223, <http://dx.doi.org/10.1016/j.elerap.2008.09.001>.
- [2] Home | APNORC.org. (n.d.). Retrieved December 10, 2014, from <http://www.apnorc.org/Pages/default.aspx>
- [3] Harris, K. M. (2003). How Do Patients Choose Physicians? Evidence from a National Survey of Enrollees in Employment-Related Health Plans. *Health Services Research*, 38(2), 711–732. doi:10.1111/1475-6773.00141
- [4] Pradeep Racherla, Wesley Friske, Perceived 'usefulness' of online consumer reviews: An exploratory investigation across three services categories, *Electronic Commerce Research and Applications*, Volume 11, Issue 6, November–December 2012, Pages 548-559, ISSN 1567-4223, <http://dx.doi.org/10.1016/j.elerap.2012.06.003>.
- [5] Finding Quality Doctors: How Americans Evaluate Provider Quality in the United States. (n.d.). Retrieved December 10, 2014, from <http://www.apnorc.org/projects/Pages/finding-quality-doctors-how-americans-evaluate-provider-quality-in-the-united-states.aspx>