

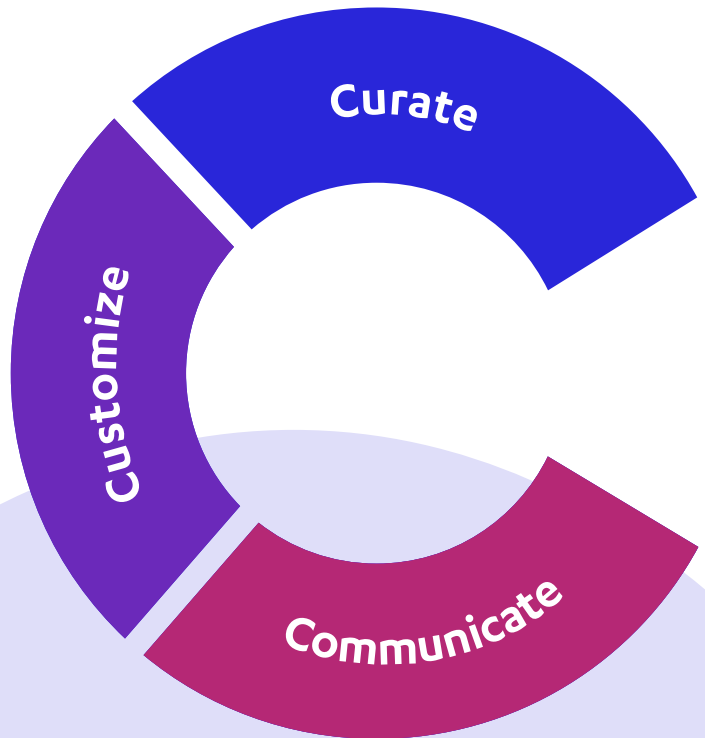
# Castlight's Approach to Quality



**Curate  
Customize  
Communicate**

# Executive Summary

Castlight Health's care navigation platform connects members with high-quality providers. The platform, which is the result of over a decade of user testing and advancements, displays quality and cost information so that members searching for a provider can easily navigate toward in-network physicians with a history of achieving the best clinical outcomes for their patients. Castlight's three-step approach to quality is at the foundation of enabling member navigation to high-value care. Castlight **curates** rigorous quality data that cover physicians and hospitals across the U.S. Castlight **customizes** this data based on member profile information, matching members with their top providers. Finally, Castlight **communicates** quality and cost information so that it's easy for members to choose high-quality, high-value care.



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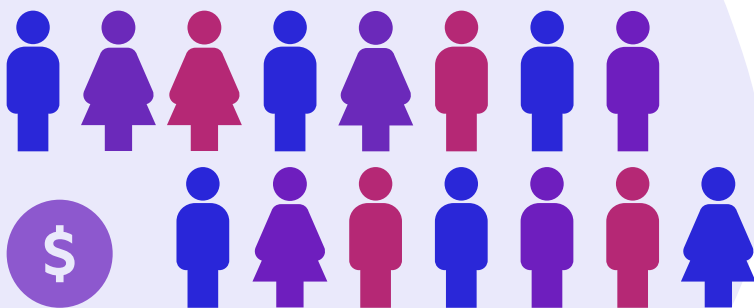
# Background

There are no simple, universally-accepted solutions for ensuring that everyone receives high-quality care—care that is necessary, appropriate, and clinically validated. Several organizations and government entities have attempted to shed light on provider quality; however, there are challenges with surfacing comprehensive provider quality information in a consumer-friendly way. Many data sets are focused on a particular specialty or geographic region, and therefore fail to comprehensively cover providers across the U.S. Further, there is no standardized format for quality data, therefore normalizing unstructured data across data sets can prove challenging. And as we know, there are dire outcomes for low quality care: over 250,000 people in the U.S. die each year of medical errors.

**Over 250,000 people in the U.S. die each year of medical errors, the fourth leading cause of death after heart disease, cancer, and as of 2020, COVID-19.<sup>1,2</sup> Low-quality care is low-value care, health care that fails to improve patient health and that costs payers and employers more in the long-term.<sup>3</sup> Experts estimate that approximately \$210 billion is spent annually on unnecessary care in the U.S.<sup>4</sup>**

As the health risks and economic impact of low-quality care have increased, so has the demand for robust methods for measuring and improving care quality. Increasingly, meaningful quality data are becoming available, especially for use by policymakers. However, consumers making health care decisions typically lack access to actionable quality information. Even vendors who provide consumers with insights into provider quality often lack transparency about their data sources and methods, leaving consumers to guess at their processes without evidence that the quality data being used to guide assessments are complete, reliable, or accurate.

**250,000+**  
die each year of medical errors

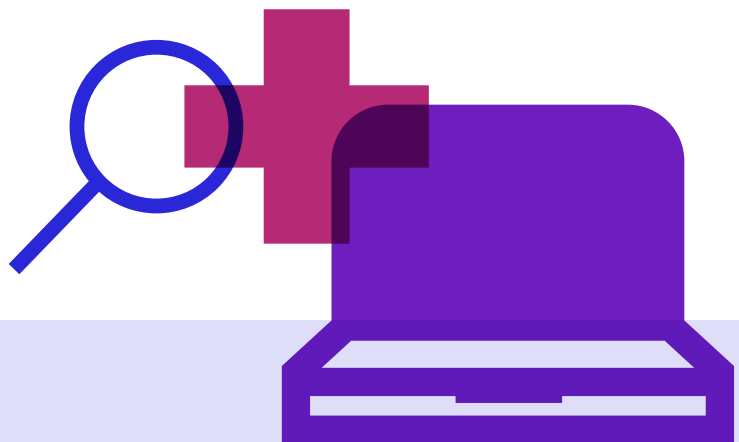


**\$**  
**\$210 Billion**  
annually on unnecessary care in the U.S.

# Background

Consumers face three key barriers when trying to identify a high-quality provider: First, they have difficulty accessing quality information.<sup>5</sup> Without access to intelligible quality data, consumers searching for quality information often turn to sources like Yelp for reviews<sup>6</sup>; however, these sites typically reflect consumers' experience with office staff or the clinician's bedside manner rather than true health care outcomes. Second, they have difficulty knowing which quality metrics are most important for their specific circumstances. Even the best doctors are not great at taking care of every clinical situation. Helping consumers find the provider best suited for their situation requires matching the clinician's skills with the consumer's clinical needs and individual preferences. Third, they have difficulty interpreting quality information in light of competing concerns, like their plan coverage, out-of-pocket costs, etc., when making their health care decisions. Consumers frequently rely on cost as a proxy for quality, and end up using cost and convenience metrics to guide their decision-making.<sup>7</sup>

The purpose of this report is to describe how Castlight addresses these problems for its members by using a three-step approach to quality. These three steps—**curation, customization, and communication**—inform Castlight's care navigation platform that connects members to top providers. We conclude with a discussion of key outcomes driven by the Castlight approach to quality.



## How our approach is different



To **achieve national coverage across a broad set of provider specialties**, Castlight aggregates and standardizes provider performance metrics across 30+ data sets from reputable 3rd parties



To **connect members to the right expertise**, Castlight personalizes provider recommendations based on the member's clinical conditions as informed by claims data



To **steer members to preferred providers**, Castlight prioritizes tiered and narrow networks as defined by employers and health plans



To create a **consumer-grade, simple provider search** experience, Castlight has invested deeply in ease-of-use and linguistic research to improve the member experience

**Castlight curates extensive data on provider performance from reputable and reliable sources, ensuring that these data sets include industry-standard metrics, like risk-adjustment and sample size requirements. Data scientists map quality ratings to individual providers and facilities in Castlight’s best-in-class Unified Provider Directory – a source of truth for provider information across the U.S. – with a rating called a Q-Score.**

Consumers want to receive care from high-quality providers. Unfortunately, the majority of consumers do not have the resources or the expertise to identify the best doctors and hospitals in terms of what matters most—clinical outcomes. Without this information, consumers often turn to online reviews of provider performance that fail to deliver quality insights.<sup>6</sup> Castlight bridges this gap by curating quality data from multiple robust, third-party and internally derived clinical metrics and distilling this information into a provider quality rating, called a Q-Score.

## What Is the Q-Score?

The Q-Score is a Castlight composite quality rating for providers and facilities across the U.S. Castlight curates data from trusted third-party sources that rely on industry standards for their quality measurements and combines these with its internal data. The data inputs offer insight into multiple quality indicators, the most important being a provider’s ability to achieve clinical outcomes. What follows is an explanation of the process that begins with data curation and ends with the Q-Score.

## Q-Score Step 1: Collect Best-in-Class Provider Quality Data

Because no single data set has comprehensive data on all U.S. providers for all common services, Castlight aggregates quality data from approximately 30 data sets that provide nearly 250 specific quality metrics, including health plan and employer network tiers and quality designations. Some metrics shed light on the performance of physicians and care facilities, while others offer insights into clinical outcomes by care type: primary care, condition-specific care, and surgery, among many others. When considering inclusion of data sets, Castlight incorporates national and regional data sets and applies them appropriately, controlling for geographic differences in practice patterns. Castlight continually scans the market for new and meaningful quality data sources to ingest. For example, in 2020 Castlight added multiple data sets to evaluate diagnostic imaging quality.

The data are mapped onto the physicians and facilities in Castlight’s Unified Provider Directory. Unlike most provider directories, which are notoriously fraught with errors, Castlight’s Unified Provider Directory gets updated regularly so that crucial provider information—contact information, location, insurance contracts, specialties, board certifications, etc.—remains reliable and up-to-date. Castlight’s clinical advisory board, experts from a wide range of clinical domains, regularly reviews the quality data and how they are used.

Additionally, Castlight’s analyses of claims data from 20 million commercially-insured individuals provide rich information about the common services that providers deliver and how effectively they do so. Taken together, these data inputs produce quality insights that cover the vast majority of physicians and hospitals in the U.S.

**Castlight curates quality data that offer wide provider and specialty coverage:**



**94%**  
of physicians



**93%**  
of acute  
care hospitals



**100+**  
procedures and  
specialties

## Q-Score Step 2: Standardize Quality Data with a Weighting System

Determining how to turn non-standardized quality data into actionable insights to guide consumer choice is one of the biggest challenges in quality measurement. Castlight's approach begins with standardizing its quality inputs and then applying a weighting system. Castlight categorizes its quality metrics by type: outcomes metrics, patterns of care metrics, and qualifications metrics, weighting them so that clinical outcomes take precedence in the Q-Score algorithm. Each category is discussed in more detail below.

### Outcomes metrics are weighted most heavily.

Outcomes metrics include readmissions, c-section rates, mortality for surgeries, and volumes of patients a physician treats for a specific condition directly. Ample research demonstrates that physicians who have treated a given condition more often deliver better outcomes.<sup>8</sup> Castlight's own analysis has shown that including patient volumes can more than double the Q-Score's ability to predict clinical outcomes. Clinical outcomes are a key data source that informs Q-Scores. Q-Scores are updated monthly, ensuring a continual feedback loop to incorporate the latest outcomes data, which in turn, influences provider recommendations.

### Patterns of care metrics are weighted next.

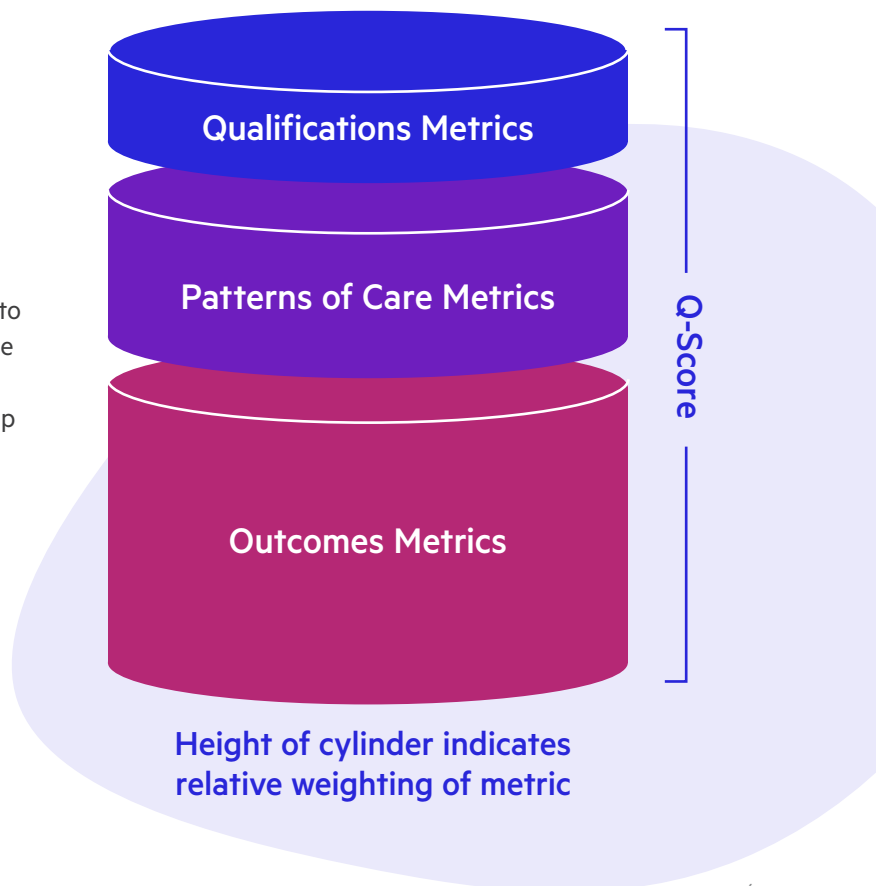
Patterns of care metrics indicate the care members are likely to receive based on a physician's practice and referral patterns, such as the quality rating of a hospital to which a physician often refers patients. Or, in the absence of sufficiently robust data to report on the physician's outcomes related directly to a specific procedure (e.g., hip revision), Castlight can utilize data on their performance with a related procedure (e.g., hip replacement) as a pattern of care metric.

### Qualifications metrics are weighted least.

Qualifications metrics include years of experience, board certification, maintenance of certification, and graduation from a top medical school. Qualifications may also act as tiebreakers for physicians who have the same rating based on outcomes or patterns of care metrics.

### Efficiency metrics are considered as well.

In addition to provider quality, Castlight also considers providers' efficient use of resources such as imaging tests and referrals when determining the sort order of the recommended providers displayed to the member. This approach considers care across multiple settings and across a longer course of time in order to route members to providers that deliver holistically higher-value care. Based on claims data, Castlight can evaluate provider referral patterns and provider ability to keep members out of the ER and/or the hospital. All other considerations around quality being equal, Castlight will prioritize those providers with better risk-adjusted episode spending metrics.

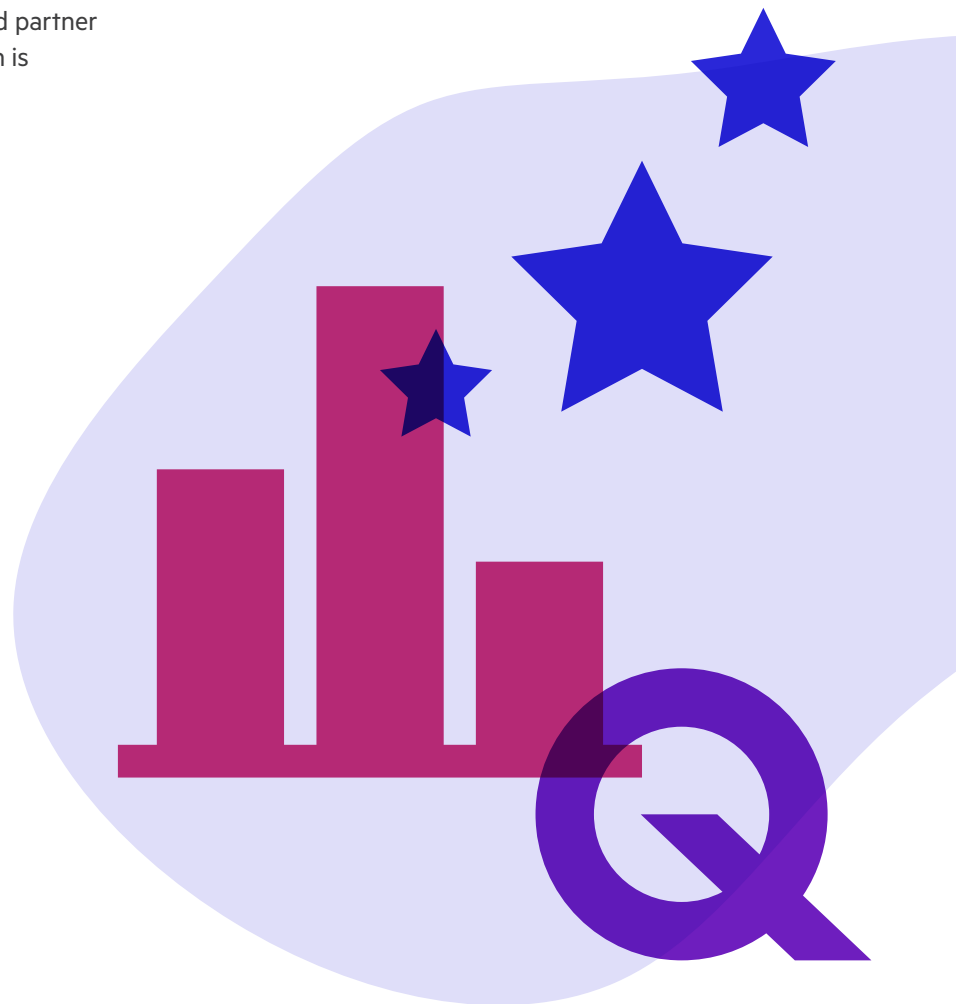


### Q-Score Step 3: Classify the Data Using Quality Ratings

When members view the Q-Score for a provider, they are seeing the summary rating of the Castlight Q-Score algorithm. These ratings are as follows: Exceptional, Great, Good, Unconfirmed, and Contested. Members don't have to be data analysts or quality experts to understand how Q-Score ratings map onto provider quality. It's simple.

Why see a good doctor when you can see an exceptional one?

Castlight's behind-the-scenes data curation sets in motion a process where raw quality data power member steerage toward exceptional healthcare providers. Castlight is fully transparent with its quality data sources and approach to weighting, enabling partners and consumers alike to understand how a provider rating is applied. But curation is just the start. For quality information to be relevant at the member level, it has to be customized based on member clinical needs, individual preferences and partner preferences for provider networks. Customization is discussed in the next section.



# Customize

**Castlight customizes quality ratings based on individual member needs and clinical profile. Q-Scores are member-customized to identify the best provider based on underlying clinical conditions indicated by the member's claims data. In addition, Castlight has the ability to deeply integrate employer and health plan narrow and tiered networks, centers of excellence, on-site and near-site clinics, and virtual care options to ensure member navigation to the most appropriate sites of care.**

The best doctor for one person isn't necessarily the best doctor for another. Even good doctors, dedicated to evidence-based practice and diligent about following clinical guidelines, aren't equally skilled at achieving outcomes across all conditions, all procedures, and all patient populations.

Castlight customizes the Q-Score algorithm to match members with providers uniquely suited to care for them. Taking customization a step further, Castlight factors in individual preferences and health care plan information (such as narrow networks or Centers of Excellence designations) to help members find providers who are high-quality, cost-effective, and easy to access. What follows are features of Castlight's care navigation platform that connect members to their best provider options.

## Personalized Q-Scores

Q-Scores are personalized so that measures of provider quality are responsive to each member's unique patient profile. The Q-Score algorithm incorporates member claims data to identify individuals who fall into any of eight clinical categories where provider expertise is essential to achieving outcomes and managing costs: diabetes, behavioral health, cancer, asthma, COPD/emphysema, musculoskeletal, cardiovascular, and pregnancy. When a member searches for a provider, the algorithm combs their data for these clinical categories. The associated outcomes metrics get weighted heavily to ensure steerage to providers with domain expertise.

Consider the example below. Castlight members A, B, and C each have previous claims that the Q-Score algorithm incorporates into condition-specific quality metrics. These metrics will impact the Q-Scores each member sees for their top provider recommendations. Member A, who has a diabetes claim on file, will see top providers who have a history of positive clinical impact on diabetes outcomes. Member B will see top providers who have a history of positive clinical impact on depression-related outcomes, and so forth.

Unlike other navigation platforms or simple provider finders, which show the same list of providers to every user, Castlight customizes the recommendations for each member's top providers. The Q-Score incorporates members' clinical circumstances into the quality equation.



## Condition-specific provider quality metrics

Provider recommendations prioritized by member clinical profile

### Member A: Diabetes

- Patient adherence to diabetes medications
- Appropriate monitoring with blood sugar testing
- Volume of diabetic patients the physician treats

### Member B: Depression

- Patient adherence to depression medications
- Volume of depression patients the physician treats
- Psychiatric care quality for provider-affiliated hospitals

### Member C: Low Back Pain

- Volume of low back pain patients the physician treats
- Spinal surgery quality for provider-affiliated hospitals

# Customize

## Provider Network Transparency

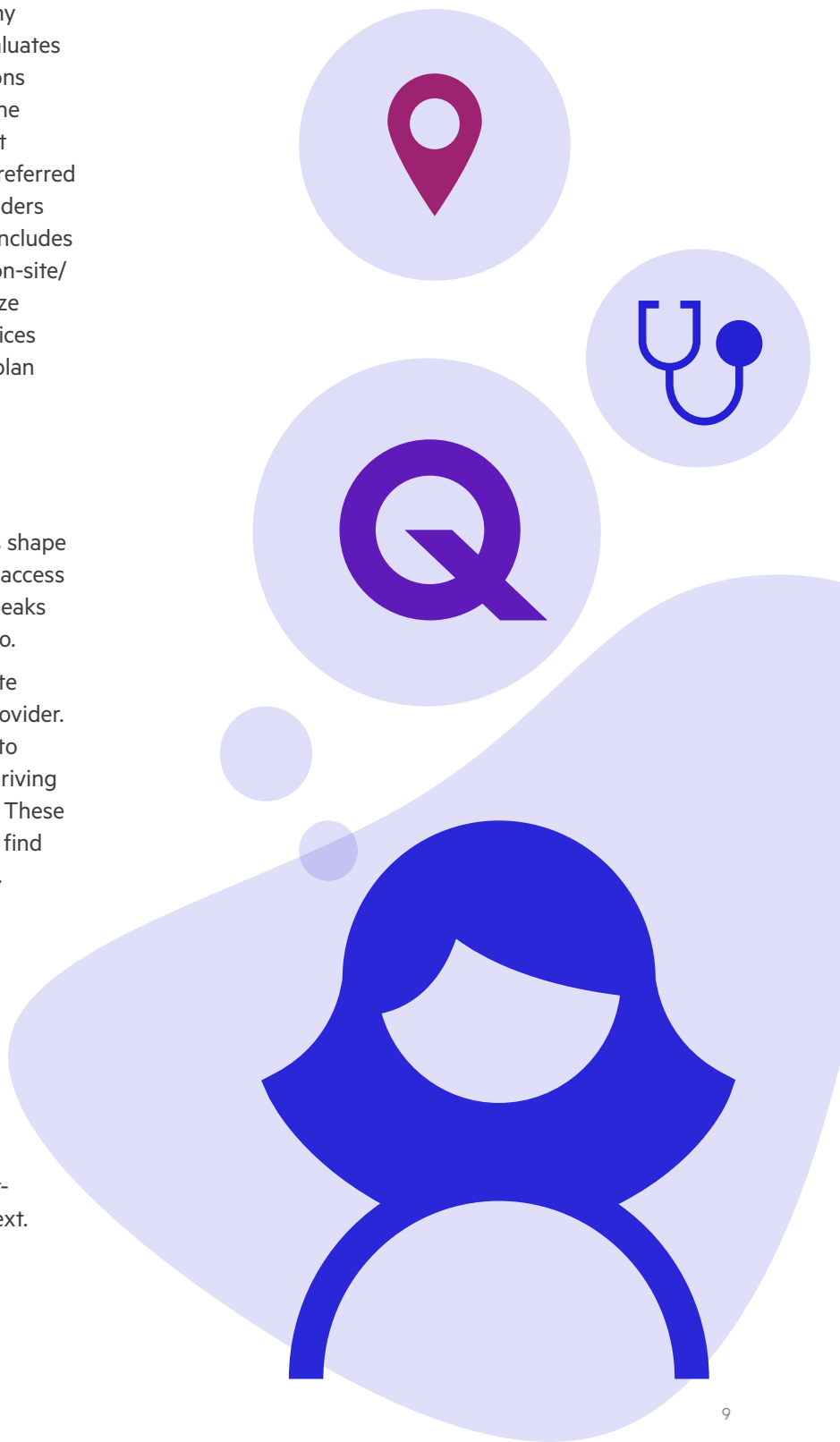
In addition to routing members to lower cost, in-network providers, Castlight can also incorporate health plan tiered networks and employer-preferred sites of care to further customize and improve member navigation. In many cases, health plans have a dedicated team that evaluates provider quality to develop their quality designations or quality tiers. This effort and work is not lost in the Castlight set of recommendations. Rather, Castlight partners with employers and health plans to use preferred tiering as a primary input to the sort order of providers recommended to the member. If a member's plan includes narrow networks, Centers of Excellence (COE), or on-site/near-site clinics, provider search results will prioritize provider recommendations accordingly. These choices can be modified based on the employer or health plan preferences.

## Member Preference Filters

While considerations like quality, cost, and benefits shape consumer health care choices, realities like ease of access to a particular provider, whether or not a doctor speaks the member's language, and gender can matter, too.

Castlight offers filters so that members may indicate their personal preferences when searching for a provider. For example, members can limit a provider search to high-quality provider practices within a specified driving distance or find providers offering virtual consults. These features offer members the flexibility they need to find doctors with attributes that are important to them.

Castlight customizes its quality algorithm so that members can find in-network doctors who are good for their specific clinical background, comfort, and financial wellbeing. But making this information available isn't enough. Helping members navigate toward quality requires communicating persuasively enough to motivate health care consumers to choose high-quality, cost-effective providers. Communication is discussed next.



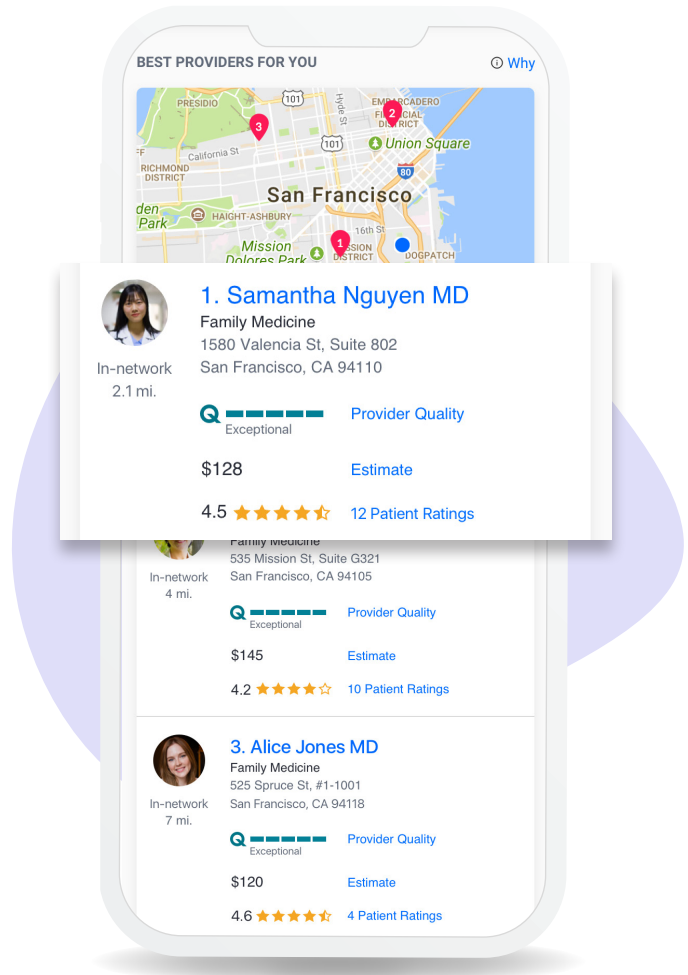
**Castlight communicates provider recommendations as simply as possible to help consumers connect to high-quality care. Castlight’s platform directs members to high-quality, high-value care by presenting quality, cost, and convenience information in a simple, intuitive manner. This information display, the result of a decade of user testing and research, provides the right level of detail to enable the member to make an informed choice.**

Consumers selecting a provider face the cognitive burden of finding and synthesizing quality, cost, and convenience information. Castlight combats decision fatigue for members by designing a straightforward user experience. Castlight’s navigation platform shows members their top recommended providers alongside the underlying data supporting the recommendations, thus empowering consumers to “dig into” the rationale for why this provider is a good match. The display simplifies decision-making. It removes misleading or unnecessary information that might otherwise cloud consumer choice so that members can navigate toward high-quality, cost-effective providers, in ways consistent with both clinical research and user testing. Importantly, the sort order ensures that in-network status and cost-efficiency are considered alongside quality considerations. Here’s how it works.

## Simplifying Health Care Decision-Making

When members search for a provider, the platform displays results that include their top five recommended doctors, a ranking based primarily on Q-Scores and factoring in network status, provider cost and member preferences. Members can explore the interface to learn more about any provider, including their medical specialty and practice location, quality rating, patient satisfaction rating, and cost.

Although members can explore multiple provider options, the information display increases the odds that members will pick a recommended provider. Upon introduction of the Q-Score, Castlight found that members were significantly more likely to select one of the top five recommended providers rather than continuing to search and scroll through other available providers. Thus, we have seen that putting quality into context during the decision-making process drives higher confidence in care decisions.



The screenshot displays the 'BEST PROVIDERS FOR YOU' section of the Castlight mobile app. At the top, a map of San Francisco shows three red location pins. Below the map, three provider cards are listed:

- 1. Samantha Nguyen MD**  
Family Medicine  
1580 Valencia St, Suite 802  
San Francisco, CA 94110  
In-network 2.1 mi.  
Provider Quality: Exceptional (Q-score)  
\$128 Estimate  
4.5 ★★★★★ 12 Patient Ratings
- 2. [Name obscured]**  
Family medicine  
535 Mission St, Suite G321  
San Francisco, CA 94105  
In-network 4 mi.  
Provider Quality: Exceptional (Q-score)  
\$145 Estimate  
4.2 ★★★★★ 10 Patient Ratings
- 3. Alice Jones MD**  
Family Medicine  
525 Spruce St, #1-1001  
San Francisco, CA 94118  
In-network 7 mi.  
Provider Quality: Exceptional (Q-score)  
\$120 Estimate  
4.6 ★★★★★ 4 Patient Ratings

# Communicate

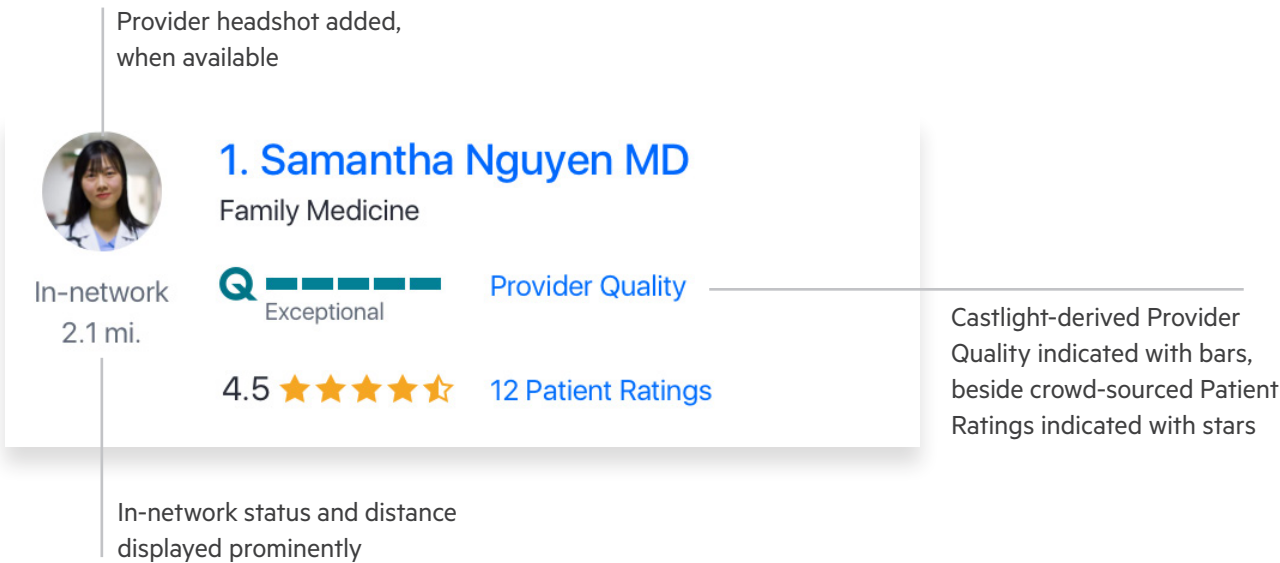
## Making Quality Comprehensible

The current provider quality display is designed to make quality information digestible for members—so that members can identify high-quality providers for themselves and their dependents at a glance. Quality information is presented so that members understand what quality is and what it is not. For example, members can learn about the quality metrics that power the Q-Score algorithm. They also recognize that crowd-sourced provider ratings, i.e. patient satisfaction scores, are separate from provider quality. Differentiating these categories of information is especially important given consumers’ tendency to equate a provider’s communication style or accessibility with clinical quality.<sup>6</sup> The current design reflects iterations of user testing to ensure that members can easily differentiate provider quality from user-generated provider ratings.


## Robust User Testing Dictates Display of Quality Information

Castlight’s User Experience (UX) team first began displaying quality information alongside cost in 2010. Drawing on a decade of continual research on patient communication best practices, the team developed both naming conventions for the Q-Score and its presentation. The current Q-Score labels, Exceptional/ Great/Good beat out other possibilities by meeting both key measures of user testing success: Users were able to (1) comprehend their meanings at a glance and (2) easily differentiate options in terms of desirability. Based upon user input, a visual shorthand was created to display quality as a range from 1 to 5 bars, with 5 bars indicating highest quality. The UX team found that pairing a linguistic label for quality with a visual icon resulted in better user comprehension.

### Current display of provider Q-Scores and ratings





Provider headshot added, when available



**1. Samantha Nguyen MD**  
Family Medicine

In-network  
2.1 mi.

 **Provider Quality**  
Exceptional

4.5  **12 Patient Ratings**

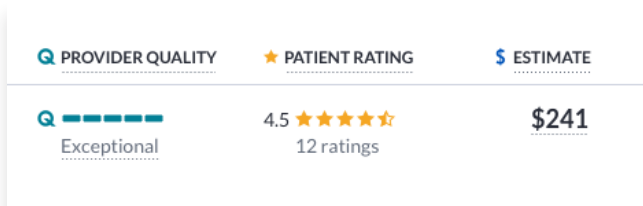
In-network status and distance displayed prominently

Castlight-derived Provider Quality indicated with bars, beside crowd-sourced Patient Ratings indicated with stars

# Communicate

## Directing Members Toward Value

For most consumer goods and services, higher costs usually mean higher quality. However, higher costs in health care often indicate lower quality—due to overuse of services and higher complication rates. This can complicate showing both cost and quality information in health care. Drawing on the landmark research by Hibbard and colleagues’ on consumer decision-making when choosing high-value providers, Castlight designed its user interface to help its members more easily choose high-quality, cost-effective providers. The design places the Q-Score alongside a cost-estimate for what members will pay out-of-pocket for a visit. Castlight’s internal user testing confirms Hibbard’s findings, which suggest that individuals are more likely to choose cost-effective, high-quality providers when quality and cost information are presented together, and when both categories of information are kept simple for ease of comprehension.<sup>7</sup>



Having the best algorithm to evaluate providers does not matter if these insights aren’t communicated in a simple and actionable way. As evidenced in Castlight user testing, Castlight’s display eliminates decision fatigue so that members can identify their top providers, learn more about them, and choose them.

The next section continues discussing the evidence, Castlight’s own outcomes that demonstrate that our approach to quality—curation, customization, and communication—drives members to high-quality providers.



# Outcomes

**Castlight’s three-step approach to quality has been subjected to rigorous evaluation and has resulted in clear evidence that users of Castlight are more likely than non-users to visit higher quality providers. Additionally, Castlight users who visit primary care physicians with higher Q-Score ratings are more likely to receive preventive care. Importantly, Castlight users who choose a high-quality provider, as identified via the Q-Score, experience fewer inpatient days and lower costs.**

Castlight’s approach to quality is based on the idea that steering consumers toward high-quality care requires a multi-pronged approach that begins with rigorous data collection and ends with members choosing one of their top recommended providers. Since 2010, Castlight’s research has validated this approach, incorporating ongoing refinements and improvements based on this work. What follows is a discussion of research that demonstrates the results of Castlight’s quality approach for primary care and specialty care across a range of clinically important outcomes.



# Outcomes

## Finding #1: Castlight Users Are More Likely than Non-Castlight Users to Choose High-Quality Providers

To determine whether or not members act on Castlight provider recommendations, Castlight compared the usage patterns of registered members who searched for providers with non-registered members who saw doctors without the help of Castlight. The analysis revealed that steered members go to exceptional and above average quality providers more than non-registered members.

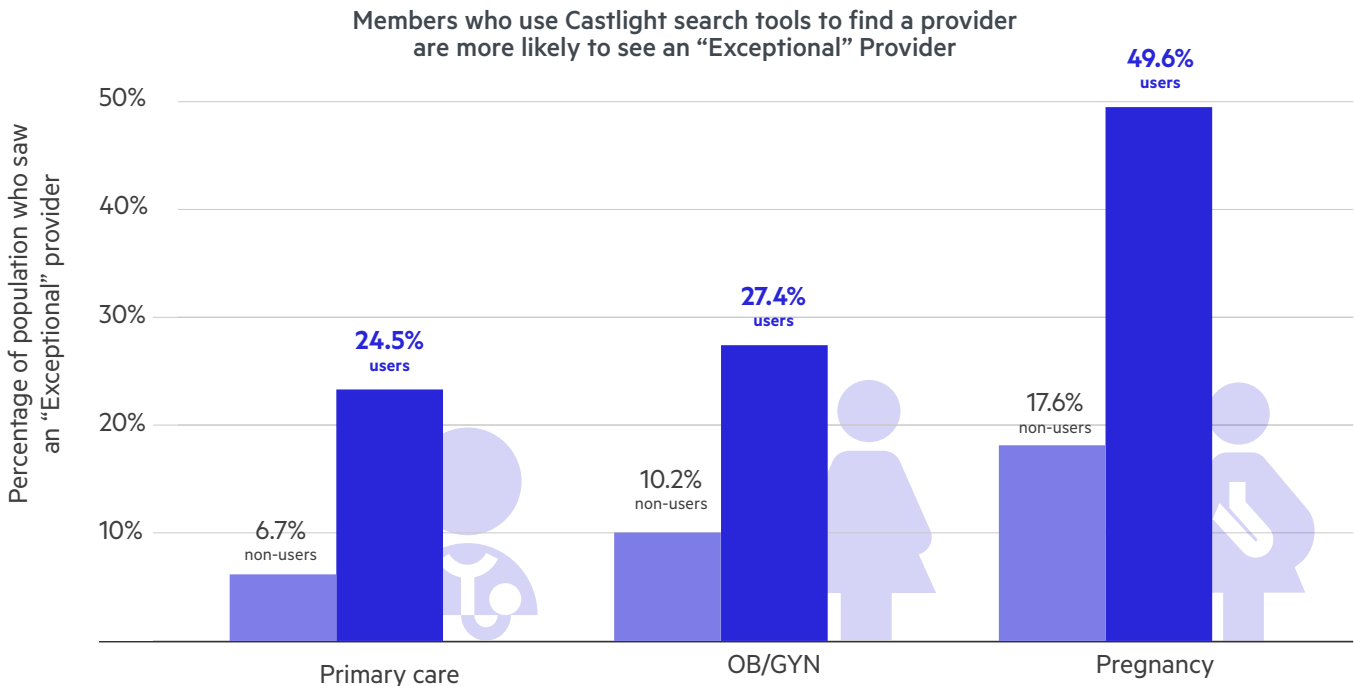
## About the Research

**Research type:** Claims-based analysis

**Population:** All Castlight-eligible members who incurred a relevant claim type

**Analysis:** We pulled claims for all Castlight-eligible members and identified claims that occurred after a search, in which the provider on the claim was presented to the user in the search result. We then identified the Q-Score of each provider on each claim and compared rates of high-quality providers between people who had not found their provider in Castlight and those who had.

**Results:** Steered members sought care from higher quality providers more than their non-steered counterparts across specialties including primary care, OB/GYN, and pregnancy.



## Implications:

Selecting a high-quality provider is easy when you know whom to call; however, given the variability in quality among in-network providers, consumers do not always make the right choice. Use of Castlight dramatically increased the selection of the highest quality providers across a spectrum of primary and specialty care.

# C Outcomes

## Finding #2: Q-Scores for Primary Care Visits Correlate with More Preventive Care

Members who visit primary care physicians (PCPs) with higher Q-Score ratings are more likely to receive preventive care.

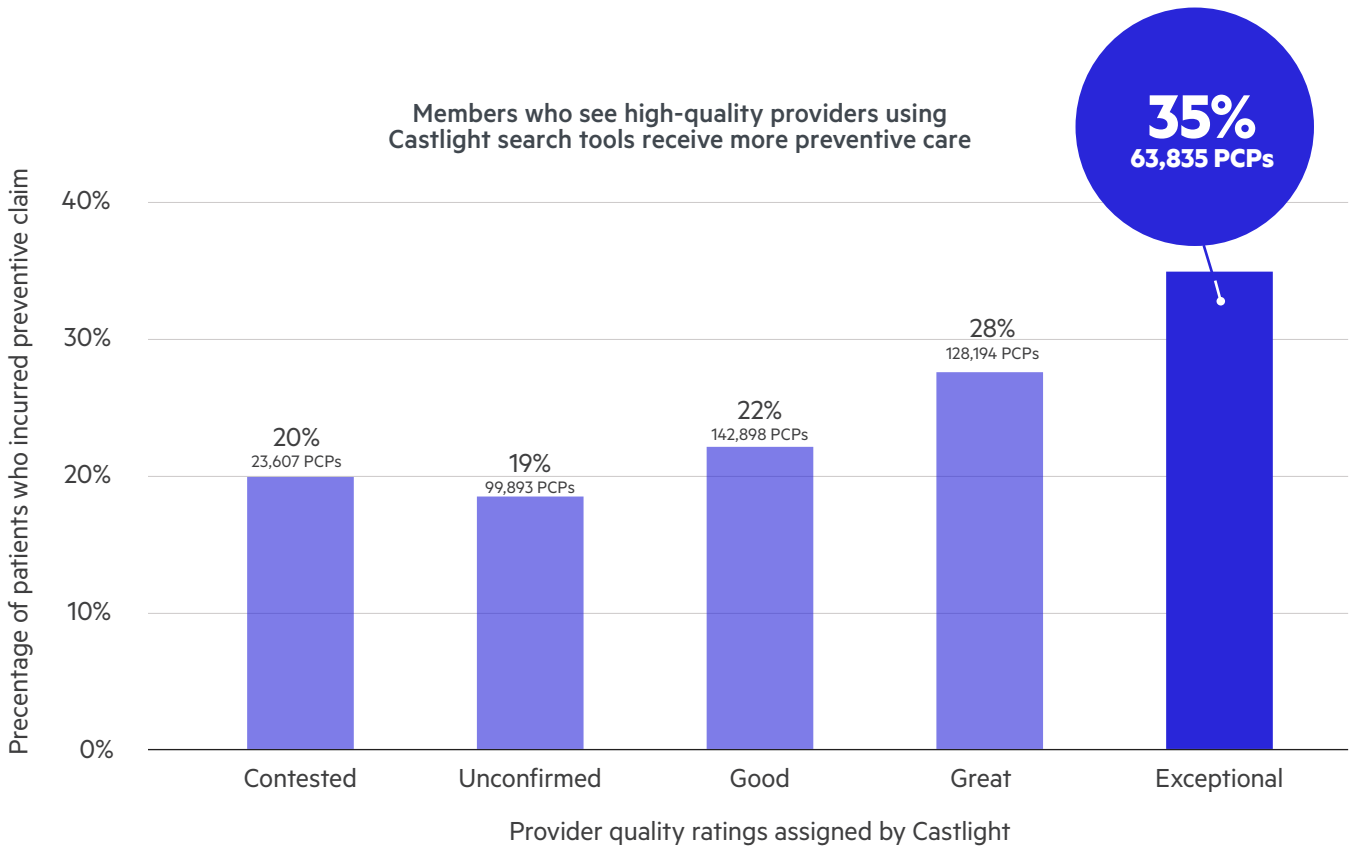
## About the Research

**Research type:** Claims-based analysis

**Population:** All Castlight-eligible members who incurred a claim from a PCP

**Analysis:** All claimants who visited a PCP in 2019 were identified, and in their PCP claims we identified preventive care visits (as defined by the American Medical Association). We calculated the rate of having at least one preventive care visit, given that the person saw a PCP at least once. We then compared the rate of preventive care visits for each provider quality group.

**Results:** Members who chose providers with Q-Scores indicating high quality received more preventive care.



## Implications:

As a result of the COVID-19 pandemic, adults and children in the U.S. have deferred critical preventive services such as routine immunizations, diabetes and blood pressure screenings, mammograms, and colonoscopies.<sup>9</sup> Directing users to high-quality primary care providers is a key to ensuring they will get the needed preventive care to detect and address health care problems early in their care journey.

# Outcomes

## **Finding #3: Q-Scores for Primary Care Visits Correlate with Fewer Inpatient Days and Lower Cost of Care**

Members who chose a high-quality primary care provider, as identified via the Q-Score, experienced fewer inpatient days and lower total annual costs.

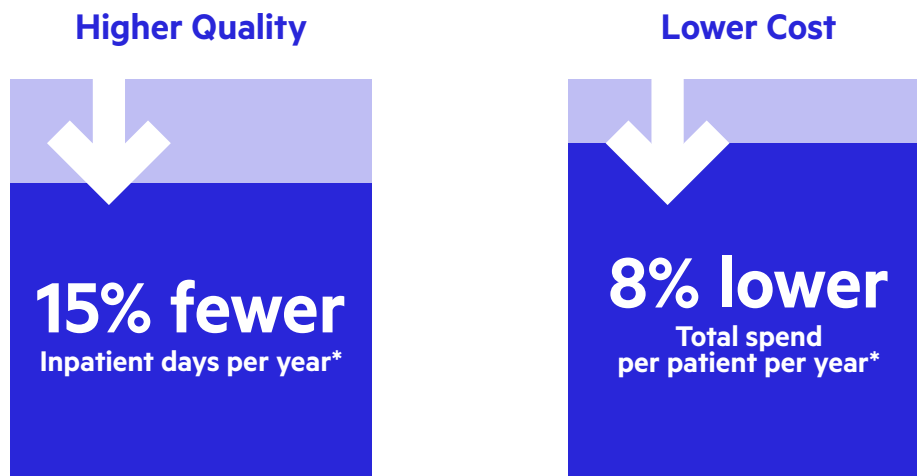
## **About the Research**

**Research type:** Claims-based analysis

**Population:** All Castlight-eligible members who incurred a claim for a primary care visit

**Analysis:** We evaluated all Castlight-eligible members who incurred a claim for a visit with a PCP. We then calculated the number of inpatient days and the total spend for each member over the course of a year, and compared those metrics between what members actually did vs. what we expected them to do given their risk scores.

**Results:** Members who chose providers with Q-Scores indicating high quality experienced 15% fewer inpatient days per year and 8% lower total medical spend than expected.



\*Baselines are expected behaviors based on risk-cohort

## **Implications:**

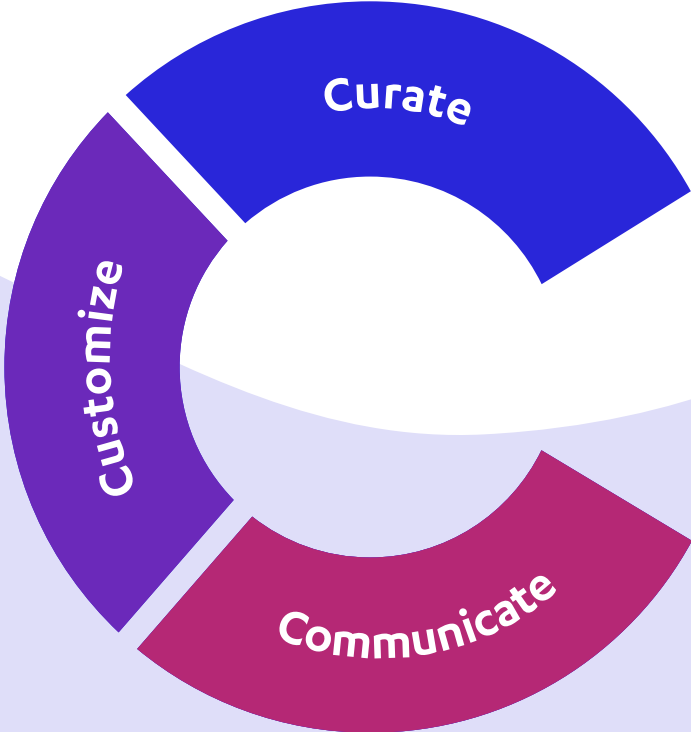
As the primary coordinators of health care referrals, PCPs direct many hospitalizations in the U.S., both by personally admitting patients for common issues such as pneumonia, heart failure, and asthma and by indirectly influencing hospitalizations and other high-cost care by selecting specialists, imaging facilities, and other testing centers for patients.<sup>10</sup> Steering members to high-quality primary care providers is a key step in controlling costly downstream care.

# Summary

Castlight’s care navigation platform incorporates over a decade’s worth of work providing quality information to members. And this work is ongoing. Castlight’s data analytics team is currently curating new data sets that illuminate provider outcomes related to telehealth and social determinants of health (SDOH). These new data are important to provider quality assessments given the recent uptick in telehealth outpatient visits in the U.S. to 71%.<sup>11</sup> The necessity of locating physicians and facilities adept at addressing health disparities has only become more apparent in the wake of COVID-19’s disproportionate impact on the most vulnerable communities.<sup>12</sup> Simultaneously, Castlight is further refining its Q-Score, updating the algorithm to include more clinical categories where domain expertise is crucial for achieving outcomes and managing costs. Finally, Castlight will continue conducting A/B user testing in 2021, iterating improvements to design, content, and platform features that will make it easier for members to navigate toward high-quality care. Castlight’s approach to quality has been refined over the past decade and is just getting better.

## Acknowledgements

We are deeply grateful to all the designers, quality experts, and product managers who have contributed to Castlight’s understanding of how best to measure and report quality to drive better health care decision-making. Hundreds of user testers have participated in research on this topic over the years. We appreciate all of their time and input.



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