

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop N2-20-16
Baltimore, Maryland 21244-1850



Office of Strategic Operations and Regulatory Affairs/Openness, Transparency & Accountability Group
Refer to: Control Number: 121020157046 and PIN: 6BKR (HCDI-EJG)

Jackson Williams
Dialysis Patient Citizens
1012 14th Street, NW, Suite #905
Washington, DC 20005

FEB 11 2016

Dear Mr. Williams:

This letter is in response to your Freedom of Information Act (5 U.S.C. § 552) request of December 10, 2015, which you sent to the Centers for Medicare & Medicaid Services (CMS) via email. Within your correspondence you requested access to all consumer testing reports commissioned by CMS for its Compare websites, as well as for the Health Insurance Marketplace's Quality Rating System and Medicare Plan Finder.

Your request and responsive records were forwarded to my office for a disclosure determination because of my responsibilities under the FOIA. After careful review of the documents submitted to me, I have determined to release them to you in their entirety.

I trust this information will be helpful to you.

Sincerely,

Hugh Gilmore
Director
Freedom of Information Group

Enclosure

QUALITY MEASURES SURVEY 2014 CENTERS FOR MEDICARE AND MEDICAID SERVICES

Topline Report

This report summarizes findings from the recently completed Quality Measures survey. It includes a brief description of the project and methodology, respondent profile, and an executive summary. A total of 807 adults were interviewed nationwide online from July 8-11, 2014.

BACKGROUND

The Centers for Medicare and Medicare Services (CMS) have invested significant resources in the creation of several online tools for consumers to aid in decision-making. These tools include Hospital Compare, Nursing Home Compare, and the more recent Physician Compare. As CMS seeks to increase awareness and usage of these tools, it is critical to understand consumer awareness and perception of quality measures that may be used in health care decision-making and how they define and rank quality measures when it comes to health care decisions.

METHODOLOGY

In order to achieve the objectives described above, Aeffect conducted a national online survey with 800 consumers between the ages of 18-80 who have health insurance and have some experience with the health system in the past year. Regional and gender quotas were maintained to match the four US Census divisions and 37% of the sample also self-identified as caregivers (n=297). Caregivers are defined as those responsible for making health care decisions on behalf of another adult who is mentally/physically disabled or needs assistance with daily living activities such as dressing, bathing, or taking medications. The survey was approximately 10 minutes in length and included use of maximum differential scaling (MaxDiff) to identify the preferred rankings of a set of possible topics/questions. Several demographic and behavioral measures were also captured to allow for application of CMS' generational segmentation.

RESPONDENT PROFILE

All respondents are between the ages of 18 and 80, have health insurance, and have visited a hospital, medical facility, or doctor within the past year. The mean age of survey respondents is 52 years old and the gender distribution is 57/43 female/male. The vast majority of beneficiaries surveyed are white (89%), two-thirds are married (64%), and over one-third self-identify as caregivers (37%). About one-in-five respondents have a high school or vocational/technical school degree (20%) and one-third surveyed have a self-reported annual household income of \$50,000 or less (35%).

In terms of health behaviors and attitudes, over half indicate they have a chronic health condition (55%) defined as a condition that requires "ongoing care such as arthritis, chronic pain, high blood pressure, or heart disease. Another 17% of respondents rate their health status as "poor or fair". Three-fourths of respondents have "looked for information on health topics" (75%) and the vast majority agree it is "important to be informed about health issues" (89%).

EXECUTIVE SUMMARY

Awareness of Online Quality Measures

Awareness and usage of websites with quality ratings is correlated with age. The potential impact is high as the vast majority who have visited a site indicate they used the ratings to help select a doctor, hospital or nursing home. Caregivers, in particular, are likely to seek out and use these resources.

- Over half of Caregivers indicate they used online quality ratings to choose a doctor, hospital, or nursing home (55%) compared to 22% of consumers who are not caregivers.
- About half of respondents have heard of websites that review hospitals (56%) or doctors (48%) while just over one-quarter have heard of websites that review nursing homes (26%). Awareness and usage is highest among those 18-34 and then steadily declines to the lowest levels among those 65-80.

Trusted Sources for Quality Measures

Of the brands tested, the most trusted resource for quality ratings was Consumer Reports. However, Medicare and a government “healthcare quality reporting site” were selected by about one-third of respondents as a trusted source. This suggests respondents are open to the U.S. Government’s involvement in these ratings and some may even expect to see organizations like Medicare involved.

- Among brands tested as the “most trusted” to provide quality ratings, half of respondents selected Consumer Reports (50%) followed by the AARP (37%), a U.S. Government Healthcare Quality Reporting Site (36%) and Medicare (32%). Caregivers show even greater levels of trust, scoring Medicare (41%) on par with AARP (42%).

Types of Quality Measures

Consumers have a clear preference for quality measures focused on treatment effectiveness in evaluation of hospitals and doctors. This is followed by the related dimension of safety. Interestingly, consumers appear to evaluate hospitals and physicians similarly and cost effectiveness, patient-centeredness, and care coordination are all relatively less important.

- The results of the MaxDiff analysis reveal that treatment effectiveness (191 index for hospital and 188 for doctor) is clearly the top choice as the most important consideration factor when choosing a hospital or doctor. However, unlike the simple ranking exercise, safety rises to second place (157 for hospital and 143 for doctor) above patient-centeredness (110 for hospital and 119 for doctor). Cost efficiency/affordability and patient-centeredness drop out as above-average influencers.

Comparative Influence of Quality Measures

A doctor’s recommendation or referral has the greatest impact on selection of hospitals or doctors. However, quality measures have higher value than the opinions of family and friends. For Caregivers, the influence of quality ratings rises to nearly comparable levels with doctors.

- About three-fourths of respondents say the doctors’ recommendation or referral has the highest influence (77% hospital vs. 73% doctor) followed by quality ratings (61% hospital/doctor). The influence of quality ratings was even more pronounced among Caregivers, almost rising to comparable levels with the influence of doctors (78% doctors vs. 71% quality ratings).
- The quality ratings may have greatest impact on younger consumers (18-34). Those in the healthy and young segment are the most likely to rate quality ratings as nearly as influential as doctors. However, quality ratings have the least impact on the passive/skeptical or vulnerable/unengaged segments.

DETAILED FINDINGS

Awareness and Usage of Online Quality Measures

Awareness of websites with quality ratings was fairly high with nearly two-thirds of respondents being aware of at least one website with reviews of hospitals, doctors, or nursing homes (66%). About half had heard of websites that review hospitals (56%) or doctors (48%) while just over one-quarter had heard of websites that review nursing homes (26%). Usage of websites with quality ratings is lower with one-third having visited a website that reviews doctors (34%) or hospitals (29%).

As might be expected, Caregivers had higher levels of awareness and usage across all types of quality rating websites. Perhaps most importantly, while less than one-quarter of respondents who are not caregivers (22%) indicate they used quality ratings to choose a doctor, hospital, or nursing home, over half of Caregivers indicate they did the same (55%).

Table 1: Awareness of Websites with Quality Measures

	Total	Care givers	All Other
	%	%	%
Yes, have heard of website with reviews of hospitals	56	71 *	47
Yes, have heard of website with reviews of doctors	48	55 *	44
Yes, have heard of website with reviews of nursing homes	26	38 *	19
None of the above	34	21 *	42
Yes, have visited a website with reviews of hospitals	29	48 *	17
Yes, have visited a website with reviews of doctors	34	45 *	27
Yes, have visited a website with reviews of nursing homes	12	24 *	5
None of the above	22	16 *	25
Yes, used reviews to choose doctor/hospital/nursing home	34	55 *	22
Base size	807	297	510

Q4. Have you ever heard of websites that have reviews or quality ratings for hospitals, physicians, or nursing homes?

Q5. Have you ever visited a website with reviews or quality ratings for hospitals, physicians, or nursing homes?

Q5b. Did you use those reviews or ratings to make a choice about which doctor, hospital, or nursing home to use?

% may total more than 100% due to multiple mentions from each respondent

*represent a statistically significant difference between columns at the 95% confidence level

Awareness of the websites tested appears to be highly correlated with age. That is, awareness is highest among those 18-34 and then steadily declines to the lowest levels among those 65-80. Those 65-80 are also the most likely to say they have not heard of these types of websites (65-80 43%). The one interesting exception to this trend is among websites with reviews of nursing homes, where awareness of those 55-64 is nearly identical to those 18-34 (18-34 29% vs. 55-64 30%).

The differences in terms of usage by age are even more dramatic. Respondents 18-34 are five times as likely as those 65-80 to have visited a website with reviews of hospital (18-34 50% vs. 65-80 8%). One third of those 65-80 (34%) and one-quarter of those 55-64 (25%) say they have not visited any websites with reviews of hospitals, doctors, or nursing homes.

In terms of using these reviews to choose a doctor, hospital, or nursing home, over half of those 18-34 say they have done so (59%) compared to about one-quarter of those 55-64 (24%) and one-in-ten among those 65-80 (11%).

Table 1A: Awareness of Websites with Quality Measures by Age

	Total	Age 18-34	Age 35-54	Age 55-64	Age 65-80
	%	%	%	%	%
Yes, have heard of website with reviews of hospitals	56	65	59	56	46
Yes, have heard of website with reviews of doctors	48	55	49	46	43
Yes, have heard of website with reviews of nursing homes	26	29	24	30	21
None of the above	34	22	31	37	43
Yes, have visited a website with reviews of hospitals	29	50	39	19	9
Yes, have visited a website with reviews of doctors	34	51	42	27	18
Yes, have visited a website with reviews of nursing homes	12	17	13	14	5
None of the above	22	12	14	25	34
Yes, used reviews to choose doctor/hospital/nursing home	34	59	46	24	11
Base size	807	156	239	216	196

Q4. Have you ever heard of websites that have reviews or quality ratings for hospitals, physicians, or nursing homes?

Q5. Have you ever visited a website with reviews or quality ratings for hospitals, physicians, or nursing homes?

Q5b. Did you use those reviews or ratings to make a choice about which doctor, hospital, or nursing home to use?

% may total more than 100% due to multiple mentions from each respondent

When asked about specific sites, www.Medicare.gov had the highest awareness (72%) and usage (42%) of the sites tested followed by www.Healthcare.gov (65% aware and 36% visited). Over one-quarter of respondents also were aware of www.Healthgrades.com (29%) and/or www.RateMDs.com (27%). The three Medicare online tools had overall lower levels of awareness and usage.

Again, awareness of websites tested is highest among those 18-34 and tends to decline as respondents get older with one notable exception. Awareness and usage of www.Medicare.gov is highest among those 65-80 (65-80 aware 84% and visited 52%). Caregivers have higher rates of awareness and usage across all sites tested.

Table 2: Heard of or Visited Quality Ratings Websites

	Total	Age 18-34	Age 35-54	Age 55-64	Age 65-80	Care givers	All Other
Have heard of...	%	%	%	%	%	%	%
www.Medicare.gov	72	71	67	70	84	80	* 68
www.Healthcare.gov	65	69	73	67	51	73	* 61
www.Healthgrades.com	29	51	39	19	9	41	* 21
www.RateMDs.com	27	46	36	19	10	44	* 17
Physician Compare	20	33	27	12	10	37	* 10
Hospital Compare	19	31	26	8	3	37	* 8
www.Vitals.com	17	34	26	8	3	33	* 8
Nursing Home Compare	15	25	20	14	3	32	* 5
Have not heard of these sites	15	10	17	18	13	8	* 18
Have visited...							
www.Medicare.gov	42	47	39	31	52	58	* 32
www.Healthcare.gov	36	50	49	32	13	52	* 26
www.RateMDs.com	21	37	30	12	6	37	* 11
www.Healthgrades.com	20	40	30	10	3	34	* 12
Physician Compare	14	22	21	8	4	30	* 5
Hospital Compare	14	26	22	9	2	31	* 4
www.Vitals.com	13	24	21	4	2	26	* 5
Nursing Home Compare	11	19	15	10	1	26	* 2
Have not visited these sites	40	26	35	51	45	23	* 50
Base size	807	156	239	216	196	297	510

Q6. Have you heard of any of the following websites?

Q7. Have you ever visited any of the following websites?

% may total more than 100% due to multiple mentions from each respondent

*represent a statistically significant difference between columns at the 95% confidence level

Among brands tested as the “most trusted” to provide quality ratings, half of respondents selected Consumer Reports (50%) followed by the AARP (37%), a U.S. Government Healthcare Quality Reporting Site (36%) and Medicare (32%). While not the top score, the relative high ratings for Medicare and/or a government healthcare site suggests consumers are open to the government providing these ratings and some may even expect the government to do so.

There are some notable differences in trust levels by age. More specifically, those 18-34 are much less likely to trust AARP than all other age groups. Interestingly, those 18-34 have similar levels of trust of Medicare as those 65-80 and the lowest levels of trust are among those 55-64. On the other hand, those 18-34 are much more likely than older respondents to trust insurance companies or news media like the Wall Street Journal or U.S. News & World Report. Caregivers tended to have higher levels of trust overall with greatest trust in Consumer Reports, but similar levels of trust across AARP, Medicare, and U.S. Government sites.

Table 3: Trusted Organizations for Quality Measures

	Total	Age 18-34	Age 35-54	Age 55-64	Age 65-80	Care givers	All Other
	%	%	%	%	%	%	%
Consumer Reports	50	49	54	52	44	55 *	47
AARP	37	23	35	42	44	42 *	34
U.S. Gov Healthcare Site	36	38	39	36	32	40 *	34
Medicare	32	37	29	25	41	41 *	27
U.S. News & World Report	21	33	28	13	11	29 *	16
Insurance company	19	32	18	16	12	27 *	14
Wall Street Journal	17	29	20	13	11	27 *	12
Another organization (specify)	<1	0	2	<1	<1	1	<1
None of these/Don't know	21	17	17	25	27	12 *	26
Base size	807	156	239	216	196	297	510

Q18. Which of the following organizations would you trust to provide reviews or quality ratings for hospitals or physicians? Please select all that apply.

*represent a statistically significant difference between columns at the 95% confidence level

Evaluation of Quality Measures

To evaluate the hierarchy and magnitude of influence in quality measures, respondents were asked to consider seven factors via an exercise that would enable subsequent MaxDiff analysis. Respondents were exposed to the seven factors with the following definitions and asked to rank them in order of importance:

Safety – the hospital or doctor follows proper practices to prevent medical errors and ensure risks and hazards are minimized

Patient-centered – the patient’s preferences should be respected and he/she should feel in control of his/her care

Care Coordination – the doctor or hospital manages and coordinates services across multiple doctors and/or specialists

Treatment Effectiveness – the hospital or doctor uses treatments that have been proven to produce the best results for people with certain common conditions

Equitable – all patients are treated equally regardless of race, gender, income, or status

Cost Efficiency/Affordability – the hospital or doctor manages the costs of care and does not order extra services that are not medically necessary for quality care

Timeliness – the patient should not experience excessive waits or delays before receiving care

Of the seven quality measures tested, based on a basic ranking exercise, treatment effectiveness appears to be the most important factor for consumers. Nearly half of respondents select treatment effectiveness as either the most important or the second most important factor (26% first + 21% second = 47%). This is followed by patient-centered, safety, and cost efficiency which are very similar in ranking (between 33% and 37% combined). Note that there are no differences among choices by Caregivers as well.

Table 4: Ranking of Quality Measures on Importance

	Total	Age 18-34	Age 35-54	Age 55-64	Age 65-80	Care givers	All Other
Ranked First (Most Important)	%	%	%	%	%	%	%
Treatment Effectiveness	26	23	31	21	28	26	26
Patient-centered	21	19	20	23	22	20	22
Safety	19	20	18	23	18	20	19
Cost Efficiency/Affordability	15	19	14	15	11	14	15
Timeliness	8	9	8	9	8	8	9
Care Coordination	6	2	5	7	9	6	6
Equitable	5	8	5	3	4	5	4
Ranked Second							
Treatment Effectiveness	21	19	19	22	22	21	21
Cost Efficiency/Affordability	18	14	19	19	18	15	19
Patient-centered	16	15	16	18	17	16	16
Safety	16	16	17	13	17	16	17
Care Coordination	12	12	13	10	14	12	12
Timeliness	11	13	11	13	9	12	11
Equitable	6	12	5	6	3	7	5
Base size	807	156	239	216	196	297	510

Q13. When deciding which hospital or doctor you should visit, there are a variety of factors that might influence your decision. Please read through the brief descriptions of each of the factors below and then rank the factors in the order of importance to you where 1 means most important, 2 is second most important, 3 is third most important, etc.

*represent a statistically significant difference between columns at the 95% confidence level

For the MaxDiff exercise, respondents were led through a series of seven different combinations, or subsets, of topics (see Figure 1). Each subset consisted of three topics. The sequence in which respondents were exposed to each subset was based on an experimental design that controlled for order and frequency of exposure. For each subset, respondents were asked to identify which factor would most influence their choice of a hospital and which one would least influence their choice. This exercise was then repeated for which factors would influence their choice of a primary care physician. Subsequently, Aeffect conducted a MaxDiff analysis on the data, using Hierarchical Bayesian (HB) modeling to estimate the utility of each topic at the individual respondent level. These utilities scores were then aggregated, rescaled between 0-100 and indexed against the average score that would be expected if all factors were preferred equally by respondents (14.29 as determined by a 1 in 7 chance of preference).

Figure 1: MaxDiff Rating Exercise

Please read each set before making your choices. Some combinations may look similar, but they are all different.

(1 of 7)

Most important in selecting a hospital		Least important in selecting a hospital
<input type="radio"/>	Cost Efficiency/Affordability	<input type="radio"/>
<input type="radio"/>	Equitable	<input type="radio"/>
<input type="radio"/>	Patient-centered	<input type="radio"/>

Cost Efficiency/Affordability - the hospital or doctor manages the costs of care and does not order extra services that are not medically necessary for quality care

Equitable - all patients are treated equally regardless of race, gender, income, or status

Patient-centered - the patient's preferences should be respected and he/she should feel in control of his/her care

The results of the MaxDiff analysis reveal similar trends as the previous exercise, but a different order to the rankings. Based on this more robust exercise, treatment effectiveness (191 index score) is clearly the top choice as the most important consideration factor when choosing a hospital. However, unlike the simple ranking exercise, safety rises to second place (157) above patient-centered (110) and cost efficiency/affordability drops out as an above-average influencer (94).

Table 5: Quality Measures Impact on Choosing a Hospital (MaxDiff)

	Mean	Index
	%	Index
Treatment Effectiveness	27.31	191
Safety	22.39	157
Patient-centered	15.71	110
Cost Efficiency/Affordability	13.39	94
Care Coordination	10.17	71
Timeliness	7.16	50
Equitable	3.87	27
Base size	807	807

Q17. [MAX DIFF] For the next exercise, we want to identify the most important factors consumers might consider when choosing a hospital for an inpatient stay for a voluntary procedure such as a knee or hip replacement. For these questions, you will see the same series of factors in different combinations. For each combination, first choose the one factor that you would be most important to you in selecting a hospital (left-hand column). Then, choose the one factor that would be least important to you in selecting a hospital (right-hand column).

*Index of 100 = average likelihood if all attributes preferred equally. Index scores above 100 indicate the relative magnitude of preference; for example, 193 means that the attribute is chosen 93% more than average by respondents.

The rank order of quality measures is the same for consumers when choosing a doctor as when choosing a hospital. Based on the MaxDiff exercise, again treatment effectiveness (188 index score) is the most important consideration, followed by safety (143) and patient-centered (119). Patient-centeredness appears to be slightly more a factor among consumers when choosing a doctor versus a hospital (119 index doctor vs. 110 index hospital).

Table 6: Quality Measures Impact on Choosing a Doctor (MaxDiff)

	Mean	Index
	%	Index
Treatment Effectiveness	26.80	188
Safety	20.48	143
Patient-centered	17.02	119
Cost Efficiency/Affordability	13.24	93
Care Coordination	10.68	75
Timeliness	7.75	54
Equitable	4.03	28
Base size	807	807

Q17b. [MAX DIFF] For the next exercise, we want you to consider some of the same topics, but this time please think about them in terms of what would be important to you if you were choosing a new primary care physician or family doctor.

*Index of 100 = average likelihood if all attributes preferred equally. Index scores above 100 indicate the relative magnitude of preference; for example, 193 means that the attribute is chosen 93% more than average by respondents.

In reviewing the quality measure scores by CMS Generations segments, the previous trends remain consistent. That is, treatment effectiveness and safety remain the two most influential factors regardless of segment. Beyond those, it appears that cost efficiency/affordability is more of a concern among the healthy and young segment while patient-centeredness is particularly important to the passive and skeptical segment when choosing a doctor.

Table 7: Quality Measures by Generations Segmentation

	Informed Healthy Educated	Sick Active Worried	Mature Secure	Healthy Young	Passive Skeptical	Vulnerable Unengaged
Choosing a hospital	Index	Index	Index	Index	Index	Index
Treatment Effectiveness	198	193	199	189	167	187
Safety	157	155	167	151	153	166
Patient-centered	112	119	104	99	99	117
Cost Efficiency/Affordability	87	93	83	106	103	95
Care Coordination	79	66	84	58	84	64
Timeliness	47	49	52	59	54	43
Equitable	20	26	10	40	41	28
Choosing a doctor						
Treatment Effectiveness	193	189	199	182	174	180
Safety	144	139	154	146	129	152
Patient-centered	119	125	119	103	127	125
Cost Efficiency/Affordability	85	93	77	110	96	93
Care Coordination	81	74	88	59	85	66
Timeliness	53	53	52	62	56	47
Equitable	25	26	11	37	32	37
Base size	239	213	65	148	71	71

Q17b. [MAX DIFF] For the next exercise, we want you to consider some of the same topics, but this time please think about them in terms of what would be important to you if you were choosing a new primary care physician or family doctor.

Comparative Influence of Quality Measures

In order to understand how quality measures or ratings might compare to other influencers, respondents were asked to rate their influence relative to recommendations or referrals from a doctor and/or family member/friend. While the influence of the doctor was clear with about three-fourths saying the doctors' recommendation or referral has the highest influence (77% choice of hospital vs. 73% choice of doctor), quality ratings were also selected by three-out-of-every five respondents (61%, respectively), which was higher than the influence of recommendations from family or friends (47% choice of hospital vs. 55% choice of doctor).

Younger respondents (under 55) are more likely to say that quality ratings have greater influence on their decision than those 55 and over. More specifically, about two-thirds of those 18-34 (66%) or those 35-54 (67%) say quality ratings have high influence compared to 54% of those 55-64 and 60% of those 65-80. The youngest respondents (18-34) are the most influenced by recommendations from friends or family members by a nearly two to one margin compared to those 65-80. Interestingly, they are also the least likely to be influenced by recommendations from a doctor when choosing a hospital (18-34 70% vs. 65-80 83%).

The influence of quality ratings is even more pronounced among Caregivers, almost rising to comparable levels with the influence of doctors. For example, when choosing a doctor 78% of Caregivers indicate a referral from another doctor has high influence compared to 71% of Caregivers saying the same about quality ratings.

Table 8: Quality Measures vs. Recommendations

Top 3 Box	Total	Age 18-34	Age 35-54	Age 55-64	Age 65-80	Care givers	All Other
When choosing a hospital...	%	%	%	%	%	%	%
Recommendation from doctor	77	70	76	81	83	82	* 76
Quality ratings	61	66	67	54	60	71	* 56
Recommend from friend/family	47	61	54	40	36	57	* 41
When choosing a doctor							
Referral from another doctor	73	74	69	75	76	78	* 71
Quality ratings	61	64	64	56	58	71	* 55
Recommend from friend/family	55	71	58	49	45	59	53
Base size	807	156	239	216	196	297	510

Q17a. If you were choosing a hospital for an inpatient stay such as a knee or hip replacement, please rate the following based on how much influence they would have on your final decision.

Q17c. If you were choosing a primary care doctor, please rate the following based on how much influence they would have on your final decision.

*represent a statistically significant difference between columns at the 95% confidence level

The influence of quality ratings remains consistent across the Generations segments. That is, recommendations or referrals from doctors remain the most influential, but are followed closely by quality ratings and then the opinions of friends and family members. One interesting note, it appears that the quality ratings have even greater impact on younger consumers. More specifically, those in the healthy and young segment are the most likely to rate quality ratings as nearly as influential as doctors. On the other hand, quality ratings have the least impact on those in the passive and skeptical or vulnerable and unengaged segments.

Table 9: Quality Measures vs. Recommendations by Generations Segmentation

	Informed Healthy Educated	Sick Active Worried	Mature Secure	Healthy Young	Passive Skeptical	Vulnerable Unengaged
When choosing a hospital...	%	%	%	%	%	%
Recommend from doctor	81	80	85	70	69	84
Quality ratings	70	60	62	63	47	53
Recommend from friend/family	54	46	33	57	40	34
When choosing a doctor						
Referral from another doctor	73	75	83	70	67	73
Quality ratings	66	60	63	63	50	54
Rec from friend/family	63	62	40	67	44	34
Base size	239	213	65	148	71	71

Q17a. If you were choosing a hospital for an inpatient stay such as a knee or hip replacement, please rate the following based on how much influence they would have on your final decision.

Q17c. If you were choosing a primary care doctor, please rate the following based on how much influence they would have on your final decision.

Health Care Attitudes and Perceptions

Consistent with past CMS consumer studies, the vast majority of respondents (and Caregivers) agree that it is very important to be “informed about health issues” (89%). Over half of respondents indicate they have “people I can always turn to if I need help” (59%) and exactly half say they are concerned about “not being able to pay for healthcare” (50%). Caregivers follow similar patterns with higher scores overall.

Table 10: Health Care Attitudes

Top 3 Box	Total	Care givers	All Other
	%	%	%
Attitudes towards health care issues			
It is very important for me to be informed about health issues	89	91	87
I have other people I can always turn to if I need help	59	69 *	53
I'm concerned about not being able to pay for healthcare	50	58 *	47
I have a financial plan w/funding for future healthcare costs	44	60 *	34
I'm usually one of the first to try new technologies	39	58 *	27
Someone else takes care of health care issues so I don't need to	15	28 *	8
Base size	807	297	510

Q25. Using a scale from 1 to 7, where 1 means you completely disagree and 7 means you completely agree, how would you rate each of the following statements?

*represent a statistically significant difference between columns at the 95% confidence level

Exactly three-fourths of respondents indicate they have “looked for information on health topics” (75%) and over half say they have a chronic condition that requires ongoing care (55%). The vast majority of respondents indicate their health status is “good to excellent” compared to their peers (82%).

Table 11: Chronic Health Condition and Perceived Health Status

	Total	Care givers	All Other
	%	%	%
Yes, have chronic health condition	55	52	56
Yes, have looked for information on health topics	75	82 *	71
Perceived Health Status			
Poor	4	2	5
Fair	13	10 *	15
Good	37	33	40
Very Good	34	40 *	31
Excellent	11	15 *	9
Base size	807	297	510

Q19. Compared to other people who are the same age as you, do you consider your health to be...

Q20. Do you have any chronic health conditions that require ongoing care, such as arthritis, chronic pain, high blood pressure, or heart disease?

Q24. Have you ever looked for information on health topics like staying healthy and preventing disease, managing ongoing conditions like pain, arthritis, or diabetes; healthcare quality information and support networks; or changes in benefits?

*represents a statistically significant difference between columns at the 95% confidence level

CMS Consumer Segmentations

The following tables show the breakout of consumer segments using two versions of the CMS SST segmentation. In the first version, the active (26%) and high effort (28%) segments are the largest while 16% are unable to be categorized. In the second version, the passive (33%) and complacent (26%) segments are the two largest and the percent uncategorized drops to 2%.

Table 12: CMS SST

	Active	Passive	High Effort	Complacent	Not Categorized
	%	%	%	%	%
CMS SST using Q21 & Q23	26%	17%	28%	13%	16%
Base	212	139	222	104	130
CMS SST using Q22 & Q23	20%	33%	20%	26%	2%
Base	159	266	158	211	13

Q21. How often do you take a list of all your prescription medicines to your doctor visits?

Q22. How often do you bring a list of questions you want to cover to your doctor visits?

Q23. How confident are you that you can identify when it is necessary for you to get medical care?

Among the CMS Generations segments, the informed, healthy and educated segment is the largest (30%) followed by the sick, active, and worried (26%). Together these two segments make up over half of the total sample. About one-in-five fall in the healthy and young segment and one-in-ten are in one of the three remaining segments.

Table 13: CMS Generations Segmentation

	Informed Healthy Educated	Sick Active Worried	Mature Secure	Healthy Young	Passive Skeptical	Vulnerable Unengaged
	%	%	%	%	%	%
Generations Segmentation	30%	26%	8%	18%	9%	9%
Base	239	213	65	148	71	71

Generations seven variable segmentation

S5. Can you please tell me the year you were born?

Q20. Do you have any chronic health conditions that require ongoing care...

Q24. Have you ever looked for information on health topics like staying health and preventing disease...

Q25. (A,B,E). How would you rate the following statements...

Q32. What is the annual income of your household before taxes and deductions?

Demographics

The demographics for respondents surveyed are largely consistent with past surveys as U.S. Census averages. More specifically, the vast majority of respondents are Caucasian (89%) and nearly two-thirds are married (64%). About one-quarter of the sample are over the age of 65 (24%) and over one-third self-identify as a Caregiver. Gender is matched to the U.S. Census with 43% male and 57% female. It should be noted that the sample was also matched for equal distribution across the four U.S. Census divisions (Northeast, West/Pacific, Midwest/Central, and South).

Table 14: Gender, Age, Ethnicity, and Marital Status

	Total		Total
Ethnicity	%	Gender	%
White	89	Male	43
Hispanic or Latino	9	Female	57
Black	6		
Other	7	Caregiver	
		Yes	37
Marital Status		Age Range	
Married	64	18-34	19
Single, never married	17	35-54	30
Divorced	12	55-64	27
Widowed	6	65-80	24
Separated	1	Mean Age	52.01
Base size	807		807

S4. Are you currently responsible for making health care decisions on behalf of another adult who is mentally/physically disabled or needs assistance with daily living activities such as dressing, bathing, or taking medications? S5. Can you please tell me the year you were born? S6. What is your gender?
Q27. What is your current marital status? Q29. Are you Hispanic or Latino? Q30. What is your racial or ethnic background?

One-fifth of respondents report having graduated from high school or vocational/technical school (20%) and just over one-third report an annual household income of \$50,000 or less (35%).

Table 15: Education and Income

	Total		Total
Education	%	Income	%
Grade school or less	0	Under \$15,000	5
Some high school	1	\$15,000 to less than 25,000	8
Graduated high school/GED	13	\$25,000 to less than \$50,000	22
Vocational/Technical school	6	\$50,000 to less than \$75,000	25
Some college/2 years or less	22	\$75,000 to less than \$100,000	16
Some college/2+ years	12	\$100,000 to less than \$150,000	15
Graduated college	29	\$150,000 to less than \$200,000	4
Post-graduate degree	17	\$200,000 and over	3
Base size	807		807

Q28. What is the highest level of education that you have completed?

Q32. What is the annual income of your household before taxes and deductions? Is it...

QUALITY COMPARE ENVIRONMENTAL SCAN

by

KRC RESEARCH

August 1, 2012

for

The Centers for Medicare & Medicaid Services (CMS)

This is a DRAFT version, based on work completed August 1, 2012.
Please do not cite without permission. Additional analyses are underway.
Comments and suggestions are welcome. For additional information,
please contact:

Frank Funderburk
Director, Division of Research
Office of Communications
410-786-1820

CMS QUALITY COMPARE ENVIRONMENTAL SCAN

Table of Contents

	Page
I. INTRODUCTION	3
II. EXECUTIVE SUMMARY	4
III. IMPLICATIONS	5
IV. DETAILED FINDINGS	6
A. Audiences for Quality Information	6
B. How Consumers and Patients Perceive Quality of Care	10
1. Definitions of Quality	10
2. Overall Consumer Mindset	14
3. Perceptions of Personal Care, Care in Your Area, and Care in the US	20
C. How and When Consumers Think about Quality Tools	24
1. Low Awareness of Quality Differences and Choice	24
2. Awareness Comes Too Late	26
D. How and When Providers Think about Quality Tools	28
E. Awareness of Quality Tools	29
1. Sources of Information and Audiences	29
2. Levels of Awareness Among Consumers	30
3. Levels of Awareness Among Providers	33
F. Utilization of CMS Quality Compare Tools	34
G. Interest in Quality Compare Information and Tools	36
H. Communicating About Quality Compare Tools	39
1. Communications Strategies	39
2. Messages for Communicating Quality	48
V. BIBLIOGRAPHY	52

I. INTRODUCTION

The purpose of this research scan is to provide a concise summary of findings from relevant published literature and primary quantitative and qualitative research on consumers' awareness of, perceptions about, and utilization of information for comparing the quality of healthcare providers to inform decision-making, as well as insights for engaging and activating consumers.

CMS offers a variety of quality compare online tools, including Hospital Compare, Nursing Home Compare, Home Health Compare, Dialysis Facility Compare, Medical Supplier Directory, Long-term Care Planning Tool, Physician Compare, Medicare Plan Finder, Medigap Policy Search and Formulary Finder.

This scan will show that current awareness and utilization of quality compare information is low for a variety of reasons, one of which appears to be a lack of perceived need and motivation among consumers. Yet, the need for consumer engagement in healthcare decision-making is generally well-recognized among experts concerned about improving patient safety, reducing medical errors, and readmissions. Providers support patient and family engagement in healthcare and recognize that it can lead to both better patient experiences and outcomes.¹

Research and data supporting the need for and the benefit of consumer involvement in healthcare decision-making is abundant. For example, the need is supported by facts showing that variability in the quality of care is great—and should be a cause for consumer concern. For example, overall performance scores for 10,408 physicians in Massachusetts based on claims generated by 1.13 million adults the mean adjusted performance score was 62.5% but with a 5th to 95th percentile range of 48.2% to 74.9%. Further, even among providers who have characteristics that most often suggest high quality care (board certification status, medical school site, gender, years in practice and physicians' history of malpractice claims) there is a great deal of variation and/or mixed findings related to how these characteristics are associated with quality. In fact, there are few individual physician characteristics consistently related to higher quality patient care.² Thus, consumers cannot make decisions based purely on board certifications or where the provider was trained and must rely on other sources of information.

A key benefit of consumer involvement in healthcare decision-making—in choosing providers and care settings as well as over the time they receive care—is that engaged patients have better outcomes than patients who do not ask critical questions and leave decision-making to others. According to a colloquium panel sponsored by The Robert Wood Johnson Foundation on consumer engagement, engaged consumers “make better choices; are more likely to avoid negative or sub-optimal outcomes; are better able to recognize and stop inappropriate or poor-quality care; have increased compliance, cooperation, and commitment to health; and will likely advocate for better quality and reasonable cost, enhancing the value of care.”³

Insights and data in this report are primarily drawn from studies conducted by KRC Research and other contractors for CMS. This synthesis will provide context to a large sample nationally-representative survey of U.S. adults that KRC is currently conducting to update and extend this information to consumer healthcare segments which CMS and KRC recently developed.

¹ Maurer, Maureen, Dardess, Pam, Carman, Kristin L., Frazier, Karen, & Smeeding, Lauren. (May 2012).

² Reid, Rachel O., Friedberg, Mark William., Adams, John L., & McGlynn, Ateev Mehotra. (September 2010).

³ Arnold, Sharon B. (October 2007). Improving Quality Health Care: The Role of Consumer Engagement. *Robert Wood Johnson Foundation*.

II. EXECUTIVE SUMMARY

This scan focuses primarily on the consumer mindset and how thinking about quality impacts utilization—or lack thereof—of quality tools. We also draw on best practices in communication to address barriers to consumer engagement. Following are key findings:

1. **Most consumers are not looking to compare the quality of providers.** Americans are mostly satisfied with the quality of care they personally receive and do not perceive a need to get involved in what most consider an area for trained experts. They rely on their trusted physicians' advice, referral, guidance, and the experiences of family and friends.
2. **Some consumers don't believe they have a choice.** In addition to feeling satisfied with current care and guidance and personally inadequate to make reliable healthcare decisions, some do not believe they have a choice of certain facilities, such as hospitals. Consumers go where their doctor or surgeon has admitting rights.
3. **Most consumers haven't heard about quality compare tools and don't know quality data exists.** Few consumers have seen information comparing doctors, hospitals, and health plans or the quality of care offered. Of those who have seen quality comparisons, even fewer use the information.
4. **Most consumers first learn about tools when it is most difficult for them to use it.** Providers often move past "informed choice" to "informed consent," and so patients are not given the option to make choices. Upon diagnosis they are often scared, stressed, and feeling pressured, which is not the optimal time to learn to use tools.
5. **Most consumers are interested in quality compare tools, once they learn about them.** Once consumers see an example of quality compare tools, they are often thrilled to know the information exists should they need it. They find the information valuable.
6. **Most consumers believe CMS/Medicare would be a reliable source of information.** Qualitative data suggest that most consumers don't think of going to CMS/Medicare for quality compare information, but once they are aware it is available, they believe CMS is a credible source of quality information.
7. **Consumers may be drawn in to tools by highlighting other high-value content.** Research on CMS' Quality Care Finder showed that the availability of a list of local providers would be a key draw. Drawing consumers in for lists and contact information may be a way to also engage them in using quality comparison information.
8. **Consumers understand the value of quality data when they see an example of variability.** Consumers need to be informed about the drastic differences in quality, particularly those who do not believe there are big differences or think they are already getting quality care. Research shows that consumers understand the idea clearly when they see a facility with high-quality ratings next to one with significantly lower ratings.
9. **Communicators need to use various tactics to engage consumers.** Communications must reach the target audience, present the most important information in a compelling way, and use various channels to reach segments of the population.

III. IMPLICATIONS

Following are implications related to each of our key findings presented in the Executive Summary:

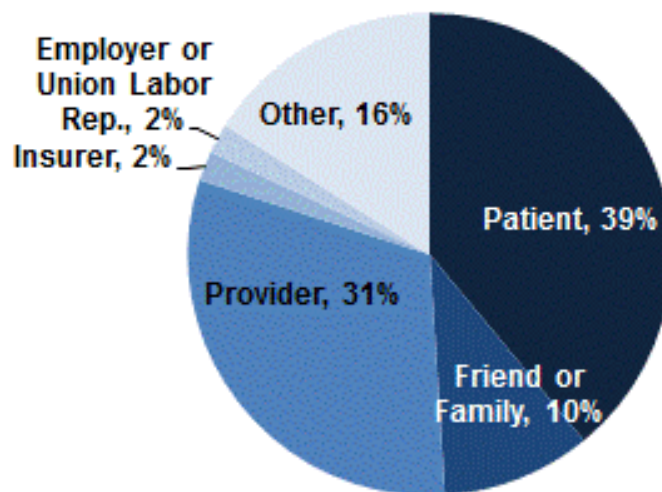
1. **Most consumers are not looking to compare the quality of providers.** Low current engagement and complacency means that consumers will be difficult to engage, but not impossible. Many are aware that there is a difference in quality overall and believe they have some choice in certain types of facilities.
2. **Some consumers don't believe they have a choice.** Because consumers feel they receive quality care, they see little need to seek out quality information. Patients need to understand that taking an active role in their care does inherently conflict with trusting their doctor; it will help build a relationship and deeper understanding of their care.
3. **Most consumers haven't heard about quality compare tools.** Communications tactics, including using audience segmentation, engaging partners to help disseminate information, and utilizing social marketing, media, and advertising to promote the tools will help break the awareness barrier.
4. **Most consumers first learn about tools when it is most difficult for them to use it.** Consumers must be engaged early, and often, so that they have CMS' tools top of mind before elective medical treatment or they must make a decision. If consumers research options before they are ill they can discuss options with their providers.
5. **Most consumers are interested in quality compare tools, once they learn about them.** Once consumers recognize that tools are available to help them compare providers and facilities in their area and that providers will be open to discussing options they will recognize the value.
6. **Most consumers believe CMS/Medicare would be a reliable source of information.** Communications will need to promote CMS/Medicare as an authoritative, well-respected source of information.
7. **Consumers may be drawn in to tools by highlighting other high-value content.** Patients only look for quality information when they need it and if they are concerned about uneven quality. Letting people know that compare tools offer lists of facilities with contact information may bring people to the website, and once there, they may be more likely to use it.
8. **Consumers understand the value of quality data when they see an example of variability.** Clearly showing differences between providers, hospitals or other facilities can paint a clear picture of the risk in going to a lower quality facility. Pointing out that some facilities receive better ratings for different treatments can help consumers recognize that providers are not a one-fits-all entity.
9. **Communicators need to use various tactics to engage consumers.** Addressing barriers and utilizing motivators is not enough to engage patients. Communications must be multi-faceted and long-term to make quality tools top-of-mind.

IV. DETAILED FINDINGS

A. Audiences for Quality Information

Analysis of sites currently reporting on hospital quality show that consumers, caregivers and providers are all important audiences for quality data, together they make up approximately 80 percent of all visitors to these sites. While caregivers—friends of family members—are currently a smaller market than patients and providers, they are an important target because they can assist by providing perspective and asking difficult questions before and during admission and at discharge from a care facility.

What Best Describes Quality Website Visitors?



4

There is much less research available on the healthcare behaviors of caregivers than there is on patients and providers. Often researchers group consumers, patients, and caregivers together in a general “consumer” category. Yet, these audiences are different in their mindset and stage of readiness. Where available, we highlight differences and similarities among these groups, but there continues to be gaps in understanding caregivers’ perspectives. Following is an overview of each of these key audiences.

1. **Consumers.** Overall, consumers underestimate the degree to which there is a quality issue, and even if they perceive quality to be poor in the U.S., they don’t believe they get poor care themselves. For this reason consumers are not interested in quality comparisons because they don’t think they need it personally. However, this mindset is also related to timing. Consumers are not interested in quality information until they need care and are in crisis—the time when it is most difficult to think clearly. Yet, once consumers understand what quality tools can show them, they see the value. The challenge is making them aware of the information before they are in an emergency.

⁴ Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011).

- a. Within the consumer audience it is important to consider the patient mindset. Patients are often those with chronic conditions, or serious health issues, who use more healthcare services than the general consumer. However, all consumers who get medical care are considered patients at one time or another. As consumers are moving in and out of the healthcare system, their mindset often shifts from being a disinterested consumer to an interested patient. Once a patient, interest in quality compare information is likely greater, in parallel to perceived need and benefit.
2. **Caregivers.** While caregivers are often grouped with patients in a general consumer category, research has shown that they are a distinct and important audience. In fact, in 2010 a Princeton Survey Research Associates study found that of those who had gone online to search out health or medical information, nearly half were looking for information related to someone else's medical condition. Just over one third were looking for themselves, and one in ten were looking for themselves and another person.⁵ Further, three in ten U.S. adults help a loved one with personal needs or household chores, managing finances, arranging for outside services, or other activities. Most are caring for a parent or spouse, but a small group cares for an adult child living with a disability or long-term health issue.⁶ The caregiver mindset is similar to that of general consumers in that they underestimate the variability of quality and are unaware of quality compare tools, but they are multi-taskers who are active in navigating the healthcare world and frequently know how to sort through complex information and make sense of it quickly.
3. **Providers.** Executives in hospitals responsible for quality believe public reporting of quality data helps consumers (69%), insurers (64%), and employer groups (59%) make better decisions. Three in ten (30%) say CMS' Hospital Compare encourages comparative analysis and drives competition among hospitals, and another three in ten (29%) say it encourages benchmarking and documentation and encourages high standards for patient care, but just under 1 in 10 (8%) say it helps patients make more informed choices.⁷ Physicians strongly feel that telling patients which hospital they need to go to for treatment is an important part of their responsibility to their patient.⁸ Thus, it is important to maintain a delicate balance between promoting the value of quality tools without suggesting that the information is meant to diminish the expertise and role of providers. In fact, conversations about quality in general and patient engagement in particular can strengthen highly-valued doctor/patient relationships.

⁵ Princeton Survey Research Associates International. (September 2010).

⁶ Pew Research Center. (July 2012).

⁷ KRC Research for Centers for Medicare & Medicaid Services. (November 2008). Hospital Compare Assessment Survey.

⁸ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

Another key consideration is based on the fact that consumers are not a monolithic group. KRC conducted cross-generational research for CMS and found that socio-behavioral factors such as health status, importance of information, current health activity and security/stress around healthcare issues, along with demographics such as age and income are indicators of engagement. Thus, in partnership with CMS we created a unique psychobehavioral consumer segmentation which sorts the U.S. adult population into six distinct healthcare consumer groups. By sorting consumers into distinct groups, we are able to better understand how to help each group overcome barriers and motivate them to take action.

Each of the six segments (Informed, Healthy & Educated; Sick, Active & Worried; Mature & Secure; Healthy & Young; Passive & Skeptical; and Vulnerable & Unengaged) have unique characteristics, behaviors, and attitudes related to healthcare. The following table outlines the six segments, their proportion in the overall adult population and a description. Segment 1, Informed, Healthy & Educated, is the most engaged and Segment 6, Vulnerable & Unengaged, the least and all are ordered along that continuum.

Segment	Name	Proportion (%)	Description
1.	Informed, Healthy & Educated	13.0	Younger, well-educated, very active with regard to health care, empowered and self-initiating information seekers.
2.	Sick, Active, & Worried	19.0	Half are Baby Boomers, are the poorest, likely disabled, and involved in health care due to poor health conditions. They are eager for help and willing to be part of developmental treatments.
3.	Mature & Secure	8.1	Mostly 65+, are in good health, financially prepared and active in health-related activities. Being informed is important to this segment, and they are actively engaged in disease prevention.
4.	Healthy & Young	36.9	Have the best health conditions of all segments, take health for granted and are less likely to work at preventing disease.
5.	Passive & Skeptical	17.1	Disengaged and have low interest level in matters of health. They tend to not have a formal relationship with doctor and hold fatalist views on health.
6.	Vulnerable & Unengaged	5.9	The majority are over 65, are sicker, poorer, and more fatalistic than other segments. They worry about the future and are not technologically savvy. They are less active in their own health care.

Each of the segments have unique barriers and motivators, and respond to different, sometimes overlapping, communications approaches.⁹ The following table outlines key barriers and motivators to healthcare engagement, important to keep in mind as we consider current, and the potential for future, engagement.

⁹ KRC Research for Centers for Medicare and Medicaid Services. (2011). *Generational Healthcare Communication Needs: Qualitative Research Step 3b*.

Segment Motivators and Barriers to Preventive Care						
	1: Informed, Healthy & Educated	2: Sick, Active & Worried	3: Mature & Secure	4: Healthy & Young	5: Passive & Skeptical	6: Vulnerable & Unengaged
Motivator	<ul style="list-style-type: none"> Family Quality of life Control 	<ul style="list-style-type: none"> Living life to fullest independent and in control Family 	<ul style="list-style-type: none"> Independence Quality of life Following-the-rules Smart decisions Adaptation (wanting to be around to enjoy life with family) 	<ul style="list-style-type: none"> Family, Calling (wanting to be around because their young children need them) Following the rules, Smart decisions, 	<ul style="list-style-type: none"> Pain and suffering, and having a sense of control. 	<ul style="list-style-type: none"> Doing it for others, not themselves
Barriers	<ul style="list-style-type: none"> No significant barriers 	<ul style="list-style-type: none"> Fear of physical discomfort Dread of more burden Lack of trust in providers to some degree Financial stresses 	<ul style="list-style-type: none"> Not motivated (other things more pressing) Feel they are doing enough (following doctor's orders) 	<ul style="list-style-type: none"> Feel young and healthy (complacent) Pro-crastination (busy, healthy) Lack of time 	<ul style="list-style-type: none"> Fear of pain and suffering Unmotivated/ Unconvinced Cynicism Denial/ fear of the unknown (bad news) Distrust in healthcare providers Financial barriers Inconvenience Difficulty understanding/navigating healthcare 	<ul style="list-style-type: none"> Fear of unknown/ bad news (denial) Fear of pain Unmotivated Financial barriers Difficulty understanding and navigating system Physical limitations

B. How Consumers and Patients Perceive Quality of Care

1. Definitions of Quality

When considering the consumer mindset around quality care there are two different sides of the coin. On one hand, there is what consumers consider to be safety issues. On the other, there is how they define quality care.

Conversely, providers, have their own views on what constitutes quality—and it is different from the consumer perspective.

Rathert et al. found that consumers focus on the healthcare process, while providers focus more on outcomes.¹⁰ Additionally, consumers consider operational problems, such as delays or lack of information, as safety issues rather than process-oriented issues. Overall, healthcare consumers regard communication, staffing issues and medication administration key issues for safety.

In qualitative research conducted for CMS to test discharge planning materials, consumers, caregivers, and providers were asked to define quality healthcare, hospital quality, and what factors show that a hospital offers patients quality care. Each definition is different, showing a clear distinction between how they think of quality healthcare compared with hospital quality. Across each, customer service, hospital staff, and attention to medical errors rise to the top. But other issues, such as clinical quality, are only top-of-mind in a general definition of quality healthcare, not hospital quality.

Consumer definitions of quality healthcare revolve around the central concept of first class care and the most appropriate treatments. In our research, consumers talked about receiving the correct treatments, having their needs met, and maintaining a good quality of life. They also talked about more subjective factors such as kindness and receiving personal attention from healthcare professionals.

Patients and caregivers primarily defined *hospital quality* around hospital appearance and customer service along three primary dimensions—physical characteristics of the hospital (e.g., cleanliness), professionalism (e.g., attentive and helpful), and empathy factors (e.g., compassionate care). Additional factors that indicated a high quality hospital included state-of-the-art equipment and the speed at which treatment is administered.

¹⁰ Rathert, C., Bradt, J., & Williams, E. S. (2011). *Putting the 'Patient' in Patient Safety: A Qualitative Study of Consumer Experiences*. Health Expectations.

The table below shows how these audiences define quality: ¹¹

How Consumers Define Quality: Three Terms		
Quality Healthcare	Hospital Quality	Proof that Hospitals Give Patients Quality Care
Customer service: <ul style="list-style-type: none"> Kindness, patience, and personal attention Good bedside manner (nice, available) Meeting patients' needs Humanizing healthcare How you are treated as a person 	Customer service: <ul style="list-style-type: none"> Customer service oriented Efficient and prompt service Friendly staff Compassionate Patient-focused 	Customer service: <ul style="list-style-type: none"> Efficiency and little to no time spent waiting/ prompt service The focus is on the patient Patients receive answers to questions quickly and staff make sure patients understand
Hospital staff: <ul style="list-style-type: none"> A variety of people in the treatment process checking on the patient The quality of care you get from the people working in the hospital Attitudes of hospital staff 	Hospital staff: <ul style="list-style-type: none"> Professional staff Attentive and helpful staff Adequate staffing Nurses properly monitor you and your medications People help you when you need them Quality of the doctors 	Hospital staff: <ul style="list-style-type: none"> Attentive, helpful and kind doctors and nurses Professional staff High-quality doctors Patients are cared for a treated by highly rated doctors and hospital staff
Medical errors: <ul style="list-style-type: none"> Have they met patient safety or medical error goals 	Medical errors: <ul style="list-style-type: none"> Safe and few medical errors Infection rates Hospital is careful about hospital-based infections 	Medical errors: <ul style="list-style-type: none"> Low numbers of, or no, misdiagnoses
Clinical quality: <ul style="list-style-type: none"> Proper treatments and care The abilities of the doctors and nurses caring for you to perform correctly Meeting patients needs (treatments, giving them necessary medicine) Positive outcomes 	Clinical quality: <ul style="list-style-type: none"> High success rates 	Clinical quality: <ul style="list-style-type: none"> Hospital strives for continuous improvement
Treatment/cost: <ul style="list-style-type: none"> High quality of life 	Treatment/cost: <ul style="list-style-type: none"> Getting value for the cost 	
	Hospital characteristics: <ul style="list-style-type: none"> Whether the appearance is clean Technology (state of the art) What rooms look like 	Hospital characteristics: <ul style="list-style-type: none"> Clean environment
Patient satisfaction: <ul style="list-style-type: none"> Satisfied patients 		
General: <ul style="list-style-type: none"> First class healthcare Good healthcare 		

¹¹ KRC Research for Centers for Medicare & Medicaid Services. (November 2008). *Hospital Compare Assessment Survey*.

The above table shows that patients have rather loose definitions of what constitutes quality. Furthermore, they also have a rather loose definition of what constitutes medical errors.

Burroughs et al. (2007)¹² determined that patients' understanding of medical errors is expansive and includes falls resulting in injury, communication problems, the responsiveness of providers, and clinical mistakes. In Burroughs' research, patients did not think of medical errors as specific clinical events or physical outcomes.

The following table summarizes how patients define medical errors:

Patient Definitions of Medical Errors ¹³	
Traditionally defined events	Non-traditionally defined events
<ul style="list-style-type: none">• Medication errors• Equipment failures• Being mistaken for another patient• Receiving the wrong test or procedure• Being misdiagnosed• Errors in judgment and execution by physicians and nurses	<ul style="list-style-type: none">• Staff not communicating effectively• Staff not taking the time to listen to patients• Staff not being responsive to patient requests• Falling and being injured• Broad categories of "mistakes by nurses"• Broad categories of "errors by physicians"• When something "didn't feel right"

¹² Burroughs, T. E., Waterman, A. D., Gallagher, T. H., Waterman, B., Jeffe, D. B., Dunagan, W. C., Garbutt, J., Choen, M. M., Cira, J., & Fraser, V. J. (2007). *Patients' Concerns about Medical Errors During Hospitalization*.

¹³ Burroughs, T. E., et al. (2007).

Also important to understand is that different patient audiences have different ways of defining quality. This table shows how a few key patient group audiences define quality.¹⁴

Definition of Quality by Patient Group			
Hospital Inpatients	Ambulatory Patients ¹⁵	Chronically ill and retired individuals	Medicare or Medicaid Beneficiaries
Clinical Care <ul style="list-style-type: none"> Coordination of care Physical comfort and pain management Transition and continuity to the home or community 	Clinical Care <ul style="list-style-type: none"> Access to care Coordination of care 	Clinical Care <ul style="list-style-type: none"> Good access to care 	Clinical Care <ul style="list-style-type: none"> Composite measures or scores that summarize information on aspects of care such as access, communication, and coordination of care
Patient-focused Care <ul style="list-style-type: none"> Respect for patients' values, preferences, and expressed needs Emotional support and alleviation of fear and anxiety Involvement of family and friends 	Patient-focused Care <ul style="list-style-type: none"> Respect for patients' values, preferences, and needs Emotional support and the alleviation of fear and anxiety Patients' experiences with processes of care, such as waiting times in the office, assistance from office staff, tests and procedures, and follow-up care and information 	Patient-focused Care <ul style="list-style-type: none"> Communication skills of their providers 	Patient-focused Care <ul style="list-style-type: none"> Survey-based measures such as access to care, communication/ interpersonal skills, experiences with the physician/ hospital/ member services
Quality Information <ul style="list-style-type: none"> Information, communication, and education 	Quality Information <ul style="list-style-type: none"> Information, communication, and education 	Quality Information <ul style="list-style-type: none"> Comprehensiveness of the coverage The referral process for specialty care 	Quality Information <ul style="list-style-type: none"> Structural measures, that is, the scope of benefits, premiums, and how the plan works Assurances that data have been collected and analyzed by an independent third party

Understanding consumer and patient perspectives about quality can help inform communications planning and help communicators use language which patients can relate to.

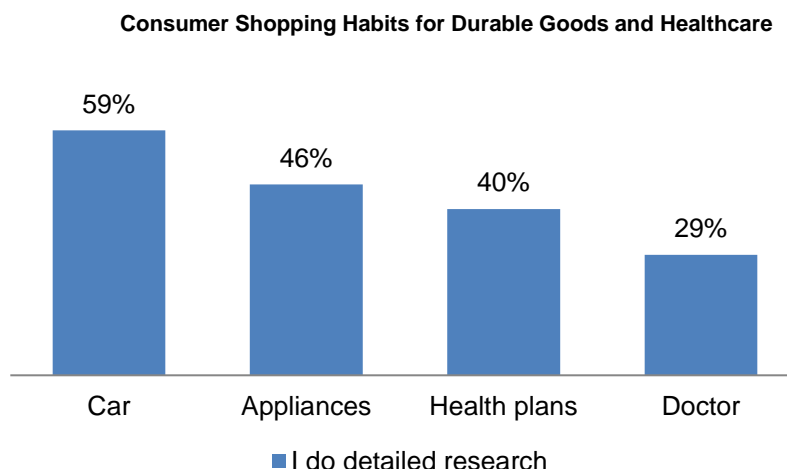
¹⁴ Edgman-Levitan, Susan & Cleary, Paul D. (1996). What Information Do Consumers Want And Need? *Health Affairs*. 15.4:42-56.

¹⁵ Ambulatory patients receiving care in emergency rooms, private doctors' offices, hospital outpatient clinics, community health centers, and managed care plans

2. Overall Consumer Mindset

When asked explicitly, consumers are able to provide explanations about what quality care looks like. However, the average consumer is not thinking about healthcare quality top-of-mind, and is not using quality compare information for decision-making.

It will be no surprise to readers that consumers do not actively seek out quality information on healthcare. In fact, *The Washington Post* recently published a study showing that consumers with health insurance spend much more time researching car and appliance purchases than healthcare plans or doctors.¹⁶ The chart below shows the unsurprising, but telling findings of the survey.



In a recent large sample probability survey conducted nationally for CMS, KRC found that although nearly 7 in 10 say they pay some attention to news and information about healthcare quality, only 4 in 10 pay a lot of attention to the topic—and most of those who are paying attention are either the most informed and upscale consumers or ones who feel they need to pay attention because their health is not outstanding or they feel the current care they get is inadequate.¹⁷

A review of literature available on consumer interest in quality information and the findings from qualitative focus groups found that wide range of measures are important to consumers on quality, and it varies depending on whether consumers are comparing doctors, hospitals, or health plans.

¹⁶ KRC Research for Centers for Medicare & Medicaid Services. (December 2011).

¹⁷ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

For health plans, this includes “information on how a plan works, what it costs, the covered benefits, the quality of care, and overall satisfaction with care if it were available. [Consumers] seem to be most interested in information about costs of coverage, technical competence, the information and communication provided by physicians, coordination of care, and access.”¹⁸ Further, consumer decision making for health plans typically relies on the following types of data:

- 1) Information on access to providers (both hospitals and physicians);
- 2) Out-of-pocket costs;
- 3) Quality of providers;
- 4) Provider communication skills and courtesy; and
- 5) Administrative burden (i.e., paperwork).¹⁹

The key here is that while quality of providers is important to consumers, other factors such as access to providers, costs and customer service factors play an important role in their decision-making, outweighing quality for some.

Other factors that impacted demand for health plan quality information included the amount of time a consumer had been enrolled in a plan (less time meant more sensitivity to quality information) and the length of time a consumer was faced with the same set of health plan options (where a longer time meant more consumer education on options and less sensitivity to new quality information).²⁰ This clearly demonstrates the complacency among consumers once they become comfortable with their health plan, physician, or other healthcare providers.

However, for health plans, where price and financial considerations are a factor for consumers, quality information actually increases the responsiveness to pricing information. RWJ research shows that where quality information is available, consumers are less likely to use price as a proxy for an indication of quality.²¹

Despite increased activity in interaction with quality data, it is not easy for many consumers to make quality evidence-based decisions about health plans and providers within the healthcare system. According to Rein’s findings from a symposium held by The Robert Wood Johnson Foundation this is because there is no “right” answer for which health plan fits best with a particular consumer, and out-of-pocket costs are also a factor that influences decision making.

Further, Dale Shaller, Principal of Shaller Consulting, a health policy analysis and management consulting practice notes the deciding factors that must be addressed for consumers to be able to utilize quality information fully, saying that “consumers will use healthcare quality measures to assess and choose health plans, providers, caregivers, and health facilities, but only if that information is relevant to their concerns and packaged and disseminated so they can easily obtain, trust, understand, and apply it.”²²

¹⁸ Edgman-Levitan, Susan & Cleary, Paul D. (1996).

¹⁹ Rein, Alison. (October 2007).

²⁰ Rein, Alison. (October 2007).

²¹ Arnold, Sharon B. (October 2007).

²² Rein, Alison. (October 2007).

Another explanation for why consumers are not thinking about quality is because they assume that rigorous accrediting systems must monitor quality and impose regulations. Various research on quality shows that for the most part, consumers believe a hospital would not be allowed to stay open if it were not accredited and did not provide quality care. Consumers trust the system checks in place to prevent errors and address issues that may come up.^{23 24}

To sort out the factors that may be playing a role in curtailing or driving interest in using quality compare data, KRC Research identified key drivers of interest in quality compare information, both perception and or expert/actual. We identified the following:²⁵

- **Belief:** Feel confident and believe there is a choice of providers and a need to compare because there are differences in quality;
- **Interest:** Feel interested in health topics, belief it is important to stay informed, and pay attention to healthcare news;
- **Experience/Need:** Have experience with provision of healthcare, use the system, have a condition; and
- **Knowledge:** Aware that comparative data is available.

We know that most consumers are not thinking about quality compare information—and even if they do think of quality they aren’t demanding comparison tools. Why is this? The next sections will throw light on this question in light of the key drivers of interest.

²³ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

²⁴ Maurer, Maureen., Dardess, Pam., Carman, Kristin L., Frazier, Karen., & Smeeding, Lauren. (May 2012).

²⁵ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

a. Perceptions of Choice

The following table shows that a majority of people believe they have a choice of providers. This means that if consumers felt there was a need to compare providers, a perceived lack of choice would not be a barrier for most people.

Nonetheless, on average, at least 3 in 10 do not believe they have a choice—and this perceived lack of choice can be a barrier for those individuals.²⁶

The following table illustrates perceived choice by healthcare segment.²⁷ It shows that there are variations by segment and notably that Segment 2 [Sick, Active & Worried], a high-interest group due to chronic conditions and health issues, feels it is more constrained in its choices than some of the other segments.

Q. Do you feel you have a real choice when it comes to [INSERT ITEM], or not really?

Consumer Choice							
	Total %	1: Informed, Healthy & Educated %	2: Sick, Active & Worried %	3: Mature & Secure %	4: Healthy & Young %	5: Passive & Skeptical %	6: Vulnerable & Unengaged %
Which doctors you or your family goes to for care	71	87	55	83	69	73	75
Which hospital you or your family goes to for care	70	79	59	85	69	70	69
Which home health agency you or your family goes to for care	44	55	39	46	41	48	39
Which health insurance plan you or your family has (Insured)	47	50	36	68	45	46	58
Being without health insurance coverage now (Uninsured)	35	42	28	23	36	40	45

²⁶ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

²⁷ KRC Research conducted Generational Research for CMS to identify key healthcare segments across CMS audiences. We identified six segments, ranging from those most attentive and engaged (Segment 1) to those least attentive and most unengaged (Segment 6).

b. Perceptions of Quality Differences among Providers

Another driver of utilization of quality compare information is perceived variability among healthcare providers. Those who perceive there to be big differences in quality across providers are more likely to feel a need to compare providers to make a good choice. Thus, a corresponding barrier to utilization is the perception that all providers are equal (because all are certified or accredited, for example).

In fact, we found that a majority of consumers believe there are big differences in quality among doctors (60%), hospitals (57%), nursing homes (52%), and health insurance plans (61%). Others believe there are small or no differences.²⁸ The table below shows specifics by healthcare segment.

Q. Based on what you know, do you think that there are big differences, small differences, or no differences in the quality of health care among each of the following?

Healthcare Quality Ratings							
	Total %	1: Informed, Healthy & Educated %	2: Sick, Active & Worried %	3: Mature & Secure %	4: Healthy & Young %	5: Passive & Skeptical %	6: Vulnerable & Unengaged %
Doctors – Any difference	85	96	89	84	86	75	70
Big difference	60	74	74	61	54	48	50
Small difference	25	22	15	23	32	27	20
Hospitals – Any difference	84	93	85	78	87	75	71
Big difference	57	71	63	46	56	48	48
Small difference	27	22	22	32	30	27	23
Health insurance plans – Any difference	81	93	80	79	84	71	67
Big difference	61	82	65	55	60	50	52
Small difference	20	11	15	24	25	21	15
Nursing homes – Any difference	68	79	68	66	72	56	57
Big difference	52	72	55	54	48	44	43
Small difference	16	7	13	12	24	11	14
Home health agencies – Any difference	56	66	56	44	61	47	43
Big difference	34	50	37	29	31	30	26
Small difference	22	16	18	15	31	17	17

²⁸ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

c. Awareness of Quality Information

Thus far, we know that most people are not thinking about quality in part because most do not perceive an immediate need for quality compare information; some don't think they have a choice; and some don't think there are big differences in quality among providers. But a bigger factor may be that most are not aware that comparative information is even available. Without awareness, there is no chance of utilization.

KRC's research shows that the majority (62%) have not seen any information in the past year comparing different doctors, hospitals, nursing homes, home health agencies, or health insurance plans.²⁹ Only about 4 in 10 were aware of ANY comparative information, and fewer were aware of quality compare information.

Seen Provider Comparisons							
	Total %	1: Informed, Healthy & Educated %	2: Sick, Active & Worried %	3: Mature & Secure %	4: Healthy & Young %	5: Passive & Skeptical %	6: Vulnerable & Unengaged %
Yes	37	57	36	54	34	25	25
No	62	42	63	46	65	74	74

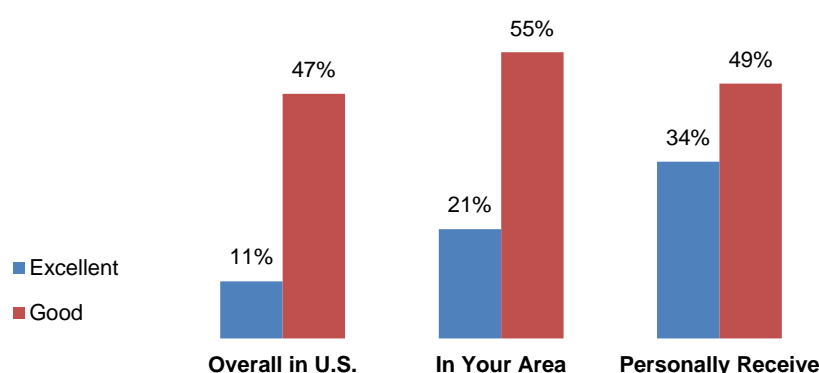
²⁹ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

3. Perceptions of Personal Care, Care in Your Area, and Care in the U.S.

As touched on previously, the majority of consumers are generally satisfied with the care they receive. A nationally representative survey of Americans conducted by Kaiser Family Foundation in March, 2011 revealed that 87 percent are satisfied with the quality of healthcare they receive. Furthermore, half (49 percent) are very satisfied. The same tracking study reported similar satisfaction rankings in June, 2008 (85 percent).³⁰

KRC found similar results recently. Majorities deem the quality of care in the U.S. overall (58%), in their area (76%), and which they personally receive (84%) at least “good.” We also found that perceptions of higher quality care increase with proximity to care.

Q. How would you rate the [INSERT ITEM] – excellent, good, poor, inadequate?



Patients also believe the quality of care they receive in hospitals is good, and hospital patients rate their safety high. Ninety percent report their safety as excellent, very good or good, and half (48 percent) rate it as excellent.³¹

This year, an NPR, Robert Wood Johnson Foundation and Harvard School of Public Health survey found similar levels of satisfaction among adults – 86 percent are satisfied with the quality of care they received over the year, nearly half were very satisfied. Similarly, adults who had been hospitalized were satisfied with the medical care they received in the hospital.

However, those who are experienced, that is, those who had a serious illness, medical condition, injury or disability requiring a lot of medical attention, reported a number of specific deficiencies of care they received from providers—even though they rated the quality of their care overall to be good.

³⁰ Kaiser Family Foundation (March 2011). *Health Tracking Poll*.

³¹ Burroughs, et al. (2007).

The table below shows all deficiencies in care experienced by over 20 percent of the sick population.³²

Deficiencies of Care	
Issue	Percent Experienced
No Care Management	%
Had to bring an x-ray, MRI or other test result with them to a doctor's appointment	28
Condition was not well managed	26
Saw a healthcare professional who did not have all of their relevant medical information	24
Had to see multiple medical professionals and no one doctor understood or kept track of the different aspects of their medical issues or treatments	23
Communication Issues	
Doctor, nurse or other professional did not spend enough time with patient	30
Could not reach a doctor, nurse or other professional in-person or via the phone	27
Doctor, nurse or other professional did not provide all the needed information about treatment or prescriptions	25
Doctor, nurse or other professional did not describe the choices and trade-offs of possible tests or treatments	21
Had a doctor, nurse or other professional who did not treat them with respect or did not listen to their concerns	21
Long Wait Times	
Had to wait for an appointment with a doctor longer than they thought reasonable	35
Had to wait for test results longer than they thought reasonable	20

³² National Public Radio, Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2012).

Additionally, Burroughs et al. (2007) research found that 39% of hospital inpatients reported concern about experiencing at least one of eight key issues they defined as medical errors. Patients were asked to “tell us whether there was a specific time during your hospitalization that you were concerned that any of the following medical errors or problems would happen to you.” Full results of the question are shown in the table below:

Frequency of Inpatient Concerns	
Concerns	Percent Concerned %
Errors with your medications	17
Mistakes by nurses	15
Errors with medical equipment	10
Mistakes by physicians	10
Being misdiagnosed	10
Falling and getting hurt	9
Having the wrong test or procedure done	8
Being mistaken for another patient	6

Both of these studies show a clear disconnect between overall quality ratings and specific care experiences or expectations. Patients need clear reminding of these risks and more understanding of how care deficiencies and the hospital care issues impact their quality of care—as well as what they can do to improve the quality of their care.

As shown at the beginning of this section, while most consumers are unlikely to acknowledge there could be quality issues in their own care, they do believe that the quality of care in the U.S. as a whole is lower.

A CMS study on generational differences last year found that while there is consensus across that the quality of U.S. healthcare today is “good,” fewer than half think it is “very good” or “excellent.” In contrast to overall ratings, most see the quality of their own healthcare as “excellent” or “very good,” and only a small proportion consider it “poor.” Older generations have a more positive view of healthcare quality—both overall and their own.

Q. How would you rate the overall quality of healthcare today? By healthcare quality I mean how well doctors and hospitals take care of their patients. Would you describe healthcare quality as excellent, very good, good, fair, or poor?

Q. How would you rate the quality of the health care you receive? By quality I mean how you're your doctors and hospitals take care of you. Would you describe it as excellent, very good, good, fair, or poor?

Healthcare Quality Ratings				
	Total %	Gen X %	Boomers %	Matures %
Overall Quality of Healthcare				
Excellent + Very good + Good	73	66	75	83
Excellent + Very good	43	38	44	49
Quality of Your Healthcare				
Excellent + Very good + Good	89	86	90	95
Excellent + Very good	66	60	67	70

The Informed, Healthy & Educated (Segment 1) and Mature & Secure (Segment 3) are most likely to rate their quality of care and quality in the U.S. higher than other segments.³³

Healthcare Quality Ratings							
	Total %	1: Informed, Healthy & Educated %	2: Sick, Active & Worried %	3: Mature & Secure %	4: Healthy & Young %	5: Passive & Skeptical %	6: Vulnerable & Unengaged %
Overall Quality of Healthcare							
Excellent + Very good + Good	73	78	60	86	71	77	68
Excellent + Very good	43	49	37	51	36	46	31
Quality of Your Healthcare							
Excellent + Very good + Good	89	94	85	95	86	89	88
Excellent + Very good	65	77	62	77	56	63	48

Thus, at least part of the answer as to why consumers are not using quality compare tools in great numbers might be explained by a lack of perceived a need to compare: most believe their personal care is good and trust and value their doctor's advice. Thus, they feel their doctor will steer them clear of problems.

And besides, most people do not feel they know enough to play an active role in healthcare decision-making on specialized topics—that advice is what they go to a healthcare professional for.

³³ KRC Research for Centers for Medicare & Medicaid Services. (September 2011). *CMS Generational Needs Communication Research: Quantitative Research Step 2-4*.

C. How and When Consumers Think about Quality Tools

1. Low Awareness of Quality Differences and Choice

As previously discussed, overall consumers believe their quality of care is good (regardless of whether they're concerned about quality issues in the hospital or experienced individual deficiencies in their care). However, beyond that there is little current demand for tools, partly because consumers seem to have a good relationship with their doctors and trust them.

A clear explanation for why many consumers do not readily think about quality care is because of the relationship that many have with their current, and often long-standing providers. Research has shown that healthcare consumers do not easily differentiate the personal relationship they have with their doctor from the quality of a hospital. This lack of hospital – doctor differentiation is key to understanding consumers' involvement in getting quality care.³⁴

Further, much of the senior population is likely to put trust in their doctors and rely on their primary care physician or a familiar specialist to make quality recommendations. An overwhelming majority of respondents in research on Accountable Care Organizations attributed good communication and their satisfaction with their doctors to having long-term relationships and familiarity with them. Even when study participants relayed problems he/she has had, most gave an explanation for the problem in an understanding, rather than a critical manner.³⁵

Likely because of the relationship between patients and providers, even if consumers were to consult expert quality ratings, they are divided over whether they would trust them over personal experience. Healthcare consumers are most likely to take expert advice on health plans compared with surgeons or hospitals.

- 52% would choose a health plan with a high quality rating from independent experts while 40% would choose a plan that was recommended by friends and family.
- 47% choose a surgeon that they do not know personally, but was rated highly while 44% would choose a surgeon who has treated a friend or family member with no problems but is not rated as high.
- The same consumers are more likely to visit a hospital they have used without problems (59%) than a hospital that was rated much higher in quality by experts (35 %).³⁶

Further, few consumers believe they have the time or ability to make informed decisions using published data. Healthcare consumers generally consider their doctor and a hospital to be one entity and trust the hospital because they trust their doctor.³⁷ Because of the trust, patients did not feel the need to research hospitals on their own.

When it comes to choosing a hospital, most consumers and caregivers feel the choice of which hospital to go to is really in their doctor's hands. Simply put, most rely on their doctor and see a hospital as something their doctor recommends, even if ultimately they have a choice. In many cases, choosing a hospital is not an option they have considered. Not only was this true of

³⁴ Cherry, K., Funderburk, F., & Cohen, B. (2009).

³⁵ KRC Research for Centers for Medicare and Medicaid Services. (2011). *Generational Healthcare Communication Needs: Accountable Care Organizations In-depth Interviews*.

³⁶ Kaiser Family Foundation (October 2008).

³⁷ Cherry, K., Funderburk, F., & Cohen, B. (2009).

patients and caregivers in focus group research but also backed up by other quantitative research (*How do elderly patients decide where to go for major surgery? Telephone survey*³⁸). Yet, this is not considered a negative because consumers trust their doctor to make a decision that is in their best resource.

Physicians tend to agree with this sentiment. While they don't explicitly say that patients don't have a choice, they strongly feel that telling patients which hospital they need to go for treatment is an important part of their responsibility to the patient.³⁹

There are some instances where Americans believe they have more room for choice: with nursing homes and home health agencies. Hospitals and medical equipment suppliers seem to offer less flexibility. Currently consumers consider online listings and reviews for medical equipment suppliers and nursing homes, but not for hospitals and home health agencies. The table below outlines important information sources for four types of providers:⁴⁰

	Provider Type			
	← Believe have little choice		Believe have greater choice →	
	Hospitals	Medical Equipment Suppliers	Home Health Agencies	Nursing Homes
Information/Referral Source	Physician referrals/ ties to a specific facility	Referrals from physicians or hospitals	Referrals from physicians or hospitals	Referrals from friends or family
	Insurance company	Online reviews	Referrals from friends or family	In-person visits, sometimes unannounced
	Personal recommendations	Yellow pages	Trial and error with a specific agency	State & county evaluations or ratings
		Knowledge about nearby locations		Lists from social services in hospitals
				Online listings and reviews

However, qualitative research testing CMS' Guide to Choosing a Hospital showed that if consumers had a resource such as that guide, or potentially other quality tools, patients and caregivers felt they would be able to have a more informed conversation with their doctor and that it would promote more of a dialogue as opposed the doctor simply telling the patient to which hospital they need to go.

This finding is key and addresses a barrier to seeking out quality ratings: trust in their doctor. Any communications or resources on quality ratings should address the trusted relationship between providers and patients, and position tools and ratings as the beginning of a guided conversation.

³¹Schwartz, Woloshin, John D Birkmeyer. (8 October).

³⁹KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

⁴⁰KRC Research for Centers for Medicare & Medicaid Services. (2011). *CMS Quality Initiative Outreach Campaign: Research and Campaign Update*.

2. Awareness Comes Too Late

Despite positive ratings from consumers on their personal healthcare quality, as noted, there appears to be a perception gap between overall quality ratings and specific care experiences. This perception gap suggests a very forgiving population, or one with low expectations.⁴¹ This may offer a clue as to why so few patients are actively engaged in their care (until it's too late).

These findings suggest that consumers need to be reminded of the potential risks of being a passive patient and encouraged to expect more and demand better quality care before they're facing a health issue.

On the whole, patients and caregivers report a certain level of fear and uncertainty when it comes to the entire healthcare process. On a very basic level they are unsure of how to be involved and on another they feel overwhelmed and intimidated by the healthcare system, providers and processes.⁴² Engaging consumers at home, in a comfortable setting without the pressures of the healthcare system around them will help them to become more familiar with their options and how to address concerns and questions when the time is right.

In a discussion at a colloquium sponsored by The Robert Wood Johnson Foundation to discuss consumer engagement and shared consumer-provided decision making one participant noted, "there is a difference between informed consent and informed choice." That is, informed consent for treatment options occurs after a diagnosis and treatment path have already been made, often bypassing the earlier point at which the consumer may have had choices or decision points available.⁴³

This difference between informed consent and informed choice is key: most consumers consent to the care they receive, often based on information from their providers but rarely are they involved in the decision-making process, in making choices on where to seek treatment, what type of treatment is best, etc.

One of the main reasons behind bypassing the informed choice phase, right to informed consent has to do with the patient themselves. Research on discharge materials can be looked at to understand why consumers are unable to seek and utilize quality ratings to make decisions when they're diagnosed with a health issue and facing a decision on where to get care. Even if consumers are aware they have a choice (and many are not) when they're being admitted to the hospital patients are often:

- Seriously ill, tired, and possibly already on medications;
- Overwhelmed with the situation and all the new information and terms;
- Most concerned about immediate feelings which makes it hard to think ahead;
- Do not have clear information or there is too much to remember; or
- Healthcare illiterate – and do not have the skill to understand instructions or options.

⁴¹ National Public Radio, Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2012).

⁴² Maurer, Maureen., Dardess, Pam., Carman, Kristin L., Frazier, Karen., & Smeeding, Lauren. (May 2012).

⁴³ Arnold, Sharon B. (October 2007).

When discussing discharge instructions, a comparably overwhelming experience similar to diagnosis, consumers and caregivers said people are given so much information that it is hard to keep it organized and they do not think about or know what questions to ask. Hospital discharge planners and clinicians also recognize this fact and thus see the value of a discharge planning checklist for beneficiaries and caregivers.⁴⁴

A similar mindset can be applied to quality metrics. While providers believe it is part of their job to recommend hospitals to patients, the quality tools can serve to direct conversation. Positioning the opportunity for consumers to do research early will help them have an informed, productive conversation with their provider, and hopefully make informed choices versus giving informed consent, before they are in a situation where they need to rely solely on the advice of others.

⁴⁴ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

D. How and When Providers Think about Quality Tools

Extensive research shows that patients and families need motivation from providers to participate in quality care. One study showed that patient participation increased in situations where providers responded positively to participants' questions, needs and views.⁴⁵ Thus, any initiative to engage consumers will also need to bring providers on board.

Quantitative data shows that the majority (65%) of hospital executives believe that the information published on CMS' Hospital Compare provides an accurate snapshot of their hospitals' quality performance. However, one third do feel the snapshot is somewhat inaccurate because there is a time lag on quality data, so published data does not reflect the current situation. Smaller hospitals with fewer beds note that data is not entirely comparable because of differing situations and differing sample sizes.

Regardless of the accuracy of data, more than nine in ten hospital quality executives believe that the time lag in data publication means data does not reflect the current situation, and two thirds believe there is not enough variation in current measures to identify meaningful differences.

Unsurprisingly, those with better quality ratings are more likely to be supportive of the reporting tool. Hospitals with reported process and outcome of care scores better than average or average are much more likely to say the data published on Hospital Compare presents an accurate snapshot of their hospital's quality than those who reported their care scores are worse than average.

The good news for bringing hospitals on board with consumer engagement is that hospitals are already focusing on quality internally and using the reported metrics for improvement. Overwhelmingly, hospitals (91%) are having more discussions about quality performance in their strategic planning processes. Half also tie compensation of their hospital's senior management to their hospital's quality performance, and about three in ten tie compensation of all hospital employees to their performance.

Hospitals do a variety of activities to increase awareness of and engagement in quality improvement activities within their hospitals. Nearly all promote an organizational culture that makes quality improvement everyone's responsibility, communicate regularly with employees about quality initiatives and outcomes, and distribute a formal QI measurement tool—such as a “dashboard” or “scorecard” to their executive leadership team, Board of Directors and/or to their parent health system.

Externally, some hospitals promote the Hospital Compare quality ratings. About half distribute information on how to interpret ratings to external audiences, like the media and consumers.⁴⁶ However, there is room to expand how providers discuss and promote the data to patients and caregivers. If consumers are to use the data as a conversation starter with their providers, providers must be made aware of the data, understand where ratings come from, and how to best discuss the differences with consumers.

⁴⁵ Maurer, Maureen., Dardess, Pam., Carman, Kristin L., Frazier, Karen., & Smeeding, Lauren. (May 2012).

⁴⁶ KRC Research for Centers for Medicare & Medicaid Services. (November 2008). Hospital Compare Assessment Survey.

E. Awareness of Quality Tools

1. Sources of Information and Audiences

The Kaiser Family Foundation found that in 2008 only three in ten Americans had seen any quality information comparing different doctors, hospitals or health insurance plans.⁴⁷ When most consumers do consider information about hospital quality they are not going to quality compare tools available, instead they're relying on word of mouth references and personal experience, such as what they saw when visiting others in a hospital.⁴⁸

Research also shows that patient engagement is often left up to the patients themselves. The HCAHPS Hospital Survey asks patients to report on their experiences with a range of healthcare services. Nearly half (44%) of respondents said that during a recent experience their doctor or provider did not tell them that there was more than one choice for treatment or care.

Many of those whose providers did tell them about options for care said their provider discussed the pros and cons of each option with them (66% said definitely yes and 30% said somewhat yes)⁴⁹ but there are still many patients left to seek the knowledge on their own.

A 2010 Health Confidence Survey observed that some consumers are more likely than others to actively seek out quality information. Those most likely to seek out information include;

- Women;
- Those under age 45 (compared with those over 65);
- Individuals in self-reported fair or poor health;
- Those whose health had gotten worse within the last five years;
- The uninsured; or
- Those less satisfied with their coverage.

These groups were more likely to research issues such as:

- The advantages and disadvantages of different treatment options;
- The full costs of different treatments;
- The different costs of doctors and hospitals;
- The number of disciplinary actions taken against doctors and hospitals; and
- The number and success rate of procedures performed at a hospital.⁵⁰

However, when it comes to using actual online quality compare tools a study of visitors to 16 hospital reporting sites affiliated with the AHRQ Chartered Value Exchange program, found that the most common visitors were 45 or older, white and with a college education. Vulnerable populations, such as those on Medicare or with less than a college education and ethnic minorities were much less likely to visit the quality reporting sites.⁵¹

⁴⁷ Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2011).

⁴⁸ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

⁴⁹ CAHPS Health Plan Survey (2011). *Adult Commercial Instrument*. CAHPS Health Plan Survey and Reporting Kit.

⁵⁰ EBRI/MGA (2010) *Health Confidence Survey (HCS)*.

⁵¹ Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011).

2. Levels of Awareness Among Consumers

In a review of previous research Kolstad et al. note that many consumers who are already in the healthcare system were less likely to use quality information provided to them, instead relying on their physician as an agent in making decisions about providers.

For those selecting a primary care physician, a case in which a physician-agent relationship does not already exist, the most relevant metrics for consumers to evaluate include physician reputation and manner, qualification, and willingness to value consumers' opinions, office atmosphere, and travel/distance from the consumer.⁵²

As previously covered, consumers are unaware of quality tools for the most part. In spring of 2011, David Share, a healthcare expert panelist for the Blue Cross Blue Shield of Michigan stated, "Currently there is pretty much, in my view, no evidence that consumers use the existing information that is publicly reported to seek healthcare. There are a few people, very few – small single digit percentages, who look at websites and find out who does well on a particular service that is technically complex and high risk that they may need in the not too distant future and they may make a choice based on that, but that's quite unusual."⁵³

An October 2008 survey⁵⁴ supports Share's claim:

Consumer Awareness and Use of Quality Ratings	
Quality Information	Percentage Yes
Saw any information comparing different doctors, hospitals or health plans	33%
Information comparing quality of doctors ⁵⁵	34%
Information comparing quality of hospitals ⁵⁶	54%
Information comparing quality of health plans ⁵⁷	61%
Saw any quality information on doctors	12%
Saw any quality information on hospitals	20%
Saw any quality information on health plans	22%
Saw and used quality information	14%
Saw quality information but didn't use it	16%

⁵² Kolstad, Jonathan T., & Chernew, Michael E. (2009).

⁵³ Share, D. (Speaker) (2011, April 27). Public Reporting of Quality Outcomes: What's the Best Path Forward? [Podcast]. Kaiser Family Foundation, Alliance for Health Reform and The Commonwealth Fund.

⁵⁴ Kaiser Family Foundation (October 2008). *2008 Update on Consumers' Views of Patient Safety and Quality Information*.

⁵⁵ Of those who saw any information

⁵⁶ Of those who saw any information

⁵⁷ Of those who saw any information

CMS researchers found similar information in 2009. Focus group participants were not aware of evidence-based quality ratings for hospitals and when the participants were shown hospital metrics, such as the percent of heart attack patients given aspirin upon arrival at the hospital, they did not always understand the measures on the whole or whether they would apply to them.⁵⁸

Today, more report having seen information comparing the quality of care among various providers. However, the percentage of Americans who have seen this information remains low, particularly information on nursing homes, home health agencies and doctors. Notably, those who did see any information comparing quality, very often found it useful. The table below shows awareness, source of information, and usefulness of quality comparison information by provider type.⁵⁹

Q. In the past 12 months did you see any information comparing the quality of care among [INSERT ITEM]?

Q. Do you recall hearing or seeing any advertising discussing or comparing the quality of care among [INSERT ITEM] over the last 12 months?

Q. Do you recall seeing any information in a news or feature story comparing the quality of care among [INSERT ITEM] over the last 12 months?

Q. And was the information you saw comparing quality ratings of [INSERT ITEM] very useful, somewhat useful, not too useful, or not at all useful?

Information on Quality Comparison						
	Saw ANY Information %	Paid Media %	Earned Media %	Both %	Neither %	Useful (Very + Somewhat) %
Doctors	47	8	6	24	8	70%
Hospitals	60	11	7	37	5	70%
Nursing homes	19	4	*	11	3	64%
Home health care agencies	14	3	1	7	3	70%
Health insurance plans	64	14	16	38	6	64%

⁵⁸ Cherry, K., Funderburk, F., & Cohen, B. (2009). *Encouraging Consumer Use of Hospital Quality Information: Both Cognitive and Emotional Appeals Contribute*.

⁵⁹ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

Even amongst those who use the internet and report engaging in health-related activities online few are using online rankings or reviews of providers or hospitals. Among those who use the internet only:

- 16% have consulted online rankings of doctors or other providers; and
- 15% have consulted hospital or other medical facility reviews.

Those who report that they use the internet for health-related activities aren't much better, only:

- 19% consulted online rankings for providers; and
- 18% consulted them for hospitals.⁶⁰

KRC Research, in conducting qualitative research for CMS, discovered that neither patients nor caregivers were aware of Medicare's quality tools, yet when they learned about the tools, they were excited about them and wanted to know why they had not been told of their existence. Nevertheless, upon review of the information provided, both patients and caregivers questioned the validity of the data and worried about whether the information could be trusted. Some worried that the information was derived from "pro-active consumers" who went to a website and wrote about their experiences. Many said they would need to personally visit a facility before they could make a decision, but having some guidance could be useful.⁶¹

Further, studies on the impact of quality report card information have learned that while report cards for health plans do seem to affect consumer plan choice, the magnitude of the effect is relatively small or is concentrated among a small group of consumers at this point. According to the review of previous studies on the topic Kostad et al. found that fewer than 10 percent of health plan enrollees switch plans as a result of reviewing data on plan quality today.⁶²

A specific example of consumers' lack of awareness on quality reporting comes from non-union employees at the General Motors Corporation (GM) during an open enrollment period. GM was one of the first companies to provide health plan rating information directly to employees. During this researchers found that only about 3% of employees switched HMO plans as a result of public report card ratings. The study inferred that the GM health plan ratings were not fully informative to employees given a perceived lack of information about the quality of the covered physicians and hospitals.⁶³

Sharon B. Arnold of AcademyHealth and The Robert Wood Johnson's Changes in Health Care Financing and Organization Initiative sums up this lack of awareness well, stating, "Findings on the impact of quality report cards about providers are mixed. At best, they appear to have a minimal impact on consumer choice. The literature shows that report cards are difficult for consumers to understand and remember, and few physicians acknowledge using public report cards when making referrals."⁶⁴

⁶⁰ Princeton Survey Research Associates International. (September 2010).

⁶¹ KRC Research for Centers for Medicare and Medicaid Services. (2011). *CMS Quality Initiative Outreach Campaign*.

⁶² Kolstad, Jonathan T., & Chernew, Michael E. (2009). Quality and Consumer Decision Making in the Market for Health Insurance and Health Care Services.

⁶³ Chernew, Michael., Gowrisankaran, Gautam., & Scanlon, Dennis P. (June 2007).

⁶⁴ Arnold, Sharon B. (October 2007).

3. Levels of Awareness Among Providers

Providers are bit more aware of CMS' Hospital Compare tool than patients. In a 2008 survey of hospital executives nearly 6 in 10 providers said they had seen advertising or publicity related to Hospital Compare over the past six months, including an article in a national or local newspaper and a CMS advertisement. Half said they saw the CMS Hospital Compare ads published on May 21, 2008.⁶⁵ This shows that advertising reaches providers, a target market that, similar to consumers, could use additional awareness of quality tools.

About 1 in 4 who saw the ads said the ads triggered inquiries or media coverage about their hospital's quality program. Inquiries came mainly from:

- Newspaper and TV reporters (53%);
- The general public (13%); and
- Internal audiences (2%).

Questions from media and the general public, while relatively low, show an interest in measures and a willingness to reach out to hospitals for more information. Nearly 1 in 5 of those who saw the ads said they did media outreach and/or consumer advertising on their own to highlight their hospital's ratings on Hospital Compare.⁶⁶

Analysis of quality reporting sites shows that healthcare professionals are better served by current reports than consumers on several metrics, including:

- Overall satisfaction;
- Usability; and
- Ability to accomplish their primary purpose among those whose purpose was to choose a hospital, compare hospitals or see the specific performance of a hospital.

Further, most reports on site impact suggest that quality reports have a greater effect on provider behavior versus consumer behavior.⁶⁷ Thus, provider communications should consider a focus toward engaging consumers through provider conversations around quality metrics.

⁶⁵ KRC Research for Centers for Medicare & Medicaid Services. (November 2008). Hospital Compare Assessment Survey.

⁶⁶ KRC Research for Centers for Medicare & Medicaid Services. (November 2008). Hospital Compare Assessment Survey.

⁶⁷ Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011).

F. Utilization of CMS Quality Compare Tools

As we know, consumers do not use online quality tools on the whole. There is little awareness and even less regular use. Rein's literature review on the impact of quality information highlights that less than 10 percent of eligible consumers responded to the release of quality data.

However, according to Rein's analysis following a symposium by The Robert Wood Johnson Foundation the consumer use of quality report cards is not necessarily to optimize care, but more so to avoid the risks associate with sub-par care. Studies showed that consumers were willing to increase their costs to move away from the lowest-quality plans, but had less willingness to increase their cost to move from an average-rated to higher-rated plan.⁶⁸

Findings from a qualitative and quantitative study among consumers by Hibbard and Jewett show that healthcare quality indicators that are poorly understood are the ones most likely to be viewed as not important, noting the relationship of comprehension to perceived salience. Furthermore, consumers do not understand the system for managed care plans or the system's impact on quality of care, a prerequisite for understanding the meaning of indicators intended to inform decision making.

In a review of past research on the comprehension of quality indicators, Hibbard noted that such issues include not understanding terminology, not comprehending the significance of high or low rates, and not recognizing the significance the indicator is supposed to communicate about quality of care. Indicators that are particularly difficult for consumers to understand are aggregations and quantitative concepts. From the current research conducted by Hibbard she found that consumers may rely more on indicators they understand better, like patient ratings, than on clinically-based measure of quality for which they have less comprehension.

In her study patient ratings of quality and satisfaction were viewed as providing the most information about all aspects of care with the exception of preventative care. Further, consumers perceived patient ratings of overall quality to provide more information about the monitoring and follow-up of a condition than the Health Plan Employer Data and Information Set (HEDIS) indicators designed to do just that in a systematic manner.

But what about CMS Quality Care Finder tools specifically? Analytics reports show that Plan Finder, Dialysis and Nursing Home have the lowest bounce rates, under 20 percent indicating a more engaged audience for those tools.

However, overall Quality Care Finder tools are poorly used by healthcare consumers. Compared to the many millions who could benefit from the quality metrics, few are accessing the tools and many who are spend very little time on the cite, demonstrating a lack of engagement in fully exploring the data available to them.

⁶⁸ Rein, Alison. (October 2007). Consumer Choice in the Health Insurance and Provider Markets: A Look at the Evidence Thus Far. *Robert Wood Johnson Foundation*.

Hospital Compare has the highest bounce rate and shortest visit duration, indicating that more consumer engagement is needed – perhaps in showing the value of the tool, the ease of use, or general awareness of what is available. Notably, between April and May 2012 there was a big spike in visitors to Hospital Compare whereas other Quality Care Finder tools had consistent numbers of visitors across the six months.

Quality Care Finder Analytics, Jan 1, 2012 to June 30, 2012					
	Visits	Unique visitors	Pageviews	Average Visit Duration	Bounce Rate
Plan Finder	2,400,967	1,506,102	33,704,521	00:15:12	5.10%
Dialysis	51,137	31,684	260,901	00:07:26	11.76%
Nursing Home	820,398	465,380	4,677,706	00:07:04	13.80%
Home Health	397,398	286,634	2,844,422	00:05:53	21.03%
Physician	1,098,610	869,864	8,265,616	00:08:32	23.85%
Hospital Compare	1,200,611	961,150	4,394,965	00:03:40	32.38%

Web analytics can help communications teams understand how widely (or narrowly) used these tools are. And, seeing bounce rates and visit duration helps to show that beyond awareness, consumers need communication around how to best use the tools.

But, what this doesn't show is how to increase involvement. Following any communications or outreach to consumers, analytics measures such as these should be used to track movements to understand what is most effective.

G. Interest in Quality Compare Information and Tools

Most consumers do report a general interest in seeing quality ratings, and many say they would use them when asked directly. This is evidenced by reported interest in using quality ratings: nearly four in ten consumers would choose a hospital that is rated much higher in quality by experts over a hospital they and their families have used for many years without any problems.

Healthcare consumers are even more likely to use quality ratings of surgeons – half would elect to go with a surgeon who is rated much higher, but no one they know personally has used them versus the other half who would choose a surgeon that treated a friend or family member without any problems.⁶⁹ CMS' Quality Compare study found that there is a great deal of consumer interest in quality ratings, both from patients and independent experts.⁷⁰

Q. In some cases, representative surveys like this one are conducted with patients about their experiences and satisfaction with specific doctors, hospitals, nursing homes, and health insurance plans. How interested would you be in having access to this type of patient experience and satisfaction ratings from reliable surveys about [INSERT ITEM] – very interested, somewhat interested, not too interested, or not at all interested?

Q. In some cases, independent experts develop quality ratings based on actual quality of care outcome data from specific doctors, hospitals, nursing homes, and health insurance plans. How interested would you be in having access to quality of care ratings from independent experts about [INSERT ITEM] - very interested, somewhat interested, not too interested, or not at all interested?

TITLE						
	Patient Experience & Satisfaction			Ratings from Independent Experts		
	Interested (Very + Somewhat) %	Very Interested %	Somewhat Interested %	Interested (Very + Somewhat) %	Very Interested %	Somewhat Interested %
Doctors	62	33	29	66	36	30
Hospitals	62	30	32	65	32	33
Health insurance plans	60	30	29	62	32	30
Home health agencies	38	15	23	43	18	25
Nursing homes	34	14	20	38	15	23

Consumers recognize the value in quality metrics. When asked about different kinds of quality information, the majority of adults said that reports of medical errors or mistakes would tell them a lot about the quality of a hospital. Consumers feel they would learn a lot from reports on:

- Errors that lead to harm for patients (70%);
- The amount of experience a hospital has in performing a test or surgery (65%);
- How many patients die after having surgery at the hospital (57%);
- How patients who are surveyed rate the quality of care (52%); and
- The number of patients who do not get the standard recommended treatments (47%).⁷¹

⁶⁹ Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2011).

⁷⁰ KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*.

⁷¹ Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2011).

In a survey for CMS, KRC Research⁷² found that across generations and healthcare consumer segments, the majorities expressed interest in three health-related topics, including information about healthcare quality. Those who reported less interest in quality were consumers in the Passive & Skeptical segment (Segment 6) and display those behaviors across health issues.

The table below shows ratings across generations and segments.

Q. Now I'll read a list of healthcare topics. For each, tell me how interested you are in each topic—very interested, somewhat interested, not too interested, or not at all interested. Here's the first topic...

Percent Very Interested				
	Total %	Gen X %	Boomers %	Matures %
Healthcare quality such as how well doctors and hospitals take care of their patients	59	57	61	59
Planning for your health across all stages of your life	51	44	57	54
Information and support for people who help care for an adult family member or friend	44	44	46	38

Percent Very Interested							
	Total %	1: Informed, Healthy & Educated %	2: Sick, Active & Worried %	3: Mature & Secure %	4: Healthy & Young %	5: Passive & Skeptical %	6: Vulnerable & Unengaged %
Healthcare quality such as how well doctors and hospitals take care of their patients	59	69	72	66	59	37	55
Planning for your health across all stages of your life	51	65	54	62	50	36	42
Information and support for people who help care for an adult family member or friend	44	49	55	42	47	30	30

⁷² KRC Research for Centers for Medicare & Medicaid Services. (September 2011). *CMS Generational Needs Communication Research: Quantitative Research Step 2-4*.

Beyond general healthcare quality many consumers want to know about specific quality metrics, several of which CMS' Quality Compare Finder tools already cover. Specifically, consumers say they're interested in:

- The overall reputation of the hospital;
- Any disciplinary actions taken against specialists or the hospital; and
- How the hospital scores on satisfaction surveys and patient reviews.

The key is the overwhelming feeling from consumers that quality tools such as the Guide to Choosing a Hospital, and beyond that other similar tools, are useful. They also feel the Guide to Choosing a Hospital helps patients be more proactive about their healthcare and empowers them to have more informed discussions with their physicians and healthcare providers.⁷³ Interactive online tools would take this one step further and allow patients to have knowledgeable conversations with providers about specific quality metrics they'd seen.

⁷³ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

H. Communicating About Quality Compare Tools

Reid, et al. report that, “Malpractice claims and board certification status, along with procedure-specific experience, are judged by consumers to be much more indicative of the quality of care delivered by a physician than ratings by government agencies or independent medical institutions.”⁷⁴ However, research demonstrates that these physician characteristics have not been shown to relate directly to quality of care. Thus, consumers need specific communications that validate the CMS Quality Care Finder tools as a trustworthy and authoritative source on quality.

Shoshanna Sofaer and Judith Hibbard sum up the necessity for effective communication around quality reports to clearly highlight why quality ratings must go beyond publication to widespread use, “If consumers do not know about public reports, they will never see them. If they never see them, they cannot use them. And if they don’t use them, there is no return on those investments [to develop the reporting].”⁷⁵ There in lies the necessity to go one step further, not only to educate consumers and promote improvements in quality but to get the full value out of these comprehensive reporting tools.

1. Communications Strategies

a. *Reaching the Target Audience*

CMS’ Generational Segmentation research provides an excellent starting place for forming a strategic communications plan. Understanding each unique groups’ information channels and sources, and in particular those segments of the greatest interest, will help start communications off on the right foot.

⁷⁴ Reid, Rachel O., Friedberg, Mark William., Adams, John L., & McGlynn, Ateev Mehotra. (September 2010).

⁷⁵ Sofaer, Shoshanna, & Hibbard, Judith. (June 2010).

The table below outlines the skill and interest level of each segment along with the best means of reaching them with healthcare communications.⁷⁶

Segment Communications						
	1: Informed, Healthy & Educated	2: Sick, Active & Worried	3: Mature & Secure	4: Healthy & Young	5: Passive & Skeptical	6: Vulnerable & Unengaged
Skill and Interest	Skilled as information users, self-directed in researching health issues, weight cost and benefits of treatment options	Above average interest in health issues, find health issues to be complicated	Engaged and seek out information, desire to stay healthy and to prevent disease	Have fewer health issues, more personal empowerment, seek out health related information at somewhat lower levels	Less Motivated Skeptics, disinterested in most health topics	Few seek out information on various health topics in spite of interest in health issues
Primary Information Channels	Internet and personal mail	Higher than average use of internet in seeking health-related information	Use of internet – not heavy, reluctant to rely on new communication technology	Combination of internet information and in-mail receipt of plan information	Use internet, but disinclined to use it as a source for health information	Rely on providers for information, few use internet
Information Sources	Doctors, government health agencies	Doctors, Pharmacists, Hospitals	Doctors most valuable source of information	Doctors most valued source, followed by internet	Heavily reliant on providers, suspect of most information sources	Most heavily rely on doctors, few have relatives who work in health

Further, key target consumers can be drawn into quality tools through other content. A study of 16 websites that currently have public quality reporting found that most consumers came to sites to look at hospital quality information – either to compare hospitals or see how their current hospital is performing, but 1 in 10 wanted practical information about the hospital or information to prepare for a talk with their doctor.⁷⁷

⁷⁶ KRC Research for Centers for Medicare & Medicaid Services. (September 2011). *CMS Generational Needs Communication Research: Quantitative Research Step 2-4*.

⁷⁷ Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011)

Focus group research among Medicare beneficiaries and their caregivers found similar sentiments on the usefulness of practical information in quality compare tools. Many group participants volunteered that the search format used on CMS' Quality Care Finder tool would be useful for identifying providers in their area. Entering their zip code and gaining access to basic lists of providers, hospitals and facilities with contact information seemed valuable to nearly all participants questioned.⁷⁸

b. Presenting Information

It is possible to present quality compare tools in a way that consumers understand the value.

In our qualitative work, we found that when patients were shown the tools, they were surprised that the information was available. But the quality compare tools can appear difficult to use, and without a compelling example of benefit one will receive, there is little incentive to try. We found that if we provided a brief summary of how it works, showing it is easy, interest increased dramatically ("There are three steps—first you put in your zip code, then you pick the facilities you are interested in comparing in your area, and then you can look at them side by side").

We also found that we needed to show an example of what a consumer gets. To do this effectively, research shows that it is important to show two similar facilities side by side on a couple quality measures that patients care about, showing one with low ratings and one with high ratings. Seeing the potential for vast differences makes the value of comparing very clear very quickly.

According to research by Hibbard et al. presenting quality information in a more evaluable format for consumers increases the weight it has on consumer decisions, while still operating outside of the decision maker's conscious awareness. Further, Hibbard et al. assert "those who disseminate information have a responsibility to be aware of how they use that influence and to direct it in productive and defensible ways."⁷⁹

Marjan Faber et al.'s review of consumers' weight on quality-of-care information in public reporting reviewed the process and behaviors of choice for health plans or hospitals. The study reviewed the most effective presentation formats for quality information. The information was presented in the context of Hibbard et al.'s theoretical consumer choice model which includes four stages:

1. Awareness of the quality information;
2. Knowledge or ability to interpret information correctly leading to comprehension of quality information and quality scoring system;
3. Perception that the information is valid, reliable, and relevant to the decision-making process; and
4. The use of that information for informed choices for better quality.

⁷⁸ KRC Research for Centers for Medicare & Medicaid Services. (January 2010). CMS Quality Initiative Outreach Campaign Quality Tools.

⁷⁹ Hibbard, Judith H., Slovic, Paul., Peters, Ellen., & Finucane, Melissa L. (2002). Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies.

Specific methods observed by Hibbard et al. in the evaluation of health plan options which improved interpretation and weighting of information in consumer choices included:

1. Providing visual cues in the presentation of quality data, which resulted in the selection of higher performing plans even with an increased cost; and
2. Ordering health plan options by quality performance within cost groups, which led to the choice of higher performing plans.⁸⁰

Contributions that lead to difficulties in consumer understanding of quality information include complex data presentation formats with statistical information and information content that is not in line with consumer expectations of good quality of care. These contributing factors lead consumers to not understand information, rate information as being irrelevant, and leads to the lack of use in decision making.

Factors that increased knowledge, altered attitudes, and impacted choice behavior included the addition of context information, risk messages, and easy-to-read layouts such as star ratings and rank orderings. Those that benefitted the most from easy-to-read presentation formats included elderly participants and those with poor numeracy.⁸¹

Similar to the aforementioned research on visual presentation methods further inquiry into evaluable presentation methods for quality data found that four key design elements improve consumers' accurate interpretation of quality data:

1. Using symbols rather than numbers;
2. Providing a summary display of evaluation;
3. Rank ordering based on quality performance; and
4. Presenting fewer, rather than more, topics.

The ideal presentation to best impact consumer understanding is to combine all four techniques (the best option), but if that is not possible, the following are the most impactful combinations of elements:⁸²

- 2nd best: Rank order based on quality performance and use symbols rather than numbers
- 3rd: Rank order (only)
- 4th: Use symbols rather than numbers (only)
- 5th: Provide a summary display of evaluation --or-- present fewer, rather than more, topics.

⁸⁰ Hibbard, Judith H., Slovic, Paul., Peters, Ellen., & Finucane, Melissa L. (2002). Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies.

⁸¹ Faber, Marjan., Bosch, Marije., Wollersheim, Hub., Leatherman, Sheila., & Grol, Richard. (2009).

⁸² Carman, Kristin L. (March 2006). Improving Quality Information in the Consumer-driven Era: Showing the Differences is Crucial to Informed Consumer Choice.

As we know, consumers can often feel overwhelmed by lots of information and there is necessity for clear, plain-language communications. However, qualitative research on CMS' Guide to Choosing a Hospital tested two documents, a shorter summary checklist and a longer, more detailed checklist. While respondents were divided over which they preferred, the pros for the longer version seem to be more substantive (e.g., it gives more information, it covers the important factors, and provides more to think about) compared to the short version.

Thus, despite initial consumer reactions to "too much information" the longer version appeared to provide more value to patients and caregivers than the short version.⁸³ While a printed brochure differs from online interactive tools, communications on Quality Care Finder tools should promote the value in data available and ease of use in addition to the quantity of information available.

In CMS's Cognitive Testing of New Medicare Part D Displays for Medicare.gov, Medicare beneficiaries and SHIP counselors shared consumer feedback on text and graphic presentations of materials to be placed on the website. The qualitative research found that common areas of confusion related to the descriptors and measures included:⁸⁴

- The concept of measures seemed illogical to consumers;
- Terminology was unfamiliar;
- The measures were not perceived as relevant to consumers themselves; or
- Measures were too detailed about the process of measurement.

This makes the case for clear, consumer-friendly language and education campaigns to make tools easy to use and accessible to a wide variety of individuals.

⁸³ KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*.

⁸⁴ CMS Division of Consumer Assessment of Health Care Surveys. (2007). *Cognitive Testing of New Medicare Part D Displays for Medicare.gov*.

c. Communications Channels

Sofaer and Hibbard identify ten evidence-based recommendations to reach the people who need to see and use quality tools and reports.⁸⁵ While a few, such as planning for promotion and dissemination from the outset and being strategic about positioning are less relevant to the already launched CMS Quality Compare Finder, many provide specific ideas for addressing low engagement, outlined in the table below.

Recommendation	Explanation	CMS Action
Identify your audience as early as possible	<ul style="list-style-type: none"> • Often promoters of quality sites say they want to reach everyone, but that is impractical • Audience segmentation is crucial for effective promotion • Target audiences who: <ol style="list-style-type: none"> (1) Need the information most, those with serious health problems or chronic conditions who use the most healthcare or those who are not seriously ill but may use care in the near future – adults who are pregnant or planning to be pregnant, those planning to have elective surgery or recent transplants who need to find a new provider (2) will be easiest to motivate to look at and use the info, those who are literate, health literate and internet-savvy 	Utilize Generational Segmentation findings to reach both target audiences
Engage those who can help you learn about and reach your audience	<ul style="list-style-type: none"> • Groups and organizations that are trusted by target audiences can help disseminate information • Consumer advocacy groups that serve different audiences, and particularly vulnerable populations and broad-based or policy-focused organizations can all help engage key consumers • These organizations should promote and disseminate information, connect specific individuals with information, provide and explain information to specific individuals and help with decision-making 	Leverage CMS partners who already have a solid relationship with the agency and trust the authority of Quality Care Finder metrics
Use the insights of social marketing	<ul style="list-style-type: none"> • Social marketing, as opposed to traditional direct marketing, applies business marketing principals and strategies to promote ideas, behaviors, and services and has been used effectively to promote health behaviors • The purpose of publishing quality reports is to influence consumer behavior in accessing reports, looking at them to make meaningful comparisons and using the information to make 	Develop and promote CMS as a well-known and trusted brand Develop and repeat key messages over and over again

⁸⁵ Sofaer, Shoshanna, & Hibbard, Judith. (June 2010).

	a decision, not to encourage consumers to choose one option over the other	Use tactics to address barriers to engagement and motivate target audiences
Be strategic about timing	<ul style="list-style-type: none"> • A major challenge to promoting quality compare tools is that you never know who will need them when, reminding them frequently will keep it top of mind when they do need it • One message delivered in one format, through one channel is not enough – all audiences need the message multiple times, in different formats, via different sources over time before it sinks in that the tools are readily available 	Disseminate messaging through various channels – and get it out there often
Actively work with media to promote the report	<ul style="list-style-type: none"> • Relationships with media – radio, TV programs, bloggers and health reporters – grow over time and early-formed relationships allow media to see stories unfold over time • Earned media can provide just as much coverage as paid media, but require specific content to draw coverage, media wants stories that will help draw in readers or viewers and need “9-second sound bites” • Messaging should be consistent to ensure that all communications are on the same page 	<p>Focus on data – what the report contains, trends as data is updated, and improvements in quality over time</p> <p>Use stories about how consumers reached decisions using the reports, how individuals benefited from reports or those who wished they used them</p>
Use advertising to promote the report	<ul style="list-style-type: none"> • Advertising can reach broad markets and target individual audiences by focusing on different channels and messaging • While little is known about the effectiveness of web advertising for quality reports, utilizing the channel that data is available on can reach those who are already internet users 	Tap existing knowledge on how to best reach target segments, what channels they most trust, and tactics for getting them to respond to advertising
Use outreach to promote the report and facilitate its use	<ul style="list-style-type: none"> • Similar to engaging those who can help you learn about and reach your audience, these partners can help promote quality reports and facilitate their use • Utilizing connections with organizations that have ongoing relationships with target audiences will help get the message out • Going beyond current partners to external existing networks will help reach a wider base of consumers 	Consider other organizations beyond the traditional CMS partners – those who may be able to reach younger vulnerable audiences or targets who will be getting significant medical care in the near future
Gather and analyze feedback	<ul style="list-style-type: none"> • Knowing how many people a report reaches, who those people are and how it is used will help with future refinements 	Continue to monitor page analytics

on the report and its promotion		Gather feedback from key audiences – patients, caregivers and providers and make improvements
--	--	---

According to interviews with plan managers and consumer advocates⁸⁶ HMOs have established combinations of communication channels to communicate with Medicare beneficiaries about their options. This includes written materials, educational group presentations, one-on-one counseling sessions and other face-to-face meetings, telephone hot lines, newsletters, fair sponsorships, and support groups for caregivers.

Despite potential advantage of these options, consumers frequently request face-to-face meetings to discuss their options to be able to assess the credibility of information and the counsel from the plan managers.⁸⁷ So, while traditional communications channels are important, communications and the tools themselves should encourage consumers to use the metrics as a platform for discussion with their provider or another trusted source.

d. Points to Remember

Most consumers do not consider quality ratings important, especially when compared with their personal experience.

- The findings discussed in this scan indicate that while healthcare consumers consider the quality of care they receive to be good, they do recognize differences in the quality of care out there.
- Despite some awareness of quality differences they are unlikely to research quality ratings, or trust them over personal experience and recommendations from friends and family.
- It is difficult for consumers to distinguish between positive relationships with their personal doctors and quality care at hospitals.

Not all patients are willing to engage in their healthcare.

- According to Davis et al.,⁸⁸ little research has been done on how willing healthcare consumers are to actively engage in their healthcare.
- Research available found that patient willingness to take an active role in care was impacted by the specific action required and whether the patient was working toward a specific goal with a provider.
- For example, patients are most likely to engage in conversations about long-standing quality recommendations and ask general questions, versus more challenging procedure-specific questions.
- Arming consumers with a place to begin these conversations on quality with providers will make them more engaged and active partners in the quality of their care.

⁸⁶ Plan Managers And Consumer Advocates includes staff at state insurance counseling programs, consumer advocacy groups, HMO managers of Medicare programs, and patient relations managers for large individual practice associations (IPAs) and prepaid-group practice plans

⁸⁷ Edgman-Levitan, Susan & Cleary, Paul D. (1996). What Information Do Consumers Want And Need? *Health Affairs*. 15.4:42-56.

⁸⁸ Davis, R. E., Sevdalis, N., & Vincent, C. A. (2010). *Patient Involvement in Patient Safety: How Willing are Patients to Participate?*

Different segments of consumers are using quality tools differently at this time and will use them differently in the long-term.

- The AHRQ analysis of current use of quality reporting sites found that boomer and matures with college educations are most often using these tools – these may be adults falling into Segments 1 (Informed, Health & Engaged) and 3 (Mature & Secure).
- While potential audiences for engagement include younger adults (age 25-45), including women of child-bearing age, friends or family members of older adults and minority groups.
- Medicaid clients and less educated audiences are also using tools less often.⁸⁹ This is particularly interesting when considering Segment 4, the Healthy & Young, this child-bearing adult who may be unaware of the need to start preparing for future medical care or those most likely to be caregivers for another person now or in the near future.

Consumers require validation of quality ratings.

- Consumers communicate preferences for two different types of quality information – (1) information from an unbiased, expert source of judgment about healthcare quality and (2) peer experiences, demonstrating how others “like them” experience care in the system.
- Further, the latter source of peer evaluations is trusted by consumers more than other sources of information, including “expert” opinion.⁹⁰

⁸⁹ Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011).

⁹⁰ Edgman-Levitan, Susan & Cleary, Paul D. (1996). What Information Do Consumers Want And Need? *Health Affairs*. 15.4:42-56.

2. Messages for Communicating Quality

a. *Tailoring Messages*

Prior CMS quality research offers two strong communications implications for engaging consumers in a quality campaign. The objectives of the research parallel the goals of the current quality initiative and include:

- Highlighting the importance of making healthcare decisions based on objective measures of quality;
- Showing consumers that they have choice;
- Increasing beneficiaries' and caregivers' awareness and perceived value of Medicare's quality tools; and
- Driving utilization of Medicare's quality tools by making them more compelling and easier to find, understand and access.

The research first suggests that messages should be tailored to what audiences' perceive about choices. Including, further education around availability of choice, with a focus on options and greater control where choice is perceived as limited (i.e. in choosing a hospital or doctor).

Second, inaction is most often related to lack of awareness, rather than interest as evidenced throughout this scan, so communications should be tailored accordingly.⁹¹ For example, communications should address a few key areas of the consumer mindset:

1. Raising awareness of the availability of the data, and the ease of use.
2. Positioning Medicare as the leading source for quality information.
3. Acknowledging the personal nature of healthcare decisions and the necessity for discussing options with their provider.
4. Showing that Medicare tools are important to making information choices due to the huge variety in quality ratings.

Further research has shown that communications strategies that appeal to the cognitive and emotional aspects of healthcare will best break through the barriers to using quality ratings and will help to engage patients. Specific examples of the cognitive/emotional balance came through CMS research to test messaging to encourage the use of quality information among the senior and baby boomer population⁹² and keyed in on four areas of focus for successful messaging:

- What consumers already know or need to know;
- What consumers think about choice;
- What consumers feel about the knowledge they have after using tools; and
- What consumers should do with information.

⁹¹ KRC Research for Centers for Medicare and Medicaid Services. (2011).

⁹² Cherry, K., Funderburk, F., & Cohen, B. (2009).

The table below outlines specific consumer mindsets and a corresponding communication principal to encourage activation.

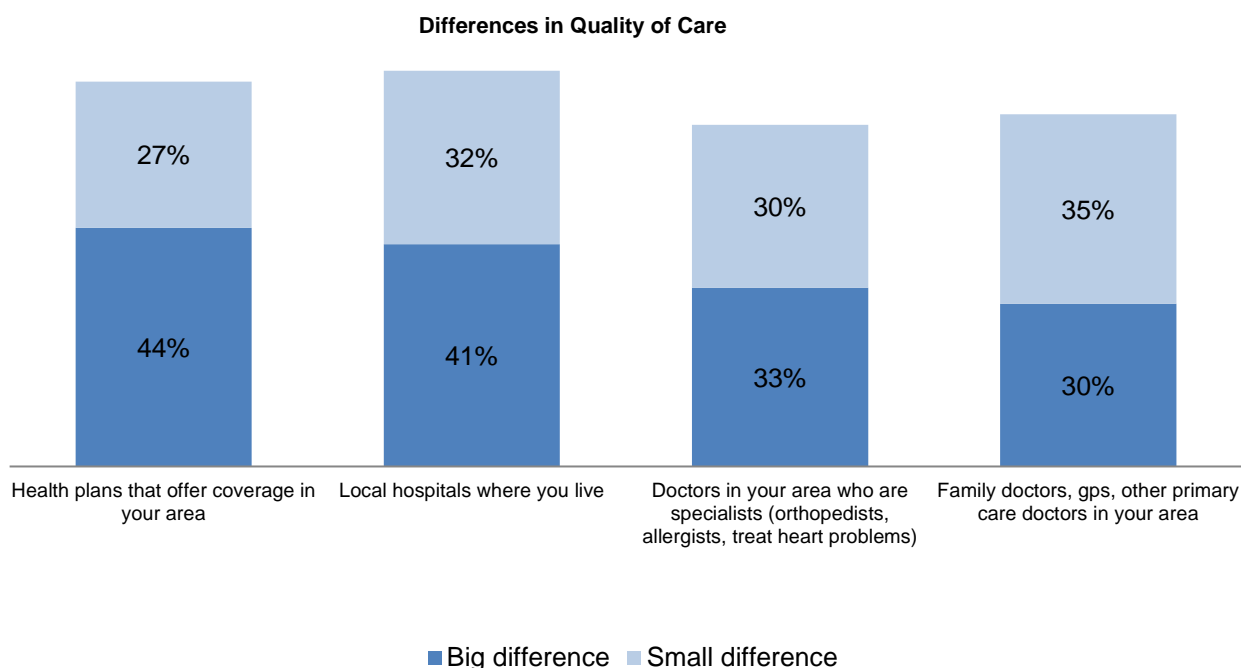
Successful HCAHPS Messaging Components		
	Consumer Mindset/Action	Communications Principal
Know	“HCAHPS is a helpful too for comparing hospitals in my area” “It could be helpful when planning an elective or scheduled hospitalization”	Addresses overall barriers: not knowing when you will be hospitalized, cannot always plan ahead, lack of knowledge of availability
Think	“I really should choose a hospital carefully because my doctor can’t be with me 24 hours a day when I am there” “I have more of a choice than I thought” “Even if I can’t change the hospital I choose it is important to know as much about a hospital as I can so that I can be in control”	Addresses cognitive barriers: fear of the unknown or uncharted territory, perceived lack of choice, separation of doctor and hospital quality
Feel	“HCAHPS provides me with information that puts me in control” “I feel more confident and comfortable about the hospital decisions I make”	Addresses emotional barriers: perceived battle for control and dignity, anxiety, lack of attention to personal needs
Do	Log onto HCAHPS at the Hospital Compare website and talk to your doctor about it the next time you are facing hospitalization	Clear call to action

Addressing the overall barriers, incorporating cognitive and emotional messaging and a clear call to action will best reach many healthcare consumers. Healthcare decisions involve the emotional – fear, anxiety, and the unknown, but also information that is objective, clear and respected. Communications strategies should address both of these avenues.

b. Showing Differences Among Hospitals

Despite the low usage of quality reports and the likelihood to continue using familiar plans and providers, nearly three quarters of Americans believe there are differences in the quality of care among local hospitals where they live (73%) and health plans that offer coverage in their area (71%).

Approximately two thirds believe there are differences in the quality of care provided by primary care doctors in their area (65%) or specialists in their area (63%). And, these perceived differences are large. Thirty to 40 percent of Americans believe the quality of care varies a lot among healthcare institutions and providers in their own area.⁹³



Qualitative research conducted by CMS found analogous feelings among focus group participants. The recognition of quality differences among hospitals and other providers allows communications to move past the potentially difficult task of convincing healthcare consumers of these differences.⁹⁴

Experts on healthcare communications Shoshanna Sofaer and Judith Hibbard suggest incorporating messaging on differences in quality into reports up front. Research indicates that most consumers respond better to messages that show them how to protect themselves from harm versus finding something that is considered “the best.”⁹⁵ Thus, clearly showing differences between providers, hospitals or other facilities as examples can paint a clear picture of the risk in going to a lower quality hospital and tell that doing research can protect them from harm at a lower quality facility.

⁹³ Kaiser Family Foundation (October 2008).

⁹⁴ Cherry, K., Funderburk, F., & Cohen, B. (2009).

⁹⁵ Sofaer, Shoshanna, & Hibbard, Judith. (June 2010).

Notably, while some are interested in satisfaction ratings, these ratings have received mixed reviews among elderly and chronically ill patients in one study by the Consumer Information Project. One noted drawback included an inability to perceive another person's tolerance for waiting times for appointments; specific temporal figures were requested instead. Additionally, elderly patients have noted an interest in information that assesses and compares care for patients relevant to their age and health status, and for care that covered both genders.⁹⁶ Including these types of information, that make it pertinent to individual, can help support the need for researching quality and show clear differences in quality that apply to each consumer.

Maurer et al. found that all materials directed at patients and families should target audiences' perspectives and reflect what is most important to each individual audience.⁹⁷ For consumers, both patients and caregivers, that includes customer service, hospital staff, medical errors, clinical quality, patient satisfaction and good healthcare overall; all of which can be shown in some way via quality metrics, whether it be through actual quality reports or patient satisfaction surveys.

⁹⁶ Edgman-Levitan, Susan & Cleary, Paul D. (1996).

⁹⁷ Maurer, Maureen., Dardess, Pam., Carman, Kristin L., Frazier, Karen., & Smeeding, Lauren. (May 2012).

4. BIBLIOGRAPHY

- Arnold, Sharon B. (October 2007). Improving Quality Health Care: The Role of Consumer Engagement. *Robert Wood Johnson Foundation*.
- Bardach, Naomi S., Hibbard, Judith H., & Dudley, R. Adams. (December 2011). Users of Public Reports of Hospital Quality: Who, What, Why and How? *Agency for Healthcare Research and Quality*. Rockville, MD.
- Carman, Kristin L. (March 2006). Improving Quality Information in the Consumer-driven Era: Showing the Differences is Crucial to Informed Consumer Choice. *American Institutes for Research for the Agency for Healthcare Research and Quality*.
- Chernew, Michael., Gowrisankaran, Gautam., & Scanlon, Dennis P. (June 2007). Learning the Value of Information: The Case of Health Plan Report Cards. *Federal Reserve Bank San Francisco*.
- Cherry, Keith., Funderburk, Frank., & Cohen, Barbara. (December 2009). Encouraging Consumer Use of Hospital Quality Information: Both Cognitive and Emotional Appeals Contribute. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1865903
- CMS Division of Consumer Assessment of Health Care Surveys. (2007). *Cognitive Testing of New Medicare Part D Displays for Medicare.gov*.
- Edgman-Levitan, Susan & Cleary, Paul D. (1996). What Information Do Consumers Want And Need? *Health Affairs*. 15.4:42-56.
- Faber, Marjan., Bosch, Marije., Wollersheim, Hub., Leatherman, Sheila., & Grol, Richard. (2009). Public Reporting in Health Care: How Do Consumers Use Quality-of-Care Information? *Medical Care*. 47.1:1-8.
- Google Analytics. (2012). [Graphic and data representation of Quality Care Finder page views, January 1, 2012 to June 30,2012]. *CMS Hospital Compare, Nursing Home Compare, Home Health Compare, Dialysis Facility Compare, Physician Compare, and Medicare Plan Finder Tools*. Retrieved from www.Medicare.gov via Google Analytics.
- Hibbard, Judith H., Slovic, Paul., Peters, Ellen., & Finucane, Melissa L. (2002). Strategies for Reporting Health Plan Performance Information to Consumers: Evidence from Controlled Studies. *Health Services Research*. 37.2: 291-313.
- Hibbard, Judith H., & Jewett, Jacquelyn J. (1997). Will Quality Report Cards Help Consumers? *Health Affairs*. 16.3:218-228.
- Kaiser Family Foundation. (May 2012). *Kaiser Family Foundation Health Tracking Poll* (Topline). Washington, DC.
- Kaiser Family Foundation, Alliance for Health Reform, & The Commonwealth Fund. (April 2011). *Public Reporting of Quality Outcomes: What's the Best Path Forward?* (Panel Discussion, Podcast). Washington, DC.

- Kaiser Family Foundation. (October 2008). *2008 Update on Consumers' Views of Patient Safety and Quality Information*. (Topline). Washington, DC.
- Kaiser Family Foundation, Robert Wood Johnson Foundation, & Harvard School of Public Health. (March 2011). *Report on Americans Views on the Quality of Healthcare*. (Topline). Washington, DC.
- Kaiser Family Foundation. (December 2000). *National Survey on Americans as Health Care Consumers: An Update on The Role of Quality Information*. Washington, DC.
- Kolstad, Jonathan T., & Chernew, Michael E. (2009). Quality and Consumer Decision Making in the Market for Health Insurance and Health Care Services. *Medical Care Research and Review*. 66.1:28S-52S.
- KRC Research for Centers for Medicare & Medicaid Services. (July 2012). *CMS Quality Compare Survey*. (Contract No. HHSM-500-2006-0018I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (December 2011). *CMS National Education Campaign Contractor (NEC) in Support of the Partnership for Patients (PfP) Environmental Scan*. (Contract No. HHSM-500-2011-00088G). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (September 2011). *Generational Healthcare Communication Needs: Accountable Care Organizations In-depth Interviews*. (Contract No. HHSM-500-2005-00034I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (September 2011). *CMS Generational Needs Communication Research: Quantitative and Qualitative Research Step 2-4*. (Contract No. HHSM-500-2005-00034I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (June 2010). *CMS Plan Choice Communications Project Literature Review*. (Contract No. HHSM-500-2005-00034I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (February 2010). *Consumer Testing of Draft CMS Publications: Guide to Choosing a Hospital and Planning for Your Discharge*. (Contract No. HHSM 500-2005-00034I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (January 2010). *CMS Quality Initiative Outreach Campaign Quality Tools*. (Contract No. HHSM-500-2006-00018I). Washington, DC: KRC Research.
- KRC Research for Centers for Medicare & Medicaid Services. (November 2008). *Hospital Compare Assessment Survey*. (Contract No. HHSM-500-2006-00018I). Washington, DC: KRC Research.

- Marshall, Martin N., Shelkelle, Paul G., Davies, Huw T.O., & Smith, Peter C. (May/June 2003). Public Reporting on Quality in the United States and the United Kingdom. *Health Affairs*, 22 (3), 134-148.
- Maurer, Maureen., Dardess, Pam., Carman, Kristin L., Frazier, Karen., & Smeeding, Lauren. (May 2012). Guide to Patient and Family Engagement: Environmental Scan Report. *American Institutes for Research*. Rockville, MD.
- National Public Radio, Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2012). *Sick in America*. Media, PA: Social Science Research Solutions (SSRS).
- Peters, Ellen., Hibbard, Judith., Slovic, Paul., & Dieckmann, Nathan. (2007). Numeracy Skill and the Communication, Comprehension, and Use of Risk-Benefit Information. *Health Affairs*. 26.3:741-48.
- Pew Research Center. (July 2012). *Family Caregivers Online*. (Research Report). For the Pew Research Center's Internet & American Life Project.
- Princeton Survey Research Associates International. (September 2010). *September Health Tracking Survey 2010*. (Topline). For the Pew Research Center's Internet & American Life Project.
- Reid, Rachel O., Friedberg, Mark William., Adams, John L., & McGlynn, Ateev Mehotra. (September 2010). Associations Between Physician Characteristics and Quality of Care. *Archives of Medicine*. 170.16:1442-1449.
- Rein, Alison. (October 2007). Consumer Choice in the Health Insurance and Provider Markets: A Look at the Evidence Thus Far. *Robert Wood Johnson Foundation*.
- Robert Wood Johnson Foundation & Harvard School of Public Health. (March 2011). *Report on Americans' Views on the Quality of Health Care*.
- Sofaer, Shoshanna, & Hibbard, Judith. (June 2010). Best Practices in Public Reporting No. 3: How to Maximize Public Awareness and Use of Comparative Quality Reports Through Effective Promotion and Dissemination Strategies. *Agency for Healthcare Research and Quality*. Rockville, MD.
- Uhrig, Jennifer D., Harris-Kojetin., Lauren., Bann, Carla., & Kuo, Tzy-Mey. (December 2006). Do Content and Format Affect Older Consumers' Use of Comparative Information in a Medicare Health Plan Choice? Results from a Controlled Experiment. *Medical Care Research and Review*. 63.6:701-18.

REPORT

DRAFT REPORT

Use of Digital Media Among Health Care Consumers: Targeted Literature Review

August 5, 2015

Jessica Heeringa
Daniella Sehgal
Russ Tisinger
Nyna Williams
Margaret Gerteis
Sarah Rosenblum
Nikhail Maestas
Colleen Dobson
Sally Crelia
Myra Tanamor

Submitted to:
Centers for Medicare & Medicaid Services
1743 Connecticut Ave
Washington, DC 20009
Project Officer: Frank Funderburk
Contract Number: HHSM-500-2010-00015I

Submitted by:
L & M Policy Research
1743 Connecticut Avenue, NW, Suite 200
Washington, DC 20009

Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543-2393
Telephone: (609) 799-3535
Facsimile: (609) 799-0005

This page has been left blank for double-sided copying.

CONTENTS

I	BACKGROUND	1
II	RESULTS.....	2
	A. Prevalence of consumer use of digital media.....	2
	B. Characteristics of users and nonusers of digital media.....	2
	C. How consumers use digital media.....	5
	1. Social networking and online health communities	5
	2. Use of digital media for comparative quality information	7
	3. Variations in information needs and mode of access	8
	D. Effect of digital media on consumers' health and health care decision making.....	8
	E. Dissemination strategies relevant to digital media for health information	9
	F. Discussion and implications for future research.....	11
	1. Differences in OHIS behavior across subgroups	11
	2. Use of online quality data and recommendations of hospitals and doctors.....	12
	3. Dissemination strategies in social media for health.....	12
	4. Challenges of digital health media	13
	REFERENCES.....	15
	APPENDIX A METHODS.....	22
	APPENDIX B DETAILED TABLES	28

TABLES

Table 1. Profile of online health information seekers	4
Table 2. Profile of CMS consumer segments based on use of Internet and health information seeking behavior	4
Table 3. Consumer needs met through digital media	6
Table 4. Awareness and perceived importance of comparative quality ratings among CMS consumer segments	8

32

I. BACKGROUND

This report summarizes findings from a targeted literature review of digital media use among health care consumers. The literature review is part of a series of studies intended to inform the development of dissemination activities involving digital media to build consumer awareness of the Medicare *Compare* Tools.

To understand health care consumers' use of digital media, the research team conducted a literature review of over 50 peer-reviewed and grey literature pieces from 2011 to present. This review sought to answer the following research questions:

1. How prevalent is consumer use of digital media for health and health care information?
2. What are the characteristics of users and nonusers of digital media?
3. For what purposes are consumers using digital media for health and health care information? How do these purposes vary by type of media?
4. What dissemination strategies for using digital media for health and health care topics are effective?

For this review, *digital media* is defined as any form of electronic media. Given the need to understand how health care consumers are accessing information to inform their health care-related decision making, the team prioritized reviews and surveys of uses of the Internet and social media for health information. Our goal was to glean insights from this literature in order to: (1) develop a profile of health-related users, and (2) inform potential questions on a future profiling survey study for this project addressing traditional and social media use for health information. This report focuses primarily on social media and broader online health information seeking (OHIS), which could include social media as well. Social media refers to social networking sites, online communities, blogging and microblogging (for example, Twitter), or wikis/file-sharing sites (Thackeray et al. 2013; Moorhead et al. 2013). Appendix A presents methodological details of the review.

II. RESULTS

A. Prevalence of consumer use of digital media

Multiple surveys have sought to understand the prevalence of consumer use of digital media for health and health care information. The Pew Research Center reported that 59 percent of U.S. adults go online for health information¹ (Fox 2011b). It also found that 80 percent of online health information seekers began their last query at a search engine, while those with chronic conditions are more likely to indicate that they started looking for information on consumer health websites such as WebMD (Fox and Duggan 2013a). Regarding social media use, a 2012 survey of U.S. adults (N = 1,060) found that approximately one-third use social media for health-related purposes, for example, viewing health-related consumer reviews or reviewing other consumers' experiences (PwC, 2012). As an example of social media, nearly half of all U.S. adults use social networking sites, and among users, 15 percent have sought health information from these sites (Fox 2011b). Furthermore, accessing health information through mobile phones is becoming more common; 31 percent of U.S. adults who own a cell phone have used their mobile phone to access health information (Fox and Duggan 2013b).

Popular sources of online health information:

- Federal government health websites (PubMed, Centers for Disease Control and Prevention, Medline, HHS.gov, and Medicare.gov (Fox and Duggan 2013a))
- Health insurance websites (Fox and Duggan 2013a)
- Clinicians' and other providers' websites (Fox and Duggan 2013a)
- WebMD, Mayo Clinic (Hall et al. 2015)

B. Characteristics of users and nonusers of digital media

According to the literature, certain characteristics are associated with use of digital health information or OHIS. Not surprisingly, access to the Internet through home-based or mobile service is a prerequisite for OHIS (Fox and Duggan 2013a; Fox 2011a; Oh et al. 2014). Access to the Internet is increasing, and estimates from the U.S. Census Bureau in late 2014 indicated that 78 percent of American households have access to high-speed Internet. However, significant gaps in home-based Internet access remain among certain groups. People who face barriers to Internet access are more likely to have chronic conditions, be members of ethnic minorities, be older, have lower educational attainment, be more distressed, and report a history of cancer or another medical condition diagnosis (Fox 2011a; Fox and Duggan 2013a; Gibbons et al. 2011).² Recent evidence shows that African Americans and Latinos are increasingly accessing the

¹ The Pew Research Center's Internet and American Life Project 2010 survey asked about uses of the Internet for health-related purposes, including signing up to receive email updates or alerts about health or medical issues; reading someone else's commentary or experiences about health or medical issues; watching an online video about health or medical issues; going online to find others who might have similar health concerns; tracking weight, diet or exercise routine; and tracking any other health indicators or symptoms (Fox 2011b).

² In 2010, 87 percent of families making \$75,000 or more had broadband at home, compared with 45 percent of those making \$30,000 or less. Sixty-seven percent of whites, and 56 percent of African Americans were broadband users at home. Education gaps exist as well: 86 percent of people with college degrees had broadband at home, while 33 percent of those with less than a high school diploma did (Gibbons et al. 2011). According to a 2013 survey, the digital divide for elderly people is closing with increasing numbers of elderly individuals gaining access to broadband at home (Hall et al. 2015).

Internet through mobile phones, closing the digital divide (Gibbons et al. 2011). However, important gaps may remain for those with chronic disease regardless of race/ethnicity. The Pew Research Center found that, after holding other variables constant, chronic disease status has an independent, negative effect on the likelihood of Internet use, and that chronic disease status is independently associated with lack of Internet access; as the number of chronic conditions increase, the likelihood that an individual will have Internet access decreases (Fox and Duggan 2013a).

Among the subset of the population with Internet access, research shows that OHIS tends to be associated with having chronic conditions, being a caregiver, being female, younger age, higher educational attainment, higher income status, and higher perceived self-efficacy in Internet use and skill (Fisher and Clayton 2012; Hall et al. 2015; Hanson et al. 2014; Kontos et al., 2014; Miller et al. 2012; Oh et al. 2014; Percheski and Hargittai 2011; Thackeray et al. 2013). Importantly, half of online health information seekers search on behalf of someone else (Fox and Duggan 2013b). Furthermore, one study found that individuals who monitor a condition or health issues through an electronic device (referred to as health tracking) were more likely to seek health information online (Kontos et al. 2014). Personality characteristics may also play a role. For example, one study found that individuals who trust traditional forms of media and government health agencies are also likely to trust online sources of health information (Ye 2011); in other words, having a disposition to trust traditional sources of information may increase the likelihood of trusting online information. Some evidence from the literature also points to higher use of online sources for health information among individuals with lower social support or fewer offline resources for health information – such as medical professionals, traditional media or family members (Merolli et al. 2013; Percheski and Hargittai 2011).

Alternatively, those with low literacy, lower cognitive test scores, and lower computer or Internet skill levels are less likely to use the Internet for online health information (Gibbons et al. 2011; Hall et al. 2015; Li et al. 2014; Percheski and Hargittai 2011).

The evidence regarding OHIS is mixed for ethnic and racial minorities, partly due to barriers to Internet access, and for those with low self-reported health status. However, the use of mobile phones to access health information has grown rapidly among ethnic minorities—African Americans and Latinos exhibit higher use rates than whites, and a higher percentage of African Americans than Latinos or whites have reported using their phones to look up health information or to use health applications to track or manage their conditions (Fox and Duggan 2013b; Gibbons et al. 2011). Evidence is also mixed regarding self-reported health status; some studies have found that poor health status is correlated with OHIS, while others have found that people with high self-reported health status are more likely to engage in OHIS (Oh et al. 2014).

Among Americans with Internet access, those who tend to use online health information share a few demographic characteristics. Table 1 presents a summary of the characteristics associated with OHIS behavior after achieving Internet access. This table only summarizes characteristics of Internet users. For example, although those with chronic conditions are less likely to have Internet access, those with chronic conditions who do have access are more likely to seek health information online compared to Internet users without chronic conditions. A full description of the findings from profiling surveys is presented in Appendix B.

Table 1. Profile of online health information seekers

Characteristics associated with online health information seeking	Characteristics with mixed evidence of association with online health information seeking
<ul style="list-style-type: none"> Chronic condition Caregiver Female Young age Higher levels of education and income Higher levels of self-efficacy/perceived computer and Internet searching skill Current health behaviors, such as health tracking using smartphone applications 	<ul style="list-style-type: none"> Minority race/ethnicity Self-reported health status

Note: For full description of studies summarized in Table 1, see Appendix A, Table A.1.

Understanding the profile of online health information seekers can help inform strategies to reach various groups. Since 2008, researchers at the Centers for Medicare & Medicaid Services (CMS) have been developing a methodology to segment, or group, healthcare consumers based on a combination of demographic (age and income), attitudinal, health status, and health information use factors (Funderburk, Field, and Astrin 2015). Table 2 presents the profile of the six CMS segments in regard to their use of the Internet and health information-seeking behavior. As Table 2 shows, the Vulnerable and Unengaged are least likely to use the Internet in general, consistent with other findings regarding vulnerable groups. Furthermore, views on the importance of health information vary across segments; like other findings, individuals with higher healthcare needs (Sick, Active, and Worried segment) view health information as important.

Table 2. Profile of CMS consumer segments based on use of Internet and health information seeking behavior

CMS Consumer Segment	Description	Percent Using Internet	Perceived Importance of Health Information	Percent Seeking Health Information
1: Informed, Healthy, and Educated	Very active with regard to health care; empowered and self-initiating information seekers	100%	Important	96%
2: Sick, Active, and Worried	Likely disabled; involved in health care due to condition status	77%	Important	43%
3: Mature and Secure	In good health; active in health-related activities and engaged in disease prevention	51%	Important	22%
4: Healthy and Young	Healthiest of all segments; less likely to engage in disease prevention	88%	Not important	42%

CMS Consumer Segment	Description	Percent Using Internet	Perceived Importance of Health Information	Percent Seeking Health Information
5: Passive and Skeptical	Low interest in health-related concerns; tend to not have formal relationships with health care providers	54%	Not important	16%
6: Vulnerable and Unengaged	Majority over 65; in poorer health than other segments; less technologically savvy and less active in health care than other segments	17%	Not important	0%

Source: Funderburk, Field, and Astrin 2015

C. How consumers use digital media

Consumers turn to digital media for knowledge, skills, recommendations for treatment options or providers, emotional support, social connectedness, and tools for maintaining health or managing their condition (Fox and Duggan 2013a; PwC 2012; Sarasohn-Kahn 2008). For example, one-quarter of U.S. adults track a health indicator using digital tools (Fox 2011b). Table 3 presents a summary of the types of consumer needs met through online health information.

1. Social networking and online health communities

Social networking sites and online communities provide both information and support. One study examining support provided through online communities posited that there are two broad types of support: informational support and emotional support (Liang and Scammon 2011), and evidence indicates that users in online communities seek and provide both types of support. The authors found that consumers who respond to others' posts tended to respond in a timely manner and often provided cues about the credibility of the information, for example, by referring to their level of experience (their "experiential credibility")—which is particularly important in online communities where the risk of misinformation may be high (Metzger and Flanagan 2011; Liang and Scammon 2011). A review of social media in chronic disease management found that online support groups were common among people with chronic conditions (Merolli et al. 2013). Reasons for use of online support groups included social support, information retrieval, exchanging information and experiences, finding positive meaning, recognition, and helping others (Merolli

Examples of health-related social networking sites:

- TuDiabetes, a virtual forum for patients with diabetes or those affected by diabetes to share information and support one another
- PatientsLikeMe, a health information sharing website for communities of patients with the same conditions
- DailyStrength, a site for support groups related to different medical conditions or life challenges, such as divorce

et al. 2013). Social networking sites—another form of online community—provide support, encourage interaction among participants, and are often used in conjunction with traditional care or as part of a broader intervention, for example, with self-management tools or educational information (Merolli et al. 2013; Hamm et al. 2014).

Table 3. Consumer needs met through digital media

Informational needs/uses	Emotional needs/uses	Behavioral needs/uses
<ul style="list-style-type: none"> • To find health information on behalf of someone else (Fox and Duggan 2013a) • To see what others say about medication or treatment (Fox and Duggan 2013a; Sarasohn-Kahn 2008) • To access other consumers' knowledge or experiences (Sarasohn-Kahn 2008) • To obtain skills and information to help manage conditions (Sarasohn-Kahn 2008) • To share personal knowledge or experiences (Sarasohn-Kahn 2008) • To find other consumers' recommendations or reviews of treatment options or drugs (Fox and Duggan 2013a; Sarasohn-Kahn 2008; PwC 2012) • To find consumers' recommendations and opinions about doctors (Sarasohn-Kahn 2008) • To read or watch something about someone else's personal health experience (Fox and Duggan 2013a) • To keep track of personal health record/information (Hall et al. 2015) 	<ul style="list-style-type: none"> • To feel sense of belonging/to join a community (Sarasohn-Kahn 2008; PwC 2012) • To find support, understanding, and acceptance (Merolli et al. 2013) • To seek validation of condition/experience with condition (Merolli et al. 2013) 	<ul style="list-style-type: none"> • To engage in health tracking (such as monitoring a health indicator like blood pressure) (Fox and Duggan 2013a) • To support or draw attention to and raise funds for a health-related cause (PwC 2012; Lefebvre and Bornkessel 2013; Merolli et al. 2013; Fox 2011b)

In addition to obtaining information and support, people can use social media to indicate support for, participate in, or raise awareness and funding for health-related causes (Lefebvre and Bornkessel 2013; Merolli et al. 2013; PwC 2012). For example, some of the most common uses of Facebook among people with chronic conditions include fundraising, awareness, and promotions (Merolli et al. 2013). Thus, social media and social networking provide outlets for a number of purposes.

2. Use of digital media for comparative quality information

Consumers more often use digital media to seek information and view personal experiences about health issues and less commonly use them to find reviews and recommendations for hospitals or doctors (Fox and Duggan 2013b). Findings regarding consumer awareness of online ratings of health care providers vary. The Pew Research Center reported that 11 percent of U.S. adults have consulted online rankings or reviews of hospitals or other health care facilities (Fox and Duggan 2013a). However, a 2012 Internet-based survey of parents (N=1,619) in an academic medical setting found that nearly three-quarters were aware of physician rating sites,³ and 63 percent were aware of hospital rating sites (Hanauer et al. 2014); the authors note that the survey mode being Internet-based may have resulted in more technologically savvy participants, while parents may be more engaged than nonparents as well. Despite the high level of awareness, just over one-quarter had used online rating sites to choose a primary care physician for their children (Hanauer et al. 2014). In addition, more respondents prioritized factors, such as whether physicians accept their health insurance, the physician's years of experience, or recommendations from friends and family, over online physician ratings. Thus, there may be gaps in awareness of online quality rating sites and reviews as well as less inclination to use this source of information vis-à-vis other sources.

The Pew Research Center has found a number of characteristics associated with increased likelihood to use online reviews or recommendations of providers. People who are likely to use online reviews or recommendations for hospitals or doctors tend to be younger, live in suburban areas, and have higher educational attainment and higher income status (Fox and Duggan 2013b). Pew Research Center has also found that users who access the Internet via wireless modes (including laptops) are more likely to go online to find information about doctors or other health professionals (Fox 2011a). However, findings indicate use of online provider recommendations and reviews does not vary between groups with and without a chronic condition (Fox and Duggan 2013a).

Research informing the CMS consumer segmentation has found differences in awareness of comparative quality information across segments and differences in the perceived importance of this information (Table 4). Consumers who may be more likely to value this information may be less aware of it, as is the case for the Sick, Active, and Worried and Healthy and Young segments.

³ The survey question asked: "Are you aware that review sites exist for the following: (a) cars, (b) restaurants, (c) movies or books, (d) electronics or appliances, (e) other service providers (for example, mechanics), (f) physicians, (g) schools, (h) dentists, and (i) hospitals."

Table 4. Awareness and perceived importance of comparative quality ratings among CMS consumer segments

CMS Consumer Segment	Awareness of Comparative Quality Ratings	Perceived Importance of Comparative Quality Ratings
	(Comparison of segment-specific percentages to overall percentages)	(Comparison of segment-specific percentages to overall percentages)
1: Informed, Healthy, and Educated	Higher	More important
2: Sick, Active, and Worried	Lower	More important
3: Mature and Secure	Higher	Less important
4: Healthy and Young	Lower	More important
5: Passive and Skeptical	Lower	Less important
6: Vulnerable and Unengaged	Lower	Less important

Source: Funderburk, Field, and Astrin 2015

3. Variations in information needs and mode of access

Despite the widespread use of digital health information, there is some evidence that online health information needs may vary by subgroup (Fox and Duggan 2013a; Hall et al. 2015; Korda et al. 2011). Understanding the types of information different consumers need can help to determine whether that information is available through digital media. For example, patients with chronic conditions are more likely to search for condition-related information (Hall et al. 2015). Another study found that men were more likely to search for information about health insurance carriers and physicians, while women were more likely to look for information about conditions and treatments (Korda et al. 2011).

The mode of access can also influence the content viewed and the use of that content. For example, African Americans and Latinos are more likely than whites to access the Internet via their phones and therefore rely on short messages (for example, microblogging or text messaging) (Gibbons et al. 2011; Neiger et al. 2012; Hanson et al. 2014) or use health smartphone applications (Fox 2011b). Research shows that people will defer to information that is easily accessible and satisfies, that is, expend only the cognitive energy necessary for a given decision-making context rather than examining all relevant information (Metzger and Flanagin 2011). This tendency may have implications for mode of Internet access. For groups that primarily access the Internet via mobile phones, challenges may exist regarding enabling them to access more complex, health-related web-based applications such as decision support tools (Gibbons et al. 2011). More evidence is needed regarding how to tailor approaches to users' mode of Internet access (Gibbons et al. 2011; Hoffman et al. 2013; Neiger et al. 2012).

D. Effect of digital media on consumers' health and health care decision making

Although more evidence is needed to determine the potential effect of digital media on consumers' health and health care decision making, some evidence suggests that it can affect consumer empowerment and has influenced health care decisions. A 2013 literature review that

summarized studies measuring empowerment found some evidence that online support group participation was positively associated with empowerment outcomes, such as feeling informed, having improved well-being, and having more confidence (Merolli et al. 2013). In one nationally representative survey of 17,000 U.S. adults, the majority of respondents reported that information obtained through OHIS affected whether they asked their doctor a question, and just over 40 percent indicated it influenced their decision to see a doctor (Tu 2011). Another survey of 1,060 U.S. adults conducted by PricewaterhouseCoopers (PwC) provides information about the likely influence of health information obtained through social media. Forty-five percent of respondents indicated that information obtained through social media would cause them to seek a second opinion; more than 40 percent indicated that social media sites would inform their choice of provider and would affect how they managed their condition or their approach to health behaviors (PwC 2012).

A number of studies have found some evidence of emotional or behavioral effects associated with social media use, although the empirical evidence regarding a causal link between social media and health outcomes is limited (Lefebvre and Bornkessel 2013). Some research has shown that using social networking sites is associated with increased motivation and improved emotional health (Fisher and Clayton, 2012; Roblin, 2011 as cited by Househ et al., 2014). For example, one study found early suggestions that online social communities are associated with reductions in anxiety and depression among patients with cancer (Coiera 2013). Internet-based interventions may also be effective, although the particular features, content, and functionality that are effective require more study. A study of two asthma self-management interventions using Internet and email platforms demonstrated improvements in knowledge of asthma symptoms, asthma control, and lung function (Joseph 2007 and Van Der Meer 2009, as cited by Baptist et al. 2011). Other research has shown evidence of the effectiveness of social media regarding behavior change such as adherence to smoking cessation (Burke-Garcia and Scally 2014). In a nationally representative survey of 17,000 U.S. adults, half indicated that the information obtained online influenced whether they asked their doctor a question and their health behaviors, for example, diet, exercise, and stress management (Tu 2011).

E. Dissemination strategies relevant to digital media for health information

Evidence of strategy effectiveness for digital media is currently limited. Table B.2 in Appendix B presents a list of metrics used to measure engagement and use of digital media for health-related purposes identified through the literature review. Like traditional media, the following principles of effective dissemination strategies appear to be most relevant for digital media:

- Leveraging existing networks to reach target audiences
- Mobilizing information intermediaries and champions who motivate engagement
- Making information relevant, accessible (in terms of location and comprehensibility), and usable (Ye 2011)
- Tailoring to individuals' needs, preferences, and contexts (Liang and Scammon 2011; Metzger and Flanagan 2011)
- Partnership, for example with organizations with a strong web presence, such as WebMD

- Use of “place-based” strategies, such as placing health-related content where consumers look for other content (Burke-Garcia and Scally 2014; Metzger and Flanagin 2011)

However, this literature posits that social media warrants different strategies than traditional media as well, because social media is oriented toward engaging communities, rather than individuals (Lefebvre and Bornkessel 2013). Social media aims to facilitate conversations—getting the conversation going, harnessing users’ contributions, and leveraging networks (Steele 2011; Lefebvre and Bornkessel 2013; Huesch et al. 2014). Harkening back to the importance of information intermediaries, intermediaries may have a particularly valuable role to play in online conversations. For example, Eysenbach proposes that, in online environments, individuals or tools can “stand by” as “apomediaries” to help guide consumers to high quality information (Eysenbach 2008, as cited by Bornkessel et al. 2014). The role of information intermediaries is particularly important in health, given the complexity of available information.

Similarly, the engagement of trusted experts in digital media may help to meet consumers’ needs. Studies have found that involving trusted experts, such as physicians, in social networking is an effective strategy for increasing the accessibility of information. In a study comparing an online expert health network with traditional information sources, patients could better comprehend the information provided by online experts (Rhebergen et al. 2012 as cited by Bornkessel et al. 2014). Furthermore, some evidence indicates that patients want their providers to engage with them through digital media to schedule appointments, answer questions, and support managing their conditions, for example, through email, text messages, social networking sites, and YouTube (Fisher and Clayton 2012; Hanson et al. 2014). However, identifying the best ways to use digital media to facilitate patient-physician interaction and meet consumers’ information needs remains a challenge.

The literature also notes that social media can be used to provide highly tailored information. As described above, some evidence suggests that people who use social networking sites can receive tailored informational and emotional support (Liang and Scammon 2011). Metzger and Flanagin (2011) argue that web 2.0 technologies—emerging technologies including social media, interactive online tools, and user-generated content—can improve the relevance of evidence-based information to users’ needs and context, for example, by employing user-generated evaluative information to refine and enhance the usability of the evidence for other audiences. One review of Internet-based behavioral health interventions for chronic conditions found that online interventions that included social tools and support functions enhanced the tailoring of the intervention and increased user engagement (Schubart et al. 2011, as cited by Merolli et al. 2013), which suggests that social media can be an important component of broader interventions.

Social media is also a dynamic source of information that can inform policy and programmatic decision making, as well as dissemination strategies designed to address users’ needs and decision-making contexts. Liang and Scammon note that

Examples of online health discussion forums:

- Health Care and Social Media (#hcsn), a Twitter-based discussion every Sunday at 8:00 pm (CT) among doctors, patients, communicators, and other health care stakeholders on social media and health care
- The Healthcare Hashtag Project, a Twitter-based series of scheduled chats and health-related hashtags that patients and the wider health care community can use to connect, share, and collaborate

policymakers have an opportunity to learn from the content of online discussions to get “rich first-hand information about consumers’ health and medical opinions and problems” (2011, p. 10). Furthermore, the authors recommend that policymakers and government agencies engage in social networking—not just by releasing information, but by participating in the two-way exchange of information that defines web 2.0 and social media (Liang and Scammon 2011). Consumers may also be an important source of information, for example, about quality of care. One review found some evidence that consumer reviews posted on social media and consumer rating sites of healthcare providers, both physicians and hospitals, correlate with objective and subjective measures of quality of care, although more research is needed regarding the risks of using social media as an indicator of quality (Verhoef et al. 2014).

F. Discussion and implications for future research

Based on the literature, gaps in the existing evidence base that warrant further investigation include: (1) the differences in OHIS across subgroups; (2) the fact that people use digital health media to access quality data and reviews or recommendations less frequently than for other purposes; (3) the need for effective dissemination strategies for using social media for health, and; (4) the challenges with digital health media related to credibility, misinformation, and privacy concerns.

1. Differences in OHIS behavior across subgroups

As described above, access to the Internet is a prerequisite for OHIS and digital health media use. Gaps in Internet access persist, however, despite gains being made nationally. Traditionally vulnerable populations still face barriers to Internet access and therefore access to digital health media—which may perpetuate disparity as the health care field relies increasingly on digital health media (Gibbons et al. 2011). For example, people with chronic conditions appear to face barriers to Internet access, as do members of ethnic and racial minorities (Fox and Duggan 2013a; Fox 2011a; Gibbons et al. 2011). The Pew Research Center reported that people with lower educational attainment and income status, people who are under age 65, and African Americans and Latinos tend to be more likely to have access to the Internet through their mobile phones, and nearly half of those who depend on their smartphones for Internet access have disruptions in their cell phone service and therefore access to the Internet (Smith and Bell 2015). Thus, certain groups may be less likely than others to be able to access digital health media due to access barriers.

Furthermore, understanding the characteristics of people who engage in OHIS and use social media can help to inform dissemination strategies employing the Internet and social media. This literature review presents evidence that certain subgroups are less likely to engage in OHIS than others, including those with lower educational attainment, lower income status, and lower computer or Internet skills. Half of individuals seeking health information online are looking on behalf of someone else. People with chronic conditions appear to face barriers to Internet access; however, once they do have Internet access, they are more likely to seek online health information. Members of this group increasingly use online communities and social networking sites for informational and emotional support.

2. Use of online quality data and recommendations of hospitals and doctors

This review also shows that, while the use of digital media for health-related purposes is growing, the use of online recommendations and reviews of hospitals and doctors is less common. More information is also needed about the type of content and messaging that is most effective and engaging through digital media, particularly for encouraging use of comparative quality information. For example, extensive research with health care consumers has found that:

- Consumers generally do not perceive choice in health care providers.
- Consumers tend to not be aware that comparative quality data exist, but when they learn about the Medicare Quality Tools, consumers tend to be interested in the information.
- Examples of quality variability help to elucidate the importance of comparative quality information.
- Making comparative quality information available at the point of need, for example, when a consumer is choosing a health care provider, remains a challenge (KRC Research, L&M Policy Research, and Funderburk 2015).

These findings point to important opportunities for digital media, for example, by promoting awareness of quality variation and comparative quality data by leveraging social media and making information available through modes consumers commonly use to access information, such as mobile phones.

3. Dissemination strategies in social media for health

Fully utilizing social media for dissemination requires participation, interactivity, and leveraging of existing networks—which may entail observing online discussions to understand information needs, stimulating discussion, and involving experts or information intermediaries (Bornkessel et al. 2014). Some authors argue that the inclusion of experts and information intermediaries can help to ascertain the accuracy of the information shared through social media as well as help consumers identify information that is most relevant and usable for their needs (Eysenbach 2008; Bornkessel et al. 2014). However, how to best engage experts, such as clinicians, and intermediaries who can help consumers navigate digital health media or develop tools to filter information based on individual need, is an outstanding issue.

Furthermore, the role of online social networks in health requires further investigation. As described above, individuals are turning to online social networking for emotional and informational support, and some evidence points to positive behavioral and emotional effects associated with engagement in online communities. Previous research on the importance of social networks in general—not limited to online environments—suggests that social networks can play an important role in individuals' health. For example, a social network survey of a nationally representative sample (N=3,232), based on individuals' reflections of their social networks, found an association between good health status and connectedness (number of friends and closeness of friendships). Having more friends was associated with improvement in health status, and good health status and social behavior were associated with closer relationships

(O'Malley et al. 2012). How these findings translate into online environments is an outstanding but increasingly important issue as more individuals go online for social support related to their health needs.

4. Challenges of digital health media

Despite the optimism about digital media, more evidence is needed about its most effective aspects. Merolli et al. (2013) posit that evaluating the functionality, interactions, and behaviors that social media afford can provide insights into why and how social media affects patient outcomes.

In addition to understanding effective features of digital health media, further research is needed to understand trust and credibility—key factors in information use—in digital health media. Social media has the potential to leverage trusted connections as sources of information (Burke-Garcia and Scally 2014; Metzger and Flanagin 2011), but it also provides access to less familiar individuals with whom people may have weak ties—which can make people skeptical about online information (Ye 2011). People's trust in digital health media appears to be related to their level of trust in other sources, such as government health agencies and traditional media (Ye 2011). However, more research is needed regarding how to establish and maintain trust and credibility in a digital media environment.

This literature raises a number of concerns about using digital media for health-related purposes. Social media may disseminate misinformation, which can lead to adverse outcomes (Bornkessel et al. 2014; Sarasohn-Kahn 2008; Moorhead et al. 2013; Metzger and Flanagin 2011). Individual users face challenges in integrating and evaluating the high volume of digital health information available for decision-making purposes, and the risk of relying on inaccurate or conflicting information—even from reliable sources—may be higher in social media environments.

Concerns about individual privacy and security are also dominant in this literature; for example, such concerns may deter users from using health applications or social networking sites (PwC 2012; Sarasohn-Kahn 2008; Moorhead et al. 2013). Privacy concerns may also deter providers from engaging in social media with patients (Bornkessel et al. 2014). This concern will persist as more users are managing personal health information online, for example, through personal health records or using social media to communicate with their providers. Additionally, some evidence indicates that patients want to use social media to interact with providers, for example, to schedule appointments or ask questions (Hanson et al. 2014). Efforts to incorporate social media into health care will require balancing security risks with potential benefits of increased connectedness and patient-provider communication. Thus, the longer-term impacts of these challenges and the need to mitigate them require further research and monitoring.

This page has been left blank for double-sided copying.

REFERENCES

- Bacigalupe, Gonzalo. "Is There a Role for Social Technologies in Collaborative Healthcare?" *Families, Systems, & Health*, vol. 29, no. 1, 2011, pp. 1–14.
- Backinger, C.L., A.M. Pilsner, E.M. Augustson, A. Frydl, T. Phillips, and J. Rowden. "YouTube as a Source of Quitting Smoking Information." *Tobacco Control*, vol. 20, no. 2, 2011, pp. 119–122.
- Baptist, Alan P., Michael Thompson, Karla S. Grossman, Layla Mohammed, Annie Sy, and Georgiana M. Sanders. "Social Media, Text Messaging, and Email-Preferences of Asthma Patients Between 12 and 40 Years Old." *Journal of Asthma*, vol. 48, no. 8, 2011, pp. 824–830.
- Bornkessel, Alexandra, Robert Furberg, and R.C. Lefebvre. "Social Media: Opportunities for Quality Improvement and Lessons for Providers—A Networked Model for Patient-Centered Care Through Digital Engagement." *Current Cardiology Reports*, vol. 16, no. 7, 2014, pp. 1–9.
- Burke-Garcia, A., and G. Scally. "Trending Now: Future Directions in Digital Media for the Public Health Sector." *Journal of Public Health (Oxford, England)*, vol. 36, no. 4, 2014, pp. 527–534.
- Coiera, E. "Social Networks, Social Media, and Social Diseases." *BMJ (Clinical Research Ed.)*, vol. 346, 2013, pp. f3007.
- Courtney, K.L. "The Use of Social Media in Healthcare: Organizational, Clinical, and Patient Perspectives." *Enabling Health and Healthcare Through ICT: Available, Tailored and Closer*, vol. 183, 2013, p. 244.
- Crabb, R.M., S. Rafie, and K.R. Weingardt. "Health-Related Internet Use in Older Primary Care Patients." *Gerontology*, vol. 58, no. 2, 2012, pp. 164–170.
- DeBar, L.L., J. Dickerson, G. Clarke, V.J. Stevens, C. Ritenbaugh, and M. Aickin. "Using a Website to Build Community and Enhance Outcomes in a Group, Multi-Component Intervention Promoting Healthy Diet and Exercise in Adolescents." *Journal of Pediatric Psychology*, vol. 34, no. 5, 2009, pp. 539–550.
- Ewing, L.J., K. Long, A. Rotondi, C. Howe, L. Bill, and A.L. Marsland. "Brief Report: A Pilot Study of a Web-Based Resource for Families of Children with Cancer." *Journal of Pediatric Psychology*, vol. 34, no. 5, 2009, pp. 523–529.
- Eysenbach, G. "Medicine 2.0: Social Networking, Collaboration, Participation, Apomediation, and Openness." *Journal of Medical Internet Research*, vol. 10, no. 3, 2008, p. e22.
- File, Thom, and Camille Ryan. "Computer and Internet Use in the United States: 2013." *American Community Survey Reports*, 2014.

- Fisher, Jennifer, and Margaret Clayton. "Who Gives a Tweet: Assessing Patients' Interest in the Use of Social Media for Health Care." *Worldviews on Evidence-Based Nursing*, vol. 9, no. 2, 2012, pp. 100–108.
- Fox, Susannah. *Health Topics: 80% of Internet Users Look for Health Information Online*. Washington, DC: Pew Research Center, 2011a.
- Fox, Susannah. *The Social Life of Health Information 2011*. Washington, DC: Pew Research Center, 2011b.
- Fox, Susannah, and Maeve Duggan. *The Diagnosis Difference*. Washington, DC: Pew Research Center, 2013a.
- Fox, Susannah, and Maeve Duggan. "Health Online 2013." Washington, DC: Pew Research Center, 2013b.
- Funderburk, Frank, Diane Field, and Clarese Astrin. "Audience Segmentation to Support Consumer Engagement in Using Healthcare Benefits." Presented at American Association for Public Opinion Research Annual Conference, Hollywood, Florida, May 17, 2015.
- Gallant, Linda M., Cynthia Irizarry, Gloria Boone, and Gary L. Kreps. "Promoting Participatory Medicine with Social Media: New Media Applications on Hospital Websites That Enhance Health Education and e-Patients' Voices." *Journal of Participatory Medicine*, vol. 3, 2011, p. e49.
- Gibbons, Christopher M. "Use of Health Information Technology Among Racial and Ethnic Underserved Communities." *Perspectives in Health Information Management/AHIMA, American Health Information Management Association*, vol. 8, 2011, pp. 1f.
- Gibbons, C.M., Linda Fleisher, Rachel E. Slamon, Sarah Bass, Venk Kandadai, and J.R. Beck. "Exploring the Potential of Web 2.0 to Address Health Disparities." *Journal of Health Communication*, vol. 16, suppl. 1, 2011, pp. 77–89.
- Glover, McKinley, Omid Khalilzadeh, Garry Choy, Anand M. Prabhakar, Pari V. Pandharipande, and G. S. Gazelle. "Hospital Evaluations by Social Media: A Comparative Analysis of Facebook Ratings Among Performance Outliers." *Journal of General Internal Medicine*, 2015, pp. 1–7.
- Goldstein, Karen, Michael Briggs, Veronica Oleynik, Mac Cullen, Jewel Jones, Eileen Newman, and Andrew Narva. "Using Digital Media to Promote Kidney Disease Education." *Advances in Chronic Kidney Disease*, vol. 20, no. 4, 2013, pp. 364–369.
- Goodall, Deborah, Sasha Ban, Eileen Birks, and Andrew Clifton. "New Perspectives on the Contribution of Digital Technology and Social Media Use to Improve the Mental Wellbeing of Children and Young People: A State-of-the-Art Review." *Neonatal, Paediatric & Child Health Nursing*, vol. 16, no. 1, 2013, p. 19.

- Hall, Amanda K., Jay M. Bernhardt, Virginia Dodd, and Morgan W. Vollrath. "The Digital Health Divide: Evaluating Online Health Information Access and Use Among Older Adults." *Health Education and Behavior*, vol. 42, no. 2, 2015, p. 202-209.
- Hamm, M.P., J. Shulhan, G. Williams, A. Milne, S.D. Scott, and L. Hartling. "A Systematic Review of the Use and Effectiveness of Social Media in Child Health." *BMC Pediatrics*, vol. 14, 2014, p. 138.
- Hanauer, D.A., K. Zheng, D.C. Singer, A. Gebremariam, and M.M. Davis. "Parental Awareness and Use of Online Physician Rating Sites." *Pediatrics*, vol. 134, no. 4, 2014, pp. e966–e975.
- Hanson, C.L., J. West, R. Thackeray, M.D. Barnes, and J. Downey. "Understanding and Predicting Social Media Use Among Community Health Center Patients: A Cross-Sectional Survey." *Journal of Medical Internet Research*, vol. 16, no. 11, 2014, p. e270.
- Hoffman, A.S., R.J. Volk, A. Saarimaki, C. Stirling, L.C. Li, M. Härter, G.R. Kamath, and H. Llewellyn-Thomas. "Delivering Patient Decision Aids on the Internet: Definitions, Theories, Current Evidence, and Emerging Research Areas." *BMC Medical Informatics and Decision Making*, vol. 13, suppl. 2, 2013.
- Househ, M., E. Borycki, and A. Kushniruk. "Empowering Patients Through Social Media: The Benefits and Challenges." *Health Informatics Journal*, vol. 20, no. 1, 2014, pp. 50–58.
- Huesch, M.D., E. Currid-Halkett, and J N. Doctor. "Public Hospital Quality Report Awareness: Evidence from National and Californian Internet Searches and Social Media Mentions, 2012." *BMJ Open*, vol. 4, no. 3, 2014, art. no. e004417.
- Jacko, J.A., A. Sears, and S.J. Sorensen. "Framework for Usability: Healthcare Professionals and the Internet." *Ergonomics*, vol. 44, no. 11, 2001, pp. 989–1007.
- Klein, Sarah, Martha Hostetter, and Douglas McCarthy. *A Vision for Using Digital Health Technologies to Empower Consumers and Transform the US Health Care System*. The Commonwealth Fund, New York, 2014.
- Kontos, E., K.D. Blake, W.Y. Chou, and A. Prestin. "Predictors of eHealth Usage: Insights on the Digital Divide from the Health Information National Trends Survey 2012." *Journal of Medical Internet Research*, vol. 16, no. 7, 2014, p. e172.
- Korda, H., and Z. Itani. "Harnessing Social Media for Health Promotion and Behavior Change." *Health Promotion Practice*, vol. 14, no. 1, 2013, pp. 15–23.
- KRC Research, L&M Policy Research, and Frank Funderburk. "Quality Compare Environmental Scan." Washington, D.C., KRC Research, August 1, 2012. Updated by L&M Policy Research January 19, 2015 and Frank Funderburk April 15, 2015.
- Lefebvre, R.C., and A.S. Bornkessel. "Digital Social Networks and Health." *Circulation*, vol. 127, no. 17, 2013, pp. 1829–1836.

- Li, N., S. Orrange, R.L. Kravitz, and R.A. Bell. "Reasons for and Predictors of Patients' Online Health Information Seeking Following a Medical Appointment." *Family Practice*, vol. 31, no. 5, 2014, pp. 550–556.
- Liang, Bo, and Debra L. Scammon. "E-Word-of-Mouth on Health Social Networking Sites: An Opportunity for Tailored Health Communication." *Journal of Consumer Behaviour*, vol. 10, no. 6, 2011, pp. 322–331.
- Lober, William B., and Janine Flowers. "Consumer Empowerment in Health Care Amid the Internet and Social Media." *Seminars in Oncology Nursing*, vol. 27, no. 3, 2011, pp. 169–182.
- Merolli, Mark, Kathleen Gray, and Fernando Martin-Sanchez. "Health Outcomes and Related Effects of Using Social Media in Chronic Disease Management: A Literature Review and Analysis of Affordances." *Journal of Biomedical Informatics*, vol. 46, no. 6, 2013, pp. 957–969.
- Metzger, Miriam J., and Andrew J. Flanagin. "Using Web 2.0 Technologies to Enhance Evidence-Based Medical Information." *Journal of Health Communication*, vol. 16, no. suppl.1, 2011, pp. 45–58.
- Miller, Lisa M.S., and Robert A. Bell. "Online Health Information Seeking: The Influence of Age, Information Trustworthiness, and Search Challenges." *Journal of Aging and Health*, vol. 24, no. 3, 2012, pp. 525–541.
- Momin B, A. Neri, K. McCausland, J. Duke, H. Hansen, J. Kahende, L. Zhang, and S.L. Stewart. "Traditional and Innovative Promotional Strategies of Tobacco Cessation Services: A Review of the Literature." *Journal of Community Health*, vol. 39, no. 4, 2014, pp. 800–809.
- Moorhead, S.A., D.E. Hazlett, L. Harrison, J.K. Carroll, A. Irwin, and C. Hoving. "A New Dimension of Health Care: Systematic Review of the Uses, Benefits, and Limitations of Social Media for Health Communication." *Journal of Medical Internet Research*, vol. 15, no. 4, 2013, p. e85.
- Neiger, B.L., R. Thackeray, S.A. Van Wagenen, C.L. Hanson, J.H. West, M.D. Barnes, and M.C. Fagen. "Use of Social Media in Health Promotion: Purposes, Key Performance Indicators, and Evaluation Metrics." *Health Promotion Practice*, vol. 13, no. 2, 2012, pp. 159–164.
- Oh, Young S., and Youngmin Cho. "Examining the Relationships Between Resources and Online Health Information Seeking Among Patients with Chronic Diseases and Healthy People." *Social Work in Health Care*, vol. 54, no. 2, Feb 2015, pp. 83–100.
- O'Higgins, A., O.C. Murphy, A. Egan, L. Mullaney, S. Sheehan, and M.J. Turner. "The Use of Digital Media by Women Using the Maternity Services in a Developed Country." *Irish Medical Journal*, vol. 107, no. 10, 2014, pp. 313–315.

- O'Malley, A.J., S. Arbesman, D.M. Steiger, and J.H. Fowler. "Egocentric Social Network Structure, Health, and Prosocial Behaviors in a National Panel Study of Americans." *PLoS ONE*, vol. 7, no. 5, 2012, e36250.
- Percheski, Christine, and Eszter Hargittai. "Health Information-Seeking in the Digital Age." *Journal of American College Health*, vol. 59, no. 5, 2011, pp. 379–386.
- PwC Health Research Institute. "Social Media "Likes" Healthcare: From Marketing to Social Business." 2012. Available at <http://www.pwc.com/us/en/health-industries/publications/health-care-social-media.jhtml>.
- Ricciardi, L., F. Mostashari, J. Murphy, J.G. Daniel, and E.P. Siminerio. "A National Action Plan to Support Consumer Engagement Via e-Health." *Health Affairs (Project Hope)*, vol. 32, no. 2, 2013, pp. 376–384.
- Sarasohn-Kahn, Jane. *The Wisdom of Patients: Health Care Meets Online Social Media*. Report Submitted to the California Healthcare Foundation, 2008
- Shaw, Ryan J., and Constance M. Johnson. "Health Information Seeking and Social Media Use on the Internet Among People with Diabetes." *Online Journal of Public Health Informatics*, vol. 3, no. 1, 2011.
- Shigaki, C.L., K.L. Smarr, Y. Gong, K. Donovan-Hanson, C. Siva, R.A. Johnson, B. Ge, and D.R. Musser. "Social Interactions in an Online Self-Management Program for Rheumatoid Arthritis." *Chronic Illness*, vol. 4, no. 4, 2008, pp. 239–246.
- Smith, Aaron, and Dana Page. *U.S. Smartphone Use in 2015*. Washington, DC: Pew Research Center, April 2015. Available at http://www.pewinternet.org/files/2015/03/PI_Smartphones_0401151.pdf.
- Steele, Robert. "Social Media, Mobile Devices and Sensors: Categorizing New Techniques for Health Communication." *Sensing Technology (ICST), 2011 Fifth International Conference on Sensing Technology*. IEEE, 2011, p. 187-192.
- Thackeray, R., B.T. Crookston, and J.H. West. "Correlates of Health-Related Social Media Use Among Adults." *Journal of Medical Internet Research*, vol. 15, no. 1, 2013, p. e21.
- Trigg, L. "Patients' Opinions of Health Care Providers for Supporting Choice and Quality Improvement." *Journal of Health Services & Research Policy*, vol. 16, no. 2, 2011, pp. 102–107.
- Tu, Ha T. *Surprising Decline in Consumers Seeking Health Information*. Center for Studying Health System Change, 2011.
- Vega, Laurian C., Tom DeHart, and Enid Montague. "Trust Between Patients and Health Websites: A Review of the Literature and Derived Outcomes from Empirical Studies." *Health and Technology*, vol. 1, no. 2–4, 2011, pp. 71–80.

- Verhoef, L.M., T.H. Van de Belt, L.J. Engelen, L. Schoonhoven, and R.B. Kool. “Social Media and Rating Sites as Tools to Understanding Quality of Care: A Scoping Review.” *Journal of Medical Internet Research*, vol. 16, no. 2, 2014, p. e56.
- Viswanath, Kasisomayajula, and Leland K. Ackerson. “Race, Ethnicity, Language, Social Class, and Health Communication Inequalities: A Nationally-Representative Cross-Sectional Study.” *PLoS One*, vol. 6, no. 1, 2011, p. e14550.
- Ye, Yinjiao. “Correlates of Consumer Trust in Online Health Information: Findings from the Health Information National Trends Survey.” *Journal of Health Communication*, vol. 16, no. 1, 2010, pp. 34–49.

APPENDIX A

METHODS

This page has been left blank for double-sided copying.

The research team conducted a targeted literature review of digital health-related media for consumers between April and June 2015.

A. Search Strategy

In consultation with a Mathematica librarian, the team defined search terms for obtaining peer-reviewed and grey literature based on the research objectives. Table A.1 presents the search terms for the peer-reviewed and grey literature. Searches for peer-reviewed literature were implemented in Academic Search Premier, CINAHL with Full Text, MedLine, PsycINFO, Sage, SocIndex, and Scopus.

Table A.1. Search terms for peer-reviewed and grey literature

Domain	Search Terms
Peer-reviewed literature	
Population	caregiver*, chronic* n3 (ill* OR condition*), patient*, underserved n3 (group*OR population*), vulnerable n3 (group* OR population*)
Intervention	cell phone*, digital media, Internet, online n3 resource*, smartphone*, social network*, Social Media, web 2.0
Article Type	meta-anlys*s, systematic review*, literature reviews, surveys
Outcome	Quality n3 healthcare AND information AND (behavior*, consult*, decision*, diagnos*s, interaction*, inquir*, search*, seek*, strateg*)
Medical Subject Headings	Adult/ Caregivers/ Consumer Health Information/ Information Seeking Behavior/ Internet/ Patients/ Social Media/ Patient Empowerment/ Patient Engagement
Grey literature	
NA	Healthcare quality information “social media”; Healthcare quality information “digital media”; Healthcare quality information “smart phone”
NA	Engaging Patients health “social media”; Engaging Patients health “digital media”; Engaging Patients health “smart phone”
NA	Consumers health interaction “social media”; Consumers health interaction “digital media”; Consumers health interaction “smart phone”

Grey literature was obtained through searches via Google, Google Scholar, and Google custom search engines that include the URLs shown in Table A.2.⁴

Table A.2. URLs included in the Google custom search engines

Organization	URL
Government websites	
AHRQ	www.ahrq.gov
CDC	www.cdc.gov
NIH	www.nih.gov
NHLBI	www.nhlbi.nih.gov
HRSA	www.HRSA.gov
FDA	www.fda.gov

⁴ After implementing the search terms in the Google custom search engine, we found that search terms relating to “digital media” yielded articles that were not relevant to our research questions. Based on this finding, we only implemented the “social media” and “smartphone” search strings in Google Scholar.

Organization	URL
Consumer health websites	
The Cleveland Clinic Health Information Center	http://my.clevelandclinic.org/health/default.aspx
FamilyDoctor.org	http://familydoctor.org/familydoctor/en.html
Hardin MD	http://hardinmd.lib.uiowa.edu/
Health Finder	www.healthfinder.gov/
Mayo Clinic	www.mayoclinic.com/
Net Wellness	www.netwellness.org
eMedicine Health	www.emedicinehealth.com/
WebMD	www.webMD.com
Consumer reports	www.consumerreports.org/
Foundations and advocacy organizations	
Pew Research Center	www.pewresearch.org
National Quality Forum	www.qualityforum.org
Leapfrog Group	www.leapfroggroup.org
Robert Wood Johnson Foundation	www.rwjf.org
Kaiser Family Foundation	www.kff.org
Kellogg Foundation	www.wkcf.org
California HealthCare Foundation	www.chcf.org
National Partnership for Women and Families	www.nationalpartnership.org
Consumer Health Foundation	www.consumerhealthfdn.org
JKTG Foundation	http://jktgfoundation.org
Families USA	www.familiesusa.org
Heritage Foundation	www.heritage.org
Media Policy Center	http://mediapolicycenter.org/
Bill and Melinda Gates Foundation	www.gatesfoundation.org
Gordon and Betty Moore Foundation	www.moore.org
Susan Thompson Buffett Foundation	http://buffettscholarships.org
Helmsley Charitable Trust	http://helmsleytrust.org
California Endowment	www.calendow.org
Bloomberg Family Foundation	www.bloomberg.org
Community Foundation for Greater Atlanta	http://cfgreateratlanta.org
California Wellness Foundation	http://calwellness.org/
Klingenstein Fund	http://klingsfund.org
David and Lucile Packard Foundation	www.packard.org
Annenberg Foundation	http://annenbergfoundation.org
Ford Foundation	http://fordfoundation.org
Lincy Institute	www.unlv.edu/lincyinstitute
Duke Endowment	http://dukeendowment.org
Kresge Foundation	http://kresge.org
California Physicians Services Fund	www.blueshieldcafoundation.org
Rockefeller Foundation	www.rockefellerfoundation.org
Arnold Foundation	www.arnoldfoundation.org
Research firms	
American Institutes for Research	www.air.org
Urban Institute	www.urban.org
Commonwealth Fund	www.commonwealthfund.org
University institutes	
Center for Health Communication (University of Michigan)	http://chcr.umich.edu
Harvard Center for Health Communication	www.hsph.harvard.edu/chc/
University of Pennsylvania Health Communications	www.annenbergpublicpolicycenter.org/health-communication
Industry	
Deloitte	www.deloitte.com
Accenture	www.accenture.com
McKinsey	www.mckinsey.com
Merck	www.merck.com
Pricewaterhouse Coopers	www.pwc.com

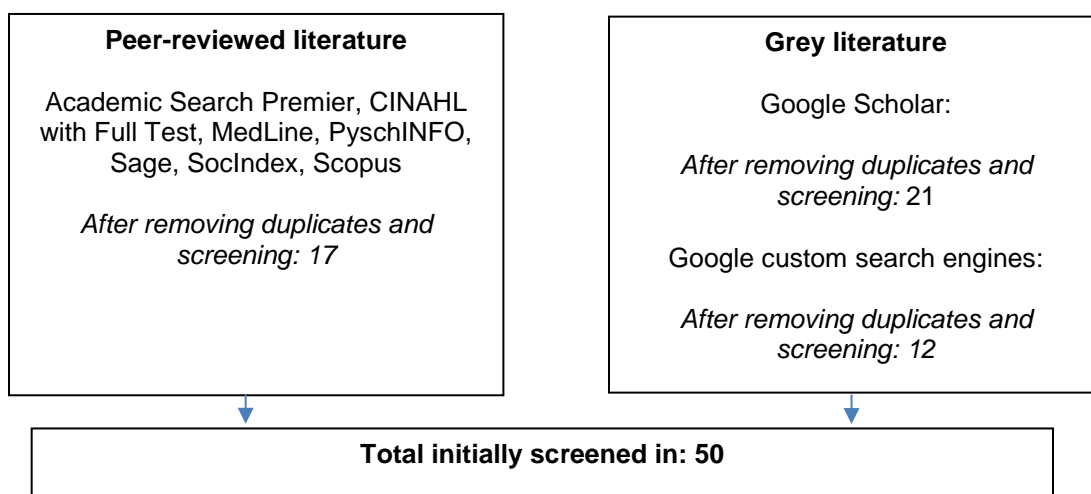
B. Inclusion and Exclusion Criteria for Reviewing Abstracts

Table A.3 presents the inclusion and exclusion criteria for reviewing abstracts. In total, three reviewers screened abstracts returned from the searches for relevance. Two reviewers screened peer-reviewed abstracts and returned grey literature searches for relevance, and two reviewers screened the surveys returned through peer-reviewed searches for relevance. In general, the reviewers prioritized reviews and surveys that profile users of digital health media above case studies, issue briefs, environmental scans, and theoretical pieces. Because the target number for included pieces was limited to 50, the reviewers prioritized pieces that address online health information seeking or Internet searching and social media. They screened out pieces that exclusively address smartphone applications or telehealth or remote monitoring, which they considered less relevant to informing dissemination strategies for improving awareness and use of the Medicare Compare Tools. Figure A.1 presents the number of sources from the peer-reviewed and grey literature searches and final number included for extraction.

Table A.3. Inclusion and exclusion criteria for abstract review

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> English articles only (domestic and international) Date range: 2011–2015 Reviews and original survey research 	<ul style="list-style-type: none"> Articles not relevant to digital media Articles not relevant to health or health care Commentary, op-ed, other opinion Advertising and marketing articles that do not have generalizable findings.

Figure A.1. Results returned and screened in by search type



Subsequently, three articles initially screened in for extraction were deemed not relevant and were replaced by articles that initially received lower priority or were identified through the references of pieces included in the literature review. Additional references were identified through reference lists in the included literature and hand searching, for a total of 59 included pieces.

C. Process for Extraction

Three extractors read and extracted articles using a template that captured major domains of interest, such as ways consumers are using digital health media, differences in use across subgroups, and benefits and challenges of digital health media. Extractors piloted the tool on five articles and met as a group to discuss the process after each article. After they achieved consistency in extraction through the pilot phase, they independently coded the remaining articles. One team member reviewed a subset of articles for quality assurance.

APPENDIX B

DETAILED TABLES

This page has been left blank for double-sided copying.

Table B.1. Digital media and profile of users based on included profiling surveys

Media	Profile of users
Internet or online information health searching (which may include seeking information from social media)	<ul style="list-style-type: none"> • A cross-sectional survey of people with diabetes (N = 57) found no differences between groups based on race/ethnicity in terms of reported online health information-seeking behavior (OHIS) (Shaw and Johnson 2011). • An analysis of the 2012 U.S. Health Tracking Survey (Oh et al. 2015) found that people with chronic diseases are more likely to seek online health information. The following other characteristics were identified as being associated with increased likelihood of engaging in OHIS: (1) having a chronic condition, (2) using a smartphone, (3) engaging in health tracking, (4) higher household income, and (5) higher educational attainment status (Oh et al. 2014). The survey also found that people with lower self-rated health status are more likely to engage in OHIS; however, the authors note that previous literature has found mixed effects associated with self-rated health status. • A survey of 225 Florida residents aged 50 or older found significant differences between users and nonusers of online health information by age, where access to the Internet (through a variety of forms) was a significant barrier among nonusers. However, access to the Internet among older adults has grown since 2012. Those with lower levels of education, those with lower computer self-efficacy scores, and those 65 years or older were more likely to be nonusers (Hall et al. 2015). • A survey of older primary care patients (N = 50) found that the majority of the participants were regular Internet users, and over half used the Internet to search for health information (Crabb et al. 2012). • A survey of university students (N = 1,060) found that women, those who are non-native English speakers, and students with greater web skill are more likely to use the Internet for health information (Percheski et al. 2011). • An analysis of the National Cancer Institute's 2012 Health Information National Trends Survey (N = 3,959) found significant differences in using Internet for health information due to socioeconomic status; for example, patients with lower educational attainment were significantly less likely to go online to look for a health care provider, track personal health, use Internet/email to communicate with a doctor, or use a health application on mobile device (Kontos et al. 2014). Like other research, this survey found that being male and older was also associated with decreased likelihood of use of online health information. • In an analysis of a nationally representative sample of 3,796 adults from the 2007 National Cancer Institute's Health Information National Trends Survey, Miller and Bell (2012) found that older age was associated with less likelihood of use of Internet for health. • Pew Research Center conducted a detailed analysis of the use of Internet and other digital media among the general U.S. population and individuals with chronic conditions based on the Pew Internet Health Tracking Survey in 2012 of 3,014 English- and Spanish-speaking U.S. adults (Fox and Duggan 2013a; Fox and Duggan 2013b). Example findings include: living with chronic condition is independently associated with not having access to the Internet; however, once people have access to the Internet, those with chronic conditions are more likely than other groups to have looked online for health information. Only 11 percent of individuals with chronic conditions and 11 percent of adults without chronic conditions have looked online for hospital rankings or reviews. • Pew Research Center's Internet and American Life Project survey in 2010 of 3,001 U.S. adults focused on describing the use of digital media for health-related purposes, the characteristics of users and nonusers of online health information, and how use varies across groups (Fox 2011a and Fox 2011b). Based on this survey, Pew reported that about 15 percent of Internet users have consulted online rankings or reviews of doctors, hospitals, or other providers, and that caregivers and individuals with chronic conditions are more likely than the general population to engage in these activities. Other findings include: 59 percent of all U.S. adults go online for health

TABLE B.1 (continued)

Media	Profile of users
Social media and networking (for example, online health communities, health blogging)	<p>information, and use of online health information is higher among women, whites, younger adults, and those with higher levels of education and income than among other groups.</p> <ul style="list-style-type: none"> • A survey of patients in an outpatient setting (N = 111) on social media use found that the most popular modalities included email, text messaging, and Facebook. The authors also found non-significant differences in use of social media between genders but more differences among age groups; in particular, younger participants were likely to use social media (Fisher and Clayton 2012). • A survey of 444 federally qualified health center (FQHC) patients found that text messaging, Facebook, email, phone applications, and YouTube were the most common forms of social media. The authors also found that Hispanics were more likely than whites to indicate an intention to use social media for health-related purposes and use of 7 of 10 social media sites was higher among Hispanics than among whites (Hanson et al. 2014). • An analysis of the 2010 Pew Research Center Health Tracking Survey found that, although social media technologies allow people to participate in creating online information, only 15 percent of people reported generating content, while 30 to 40 percent of respondents reported using social networking sites for health-related activities and using online rankings or reviews of doctors, hospitals, and medical treatments. Use of social networking sites for health was more common among females and younger people. People with chronic disease were twice as likely to consult online rankings or reviews, and people with higher income were more likely to consult online rankings or reviews (Thackeray et al. 2013).

Table B.2. Metrics used to measure effectiveness of digital media for health-related purposes

Author, year	Background/research questions	Type of metrics	Primary outcome metrics	Mode	Self-reported
Ewing, 2009	To develop a web-based resource for families of children newly diagnosed with cancer.	Website usage	<ul style="list-style-type: none"> Usage statistics Website evaluation instrument 	Website tracking	No
Huesch, 2014	To understand how much consumers search for such information online on one Internet search engine, whether they mention such information in social media, and how positively they view this information.	Mentions and attitudes associated with mentions	<ul style="list-style-type: none"> Google's in-house search and Ad-word analytics tools to understand the volume and types of hospital quality and quality report searches occurring through Google's market-leading Internet search engine Use of a proprietary social media monitoring tool to monitor mentions in social and traditional media and assess users' attitude or 'sentiment' 	Google's Ad-word analytics and marketing tools	No
Backinger, 2010	To conduct a content analysis of smoking cessation videos on YouTube to look for quit smoking messaging using evidence-based practices.	Content analysis	<ul style="list-style-type: none"> Number of video views 	YouTube Metrics	No
Crabb, 2011	To gauge the extent to which older primary care patients are receptive to using web-based health resources, and to explore how health-related Internet use may be related to patient characteristics such as age, income, and health and mental health status.	Internet use profile	<ul style="list-style-type: none"> Internet use for any purpose, Internet use to obtain health or mental health-related information, Interest in using Internet-based interventions to address various health-related needs 	Survey	Yes
Thackeray, 2013	To establish the frequency of various types of online health-seeking behaviors, and to identify correlates of two health-related online activities, social networking sites for health-related activities and consulting online user-generated content for answers about health care providers, health facilities, or medical treatment.	Use of digital media for health-related activities	<ul style="list-style-type: none"> Use of social networking sites for health-related activities included (5 questions): (1) get health information, (2) start or join a health-related group, (3) follow your friend's personal health experiences or health updates, (4) raise money or draw attention to a health-related issue or cause, and (5) remember or memorialize others who suffered from a certain health condition. Consultation of online rankings or reviews (3 questions): focused on consulting online rankings or reviews of (1) doctors or 	Survey	Yes

TABLE B.2 (continued)

Author, year	Background/research questions	Type of metrics	Primary outcome metrics	Mode	Self-reported
			<p>other providers, (2) hospitals or other medical facilities, and (3) particular drugs or medical treatments.</p> <ul style="list-style-type: none"> • Posted a review online (3 questions): focused on whether respondents had posted a review online of (1) a doctor, (2) a hospital, or (3) their experiences with a particular drug or medical treatment. • Posted a comment or question on social media (5 questions): asked if respondents had posted comments, questions, or information about health or medical issues on various social media. These included (1) an online discussion, a listserv, or other online group forum, (2) a blog, (3) a social networking site, such as Facebook, MySpace, or LinkedIn, (4) Twitter or another status update site, and (5) a website of any kind, such as a health site or news site that allows comments and discussion. 		
DeBar et al., 2009	To collect information about website visits as an overall measure of use and page-specific hits to obtain information about content-specific use.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • Website visits • Web page clicks 	Website tracking and survey	Both
Percheski, 2011	To understand sources of health information among first-year university students and whether the predictors of information-seeking varied by information source.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • How often, in the past year, respondents had consulted the following sources for health information: (1) daily newspaper (paper version); (2) general-interest magazine (paper version); (3) special health or medical newsletter or magazine (paper version); (4) a doctor, nurse, or other medical professional; (5) friends; (6) family; (7) radio or television programs; (8) health website; and (9) other website. 	Survey	Yes
Shaw & Johnson, 2011	To examine the online health-seeking behaviors of people with a chronic illness.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • Types of health information sought online. • Frequency of use (social networking, YouTube, Twitter) 	Survey	Yes

TABLE B.2 (continued)

Author, year	Background/research questions	Type of metrics	Primary outcome metrics	Mode	Self-reported
			<ul style="list-style-type: none"> • Willingness to use Digital Media to discuss health info (social networking, YouTube, Twitter) 		
Baptist, 2011	To quantify the use of these technologies (social media) in adolescent and young adult patients with asthma and to explore adolescents' and young adults' interest in using these technologies to receive asthma information or to communicate with their physician.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • Self-reported interest in receiving asthma information through each of the technologies • Level of interest in asking doctor or health care provider questions using each of these technologies (high, some, low, or no interest) 	Survey	Yes
Goldstein, 2013	To build awareness and engagement online among key target audiences, strengthen National Kidney Disease Education Program reach and impact of using social media platforms, and complement other outreach efforts.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • Number of website visits • Duration • Exit rate • Survey satisfaction scores that pop up while on the website • YouTube video views • Facebook likes 	Tracking and survey	Both
Jacko, 2010; Tullis, 2008	To explore the effectiveness of the delivery of patient decision aids on the Internet.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • Number of clicks • Frequency of errors • Page-loading speeds • Ease of learning • Efficiency • Error frequency • Memorability • Satisfaction 	Tracking	No
Li, 2014	To examine predictors of patients' post-visit online health information seeking, reasons for seeking information, and information sources used.	Use of digital media for health-related activities	<ul style="list-style-type: none"> • eHealth literacy • Patient-centered communication • Post-visit changes in worry • Online health information seeking • Reasons for seeking information 	Survey	Yes
Neiger, 2012	To outline purposes for social media in health promotion, identify potential key performance indicators	Use of digital media for health-related activities	<ul style="list-style-type: none"> • To assess the activity level of blogs, frequency of posts, and comments 	Tracking and Google Analytics	No

TABLE B.2 (continued)

Author, year	Background/research questions	Type of metrics	Primary outcome metrics	Mode	Self-reported
	associated with these purposes, and propose evaluation metrics for social media related to the key performance indicators.		<ul style="list-style-type: none"> To assess microblogging activities such as Twitter: frequency of tweets and retweets, and so forth Visitors, views, time on page, etc. as measured using Google Analytics or similar software 		
Visawanath, 2011	To use a nationally representative sample to investigate the relationships between race, ethnicity, language, and social class and the use of health communications including cancer information seeking, attention to health information in the mass media, and trust of cancer information from these media.	Use of digital media for health-related activities	<ul style="list-style-type: none"> Cancer information seeking ("Have you ever looked for information about cancer from any source?") Attention to health information sources ("How much attention do you pay to information about health or medical topics [from this source]?") Trust in health sources ("How much would you trust the information about cancer from [this source]?") 	Survey	No
Shigaki, 2008	To evaluate social interactions among individuals with rheumatoid arthritis participating in an empirically based, cognitive-behavioral, self-management, and peer-support program, delivered in an online format.	Engagement/participation	<ul style="list-style-type: none"> Number of times each unique online feature was accessed Average length of time spent engaging with the platform 	Online controlled study	Yes
Kontos, 2013	To examine eHealth use by sociodemographic factors, such as race/ethnicity, socioeconomic status, age, and sex.	eHealth use	<ul style="list-style-type: none"> Predictor of eHealth usage 	Survey	Yes

www.mathematica-mpr.com

Improving public well-being by conducting high quality,
objective research and data collection

PRINCETON, NJ ■ ANN ARBOR, MI ■ CAMBRIDGE, MA ■ CHICAGO, IL ■ OAKLAND, CA ■ WASHINGTON, DC

MATHEMATICA
Policy Research

Mathematica® is a registered trademark
of Mathematica Policy Research, Inc.

Memorandum

To: Frank Funderburk

From: L&M Policy Research / Mathematica Policy Research

Date: March 31, 2015

Re: Engaging Consumers In Quality Information:
Key Quotations from Focus Group Research on the Carefinder.gov Prototype

OVERVIEW

The research, conducted by L&M Policy Research and Mathematica Policy Research, was collected from six consumer focus groups that explored CareFinder.gov, a website prototype designed to provide an updated presentation of the quality information currently reported on the *Compare* Tools. The research addressed four elements of the Carefinder.gov prototype: the homepage, the Personal Stories feature, the Care Guide feature, and the Learn feature (See Figure 1). The goal of the research was to explore how well the CareFinder.gov prototype captures consumer attention and motivates the informed use of comparative quality information among the general public and each CMS audience segment.

This document lists key quotations from participants that illustrate some of the research study's key findings about the prototype's features.

HOMEPAGE

Responses to the Carefinder.gov homepage were generally positive. Some quickly grasped the function and purpose of the website, but others felt they would have had to click through the website to fully understand the website's purpose.

- **Immediate reactions to the homepage were generally positive.**
 - It has a “*very minimal design...it’s pretty clean and simple*” (Informed & Healthy participant, Atlanta)

- *“It’s a nice clean look and looks like it’s very simple to navigate”* (Mature & Secure participant, Atlanta)
- **Some participants immediately grasped the purpose of the website...**
 - After viewing the prototype homepage, one Passive & Skeptical participant in Chicago had spent months creating a spreadsheet comparing 12 nursing homes for her parents: *“I did my own spreadsheet, I had all 12 of them with all the different scenarios. It was a whole summer project. But if you had something like this...it would have been so much easier.”*
 - A Passive & Skeptical participant in Atlanta grasped the difference between the “Find,” “Care Guide” and “Learn” features: *“It looks like one [the Find section] is for services – who’s going to do the services. The second one [The Care Guide] is if you don’t know really what you need to look for and need to put in what you’re dealing with, so I’d think questions about what symptoms [you’re] dealing with, how old you are..., and the other [the Learn Section] is so you can evaluate what you’re looking at on the far left”*
- **...while others did not immediately understand the website’s purpose.**
 - One participant suggested providing more information in the website’s tagline at the top, which reads “helping you make good decisions about healthcare.” After reading the tagline and viewing the homepage, the participant said: *“What kind of decisions...put something on top that explains a little more what the website’s about because I don’t know what kind of decisions.”* (Passive & Skeptical participant, Atlanta).
 - Another participant felt she would need to click through the site to really understand its purpose: *“...it’s just that you have to click on [various elements of the website] to figure out what it’s about, what you’re looking for.”* (Passive & Skeptical participant, Atlanta)

PERSONAL STORIES

The personal stories on the original prototype provided positively framed anecdotes showing how individuals used quality information on a website to help them make decisions about choosing a physician, hospital or other type of provider. The L&M/Mathematica team added one negatively framed story showing an individual who failed to use quality information in making a health decision.

Almost all participants felt that reading the stories (especially positively framed stories) provided a helpful overview of the purpose of the site and helped them envision how they might use the site in their own situations. However, some said they would not have clicked on them from the homepage.

- **After participants read the personal stories, most felt the stories helped them understand the purpose of CareFinger.gov and understand better how to use it.**
 - *“I would know what to look for... since she tells you some of the things to look for....I also like that she mentioned comparing infection rates, and it would make me want to look further into the site.”* (Healthy & Young participant, Chicago)
 - After reading one of the personal stories about a woman who needed care around her hip surgery, an Informed & Healthy participant in Chicago felt he understood the purpose of the prototype, and said: *“Three years ago my orthopedic surgeon recommended knee surgery...I searched the internet and I had to go through an overwhelming amount of info. I could have used this. It would have been very helpful.”*
- **However, some participants said they would not have clicked on the stories to read them. Some questioned whether the stories were real, and a few perceived the stories as a form of marketing—which made participants less interested in them.**
 - *“I would pay more attention to it if it is an actual quote from that person. It would be nice to see an actual person making that statement instead of just the company saying it”* (Passive & Skeptical participant, Chicago)
 - *“I would assume the stories are made up anyway, so I wouldn’t click...they’re marketing”* (Passive & Skeptical participant, Atlanta)

CARE GUIDE

The CareFinder.gov prototype’s Care Guide presents a four-step questionnaire asking for a consumer’s current health situation (e.g. post-acute care at home or in a facility). Based on a consumer’s answers, the Care Guide displays a range of providers that would be appropriate for the situation. This was the feature that participants received most favorably.

- **Many felt the four-step questionnaire was easy to use and the results were useful.**
 - *“The Care Guide for me was pretty easy...[It gives you] simple, to-the-point questions about what you’re looking for... and then it brings you all the results. To me it wasn’t complicated”* (Passive & Skeptical participant, Atlanta)
 - *“I would love to be able to use it”* (a Sick, Active & Worried participant in Atlanta)
- **Others mentioned the range of provider options the Care Guide displayed.**
 - *“It gives you a lot of options to choose from...It’s pretty easy and simple!”* (Passive & Skeptical participant, Chicago).
 - *“I like this. It’s pretty comprehensive. It might come up with something that I say ‘Gee I hadn’t thought of that’”* (Vulnerable & Unengaged participant, Atlanta)

- **Some were comfortable with the amount of information requested in the four-step questionnaire.**
 - *“It’s not overly invasive...as general as [the questionnaire] is, it’s enough to still make you want to move forward without giving up privacy or feeling like someone’s spying on you.”* (Passive & Skeptical participant, Atlanta)
- **...but some participants raised potential privacy concerns if the questionnaire required anything “too personal”—like names or email addresses—before providing recommended provider choices.**
 - *“As soon as I would have to give anything personal, I would be off of it”* (Passive & Skeptical participant, Atlanta).

LEARN

The original Carefinder.gov prototype did not have a functioning “Learn” section. The homepage simply displayed the “i” icon and the word “Learn.” For this round of research, the L&M/Mathematica team created a version of the prototype that added a list of quality care topics modeled after the National Quality Strategy priorities: Effective Care, Safe Care, Coordinated Care, Patient Experience, and Value & Efficiency.

- **Some participants were interested in clicking the “Learn” feature, volunteering that they would be willing to click on it to find background information on the website.**
- **However, some participants were sometimes confused by the quality care categories listed underneath the Learn icon**
 - *“I don’t know what they [the categories] mean, so I would just click on Learn”* (APassive & Skeptical participant, Atlanta)
 - *“It seems like it is made for doctors more than patients. The wording is clinical”* (Sick, Active & Worried participant, Chicago)
- **Other participants had trouble distinguishing between the categories without definitions provided next to them.**
 - *I don’t understand...the Learn part I probably would never click on... what’s the difference between Effective Care, Safe Care, Coordination?”* (Healthy & Young participant, Atlanta)
 - *“I feel like a lot of them fall under effective care. All of these tie into how effective the care is.”* (Healthy & Informed participant, Atlanta)

ABOUT THIS RESEARCH

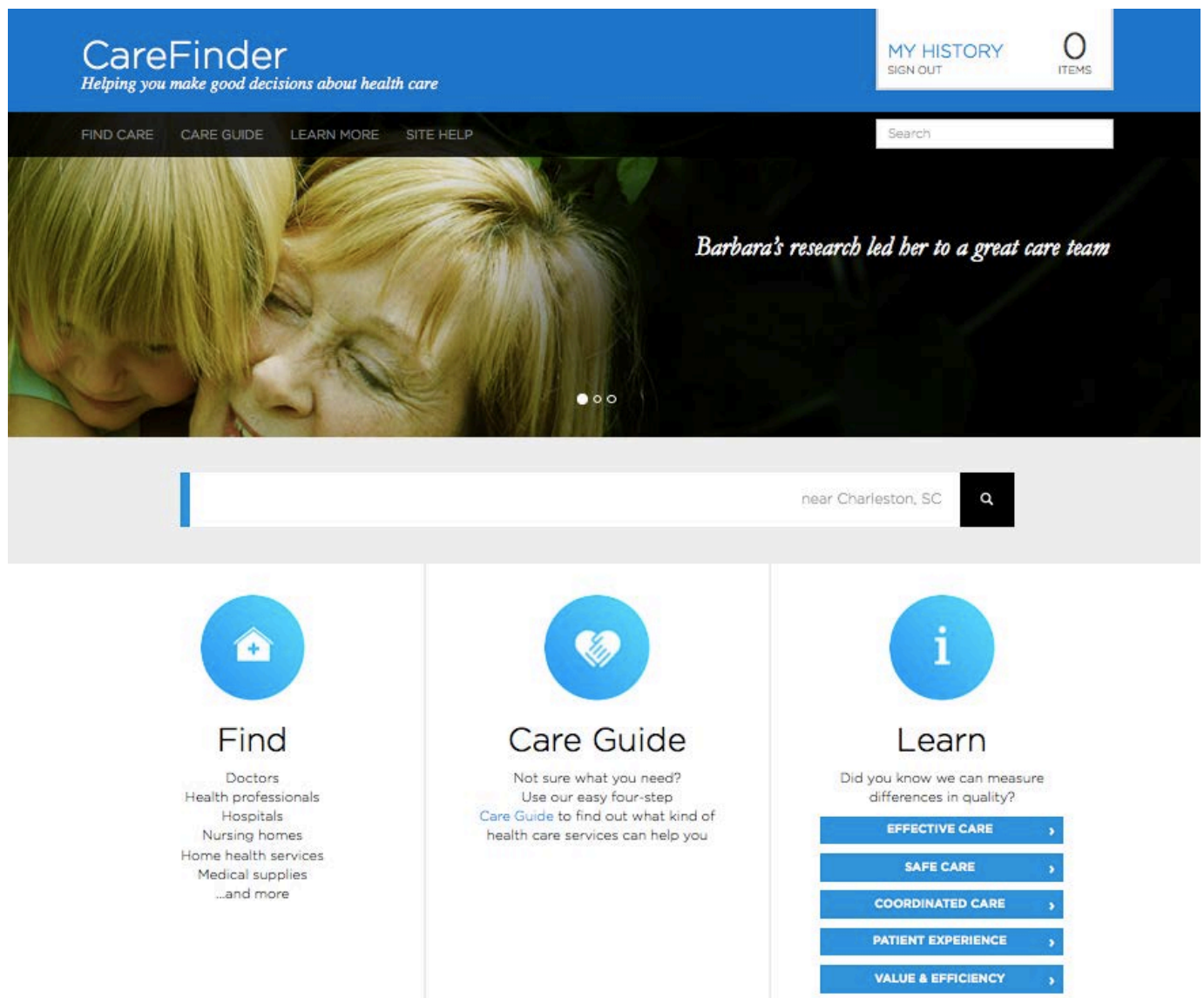
This report, prepared by L&M Policy Research and Mathematica Policy Research, summarizes findings from six consumer focus groups that explored CareFinder.gov, a website prototype designed to provide an updated presentation of the quality information currently reported on the *Compare Tools*. The goal was to explore how well the CareFinder.gov prototype captures consumer attention and motivates the informed use of comparative quality information.

This research is based on a limited sample size and data collected through moderator-led focus group discussions and does not reflect how individual users would navigate through the CareFinder website, and in particular, how they would use the Care Guide tool. Additionally, the design of the prototype website used for this research influenced the participants' perception of the different features. All website features were designed as a pathways to quality measures; however, for this study only the Care Guide pathway provided this information. Furthermore, participants' perception and understanding of the purpose of the CareFinder prototype website may have been influenced by the opening discussion regarding the Facebook friend post and advertisement, which showed that they could use the CareFinder website to find information on hospital performance with regard to reducing healthcare-associated infections, to explore social media use.

This research is part of a broader set of studies intended to develop a Landing Page, or initial website, and other potential modes or media that can be used to engage consumer interest in quality information, orient consumers to quality concepts and quality measurement, and encourage use of quality information collected by Medicare.

Table 1. Participants

	Atlanta			Chicago			Total Participants by Audience Segment
	Mixed Group	Passive & Skeptical Group	Vulnerable & Unengaged Group	Mixed Group	Passive & Skeptical Group	Vulnerable & Unengaged Group	
Vulnerable & Unengaged	—	—	2	—	—	2	4
Passive & Skeptical	—	5	1	—	4	—	10
Sick, Active & Worried	1	—	1	1	—	2	5
Informed & Healthy	2	—	—	3	—	—	5
Healthy & Young	1	—	—	2	—	—	3
Mature & Secure	2	—	—	1	—	—	3
Total Participants by Focus Group	6	5	4	7	4	4	30

Figure 1. CareFinder.gov Homepage



Medicare Quality Tools

Contract HHSM-500-2010-00015I, T.O. HHSM-500-T0003

Landing Page Message Development Survey – Final Report

January 6, 2014

Prepared for:

Frank Funderburk
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244-1850

Prepared by:

Myra Tanamor, MPP
L&M Policy Research, LLC
1743 Connecticut Ave NW
Washington, DC 20009
Telephone: 202.230.9029
Fax: 202.688.2936
MTanamor@LMpolicyresearch.com

www.LMpolicyresearch.com

1743 Connecticut Avenue NW Suite 200
Washington DC 20009

• tel 202.506.6183
• fax 202.688.2936

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	3
2. BACKGROUND	7
3. METHODS	7
4. RESULTS	11
4.1. Frame Preferences.....	11
4.2. Topic Preferences	17
4.3. Message Preferences	19
5. CONCLUSIONS	33
6. APPENDICES	35
6.1. Message Rankings: Information-Seeking	35
6.2. Message Rankings: Personal-Usefulness.....	36
6.3. Survey Instrument.....	37

EXECUTIVE SUMMARY

The Centers for Medicare & Medicaid Services (CMS) Medicare.gov website hosts online tools that allow consumers to compare health care service providers based on publicly-reported quality measures, including *Hospital Compare*, *Nursing Home Compare*, *Home Health Compare*, *Dialysis Facility Compare*, and *Physician Compare*. Under contract to CMS, L&M Policy Research (L&M) and its subcontractor, Mathematica Policy Research (Mathematica), are supporting CMS's efforts through research to inform the design of effective quality tools that engage consumers in using the quality information offered through Medicare's *Compare* web tools.

As part of this research, the L&M and Mathematica team designed a general population survey to measure consumer preferences of messages that might appear on a landing page, or "homepage," for the *Compare* websites. The results of this survey have a few clear implications for crafting messages that can either draw consumers to the *Compare* tools or engage users already on the Medicare.gov website.

- **Respondents showed a clear preference for the Risk Information Frame messages and a distinct disinterest in the Progress Frame messages (Figure A).**
 - Older respondents had an especially strong preference for the Risk Information Frame.
 - The same order of frame preference (Risk Information, Positive, Empowerment, Progress) that was observed for the combined index score was also present for the information-seeking and personal usefulness subsets of the survey sample.
- **Three of the four Risk Information Frame messages – and one of the HAI messages – communicated a more specific need to avoid potential dangers in the healthcare system. These “Warning Frame” messages received especially high scores from survey respondents.**
 - The three Risk Information Frame messages and the HAI/Empowerment message were recoded as “Warning Frame” messages and compared to the other frames. These four “Warning Frame” messages received a higher overall score than the Risk Information Frame messages.
 - Higher scores for Warning Frame messages and lower scores for non-Warning Frame messages are consistent with the literature on negativity bias, which has established that negative or threatening information is consistently more likely to draw attention compared to neutral or positive information.
 - Older respondents had an especially strong preference for the Warning Frame.
- **The HAI topic messages generated the highest overall index score (Figure A). HAI messages were rated highest for the information-seeking outcome and both HAI messages and Post-Acute Care messages were rated highest for personal usefulness (Figure B).**
- **Higher familiarity with a given topic did not appear to be a predictor of higher Index Scores for messages with that topic.**

- Correlations were calculated between the 4 index score topic means (means of the 4 frame scores for each topic) and the 4 corresponding topic familiarity ratings. The correlations calculated around care coordination and post acute care were not significant. The correlations for HAI and OS were statistically significant, but the magnitude of each correlation was very small.
- **Individual message index scores were consistent with rank ordering of messages**
 - Correlations between all messages' index scores and the rank ordering of the messages (performed on a split sample) were all in the right direction, and 13 out of 16 were significant.
- **The order of frame preferences did not differ substantially by audience segment.**
 - Order of frame preference was the same across all of the segments, albeit more pronounced for the “Sick, Active and Worried” and “Mature and Secure” segments, and less pronounced for the Vulnerable and Unengaged segments
- **The combined index scores for topics did not differ substantially by audience segment.**
 - All six audience segments rated the HAI topic higher than 100, but respondents in the “Sick, Active and Worried” and “Mature and Secure” segments were more likely to rate HAI higher.

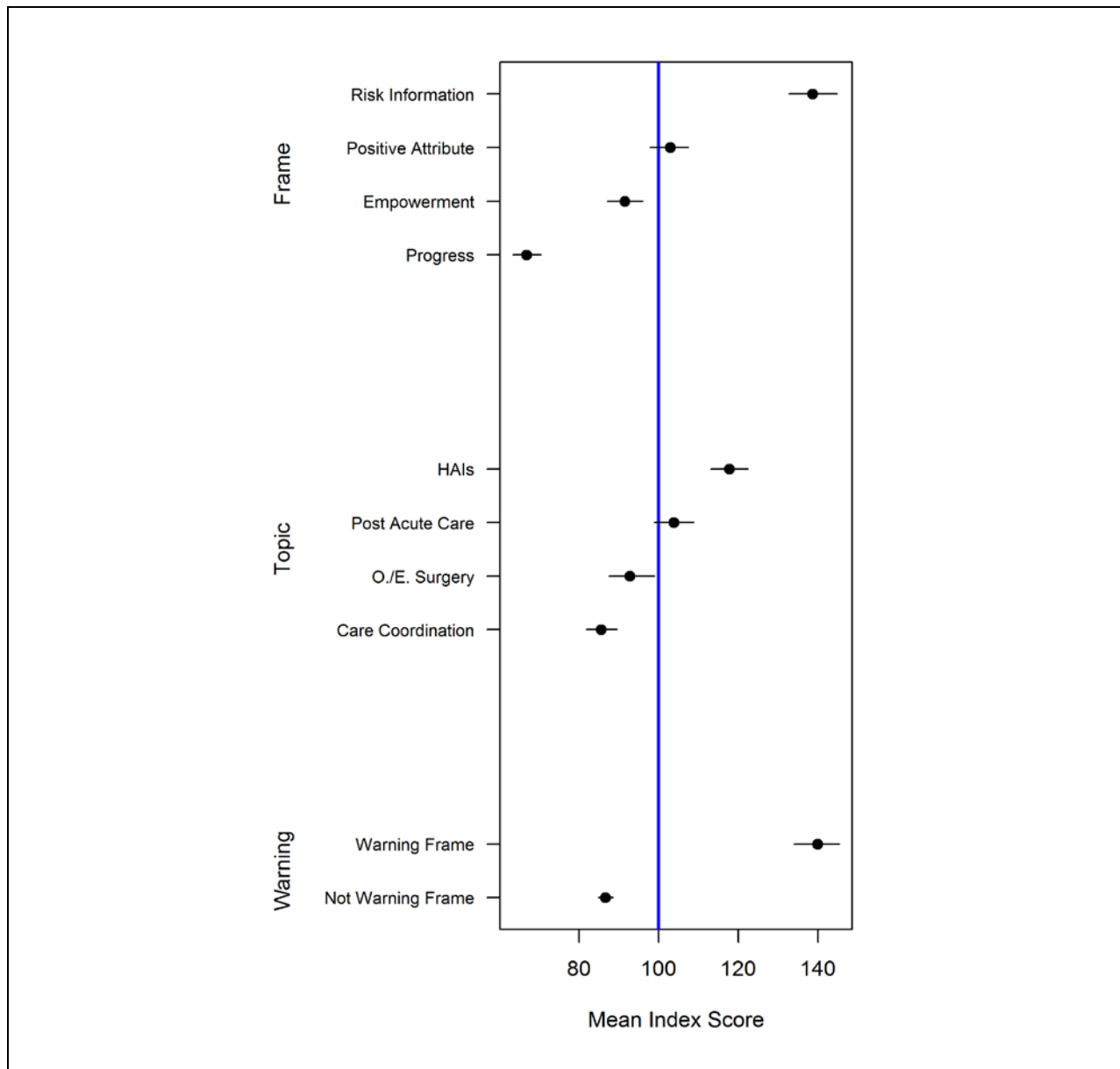
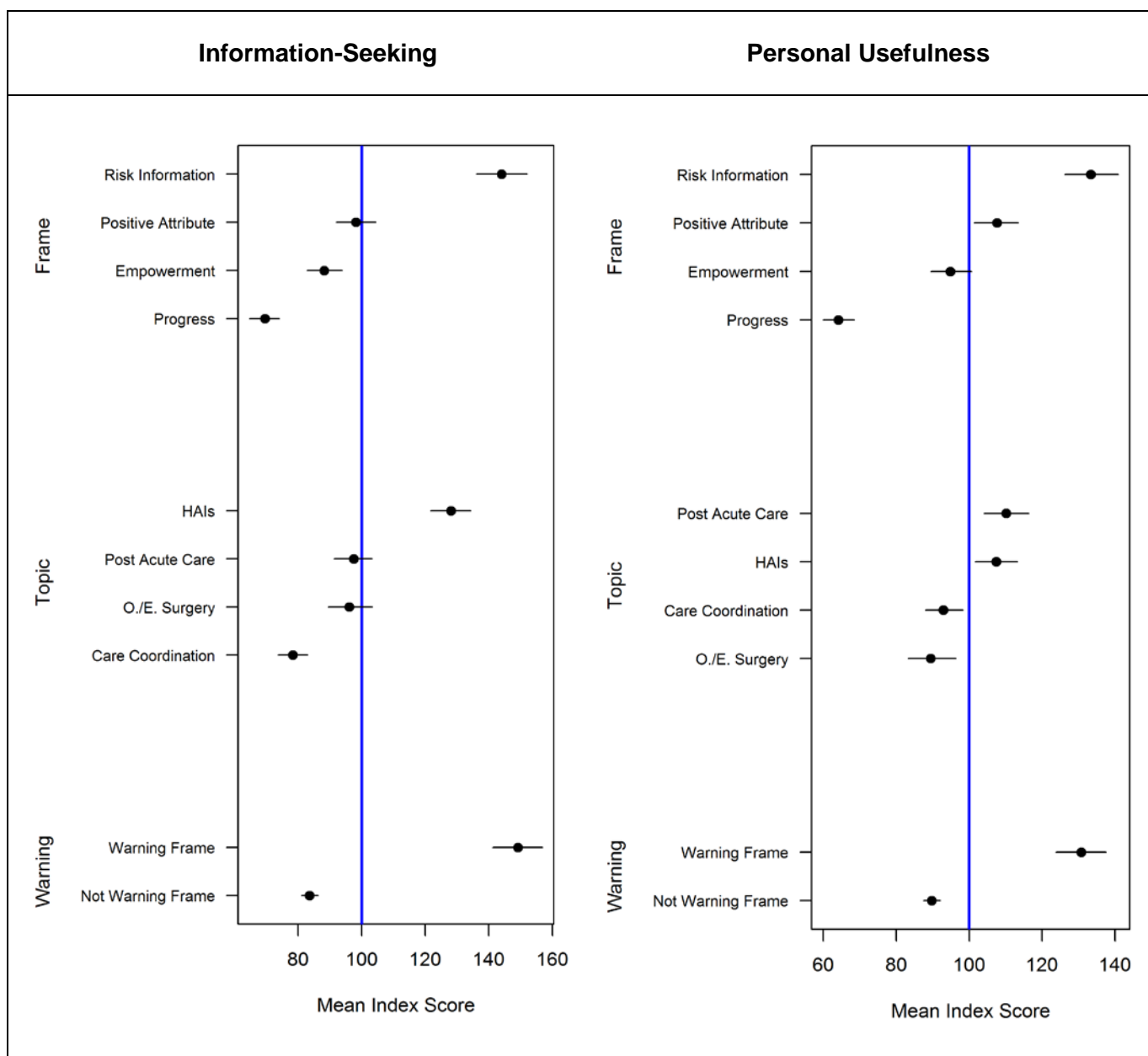
Figure A. Overall Mean Index Scores for Topics and Frames

Figure B. Mean Index Scores for Topics and Frames

The survey was conducted by SSRS (an independent research company) between October 14 and 27, 2014 among a sample of 1,250 respondents. The margin of error for total respondents is +/- 2.77% at the 95% confidence level. Respondents represented all six of the CMS audience segments (see Table 1). The mean age of the sample was 46.8 years. Fifty-two percent of respondents were female. Respondents could choose more than one racial category, so percentages did not total to 100 percent. Eighty-one percent identified as white and 18 percent as black. Fourteen percent of the sample identified as Hispanic or Latino. Seventy percent had less than a four-year college degree, and 53 percent were married.

BACKGROUND

The CMS Medicare.gov website currently hosts online tools that allow consumers to compare health care service providers based on publicly-reported quality measures, including *Hospital Compare*, *Nursing Home Compare*, *Home Health Compare*, *Dialysis Facility Compare*, and *Physician Compare*. The Affordable Care Act (ACA) requires CMS to refine and expand the existing *Compare* web tools to better educate consumers about health care quality and empower them to make better health care decisions. Under contract to CMS, L&M Policy Research (L&M) and its subcontractor, Mathematica Policy Research (Mathematica), are supporting CMS's efforts through research to inform the design of effective quality tools that engage consumers in using the quality information offered through Medicare's *Compare* web tools.

The results presented in this report provide some insights into messages, topic areas, and message frames that are more likely to engage the public with the information on the *Compare* web tools. Prior research suggests that consumers generally find CMS to be a reliable source of information and would, potentially, be interested in the quality information provided on the *Compare* web tools.¹ However, they are largely unaware of the *Compare* tools currently offered and do not actively look for information comparing the quality of health care providers. The results in this report provide guidance for what types of messages on a landing page website would be more likely to engage consumers.

METHODS

The research team designed a general population survey to measure consumer preferences of messages that might appear on a landing page, or "homepage," for the *Compare* web tools.

Survey Design

The first part of the survey was a MaxDiff exercise that generated a ranking of 16 different messages. The MaxDiff method is a way to elicit a rank ordering of several items without creating unreasonable cognitive burdens on respondents. Respondents were presented with a subset of items (four items) and then respondents selected their "best" and "worst" items on given criteria. This study used a split sample and asked respondents to select messages based on one of two criteria: 1) the extent to which a message would encourage seeking more information or 2) how personally useful respondents found the information.

The messages were created around four topics: 1) healthcare-associated infections (HAI), 2) coordinated care (CC), 3) post acute care (PAC), and 4) orthopedic surgery/elective surgery (OS). Each topic message was framed in four different ways: 1) empowerment, 2) positive attribute, 3) progress, and 4) informational. The design was therefore a within-subjects factorial experimental design with two main effects (topic and frame) and 16 alternatives or cells (4 topics x 4 frames). Half of the sample was instructed to evaluate the messages on the basis of information-seeking behavior: how likely the message was to spur consumers to click for more information upon seeing the message. The other half of the sample was instructed to evaluate messages on the basis of

¹ Quality Reporting on Medicare's *Compare* Sites: Lessons Learned from Consumer Research, 2001 – 2013. L&M Policy Research and Mathematica Policy Research, September 2014.

personal usefulness: how personally relevant consumers rated messages for making healthcare decisions for themselves or loved ones.

The second half of the survey included questions used to assign respondents into CMS's audience segments (see Table 1) and to measure: frequency of information consumption, level of health system utilization, familiarity with message topics, informal caregiver status, and demographic information.

The survey was conducted between October 14-27, 2014 for L&M via the web by SSRS, an independent research company. The online survey was conducted among a sample of 1,250 respondents based on a power analysis. The margin of error for total respondents is +/-2.77% at the 95% confidence level.

Survey Sample

Respondents represented all six of the CMS audience segments (see Table 1). The mean age of the sample was 46.8 years. Fifty-two percent of respondents were female. Respondents could choose more than one racial category, so percentage totals did not total to 100 percent. Eighty-one percent identified as white and 18 percent as black. Fourteen percent of the sample identified as Hispanic or Latino. Seventy percent had less than a four-year college degree, and 53 percent were married.

Table 1. Respondent Characteristics

CMS Segment	% Sample	Age	% Sample	Race/Ethnicity	% Sample
1 – Informed, Healthy and Educated	12%	18-24	30%	White	81%
2 – Sick, Active and Worried	18%	35-44	16%	Black	18%
3 – Mature and Secure	9%	45-54	19%	Asian	7%
4 – Healthy and Young	38%	55-64	16%	AI	6%
5 – Passive and Skeptical	15%	65+	19%	NH/PI	5%
6 – Vulnerable and Unengaged	9%			Other	5%
Education	% Sample	Marital Status	% Sample	Gender	% Sample
Some HS or less	3%	Married	53%	Male	48%
HS grad or GED	29%	Divorced	12%	Female	52%
Voc./tech. school	9%	Separated	2%		
Some college	29%	Widowed	3%	Hispanic/Latino	% Sample
College grad	19%	Single	29%	Yes	14%
Post-grad	11%			No	86%

Analysis Summary

The raw MaxDiff survey data were analyzed using Sawtooth software's hierarchical Bayesian (HB) multinomial logistic (MNL) model. The output of this model was a set of Index Scores, centered at 100, indicating the strength of respondents' preferences for each message

Our analysis of these Index Scores consisted of three complementary approaches: 1) a bivariate analysis of cross tabulations generated from the survey data and Pearson correlations; 2) a multivariate analysis of the data using Analysis of Variance (ANOVA), and 3) a Bayesian analysis directly using the posterior draws from the Sawtooth software.

The analyses involved three key independent variables: message topic (categorical variable with four values), message frame (categorical variable with four values), and message (which can be thought of as a categorical variable with 16 different values).

The key dependent variables were Index Scores, estimated separately for those respondents who evaluated messages on the basis of information-seeking behavior (how likely a consumer was to click for more information after viewing a message) and for those respondents who evaluated messages on the basis of personal usefulness (how useful a message was rated in helping a consumer make health care decisions for themselves or a loved one). A third dependent variable – “combined index score” – was calculated by combining Index Scores across the information-seeking and personal-usefulness subsets of the survey sample.

Bivariate Analyses

Cross tabulations were used to identify statistically significant differences in message mean index scores between select groups in the sample. Significant differences were observed based on audience segment, internet use, health system utilization (specialist and hospital use) and demographic variables.

We also calculated one-tailed correlations between the 16 index scores and 16 corresponding message ranks derived from question 2 on the survey. The ranks were based on a split sample, with one quarter assigned to rank messages for each topic.

We compared combined index scores of Risk Information Frame messages with Warning Frame messages, which were coded in a follow-up analysis as an alternative more specific concept for understanding the effectiveness of the messages designed as “informational.”

We also calculated one-tailed correlations between combined index scores and familiarity with the topic of the message.

Multivariate Analyses of Variance

To test the effects of topic and frame (as well as the interaction effect of topic and frame) on overall message preference scores, we conducted a within-subjects ANOVA using the SPSS GLM procedure with demographic weighting, using the Sidak *post hoc* multiple comparisons test to control for Type I error. This analysis can equivalently be understood as a weighted 16-dimensional multivariate regression analysis. Because the sphericity assumption was not met, we

present the multivariate effects F s rather than the univariate effects F s. An ANOVA was conducted with outcome type (information-seeking and personal usefulness) as a between-subjects variable added to the frame X topic within-subjects ANOVA, to examine the interaction of outcome type with frame and with topic.

To take into account the possible influence of demographic and utilization variables, we conducted the same ANOVA described above for overall preference, but included covariates for age (continuous), gender (dummy code), chronic conditions (dummy code), inpatient hospital use (dummy code), and specialist use (dummy code).

The design did not allow for examining between-subjects effects because MaxDiff scores average to 100 for each individual. We did perform ANOVAs in which we included between-subjects variables, including outcome type, segment, and caregiver status.

This SPSS GLM procedure was used in other specific cases that will be described in the results section.

Bayesian Analysis

The Bayesian Analysis was conducted using the posterior draws directly rather than performing regression or ANOVA on summaries of the draws. The advantage of this approach is that the draws naturally account for the dependence across subjects' preferences. The HB-MNL output also accounts for the differences in the estimates' precision across messages, whereas an ANOVA falsely treats all estimates as equally precise, potentially clouding the effects of interest.

Furthermore, whereas ANOVA requires testing many disjoint hypotheses (by topic, frame, segment, etc.) and therefore increases the probability of detecting spurious effects by chance alone, the Bayesian approach includes a built-in correction for the so-called "multiple comparison problem."

Finally, the Bayesian framework allows us to report results using intuitive probabilistic statements. By contrast, the ANOVA framework focuses on testing the hypothesis that differences between preferences are equal to zero. Stakeholders may view the resulting 'thumbs up-thumbs down' inference as restrictive and not sufficiently informative.

Markov chain Monte Carlo (MCMC) performance is notoriously difficult for multinomial models, and Sawtooth's default approach (of using 10,000 iterations of burnin follow by 10,000 additional iterations with which to do inference) was insufficient. We therefore re-ran the analysis, burning the chains in for 20,000 iterations, and then saving the subsequent 20,000 posterior samples for inference. Although mixing was slow for some chains at the respondent level, we obtained at least 90 effectively independent samples from each of the sixteen chains that averaged across subjects' preferences for a given message. We also obtained reasonably good convergence, with absolute Geweke statistics² less than 3 for all 16 chains of mean preference.

² Geweke, J. (1992). Evaluating the accuracy of sampling-based approaches to the calculation of posterior moments. In Bayesian Statistics 4, Bernardo, J. M., Berger, J. O., Dawid, A. P. and Smith, A. F. M. (eds.), 169-193. Oxford: Oxford University Press.

All figures use a 95% credible interval to denote uncertainty. Note that since the MCMC was run by Sawtooth and not as part of the current analysis, we were not able to incorporate demographic weights in the Bayesian analysis.

RESULTS

The results outlined here quantify preferences for frames, topics, and individual messages among the full sample and differences in preferences between key segments of the sample. The first section summarizes findings around topics, the second section focuses on frames, and the third section highlights findings about specific messages.

In this report, the word “preference” will be used as a general term when describing scores across the two types of Index Scores: information-seeking and personal usefulness. As described in the methodology section, the “combined index scores” in this report refer to scores calculated by combining data across these two subsets of the survey sample.

Frame Preferences

Frame Preferences: All Respondents

The Risk Information Frame generated the highest combined index score of 134, followed by the Positive Attribute Frame with a score of 107, just above the mean of 100. The Empowerment Frame score fell just below the mean at 94 and the Progress Frame fell far below the mean with a score of 65 (see the last column of Table 2).

Table 2. Mean Combined Index Scores and Frame/Column Differences by Topic

FRAME	TOPIC				
	HAI	CC	PAC	OS	Overall
Empower	112 ^b	75 ^b	126 ^a	64 ^c	94 ^c
Progress	83 ^c	61 ^c	58 ^c	58 ^c	65 ^d
Positive	134 ^a	102 ^a	111 ^b	79 ^b	107 ^b
Risk Information	143 ^a	101 ^a	128 ^{ab}	166 ^a	134 ^a

Note. Means that share superscripts do not differ significantly at $p < .05$.

The overall Index Score means were generated from a within-subjects ANOVA using the GLM procedure with demographic weighting, using the Sidak *post hoc* multiple comparisons test to control for Type I error (see the last column of Table 2). The procedure showed that differences across frames were statistically significant ($F = 235.80, p < .001$).

The same order of frame preference (Risk Information, Positive, Empowerment, Progress) that was observed for the combined index score was also present for the information-seeking and personal usefulness subsets of the survey sample. Figures 1 and 2 clearly show the consistent pattern. Figure 1 plots combined index scores for each frame. Figure 2 shows plots for both the

information-seeking scores and the personal usefulness scores for each frame. Both figures were generated from the Bayesian analysis of posterior draws.

Figure 1. Mean Combined Index Scores for Topics and Frames

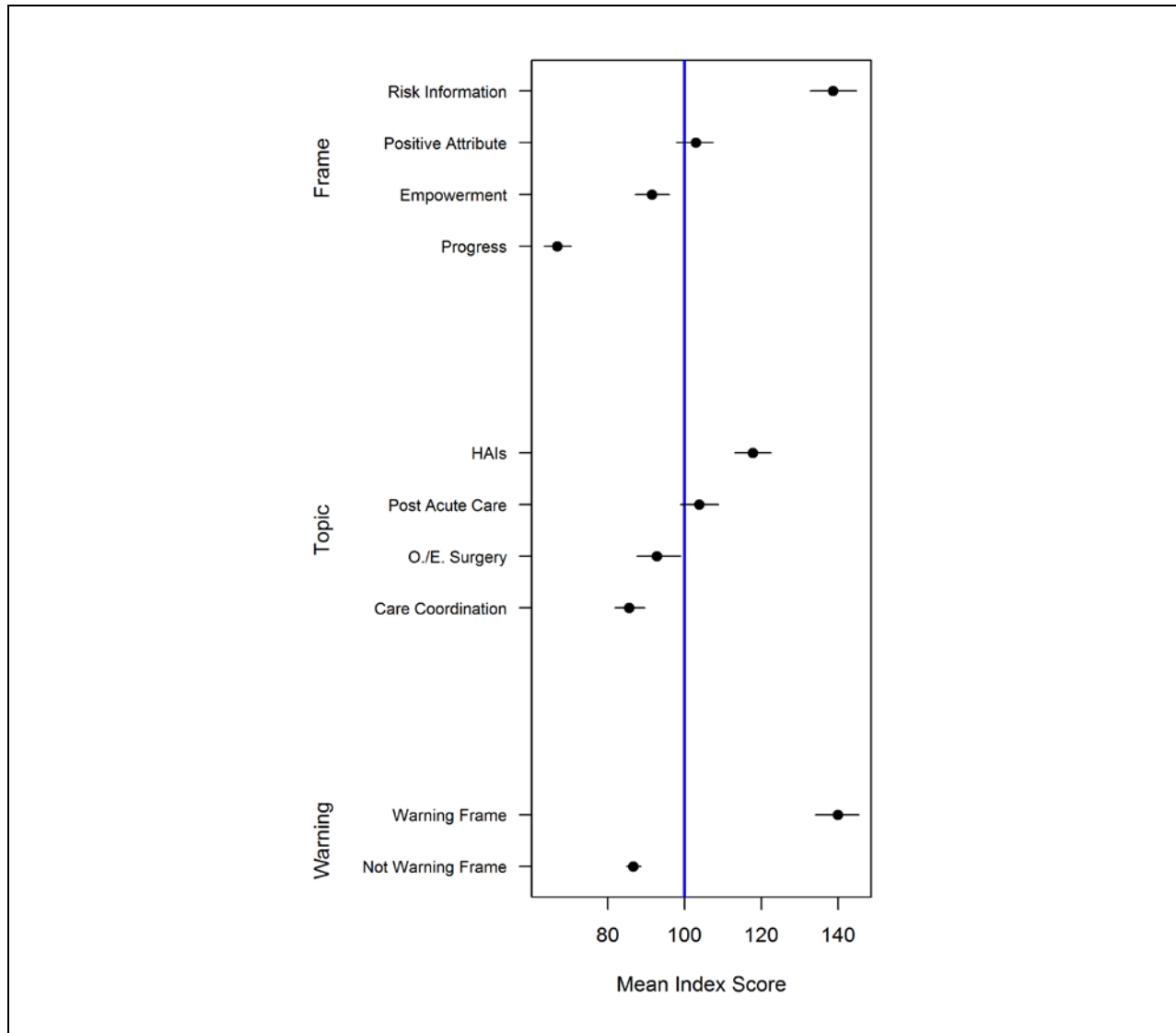
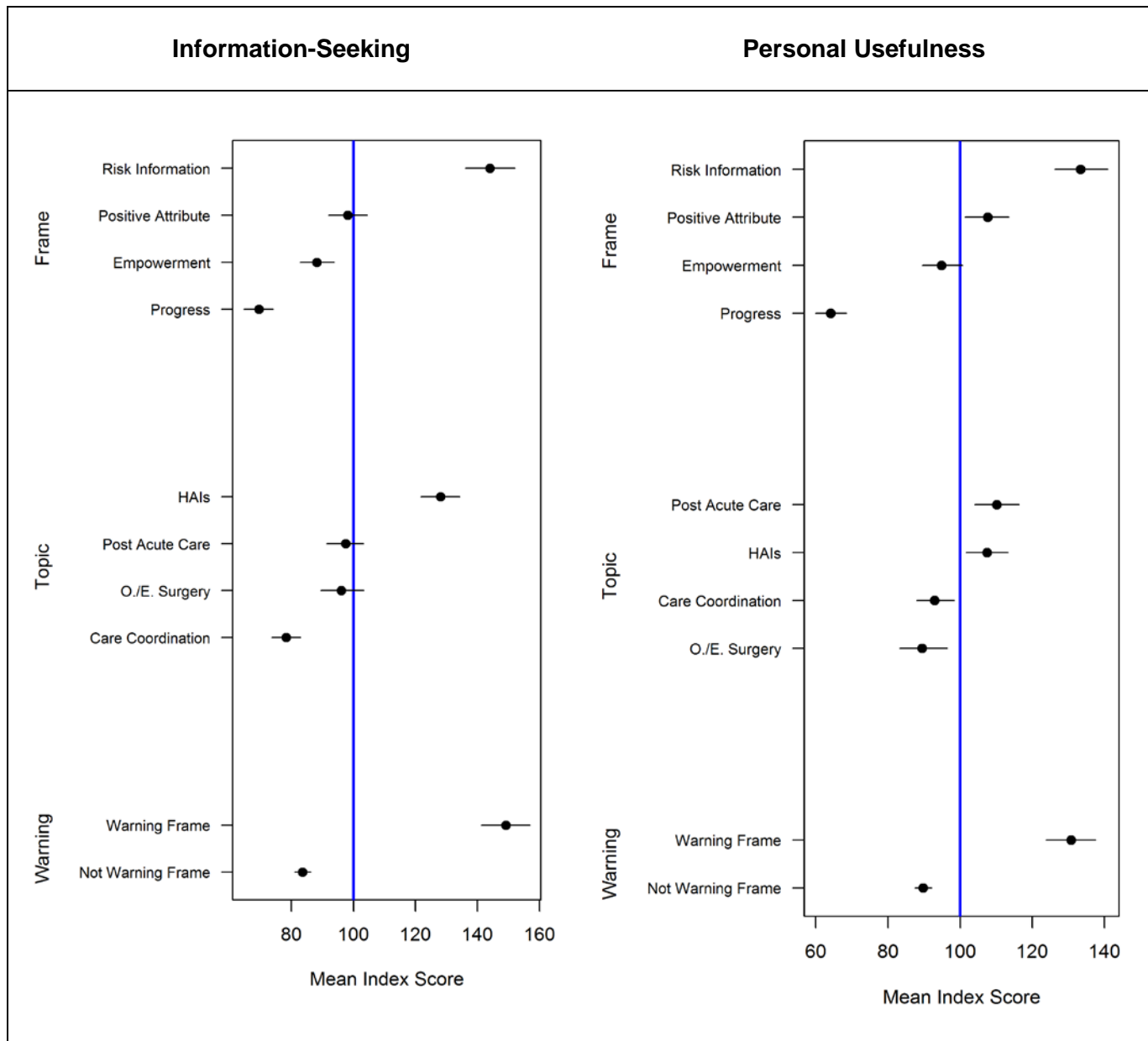


Figure 2. Mean Index Scores for Topics and Frames

While the order of frame preference was the same for both outcome measures, there were differences in magnitude of the preference in some cases. An ANOVA was conducted using the GLM procedure to test whether any frames generated different preference scores for information-seeking or personal usefulness. Only one frame did. The Positive Frame personal usefulness score was significantly higher than Positive Frame information-seeking score (that can be seen in Figure 2 and from Table 3). In line with that finding, the GLM procedure revealed a weak (but statistically significant) interaction between frame and outcome type ($F = 4.22, p < .01$).

Table 3. Mean Index Scores for Outcome Type/Row Differences by Frame

FRAME	OUTCOME TYPE	
	Information-Seeking	Personal Usefulness
Empower	92 ^a	96 ^a
Progress	67 ^a	63 ^a
Positive	103 ^b	110 ^a
Risk Information	138 ^a	131 ^a

Note. Means that share superscripts do not differ significantly at $p < .05$.

Warning Frames

The Risk Information Frame messages clearly outperformed the other message frames. However, the Warning Frame messages collectively received higher scores than the Risk Information Frame messages.

it is more difficult to ascertain exactly what about these messages drove the higher combined index scores.

Three of the four Risk Information Frame messages included more vivid threat-related language that could be categorized as “Warning Frame” messages. These “Warning Frame” messages received especially high scores from survey respondents.

The three Risk Information Frame messages and the HAI/Empowerment message were recoded as “Warning Frame” messages. These four “Warning Frame” messages received highest overall score compared to the all other frames.

Higher scores for Warning Frame messages and lower scores for non-Warning Frame messages are consistent with the literature on negativity bias, which has established that negative or threatening information is consistently more likely to draw attention compared to neutral or positive information.

A follow-up analysis (see Table 5) raised the possibility that the key driver of preference for “Risk Information Frame” messages may not have been general “information” per se. Rather it may have been the specific information that warned consumers of prevalent risks involved in visiting hospitals and health providers. Three of the four Risk Information Frame messages included specific facts about the prevalence of problematic issues at hospitals. These messages essentially served as specific warnings about the likelihood of encountering problems while using hospitals.

Another message (that was designed as an Empowerment Frame message on Orthopedic Surgery) also contained a specific warning about threats to health at hospitals, urging consumers to “make sure your loved ones are protected” from HAIs. In a follow-up analysis, the three Risk Information Frame messages and the one Empowerment Frame message that contained warnings were

combined to test the effects of a “Warning Frame,” Table 4 highlights the four messages that were recoded as “Warning Frame” messages.

Table 4. Messages used for MaxDiff Exercise (Warning Frames bolded)

	HAI	CC	PAC	OS
Empowerment	Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.
Progress	New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.
Positive Attribute	Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.
Risk Information	Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.

Table 5 provides a comparison of demographically-weighted combined index scores for Risk Information Frame messages and Warning Frame messages. The scores are remarkably similar, and although the scores do not support one frame as being more potent than the other, there is clear evidence that Warning Frame is at least as effective as the Risk Information Frame.

The idea that these warnings may be the key driver of message preference among these Information Frame messages is consistent with the literature on negativity bias, which has established that negative or threatening information is consistently more likely to draw attention compared to neutral or positive information.³

Table 5. Mean Combined Index Scores by Frame

MESSAGE FRAME	INDEX SCORE
Risk Information Frame	135
Not Risk Information Frame	88
Warning Frame	138
Not Warning Frame	87

Frame Preferences: Key Audience Segments

The order of frame preferences did not differ substantially by audience segment. The GLM procedure revealed a weak (but statistically significant) interaction between frame and audience segment ($F = 4.18$, $p < .001$). The order of frame preference was the same across all of the segments, albeit more pronounced for the Sick, Active and Worried and Mature and Secure segments, and less pronounced for the Vulnerable and Unengaged segments (see Table 6).

The Risk Information Frame messages scored significantly higher than the Positive Frame messages for the first three audience segments, the three that would logically be more engaged and aware of healthcare news and issues (Informed, Health and Educated; Sick, Active and Worried; and Mature and Secure).

Informal caregivers did not rate frames significantly differently than non-caregivers. We conducted a GLM procedure with the Sidak *post hoc* multiple comparisons test to control for Type I error to test for an interaction between caregiver and frame (i.e., whether caregivers rated frames differently than non-caregivers). The GLM procedure showed no significant differences ($F = .81$, ns).

³ Baumeister, Roy F.; Finkenauer, Catrin; Vohs, Kathleen D. (2001). "Bad is stronger than good." *Review of General Psychology* **5** (4): 323–370.

Table 6. Mean Combined Index Scores and Frame/Row Differences by Audience Segment

AUDIENCE SEGMENT	FRAME			
	Empower	Progress	Positive	Risk Information
1 – Informed, Healthy and Educated	88 ^b	61 ^c	100 ^b	151 ^a
2 – Sick, Active and Worried	86 ^c	61 ^d	105 ^b	147 ^a
3 – Mature and Secure	77 ^c	57 ^d	107 ^b	159 ^a
4 – Healthy and Young	100 ^b	69 ^c	106 ^{ab}	125 ^a
5 – Passive and Skeptical	100 ^b	70 ^c	110 ^{ab}	120 ^a
6 – Vulnerable and Unengaged	104 ^a	62 ^b	115 ^a	120 ^a

Note. Means that share superscripts do not differ significantly at $p < .05$.

Topic Preferences

Topic Preferences: All Respondents

The HAI topic generated the highest combined index score. HAI scored higher than all other topics with a score of 118. That score was significantly higher than the second highest topic, PAC, for which the combined index score was just above the mean at 106. CC and OS scored below the mean (see Figure 1 and Table 7).

To test differences in combined index score means, we conducted a within-subjects ANOVA using the GLM procedure with demographic weighting, using the Sidak *post hoc* multiple comparisons test to control for Type I error. As the bottom row of Table 7 shows, the HAI topic combined index score was significantly higher than the next highest topic, PAC ($F = 40.73$, $p < .001$). Both HAI and PAC topics were significantly higher than CC and OS. The two lowest-scoring topics were not significantly different from each other (see Table 7).

Table 7. Mean Combined Index Scores and Topic/Row Differences by Frame

FRAME	TOPIC			
	HAI	CC	PAC	OS
Empower	112 ^b	75 ^c	126 ^a	64 ^d
Progress	83 ^a	61 ^b	58 ^b	58 ^b
Positive	134 ^a	102 ^b	111 ^b	79 ^c
Risk Information	143 ^b	101 ^c	128 ^b	166 ^a
Overall	118 ^a	85 ^c	106 ^b	92 ^c

Note. Means that share superscripts do not differ significantly at $p < .05$.

The level of preference for HAI-related topic information may actually be understated in these data, because the single highest rated message overall mentions infections prominently but was not counted as an HAI message. This message was designed as an OS message but urges consumers to avoid surgery-related infections (it reads, “Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures”).

That combined index scores mask a difference in preferred topic messages on the two distinct Index Scores. While the HAI topic scored higher in terms of clicking for more information, PAC scored higher in terms of personal usefulness. PAC is a topic that consumers may find more relevant and useful for their personal circumstances. As Figure 2 shows, the information-seeking scores mirror the order of the combined index scores (HAIs first, PAC second, CC third and OS last). However, personal usefulness rankings show that PAC messages were ranked highest, followed closely by HAIs.

To test differences in means among the two outcome measures, we conducted a within-subjects ANOVA using the GLM procedure with the Sidak *post hoc* multiple comparisons test to control for Type I error. As you can see from the middle two rows of Table 8, the procedure did not indicate CC and PAC messages would make them want to click for more information (with scores of 75 and 99 respectively). However, respondents gave those topics higher scores for personal usefulness ($F = 13.63$, $p < .001$) – though the CC personal usefulness score is still only 95, below the mean.

Table 8. Mean Index Scores for Outcome Type/Row Differences by Topic

TOPIC	OUTCOME	
	Information-Seeking	Personal Usefulness
HAI	130 ^a	106 ^b
CC	75 ^b	95 ^a
PAC	99 ^b	112 ^a
OS	96 ^a	87 ^a

Note. Means that share superscripts do not differ significantly at $p < .05$.

Topic Preferences: Key Audience Segments

The combined index scores for topics did not differ substantially by audience segment. The GLM procedure revealed a weak (but statistically significant) interaction between topic and audience segment ($F = 3.01, p < .001$). All six audience segments rated the HAI topic higher than 100, but respondents in the “Sick, Active and Worried” and “Mature and Secure” segments were more likely to rate HAI higher. Those segments rated the HAI topic significantly higher than all other segments (see Table 9).

For some segments, other topics rivaled HAI messages for highest Index Score. For example, the “Healthy and Young”, “Vulnerable and Unengaged,” “Informed, Healthy, and Educated”, and “Passive and Skeptical” segments did not rate HAI significantly higher than PAC. Segment four (“Healthy and Young”) did not rate HAI significantly higher than CC. Segment six (“Vulnerable and Unengaged”) did not rate HAI significantly higher than OS.

Table 9. Mean Combined Index Scores and Topic/Row Differences by Audience Segment

AUDIENCE SEGMENT	TOPIC			
	HAI	CC	PAC	OS
1 – Informed, Healthy and Educated	129 ^a	80 ^c	105 ^{ab}	85 ^{bc}
2 – Sick, Active and Worried	124 ^a	82 ^c	101 ^b	92 ^{bc}
3 – Mature and Secure	147 ^a	58 ^c	98 ^b	97 ^b
4 – Healthy and Young	107 ^a	95 ^{ab}	108 ^a	91 ^b
5 – Passive and Skeptical	115 ^a	90 ^b	107 ^{ab}	88 ^b
6 – Vulnerable and Unengaged	109 ^a	79 ^b	111 ^a	102 ^{ab}

Note. Means that share superscripts do not differ significantly at $p < .05$.

Informal caregivers did not rate topics differently than non-caregivers. We conducted a GLM procedure with the Sidak *post hoc* multiple comparisons test to control for Type I error to test for an interaction between caregiver and frame (i.e., whether caregivers rated frames differently than non-caregivers). The GLM procedure showed no significant differences ($F = 1.67, ns$).

Message Preferences

The previous two sections involved teasing out the effects of topics and frames. This section focuses on individual messages that scored highest among all respondents. As might be expected based on topic and frame results, Risk Information and HAI messages are clustered at the top of the list. But this section also focuses on certain messages that held special appeal among certain audience segments and demographic groups.

Message Preferences: All Respondents

All 16 messages included in the study are included in Figure 3, which plots the messages on the combined index score scale. As might be expected based on the topic and frame findings, the Risk Information and Warning Frame messages are among the highest rated as are the HAI topic

messages. Of the top six (6) messages, three are Risk Information Frame and three are HAI-specific (you could consider four being HAI-specific if the Empowerment Frame OS message that mentions infections were considered an HAI message).

Although the topic and frame analyses showed a clear overall preference for the HAI messages, the single most-preferred message among all respondents was the OS Risk Information message. This message, while designed to address orthopedic surgery, also contained salient information on HAIs. It warns of a risk of “infection” and other potential dangers of surgery. In this light, the message could be considered an HAI message.

Based on the Bayesian analysis, there is a 94 percent chance that this message is preferred over the next most highly ranked message, which is the informational message about HAIs. Table 10 provides a color-coded visualization that allows for a quick overview of the messages with the highest combined index scores among all respondents. Scores above the mean are green and scores below the mean are red. The darker the green, the higher the score is. The darker the red, the lower the score is. Tables 10, 11, and 12 show, for all respondents, the scores for overall preference, information-seeking and personal usefulness, respectively.

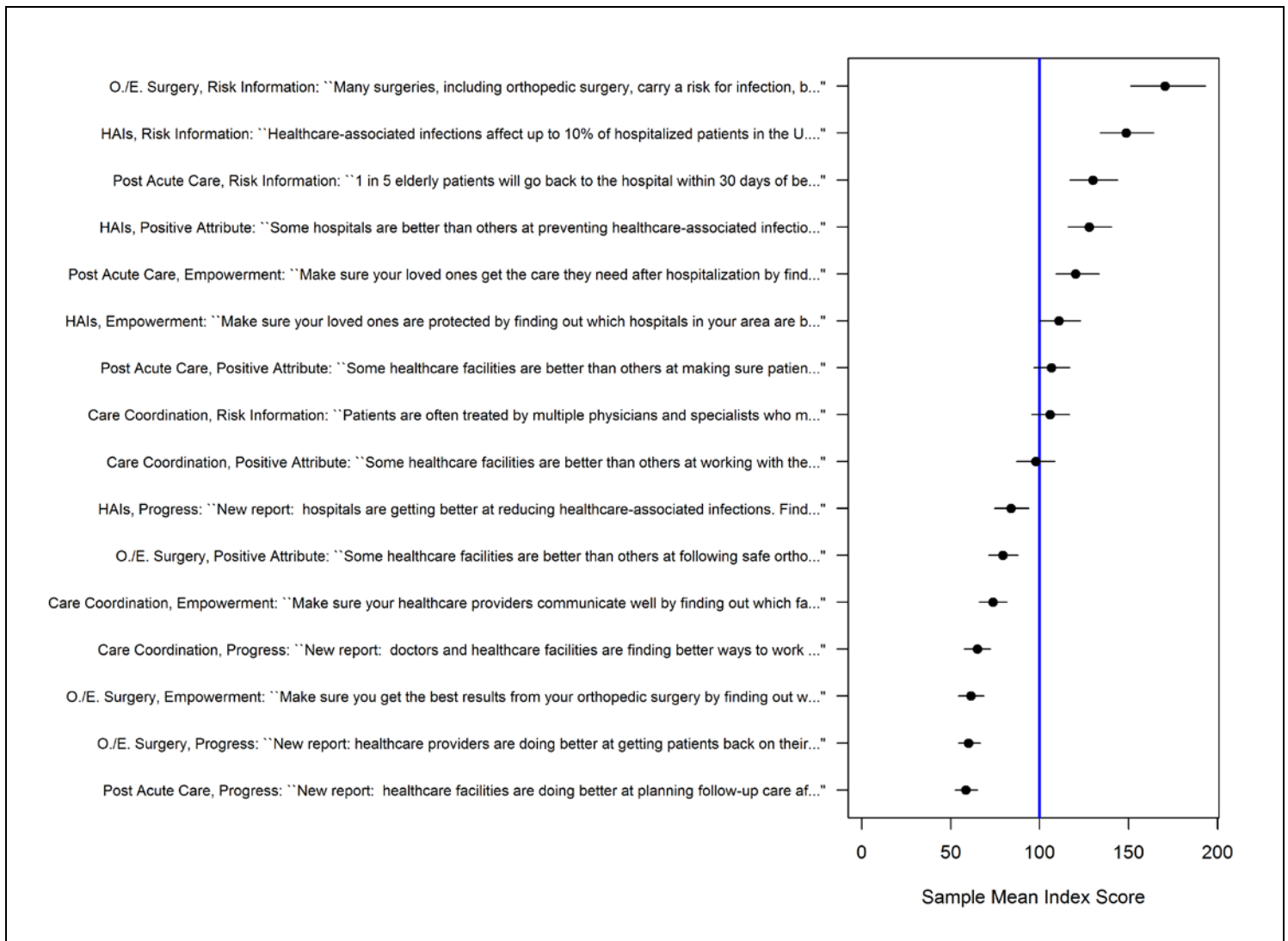
Figure 3. Mean Combined Index Scores for All Messages

Table 10. Mean Combined Index Scores for All Messages

	HAIs	Care Coordination	Post Acute Care	Orthopedic/ Elective Surgery
Empowerment	Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.
Progress	New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.
Positive Attribute	Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.
Risk Information	Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.

Legend

50	60	70	80	90	100	110	120	130	140	150
----	----	----	----	----	-----	-----	-----	-----	-----	-----

Table 11. Mean Index Scores for Information-Seeking

	HAIs	Care Coordination	Post Acute Care	Orthopedic/ Elective Surgery
Empowerment	Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.
Progress	New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.
Positive Attribute	Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.
Risk Information	Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.

Legend

50	60	70	80	90	100	110	120	130	140	150
----	----	----	----	----	-----	-----	-----	-----	-----	-----

Table 12. Mean Index Scores for Personal Usefulness

	HAIs	Care Coordination	Post Acute Care	Orthopedic/ Elective Surgery
Empowerment	Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.
Progress	New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.
Positive Attribute	Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.
Risk Information	Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.

Legend

50	60	70	80	90	100	110	120	130	140	150
----	----	----	----	----	-----	-----	-----	-----	-----	-----

Interaction of Topic and Frame

Some combinations of topics and frames did generate higher overall Index Scores. The GLM procedure revealed a significant interaction between frame and topic ($F = 56.44, p < .001$). As Table 7 demonstrates, the Empowerment Frame Mean Index Scores were higher (and above the mean) for the PAC and HAI messages and lower (and below the mean) for the CC and OS messages.

The Positive Frame combined index score for the HAI message was significantly higher than the other topic messages (the Positive Frame messages for PAC and CC were also high but just slightly above the mean of 100, and the OS message was lowest, below the mean).

The highest Risk Information Frame combined index scores were for the OS, HAI and PAC messages (all of which were also designated as “Warning Frame” messages in the post-hoc analysis). The lowest Information Frame score was for the CC message, which was just one point above the mean of 100 (and was not designated as a “Warning Frame” message). All of the Progress Frame message scores were below 100, but the highest among the Progress Frame messages was the HAI message.

Relationships between Index Scores and Ranked Preferences

We calculated one-tailed correlations between combined index scores and the corresponding 16 message ranks that respondents performed. This is a split sample, with participants randomly assigned to rank the 4 frame messages for 1 of the 4 topics; therefore, the *Ns* are small). The correlations should be negative because lower ranks indicate greater preference for the message. For ease of interpretation, correlations are reverse-signed.

Table 13. Correlations Between Combined Index Scores and Ranked Message Preferences

MESSAGE	PEARSON CORRELATION COEFFICIENT
HAI-Empowerment	.24 [#]
HAI-Progress	.21 [#]
HAI-Positive	.01
HAI-Risk Information	.24 [#]
CC-Empowerment	.18 ^{**}
CC-Progress	.20 [#]
CC-Positive	.11 [*]
CC-Risk Information	.02
PAC-Empowerment	.15 ^{**}
PAC-Progress	.28 [#]
PAC-Positive	.09
PAC-Risk Information	.47 [#]
Orthopedic-Empowerment	.15 ^{**}
Orthopedic-Progress	.24 [#]
Orthopedic-Positive	.11 [*]
Orthopedic-Risk Information	.24 [#]

Note. * $p < .05$; ** $p < .01$; # $p < .001$

All correlations in the expected direction, and 13 out of 16 correlations are significant. The three messages that did not show a significant correlation with the corresponding message ranks were HAI-Positive, CC-Risk Information, and PAC-Positive. Also, two correlations that were only marginally significant were CC-Positive and Orthopedic-Positive. Overall, correlations are lowest for the Positive Frame messages

Relationships between Index Scores and Familiarity with Message Topics

We calculated one-tailed correlations between the 4 index score topic means (means of the 4 frame scores for each topic) and the 4 corresponding topic familiarity ratings. If these correlations were positive and strong, it would indicate that respondents who are more familiar with a given topic are more likely to rate messages on that topic more highly.

However, as Table 14 shows, the correlations for HAI and OS were statistically significant, but the magnitude of each correlation was very small. The correlations for the other two topics, CC and PAC, were not significant. The results suggest that familiarity does not appear to be a predictor of Index Scores on these topics.

Table 14. Correlations Between Index Score Topic Means and Topic Familiarity Ratings

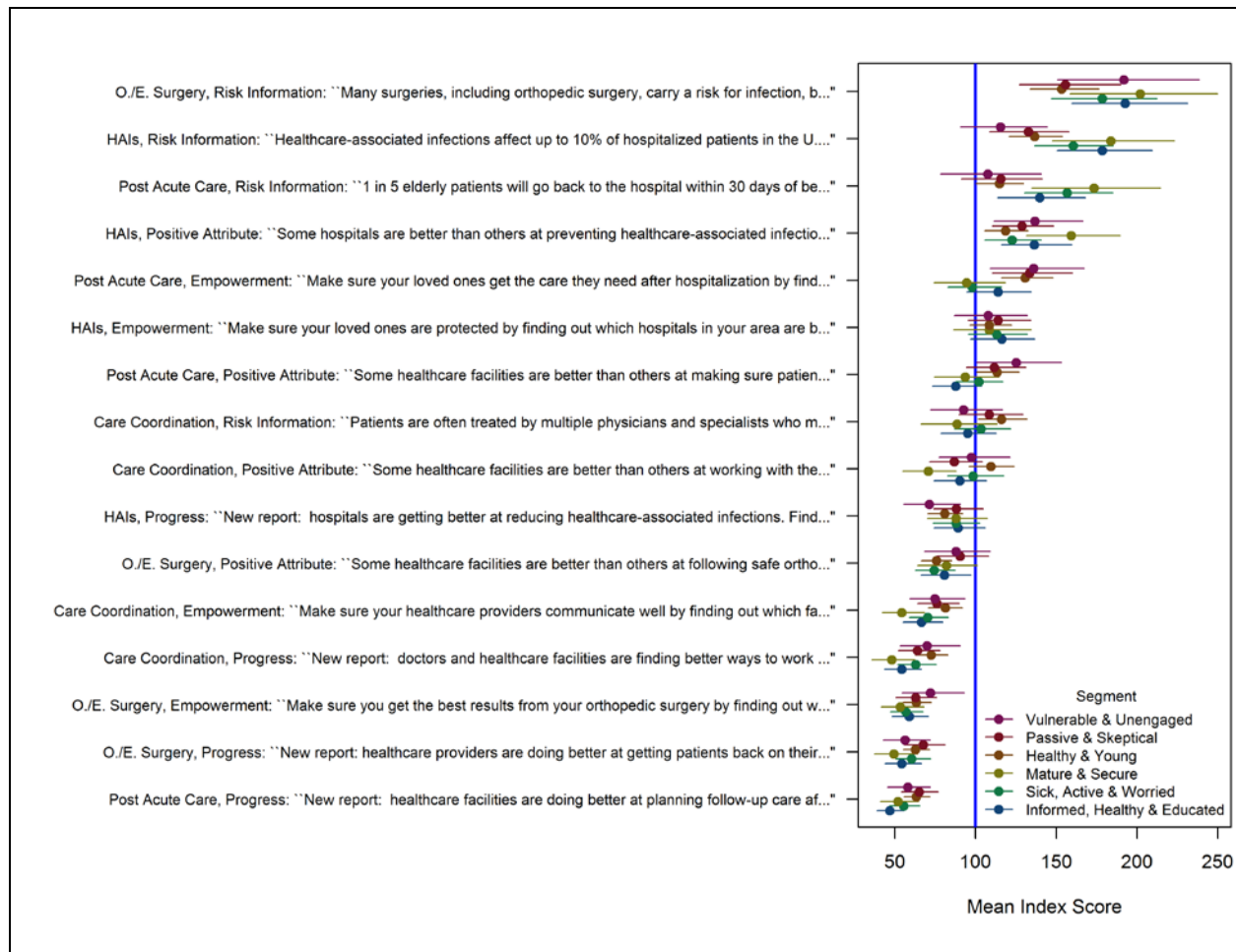
COVARIATE	Pearson Correlation Coefficient
HAI	.09**
CC	0.03
PAC	-0.05
Orthopedic	.12#

Note. * $p < .05$; ** $p < .01$; # $p < .001$

Message Preferences: Key Audience SegmentsMessages with Appeal to More Engaged Audience Segments

In many cases, message preference was relatively uniform across audience segment. However, a relatively consistent divide in preference scores emerged between the first three segments (Informed, Health and Educated; Sick, Active and Worried; and Mature and Secure) and the last three segments (Healthy and Young; Passive and Skeptical; Vulnerable and Unengaged).

As an example, consider the combined index scores for each message by audience segment in Figure 4 (these preference scores were generated by the Bayesian analysis). Although the Risk Information Frame messages about HAI and PAC were strongly preferred overall, there is only an 88 percent and 67 percent chance, respectively, that they are preferred by the “Vulnerable and Unengaged” segment more than chance would predict. Similarly, there is only an 88 percent chance that the informational message about PAC is preferred by the “Passive and Skeptical” segment.

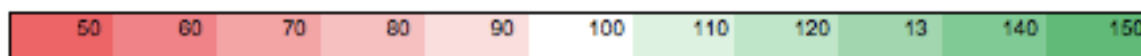
Figure 4. Mean Combined Index Scores, by Audience Segment

Messages with Appeal to Less Engaged Audience Segments

Notably, two PAC messages generated the reverse preference pattern: the messages held special appeal for the three audience segments that are likely less engaged with health information: segments four, five, and six ("Healthy and Young," "Passive and Skeptical" and "Vulnerable and Unengaged"). Previous research has shown segments five and six are most difficult to reach. The "Healthy and Young" segment may also be harder to reach because of their age and relative health and lack of incentive to follow healthcare issues.

Table 15. Mean Combined Index Scores, by Audience Segment

Frame & Topic	Audience Segment					
	1. Informed, Healthy, and Educated	2. Sick, Active, Worried	3. Mature and Secure	4. Healthy and Young	5. Passive and Skeptical	6. Vulnerable and Unengaged
Empowerment						
HAI	115	112	122	110	117	121
CC	71	72	50	83	89	88
PAC	117	95	84	140	125	146
OS	50	58	53	67	64	82
Progress						
HAI	99	85	94	82	87	67
CC	57	55	38	70	60	62
PAC	49	52	46	61	72	68
OS	46	55	45	59	65	41
Positive Attribute						
HAI	137	134	162	118	123	146
CC	106	99	69	112	104	96
PAC	87	109	92	113	127	121
OS	72	79	88	75	87	88
Informational						
HAI	178	165	202	133	123	105
CC	96	104	75	134	116	73
PAC	154	148	162	110	100	124
OS	168	179	199	148	140	193

Legend

Pearson chi-square tests showed that the Healthy and Young; Passive and Skeptical; Vulnerable and Unengaged segments rated this message significantly higher on both outcome measures than the segment three “Mature and Secure” respondents ($p < .05$). Figure 4 plots each audience segment combined index score on each message and provides a visualization of this pattern. Table 15 presents another way of visualizing messages that are preferred by different audience segments.

The finding offers an opportunity to target these traditionally hard-to-reach groups. Both messages dealt with issues around care after hospitalization. One message included a unique feature – an

appeal to taking steps to care for “loved ones.” The message read: “Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.”

The other specifically mentioned avoiding having to return to the hospital. It read: “Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.”

Influence of Demographic Variables on Index Scores

To take into account the possible influence of demographic and utilization variables, we conducted the same interaction of topic and frame ANOVA described above for overall preference, but included covariates for age (continuous), gender (dummy code), chronic conditions (dummy code), inpatient hospital use (dummy code), and specialist use (dummy code).

Table 16. Covariate Effects and F Statistics

COVARIATE	F Statistic
Frame X Age	17.56 [#]
Frame X Gender	4.20 ^{**}
Frame X Chronic	0.4
Frame X Inpatient	3.19 [*]
Frame X Specialist	2.62 [*]
Topic X Age	16.76 [#]
Topic X Gender	2.34
Topic X Chronic	1.31
Topic X Inpatient	6.32 [#]
Topic X Specialist	1
Frame X Topic X Age	5.89 [#]
Frame X Topic X Gender	2.20 [*]
Frame X Topic X Chronic	0.34
Frame X Topic X Inpatient	2.37 [*]
Frame X Topic X Specialist	1.39

This analysis revealed a few patterns worth noting:

- Overall, age is a strong effect modifier throughout.
- Age, Gender, Inpatient use, and Specialist use significantly modify the effect of Frame on Index Scores.
- Age and Inpatient use significantly modify the effect of Topic.
- Age, Gender, and Inpatient use significantly modify the interaction of Frame and Topic.

Association of Age with Index Scores

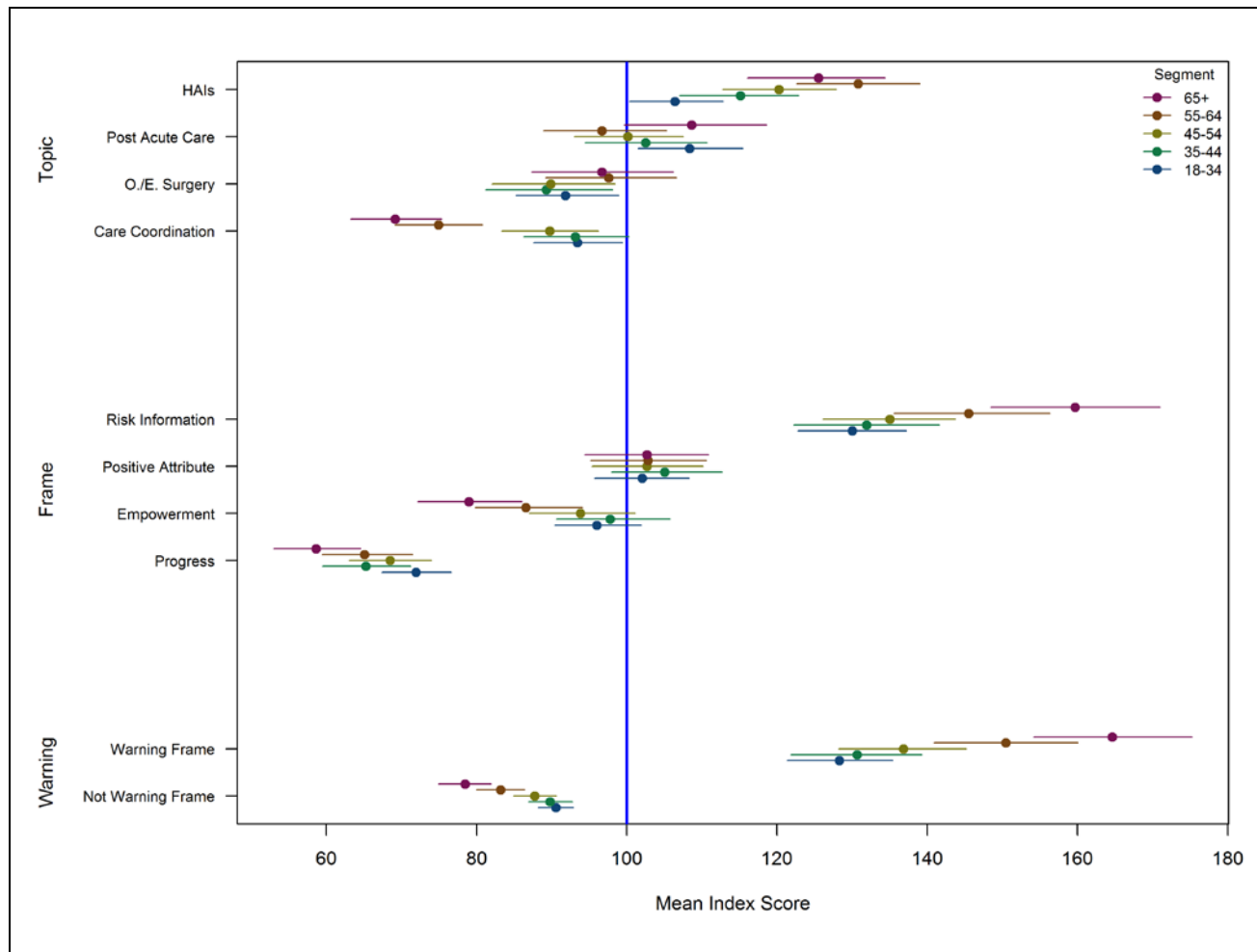
The F statistics for the ANOVAs provide evidence that age interacts with different topics and frames to influence index scores. However, the ANOVAs do not describe the specific nature of

the effect. To detect the actual patterns in the data, we examined the combined index scores for each topic and frame by age segment (see Figure 5). Figure 5 reveals how each topic and frame scored among members of each age segment (18-34, 35-44, 45-54, 55-64, and 65+). We then examined the combined index scores for individual messages by age segment (see Figure 6).

The Risk Information Frame messages scored highly among all age segments, but the interaction pattern for age and the Risk Information Frame was clear: the older the segment the higher the score. By contrast, both the Progress and Empowerment frames scored more highly among younger segments than older segments.

The Positive Attribute Frame, like the Information Frame, scored highly among all age groups. But in contrast to the Risk Information Frame messages, where older segments scored messages higher, every age segment scored the Positive Attribute messages similarly – just above the mean of 100.

Figure 5. Mean Combined Index Scores for Topics and Frames, by Age Segment

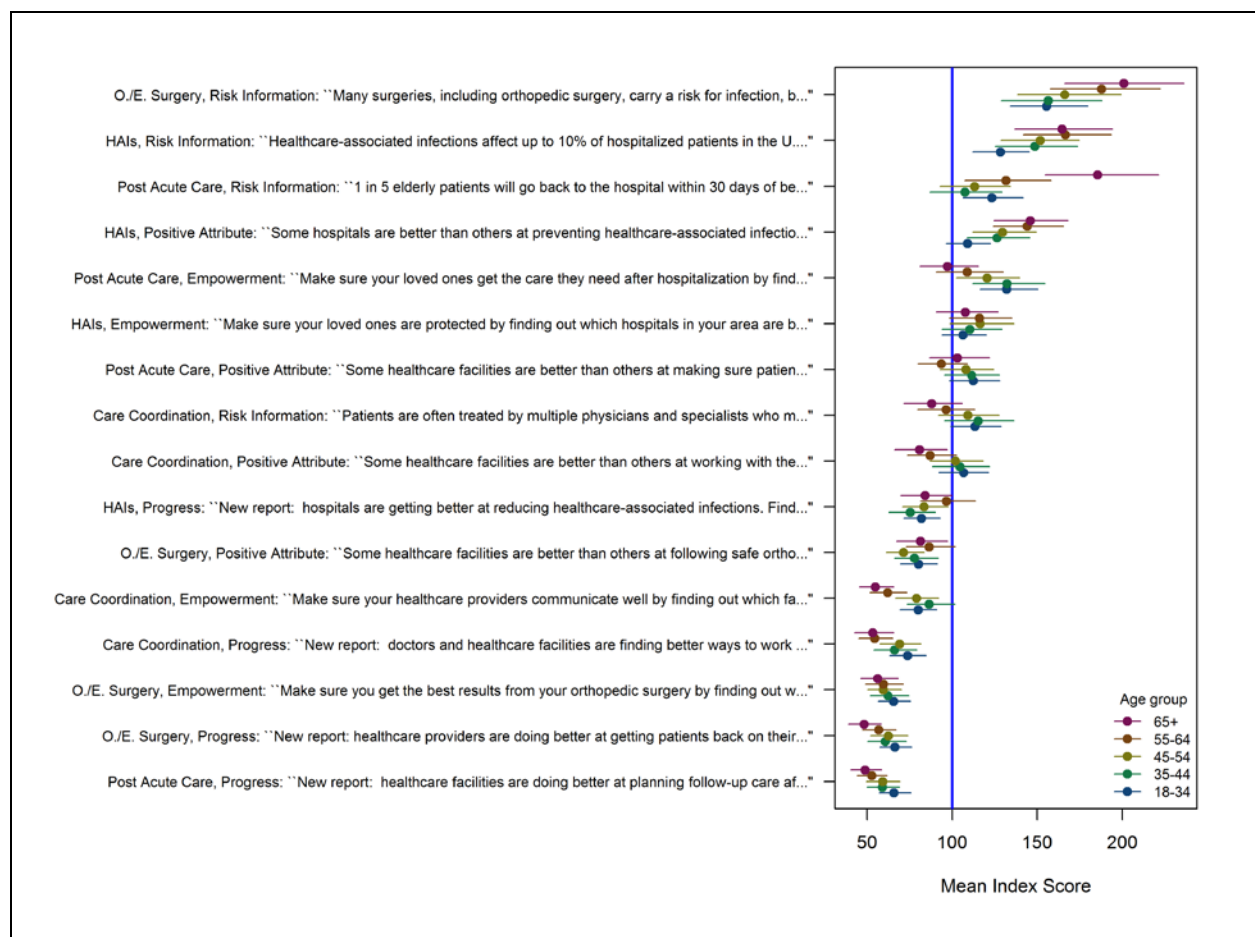


The highest-scoring topic, HAI, scored above the mean among all age segments. However, overall, older segments scored HAI messages more highly. The oldest two segments (55-64 and 65+)

scored the HAI messages higher than the younger age segments. With only one exception, older segments had higher combined scores compared to each of the younger segments (the exception was the 65+ segment, which had scores slightly lower than the 55-64 segment). A different interaction pattern emerged with regard to PAC messages. Younger segments had higher scores than each of the older segments – with one exception (the one exception was for the 65+ segment, for which PAC messages scored just as high as the youngest segment).

CC and OS messages were universally low-scoring but showed opposite patterns with regard to age segment. The youngest three segments scored CC messages more highly than those 55-64 and above age 65. By contrast, with regard to OS messages, the older two segments scored the messages more highly than the youngest three segments.

Figure 6. Mean Combined Index Scores for Messages, by Age Segment



An examination of individual messages revealed some small exceptions to the overall frame patterns. For example, the overall Risk Information Frame pattern, where older segments tended to score the messages more highly, was reversed for the Risk Information Message regarding Care Coordination. For this message, younger segments tended to score the message more highly.

All of the Empowerment messages – save one – showed slight patterns where younger segments preferred the messages more than older segments. That overall pattern did not hold for the HAI

message. For this message, the scores among each age segment clustered together and showed no significant differences.

The significance tests on the cross-tabulations indicate that age did show association with index scores for one or both of the outcome measures. The four highest-scoring messages shared a pattern: at least one of the oldest two age groups (55-64 and 65-plus) had index scores significantly higher than at least one of the younger age groups (18-34, 35-44, or 45-54).

But for the fifth and sixth highest-scoring messages – the two messages that urged caring for “loved ones” – different patterns emerged. For the PAC-Empowerment message, both the 18-34 segment and the 35-44 segment scored significantly higher than the 65-and-over segment. For the HAI-Empowerment message, no significant differences existed between age segments.

CONCLUSIONS

The results have a few clear implications for crafting messages that can either draw consumers to the *Compare Tools* or engage users already on the Medicare.gov website.

- **Respondents showed a clear preference for the Risk Information Frame messages and a distinct disinterest in the Progress Frame messages.**
 - The same order of frame preference (Risk Information, Positive, Empowerment, Progress) that was observed for the combined index score was also present for the information-seeking and personal usefulness outcome measures.
- **A key driver of preference of so-called Risk Information Frame messages may have been specific “warning frame” language about potential threats associated with health care utilization.**
 - A follow-up analysis suggests that “Warning Frame” messages that include language warning about a need to avoid potential dangers in the health care system –generated the highest scores.
 - This is consistent with the literature on negativity bias, which has established that negative or threatening information is consistently more likely to draw attention compared to neutral or positive information.
 - A preference for “negative” or threatening information about potential dangers in the health system appears to contradict findings from earlier focus group research that demonstrated individuals preferred “positive” messages that showed the highest quality options for health care providers and services. Taken together with the survey results, it appears individuals pay close attention to and are more likely to click a link with “negative” information that outlines potential threats. Once attention is established, individuals do seek information about options to minimize danger. In this sense, their preferences are “positive” in that they attend to messages that suggest best available options to deal with the potential threats.
- **The HAI topic messages generated the highest combined index scores.**

- The level of preference for HAI-related topic information may actually be understated in these data, because the single highest rated message overall mentions infections prominently but was not counted as an HAI message.
 - However, while HAI topic messages generated higher combined index scores, **when it comes to personal usefulness, HAI messages did not score significantly higher than post acute care topic messages.**
- **Higher familiarity with a given topic did not appear to be a predictor of higher Index Scores for messages with that topic.**
 - Correlations were calculated between the 4 index score topic means (means of the 4 frame scores for each topic) and the 4 corresponding topic familiarity ratings. The correlations calculated around care coordination and post acute care were not significant. The correlations for HAI and OS were statistically significant, but the magnitude of each correlation was very small.
- **Individual message index scores were consistent with rank ordering of messages**
 - Correlations between all messages' index scores and the rank ordering of the messages (performed on a split sample) were all in the right direction, and 13 out of 16 were significant. This result appears to validate the MaxDiff-generated index scores.
- **The order of frame preferences did not differ substantially by audience segment.**
 - Order of frame preference was the same across all of the segments, albeit more pronounced for the "Sick, Active and Worried" and "Mature and Secure" segments, and less pronounced for the Vulnerable and Unengaged segments
- **The combined index scores for topics did not differ substantially by audience segment.**
 - All six audience segments rated the HAI topic higher than 100, but respondents in the "Sick, Active and Worried" and "Mature and Secure" segments were more likely to rate HAI higher.

Appendix 1. MaxDiff Exercise: Messages Ranked on Basis of Information-Seeking

Message	Score	Rank	Topic	Frame	Warning
Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	177	1	HAIs	Risk Information	Warning Frame
Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.	171	2	OS/ES	Risk Information	Warning Frame
Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	147	3	HAIs	Positive Attribute	
1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	131	4	PAC	Risk Information	Warning Frame
Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	113	5	HAIs	Empowerment	Warning Frame
Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	107	6	PAC	Empowerment	
Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	95	7	PAC	Positive Attribute	
New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	92	8	HAIs	Progress	
Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	90	9	CC	Risk Information	
Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.	80	10	OS/ES	Positive Attribute	
Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	79	11	CC	Positive Attribute	
New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	71	12	CC	Progress	
Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	71	13	CC	Empowerment	
Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.	60	14	OS/ES	Empowerment	
New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.	59	15	OS/ES	Progress	
New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	56	16	PAC	Progress	

Appendix 2. MaxDiff Exercise: Messages Ranked on Basis of Personal Usefulness

Message	Score	Rank	Topic	Frame	Warning
Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.	154	1	OS/ES	Risk Information	Warning Frame
Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital.	132	2	PAC	Empowerment	
Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	128	3	HAIs	Risk Information	Warning Frame
1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	128	4	PAC	Risk Information	Warning Frame
Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	121	5	HAIs	Positive Attribute	
Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	120	6	PAC	Positive Attribute	
Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	120	7	CC	Positive Attribute	
Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	118	8	CC	Risk Information	
Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	110	9	HAIs	Empowerment	Warning Frame
New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	79	10	HAIs	Progress	
Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	79	11	CC	Empowerment	
Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.	77	12	OS/ES	Positive Attribute	
New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	61	13	PAC	Progress	
Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.	60	14	OS/ES	Empowerment	
New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.	57	15	OS/ES	Progress	
New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	56	16	CC	Progress	

Appendix 3. Landing Page Survey Questionnaire

09/07/2016 3:14:00 PM

Landing Page Message

Landing Page Survey - Final Report 12 16 14 .docx

Job #N1104

October 7, 2014

INTRODUCTION

We are conducting a survey to better understand how people make decisions about their health care. Your responses will be kept confidential and they will not be used to attempt to sell you anything. This survey will only take about ten minutes of your time.

S1. Please select the state you live in.

INSERT DROP DOWN STATE LIST INCLUDING WASHINGTON, DC AND
'OUTSIDE THE US' OPTION

(IF OUTSIDE THE US, THANK AND TERMINATE)

(THE FOLLOWING NEEDS TO BE LABELED AS Q3 FOR SEGMENTATION)

S2. In what year were you born?

[ENTER FOUR DIGIT YEAR – RANGE -1915-1996]

9998 Prefer not to say

THANK AND TERMINATE

(IF UNDER AGE 18, THANK AND TERMINATE)

(CHECK QUOTA TARGETS)

MAX-DIFF QUESTIONS

(DESIGN NOTES: WE WANT TO TEST 16 MESSAGES WITH THE MAXDIFF METHOD (SEE LAST PAGE FOR ALL MESSAGES). WE HAVE TWO CRITERIA OR “OUTCOME MEASURES” THAT WE WANT PEOPLE TO USE IN THEIR RANKINGS. WE WANT TO RANDOMLY ASSIGN HALF OF THE SAMPLE TO USE ONE OUTCOME MEASURE AND HALF USE THE OTHER.)

1. Max-Diff Exercise
(1/2 SAMPLE GETS PART A; OTHER 1/2 SAMPLE GETS PART B)

A. Outcome Measure: Information-seeking (**RANDOMLY ASSIGN TO HALF SAMPLE)

You will be presented with some messages that might appear on a website that provides information about finding health care providers and services in your area. For each set of messages, first choose the one message that is most likely to make you click for more information (left-hand column). Then, choose the one that is least likely to make you click for more information (right-hand column).

Please read each set before making your choices. Some combinations may look similar, but they are all different. [INSERT X SETS; 4 MESSAGES EACH]

Most likely to make me click for more information...		Least likely to make me click for more information...
	Message 1	
	Message 2	
	Message 3	
	Message 4	

B. Outcome Measure: Personal Usefulness (**RANDOMLY ASSIGN TO HALF OF SAMPLE)

You will be presented with some messages that might appear on a website that provides information about finding health care providers and services in your area. For each set of messages, first choose the one message that is most useful in helping you make health care decisions for yourself and your loved ones (left-hand column). Then, choose the one that is least useful in helping you make health care decisions for yourself and your loved ones (right-hand column).

Please read each set before making your choices. Some combinations may look similar, but they are all different. [INSERT X SETS; 4 MESSAGES EACH]

Most useful in helping me make health care decisions for myself and my loved ones ...		Least useful in helping me make health care decisions for myself and my loved ones ...

	Message 1	
	Message 2	
	Message 3	
	Message 4	

2. Please rank the following messages in order of most likely to make you click for more information to least likely to make you click for more information (rate the most likely message as “1” and least likely message as “4”)

Insert Message 1

Insert Message 2

Insert Message 3

Insert Message 4

(**RANDOMLY ASSIGN ONE QUARTER OF THE SAMPLE TO RANK the MESSAGES UNDER EACH TOPIC ON PAGE 2 OF THIS DOCUMENT. i.e.: ¼ of sample would be presented the four HAI messages and asked to rank order them, ¼ of the sample would be presented the Care Coordination messages and asked to rank order them, ¼ of the sample would be presented the Post Acute Care messages and asked to rank order them, and ¼ of the sample would be presented the Orthopedic/Elective Surgery messages and asked to rank order them. RANDOMIZE ORDER OF MESSAGES)

SEGMENTATION QUESTIONS

(Q98 FOR SEGMENTATION)

3. Do you currently have any chronic health conditions that require ongoing care – such as arthritis, chronic pain, diabetes, high blood pressure, or heart disease?

- 1 Yes
2 No

(Q69 FOR SEGMENTATION)

4. Have you ever looked for information on health topics like staying healthy and preventing disease; managing ongoing conditions like pain, arthritis, or diabetes; or healthcare quality information and support networks; or the new healthcare law?

- 1 Yes
2 No

(SEE Q#'S FOR SEGMENTATION)

5. For each statement below, indicate how strongly you agree or disagree. Use a scale from 1 to 7, where a 1 means you strongly disagree and a 7 means you strongly agree. You can pick any number between 1 and 7. If any statement does not apply to you, you may indicate this. (Please select one answer for each statement.)

PN: RANDOMIZE ITEMS A-F

Q# for seg-mentation			Strongly Disagree <<< >>> Strongly Agree							Does not apply	Don't know
Q35	a.	Someone else takes care of health care issues so I don't really need to	1	2	3	4	5	6	7	9	99
Q48	b.	It is very important for me to be informed about health issues	1	2	3	4	5	6	7	9	99
Q41	c.	I have other people I can always turn to if I need help	1	2	3	4	5	6	7	9	99
Q43	d.	I'm concerned about not being able to pay for healthcare	1	2	3	4	5	6	7	9	99
Q52	e.	I am usually one of the first to try new technologies	1	2	3	4	5	6	7	9	99
Q44	f.	I have a financial plan that includes funding for future healthcare costs	1	2	3	4	5	6	7	9	99

(LABELED AS income_with_imputed2 FOR SEGMENTATION)

6. Which one of the following categories includes your total annual household income, after taxes? If you are living with parents, a roommate or other relatives, please tell me the income category that applies to only yourself and a spouse if applicable. (Please select one.)

- 1 Less than \$15,000
- 2 \$15,000 to under \$25,000
- 3 \$25,000 to under \$50,000
- 4 \$50,000 to under \$75,000
- 5 \$75,000 to under \$100,000
- 6 \$100,000 to under \$150,000
- 7 \$150,000 to under \$200,000
- 8 \$200,000 or more
- D Don't know/ Prefer not to answer

INTERNET USE AND HEALTH CARE INFORMATION SOURCES

7. How many days per week do you use the Internet for things other than for checking e-mail? For example, for things such as checking news, online shopping, or searching for information.

[ENTER NUMBER OF DAYS – RANGE -1-7]

- 8 Prefer not to say

8. If you were looking for information to find a hospital or health care facility for a planned health care service or procedure, which of the following sources are you most likely to use? (Please select only the one item that you are most likely to use)

PN: RANDOMIZE RESPONSES 1-6

- 1 Personal recommendation from friends and family
- 2 Magazines or other literature
- 3 Hospital or Provider websites
- 4 Government-sponsored websites
- 5 Internet search (Please specify) _____
- 6 Social Media (Please specify) _____
- 7 Other (Please specify) _____

HEALTH SYSTEM UTILIZATION

9. Have you received inpatient treatment or services at a hospital or health care facility, including a nursing home or rehabilitation facility, within the past year, or anticipate receiving treatment in the next six months?

- 1 Yes
2 No

10. Have you visited a specialist for the same health issue at least two times in the past year?

- 1 Yes
2 No

11. Do you provide care for a family member or loved one who cannot care for him or herself due to a disability or functional limitation? This might include nonmedical care such as help with bathing or eating or medically necessary care such as changing dressings.

- 1 Yes
2 No

12. For each statement below, indicate how strongly you agree or disagree. Use a scale from 1 to 7, where a 1 means you strongly disagree and a 7 means you strongly agree. You can pick any number between 1 and 7. If any statement does not apply to you, you may indicate this. (Please select one answer for each statement.)

PN: RANDOMIZE ITEMS A-D

		Strongly Disagree <<< >>> Strongly Agree							Does not apply	Don't know
a.	I am familiar with issues related to healthcare associated infections	1	2	3	4	5	6	7	9	99
b.	I am familiar with issues of care coordination	1	2	3	4	5	6	7	9	99
c.	I am familiar with issues related to post-acute care	1	2	3	4	5	6	7	9	99
d.	I am familiar with issues related to orthopedic or elective surgery	1	2	3	4	5	6	7	9	99

DEMOGRAPHICS

13. What is your current marital status?
- 1 Married
 - 2 Divorced
 - 3 Separated
 - 4 Widowed
 - 5 Single, never married
 - D Don't know
 - R Prefer not to answer
14. What is the highest level of education that you have completed?
- 1 Grade school or less
 - 2 Some high school
 - 3 Graduated high school/ GED
 - 4 Vocational/Technical school
 - 5 Some college/2 years or less
 - 6 Some college/ more than 2 years
 - 7 Graduated college (e.g. Bachelor's degree)
 - 8 Post-graduate degree (e.g. PhD or master's degree)
 - D Don't know
 - R Prefer not to answer
15. Are you Hispanic or Latino?
- 1 Yes
 - 2 No
 - D Don't know
 - R Prefer not to answer
16. What is your racial or ethnic background? (Please select all that apply.)
- 1 White
 - 2 Black
 - 3 Asian
 - 4 American Indian
 - 5 Native Hawaiian or other Pacific Islander
 - 6 Other (Please specify)
 - D Don't know
 - R Prefer not to answer

17. What is your 5-digit zip code?

[ENTER FIVE DIGIT NUMBER]

18. Please select your gender.

- 1 Male
- 2 Female

CLOSING: Thank you for your cooperation in this important research study!

Messages to be used for Max-Diff Exercise

	HAIs	Care Coordination	Post Acute Care	Orthopedic/Elective Surgery
Empowerment	Make sure your loved ones are protected by finding out which hospitals in your area are best at preventing healthcare-associated infections.	Make sure your healthcare providers communicate well by finding out which facilities in your area are better at working together to improve patient care.	Make sure your loved ones get the care they need after hospitalization by finding out which facilities in your area are better at planning quality follow-up care after patients leave the hospital	Make sure you get the best results from your orthopedic surgery by finding out which facilities in your area are better at following safe surgical practices.
Progress	New report: hospitals are getting better at reducing healthcare-associated infections. Find out which hospitals in your area are doing better.	New report: doctors and healthcare facilities are finding better ways to work together. Find out which facilities in your area are doing better.	New report: healthcare facilities are doing better at planning follow-up care after patients leave the hospital. Find out which facilities in your area are doing better.	New report: healthcare providers are doing better at getting patients back on their feet after orthopedic surgery. Find out which facilities in your area are doing better.
Positive Attribute	Some hospitals are better than others at preventing healthcare-associated infections. Find out which are better at protecting you and your loved ones from infections.	Some healthcare facilities are better than others at working with the many providers involved in their patients' care. Find out which are working together to improve care in a way that can benefit you.	Some healthcare facilities are better than others at making sure patients have quality follow-up care after a hospital stay. Find out which are better at preventing you from having to return to the hospital.	Some healthcare facilities are better than others at following safe orthopedic surgical practices. Find out which are better at minimizing complications after your surgery.
Risk Information	Healthcare-associated infections affect up to 10% of hospitalized patients in the U.S. every year. Find out how hospitals in your area compare in rates of infection.	Patients are often treated by multiple physicians and specialists who may or may not work together. Find out how healthcare facilities in your area compare in working together to improve patient care.	1 in 5 elderly patients will go back to the hospital within 30 days of being discharged. Find out how healthcare facilities in your area compare in preventing you from having to return to the hospital.	Many surgeries, including orthopedic surgery, carry a risk for infection, bleeding, or blood clotting. Find out how healthcare facilities in your area compare in following safe surgical procedures.



Engaging Consumers with Quality Information

Consumer Reactions to a Quality Tools Landing Page

Prepared for the Centers for Medicare & Medicaid Services

March 31, 2015

L&M POLICY RESEARCH, LLC

Overview

The presentation distills findings from a study about how consumers engage with web-based quality information

AGENDA

- Provide background and context for this study
- Outline research objectives
- Describe study methodology
- Highlight key findings
- Summarize limitations of the research
- Provide recommendations for presentation of quality information generally and for the specific Carefinder.gov prototype that was used for testing

Context for Research

- Current study is one of a larger series to develop a Quality Tools Landing Page that would:
 - ▶ Educate all consumer segments about quality variation and measurement
 - ▶ Spur further consumer action and engagement with quality information
- Previous two studies in series:
 - ▶ Consumer focus groups that examined healthcare topics and “hooks” that could be used to attract consumers to a Quality Tools Landing Page
 - ▶ Survey that presented “hooks” in choice sets of four and elicited consumers’ preferences for framing and topics

Research Objectives

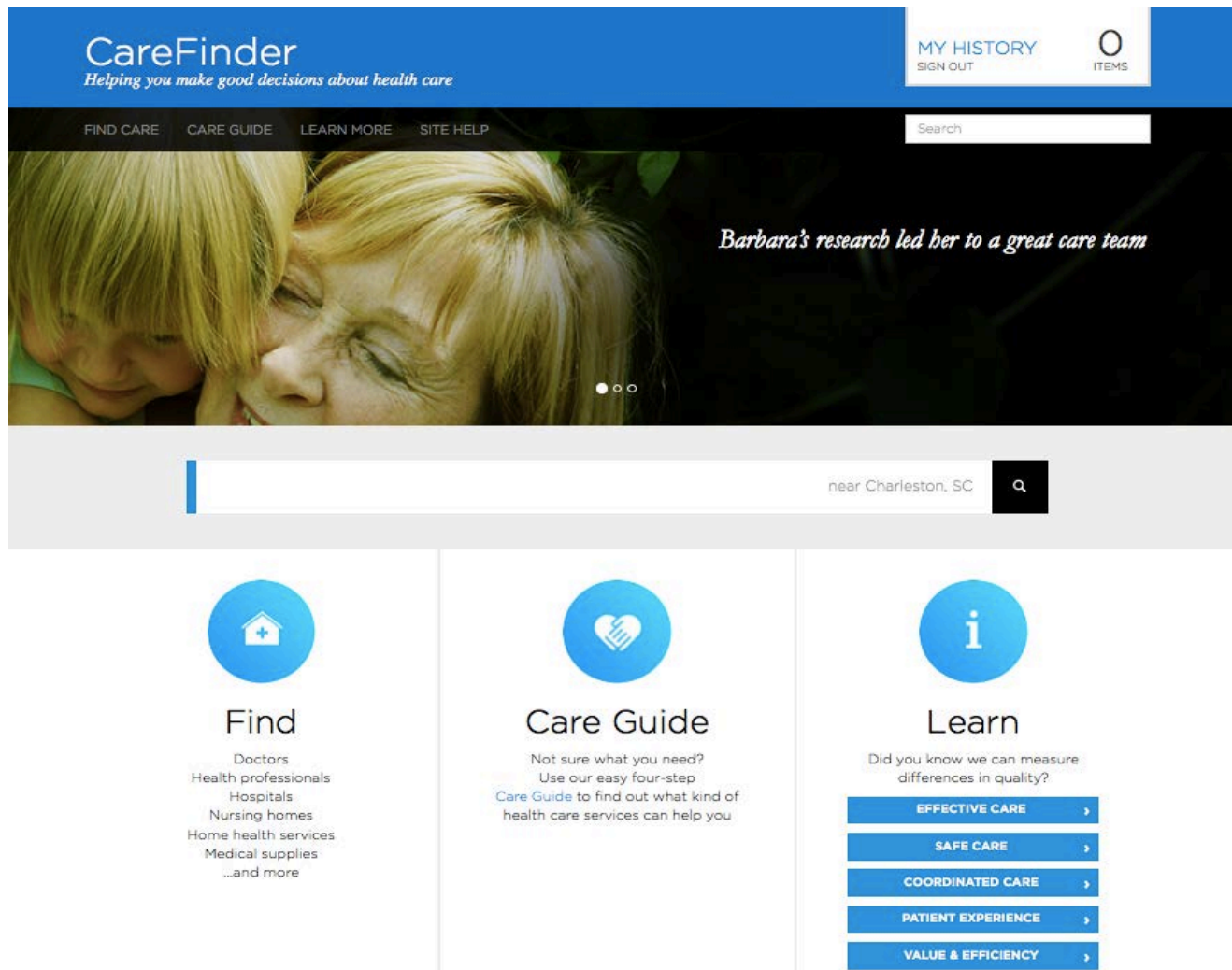
The research served two purposes:

1. Gain generalizable insights into **what types of web-based information facilitates understanding** of, engagement with, and perceived relevance of health provider quality ratings
2. Elicit consumer **responses to a prototype of a Quality Tools Landing Page** branded as “CareFinder.gov”

Objective 1: Four Research Questions

- What features motivate staying and navigating further into the website?
- What intermediate content is needed to orient users to quality information?
- What information supports understanding of and motivation to use quality information?
- How do personal stories on the site motivate staying and navigating further into the website?

Objective 2: CareFinder Testing





Methodology

Overall Research Approach

- Six consumer focus groups
 - ▶ Three groups in Atlanta, GA on February 24, 2015
 - ▶ Three groups in Chicago, IL on February 26, 2015
- Groups were organized by CMS Audience Segment
 - ▶ Vulnerable & Unengaged
 - ▶ Passive & Skeptical
 - ▶ General Mix of other segments (Healthy & Young; Informed & Healthy; Sick. Active & Worried; and Mature & Secure)

Participant Summary

	Atlanta			Chicago			Total Participants by
	Mixed Group	Passive & Skeptical Group	Vulnerable & Unengaged Group	Mixed Group	Passive Skeptical Group	Vulnerable & Unengaged Group	Audience Segment
Vulnerable & Unengaged	—	—	2	—	—	2	4
Passive & Skeptical	—	5	1	—	4	—	10
Sick, Active & Worried	1	—	1	1	—	2	5
Informed & Healthy	2	—	—	3	—	—	5
Healthy & Young	1	—	—	2	—	—	3
Mature & Secure	2	—	—	1	—	—	3
Total Participants by Focus Group	6	5	4	7	4	4	30



Key Findings Objective 1: What engages consumers with quality ratings information

Objective 1: Identifying the types of of web-based quality information that work best for consumers

- Gain generalizable insights into what types of web-based information facilitates understanding of, appreciation for, and engagement with health provider quality ratings

RQ 1: Does a landing page with multiple features motivate users to navigate further?

- Overall, participants were engaged by the prototype content and wanted to navigate beyond the homepage – often because they wanted to quickly find providers and view quality information about them.

RQ 2: Need for intermediate content to orient and introduce quality information to consumers?

- Some participants wanted to learn about quality information and the website's purpose, while others wanted to navigate directly to quality ratings.
 - ▶ Many participants preferred descriptive information provided in the Personal stories and the Care Guide
 - ▶ Many participants viewed the data source of the quality ratings information as important

RQ 3: What content supports understanding of and motivation to use quality information?

- Overall, two kinds of content were most supportive of participants' understanding of quality information and motivation to use it: (1) concrete patient and family examples; and (2) step-by-step Care Guide tailored to one's situation.
 - ▶ Personal stories helped some participants understand the relevance of the quality information.
 - ▶ Some participants believed the Care Guide helped identify informational needs and narrow options based on their circumstances.

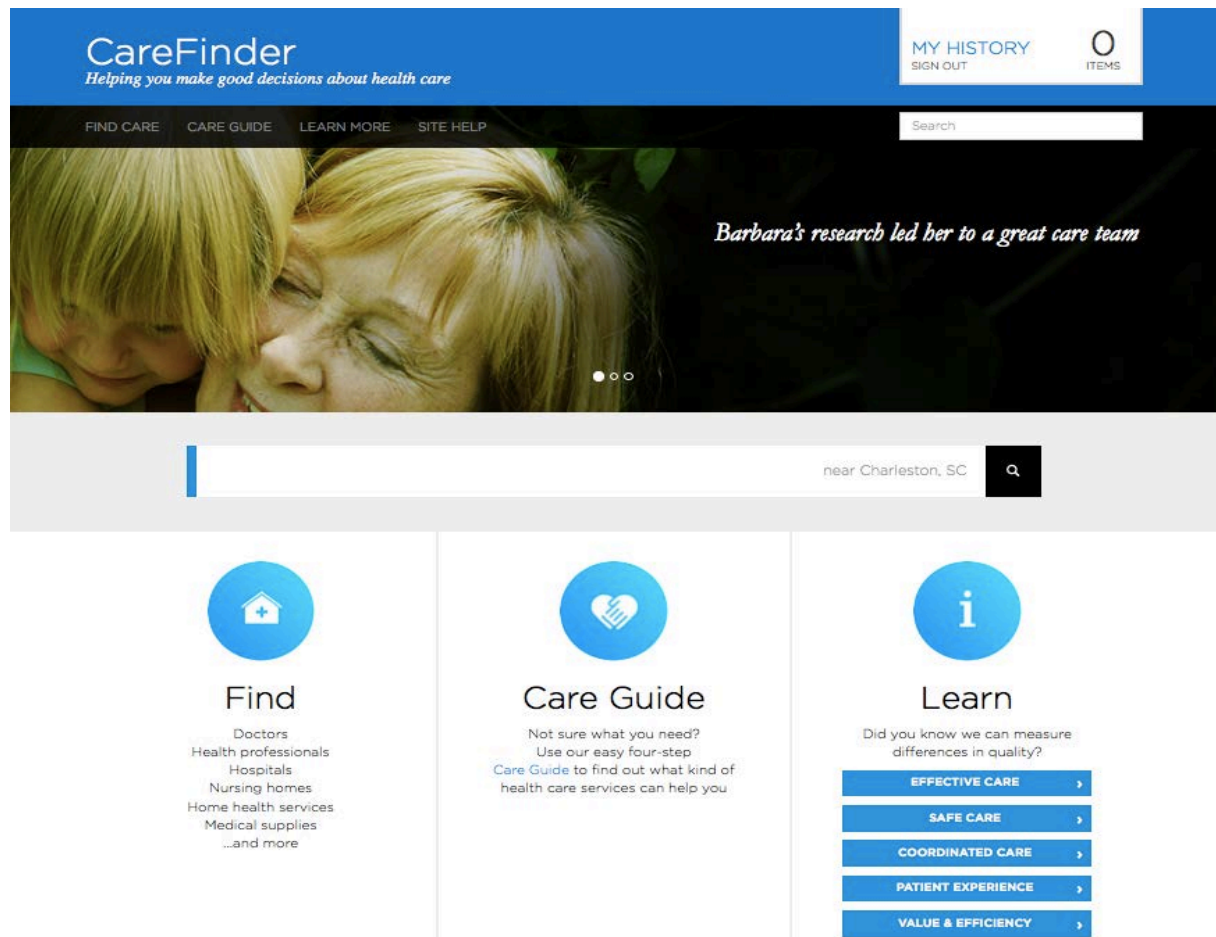
RQ 4: How does personalization of the site motivate further navigation of site?

- Different features appealed to different participants.
 - ▶ A few participants indicated that they would go to different features depending on their needs or circumstances.
- For many participants, the personal stories helped to orient them to the purposes of the site and use of quality information.
 - ▶ Participants wanted to see stories that were more relatable, for example, by featuring younger people.
- However, three important caveats emerged:
 - ▶ The perceived truth of the story matters.
 - ▶ Aspects of the stories that seem to be marketing are less appealing and potentially disengaging.
 - ▶ Positively framed stories were more engaging than negatively framed stories.

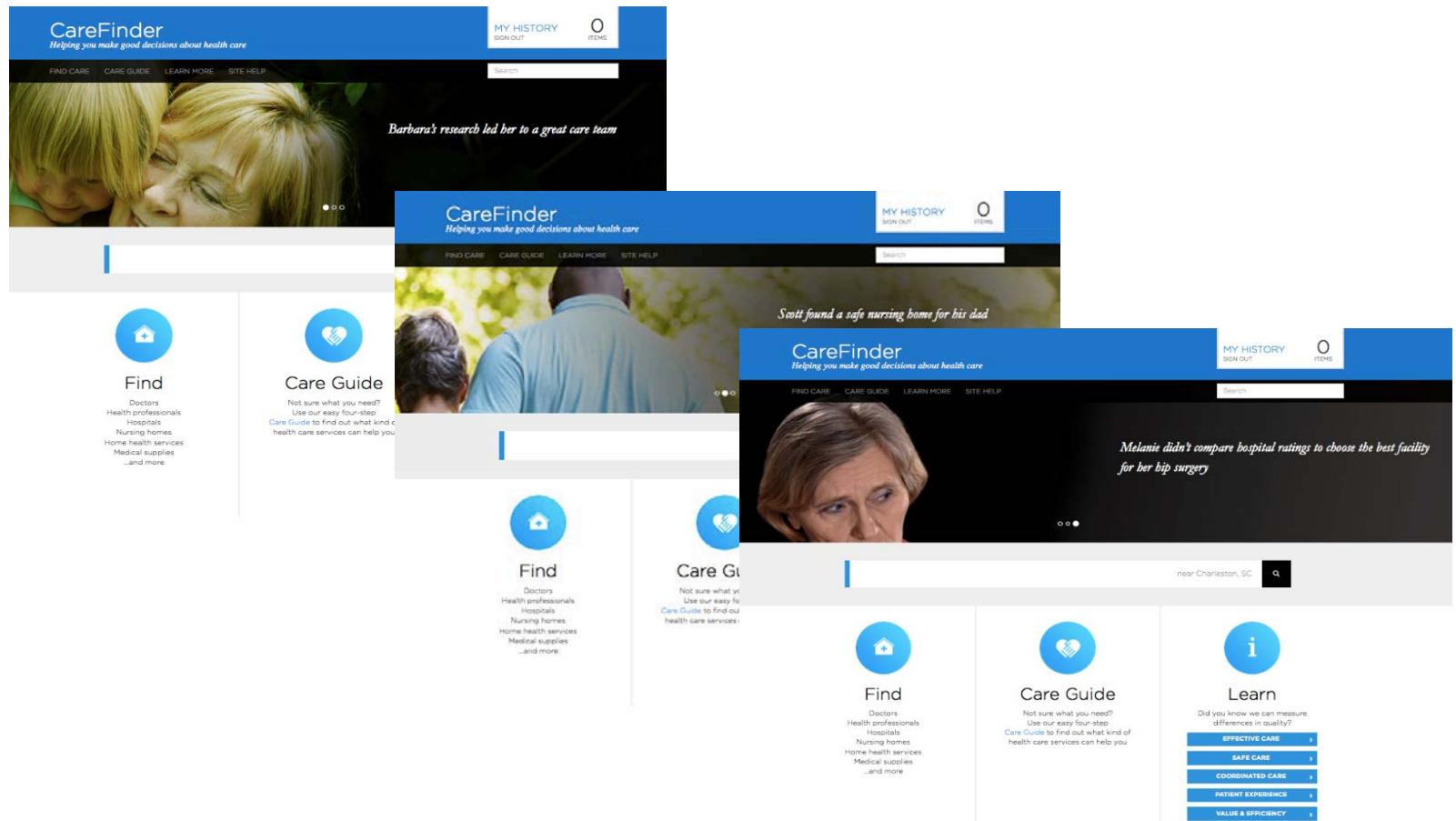


Key Findings Objective 2: Reactions to CareFinder.gov

Objective 2: Identifying which features of the CareFinder.gov prototype engage consumers



CareFinder Prototype Homepage



Homepage Reactions: Overview

- Immediate reactions to the homepage were generally positive.
- Some participants immediately grasped the purpose of the site...
- ...while others did not immediately understand the website's purpose.

Immediate reactions to the homepage were generally positive

- Participants were asked to share their first impressions after a brief look at the Carefinder.gov homepage:
 - ▶ It has a “*very minimal design...it’s pretty clean and simple*” (Informed & Healthy participant, Atlanta)
 - ▶ “*It’s a nice clean look and looks like it’s very simple to navigate*” (Mature & Secure participant, Atlanta)

Some easily grasped the website's purpose from viewing the homepage...

- For example, one participant was able to quickly discern different functions of the “Find,” “Care Guide,” and “Learn” features.
 - ▶ *“It looks like one [the Find section] is for services – who’s going to do the services. The second one [The Care Guide] is if you don’t know really what you need to look for and need to put in what you’re dealing with, so I’d think questions about what symptoms [you’re] dealing with, how old you are..., and the other [the Learn Section] is so you can evaluate what you’re looking at on the far left” (Passive & Skeptical participant, Atlanta).*

...but some needed more information from the homepage to glean its purpose

- One participant felt she would need to click through the site to really understand its purpose:
 - ▶ *“It’s not too busy.. it’s just that you have to click on [elements of the page] to figure out what it’s about, what you’re looking for.”* (Passive & Skeptical participant, Atlanta)
- Another participant asked for more information in the site description beyond “helping you make good decisions about healthcare.”
 - ▶ *“What kind of decisions?...put something on top that explains a little more what the website’s about because I don’t know what kind of decisions”* (Passive & Skeptical participant, Atlanta).

Personal stories reactions:

When read, stories improved understanding

- Some participants were not inclined to click on the personal stories – either because they thought they were not clickable or were simply not interested.
- However, once participants read the personal stories, most felt the stories helped them understand how to use CareFinger.gov.
 - ▶ *“I would know what to look for, since she tells you some of the things to look for....I also like that she mentioned comparing infection rates, and it would make me want to look further into the site.”* (Healthy & Young participant, Chicago)

Perceived truth of the personal stories mitigated their impact on participants

- The perceived truth of the story matters; some participants questioned whether the stories were real, and a few viewed them as a form of marketing.
 - ▶ *“I would pay more attention to it if it is an actual quote from that person. It would be nice to see an actual person making that statement instead of just the company saying it”* (Passive & Skeptical participant, Chicago)

Care Guide

CareFinder

Helping you make good decisions about health care

MY HISTORY

SIGN IN | CREATE ACCOUNT

0
ITEMS

FIND CARE CARE GUIDE LEARN MORE SITE HELP

Search

HOME > CARE GUIDE

SAVE

EMAIL

PRINT

Care Guide: find out what you need

Knowing what kind of services and care you need can be challenging. This easy four-step guide will help you define your situation and find the kind of care you need.

STEP 1 The Person Needing Care

STEP 2 Situation

STEP 3 Health Issues and Concerns

STEP 4 Care Needed

What does Dad need?

- ☐ Intense nursing care (for example, needs 24 hour monitoring)
- ☒ Nursing care (for example, wound care)
- ☐ Help with daily activities
- ☐ Mobility assistance
- ☒ Physical or other therapy for rehabilitation
- ☐ A place to live

I want to see Dad's options for getting care at...

- ☒ At home
- ☐ Living with family
- ☐ In a care facility (for example, a nursing home)

SEE RELEVANT SERVICES

Good to know

COMMON SEARCHES

[Primary care physician](#)
[Home health](#)
[Nursing home](#)

RELATED LINKS

[What every caregiver needs to know](#)

[Living with a chronic condition](#)

[How to apply for financial assistance](#)

[What to know about long-term planning](#)

Care Guide: Pre-Results Page

CareFinder

Helping you make good decisions about health care

MY HISTORY

SIGN IN | CREATE ACCOUNT

0 ITEMS

FIND CARE

CARE GUIDE

LEARN MORE

SITE HELP

Search

Q

FIND CARE > SEARCH RESULTS

SERVICES RELEVANT TO DAD'S SITUATION

CARE AT HOME

HOME HEALTH CARE

Skilled nursing, various therapists, medical social workers, and home health aides can provide care in the home for patients who are ill or injured.

SELECT

CARE OUTSIDE THE HOME

THERAPY AND REHABILITATION

Group practices and individual professionals offer office appointments for physical therapy, occupational therapy, post-surgical therapy, and more.

SELECT

PLACES TO STAY WITH PROFESSIONAL CARE

NURSING HOMES

Nursing homes provide long-term or short-term residential care, skilled nursing, and therapy for those with chronic illness or disability.

SELECT

REHABILITATION FACILITY

Residential rehabilitation facilities offer patients intensive physical and other therapy services to help them return to independent living.

SELECT

MEDICAL SUPPLIES AND EQUIPMENT

WHEELCHAIRS AND RELATED ACCESSORIES

Manual and electric wheelchairs and scooters help patients with mobility and daily living

SELECT

Good to know

Medicare covers short-term or infrequent home health care as prescribed by your doctor if you are housebound. Medicare does not cover a home health aide if that is the only care needed.

AVERAGE COST RANGE

\$24 - \$28

per hour of physical therapy

\$19 - \$21

per hour of nursing care

COMMON SEARCHES

Primary care physician

Physical therapist

Occupational therapist

Home health

Nursing home

In-patient rehabilitation facility

Crutches, walkers, and canes

RELATED LINKS

How Medicare covers home health services >

Resources for caregivers >

Living with a chronic condition >

How to apply for financial assistance >

Care Guide: Quality Results Page

CareFinder
Helping you make good decisions about health care

MY HISTORY
SIGN IN | CREATE ACCOUNT | 0 ITEMS

FIND CARECARE GUIDELEARN MORESITE HELP

Search

SEARCH > HOME HEALTH

You searched for "home health" near Charleston, SC

LOCATION

Within 5 miles of

Charleston, SC

Show Map

CARE NEEDED

Nursing care

Physical therapy

Select more

COVERED BY

☒ Medicare

☒ Medicaid

☐ Other Plans

6
RESULTS

SHOW ADVANCED SEARCH OPTIONS >

SHOWING 15 RESULTS - SORT BY

QUALITY OF CARE

PHC Home Health

Home Health Agency



Overall Quality of Care

(843) 553-1263
2675 Lake Park Drive
Charleston, SC 29406

[View Website](#)

- Physical therapy
- Occupational therapy
- Medical social services
- Show all

Rehabilitation care
Pain management
Care management



Amedisys Home Health of East Charleston

Home Health Agency



Overall Quality of Care

(843) 553-0200
1027 Physicians Drive, Suite 210
Charleston, SC 29414

[View Website](#)

- Physical therapy
- Occupational therapy
- Medical social services
- Show all

Rehabilitation care
Pain management
Care management



Good to know

Medicare covers short-term or infrequent home health care as prescribed by your doctor if you are housebound. Medicare does not cover a home health aide if that is the only care needed.

AVERAGE COST RANGE

\$24 - \$28

per hour of physical therapy

\$19 - \$21

per hour of nursing care

COMMON SEARCHES

Primary care physician
Physical therapist
Occupational therapist
Home health
Nursing home
In-patient rehabilitation facility
Crutches, walkers, and canes

Care Guide Reactions

- Participants liked that the ease of the Care Guide questionnaire and the resulting information tailored to their needs and circumstances.
 - ▶ However, there was some concern about sharing personal information.
- In contrast to Hospital Compare, one participant noted that the Care Guide helps you identify the range of provider options available; Hospital compare requires that you already know exactly what you need.
- Participants liked the layout of the results pages – and liked the quality ratings.
 - ▶ However, there was still some confusion about the meaning of the ratings and how the composite and component measure ratings related to each other

Care Guide questionnaire was considered user-friendly but raised privacy concerns for some

- Most participants reacted favorably to the perception that the Care Guide uses information from the questionnaire to tailor information.
 - ▶ *“It gives you a lot of options to choose from...It’s pretty easy and simple!”* (Passive & Skeptical participant, Chicago).
 - ▶ *“The Care Guide for me was pretty simple. [The questionnaire presented] to-the-point questions... and then it brings you all the results. To me. it wasn’t complicated”* (Passive & Skeptical participant, Atlanta).
- ...but some participants raised privacy concerns.
 - ▶ *“As soon as I would have to give anything personal, I would be off of it”* (Passive & Skeptical participant, Atlanta).

Learn

The screenshot shows the CareFinder website. The header is blue with the 'CareFinder' logo and tagline 'Helping you make good decisions about health care'. On the right, there's a 'MY HISTORY' section with a 'SIGN OUT' link and a counter showing '0 ITEMS'. Below the header is a navigation bar with links: 'FIND CARE', 'CARE GUIDE', 'LEARN MORE', and 'SITE HELP'. A search bar is also present. The main banner features a photo of an elderly woman hugging a young child, with the text 'Barbara's research led her to a great care team'. Below the banner is a search bar with the text 'near Charleston, SC' and a magnifying glass icon. The main content area is divided into three columns. The first column, 'Find', has a house icon and lists: 'Doctors', 'Health professionals', 'Hospitals', 'Nursing homes', 'Home health services', 'Medical supplies', and '...and more'. The second column, 'Care Guide', has a heart icon and text: 'Not sure what you need? Use our easy four-step Care Guide to find out what kind of health care services can help you.' The third column, 'Learn', has an 'i' icon and text: 'Did you know we can measure differences in quality?'. Below this text are five blue buttons with white text and right-pointing arrows: 'EFFECTIVE CARE', 'SAFE CARE', 'COORDINATED CARE', 'PATIENT EXPERIENCE', and 'VALUE & EFFICIENCY'.

CareFinder
Helping you make good decisions about health care

MY HISTORY
SIGN OUT
0
ITEMS

FIND CARE CARE GUIDE LEARN MORE SITE HELP

Search

Barbara's research led her to a great care team

near Charleston, SC

Find
Doctors
Health professionals
Hospitals
Nursing homes
Home health services
Medical supplies
...and more

Care Guide
Not sure what you need?
Use our easy four-step
Care Guide to find out what kind of
health care services can help you.

Learn
Did you know we can measure
differences in quality?

EFFECTIVE CARE
SAFE CARE
COORDINATED CARE
PATIENT EXPERIENCE
VALUE & EFFICIENCY

Learn



Learn

Did you know we can measure
differences in quality?

EFFECTIVE CARE



SAFE CARE



COORDINATED CARE



PATIENT EXPERIENCE



VALUE & EFFICIENCY



Learn

CareFinder
Helping you make good decisions about health care

MY HISTORY
SIGN OUT 0 ITEMS

FIND CARE CARE GUIDE LEARN MORE SITE HELP

Search

LEARN MORE > QUALITY MEASURES

Did you know we can measure differences in quality?

Click on the quality areas below to see more. A health care system that performs well in these areas will be better at meeting your needs.

- EFFECTIVE CARE**
Health care that is based on scientific knowledge and shown to be beneficial >
- SAFE CARE**
Health care that reduces harm and injury to patients >
- COORDINATED CARE**
Health care that involves effective communication and collaboration between patients, doctors, hospitals and other providers >
- PATIENT EXPERIENCE**
Health care that respects patients' preferences, needs, and values >
- VALUE & EFFICIENCY**
Health care that is made more affordable by promoting efficiency and avoiding waste >

Learn

CareFinder

Helping you make good decisions about health care

MY HISTORY

SIGN OUT

0

ITEMS

FIND CARE


CARE GUIDE

LEARN MORE

SITE HELP

Search

LEARN MORE > QUALITY MEASURE



A health care system that performs well in these areas will be better at meeting patient needs

EFFECTIVE CARE >

SAFE CARE >

COORDINATED CARE >

PATIENT EXPERIENCE >

VALUE & EFFICIENCY >

Enter a location here to find quality ratings of providers near you

Zip Code or City, State

Q

Effective care

Health care that is based on scientific knowledge and shown to be beneficial

Click the provider types below to see what kind of "effective care" quality ratings CareFinder provides.

Physicians

Hospitals

- Heart attack care
- Heart failure care
- Pneumonia care
- Surgical care
- Emergency department care
- Preventive care
- Children's asthma care
- Stroke care
- Blood clot prevention and treatment
- Pregnancy and delivery care

Home Health Services

Nursing Homes

Dialysis Facilities

L&M POLICY RESEARCH, LLC

33

Learn Reactions

- Overall, several participants were interested in clicking the Learn section
 - ▶ However, those participants often did not have a clear sense of what they would find after clicking.
- But once they clicked, participants were generally less interested in – and somewhat confused by – the material that grouped quality care into the National Quality Strategy domains.
 - ▶ *“I feel like a lot of them fall under effective care. All of these tie into how effective the care is.”* (Healthy & Informed participant, Atlanta)
- When asked, some participants said it would be useful to include information about how the ratings are calculated under the Learn section
 - ▶ In addition, a few participants said they would also like to see information explaining the ratings next to the measures.



Conclusions and Recommendations

General Recommendations for Quality Compare Landing Page

- **Provide a clear, concise website summary** to immediately focus consumer on purpose of the site.
 - ▶ People do not know that quality ratings exist, so communicating this upfront is important.
- Use images and personal stories on a homepage **that relate to consumers of all ages.**
- **Provide multiple features to meet different consumer needs**, much as the CareFinder prototype has done (for example, Personal Stories, Care Guide, Find, Learn, and Search features).
- Help consumers **understand the types of healthcare decisions that may benefit from quality information.**

Specific Recommendations for CareFinder.gov Prototype

- **Homepage:** Summarize the purpose of the site in place of one of the rotating personal stories at the top of the page.
 - ▶ Test alternative names that are less likely to be mistaken for having a focus on seniors – such as “HealthCare Finder.”
- **Personal Stories:** Further develop positive stories that provide a brief “how to” overview of the website and highlight ways to use the site or quality data in the stories.
- **Care Guide:** Keep the general structure.
 - ▶ Keep the pre-results page (with categories of providers) and final the results.
 - ▶ Usability testing is recommended to verify whether participants can understand the steps and navigate the website independently and understand the measure ratings.
- **Learn:** Consider presenting descriptions of data collection and quality measurement; use the background as a “hook” or enticement to visit actual quality information.

Research Limitations

- Vulnerable & Unengaged **recruitment** challenges, so groups were not homogeneous.
- Participant input based on **website demonstrations**, not independent navigation of CareFinder.gov
- **Prototype design may have influenced the participants' perception** of the different features; the Care Guide showed provider results; other features did not.
- **Pre-demonstration discussion** on social media, to elicit information about social media use, may have affected interpretation of homepage.



Memorandum

To: Frank Funderburk

From: L&M and Mathematica Policy Research

Date: Friday, August 28, 2015

Re: Topline Findings from Focus Groups around Media Use and Comparison Information

Background

L&M Policy Research (L&M) and Mathematica Policy Research (Mathematica) have conducted a series of studies designed to help the Centers for Medicare & Medicaid (CMS) encourage use of Quality *Compare* Tools on Medicare's website. The purpose of this recent round of qualitative research was to learn more about how consumers use the Internet and social media to access health and healthcare information. The research team conducted six focus groups in the Detroit, MI metropolitan area on July 30 and 31, 2015.

The focus group discussions informed the following research questions (RQs):

1. What sources of health information are commonly used among consumers? For what purposes? To what extent are consumers using social media for health information?
2. Who or what sources of health information are most trusted by consumers? Why?
3. What are the facilitators and barriers to use of online health information, and social media in particular?
4. Under what circumstances would consumers be interested in using social media to learn more about quality variation and to access comparative quality ratings?
5. What types of digital media sources of health information do consumers find most engaging and useful?

Methods

Focus Groups

Focus group participants were selected to reflect a mix of CMS's six Lifestyle and Psychographic segments: 1) Informed, Healthy & Educated (IH&E); 2) Sick, Active & Worried (SA&W); 3) Mature & Secure (M&S); 4) Healthy & Young (H&Y); 5) Passive & Skeptical (P&S) and 6) Vulnerable & Unengaged (V&U). The recruitment focused on V&U and P&S individuals because past research around messaging has shown these participants to be traditionally "hard to reach." The research consisted of two groups of V&U participants, two groups of P&S participants, and two groups containing a mix of participants from the other four CMS segments. All participants provided informed consent before participating.

Given the small number of participants and limitations to one geographic location, these findings are not generalizable to the broader consumer population but provide important insights that can help inform the development of a survey to profile consumers' media use and future dissemination efforts around the Medicare *Compare* Tools.

Egocentric Social Networking and Health Information Survey

Prior to each interview, participants completed a brief questionnaire on their social network and their use of health information. Because of the small sample size, analysis of the questionnaire data involved combining the hard-to-reach V&U and P&S segments together and comparing their responses to those of the participants in all other segments. The key variables measured in the questionnaire were:

- *Degree.* The "degree" of an individual's social network is the number of people with whom an individual discusses "important personal matters."
- *Closeness.* The "closeness" of an individual's social network is a measure of the average depth of relationships with members of the individual's network. The participant was asked to characterize the relationships with the five individuals that they "most often turn to when discussing personal matters." Participants rated the relationships on a 4-point scale where 1 is "Not that close," 2 is "Somewhat close," 3 is "Very close," and 4 is "Closest."
- *Social Media Use.* Use of certain social media tools included popular social networking websites like Facebook and Twitter, as well as answer choices like text messaging and email use.
- *Devices used to access Internet.* Options listed for devices used to access the Internet included a smart phone, tablet or personal computer.
- *Independence in making health decisions.* Participants provided their reliance on their self versus others in making health decisions. Participants rated themselves on a 4-point scale where 1 is "Making decision completely on one's own" and 4 is "Relying on someone else to make those decisions."

- *Most-used resource for choosing health providers.* Participants were asked what resource (e.g., friends, pharmacists, mailings, etc.) they would “use the most” to choose a health provider like a doctor or hospital.
- *Most-trusted resource for choosing health providers.* Participants were asked what resource (e.g., friends, pharmacists, mailings, etc.) they would “trust the most” to choose a health provider like a doctor or hospital.
- *Most-used medium of health information about providers.* Participants were asked what medium (television, radio, print, Internet, etc.) they used most in the last week for information about a health provider like a doctor or hospital.

Findings

RQ1: Commonly-used Sources of Health Information

- Many participants communicated that they do not routinely consume health information. Rather, they seek health information when they need to, as situations arise. When asked how often she consults online sources of health information, one participant commented, “It depends. When I was searching for a specific type of doctor in the last six months, I would be on there a lot more. But if I didn’t have anything going on, I wouldn’t.”
 - The questionnaire also indicated that health information consumption is often situational. Participants were asked what medium (television, radio, Internet, print, etc.) they used most for health-related information in the last week. The most common response was “Did not get any health information last week” (39 percent).
- Many participants said that if they needed information about a health condition or about a provider, they would rely on their doctors, friends, and Internet searches.
 - The questionnaire found that a majority of the participants (58 percent) said their most used resource for finding a doctor or other provider was “friends/family,” followed by “physician or nurse” (50 percent), “insurance or drug plan” (17 percent), mail from a health plan (11 percent) and “Internet” (8 percent).¹
 - In the focus groups, fewer of the V&U participants said they have enough sources of health information compared to the rest of the participants.
- When presented with various media sources (television, radio, Internet, print) more than one quarter of participants (28 percent), answered that they accessed most of their health information about providers using the Internet in the last week. However, the results varied widely between audience segments.

¹ Percentages do not add to 100 percent because recipients could check more than one answer.

- Individuals in the “hard-to-reach” segments (V&U and P&S segments combined) were far less likely to use the Internet (9 percent) compared to the participants in all other segments (57 percent).
- In the focus groups, several V&U participants noted information on the Internet can be overwhelming: “I’ll be trying to look something up, and my wife will come and stop me because I am overwhelmed.”

RQ2: Trusted Sources of Health Information

- We also found that while “friends/family” may have been participants’ “most used” resource in finding providers, the “most trusted” resource was “physician or nurse.” The majority of the participants (58 percent) said their most trusted resource for finding a doctor or other provider was a “physician or nurse,” followed by “friends/family” (47 percent), “insurance or drug plan” (14 percent), mail from a health plan (11 percent) and “internet” (6 percent).²
- When participants were asked which of the four (the two “.org” and two “.gov”) websites³ they found more trustworthy, a few participants chose websites they felt were most clearly designed and easiest to understand. These findings (trustworthiness perceptions prompted by clear design) comport with previous research showing that consumers tend to trust information when they find it is clearly presented and easily accessible (Ye 2011; Miller et al. 2012).
- Reactions of focus group participants suggested that the trustworthiness of government-compiled information depended on the context of its presentation.
 - The groups were presented with language that might be used to introduce information on a *Compare Tools* landing page: “This site is based on objective data compiled by the government and many others, including experts and consumers.” The statement elicited mixed reactions and raised doubts about government involvement in quality ratings information. At least one participant in each group expressed skepticism, sometimes mocking skepticism, about trusting “the government” to compile information.
 - However, when presented with four website URLs (two “.org” and two “.gov”) even participants skeptical of “the government” said they would be more likely to visit the .gov sites (*Hospital Compare* and *Physician Compare*). After seeing the content, most participants expressed positive opinions of these websites.

² Percentages do not add to 100 percent because recipients could check more than one answer.

³ Participants were shown a list of URLs and asked to react:

Physician Compare – <http://www.medicare.gov/physiciancompare>

Hospital Compare – <http://www.medicare.gov/hospitalcompare/search.html>

Surgeon Ratings – <http://www.checkbook.org/surgeonratings/>

Surgeon Scorecard – <https://projects.propublica.org/surgeons/>

- One participant in a P&S group who had already expressed wariness of depending on information “compiled by the government,” explained why he would be more likely to use *Hospital Compare* and *Physician Compare* than consumer rating websites: “Sometimes you don’t trust the government, but when it comes to information like this you want the ‘.gov.’ I think that those people have the ethics to put out the right information. Again, when you look at consumer information [ratings], you never know the circumstances around that.”

RQ3: Barriers and Facilitators to Use of Health Information, Including Social Media

- Important barriers related to seeking online health information to select providers were common among participants in these groups: lack of awareness of provider choice, constraints on choice, and lack of awareness of websites with comparative quality data.
 - Participants were largely unaware that they had options or choice in picking a surgeon or hospital and said they tended to depend on their primary care provider (PCP) for referrals. One participant stated, “You don’t get to pick your surgeon, your doctor refers you to a surgeon so I don’t know. You don’t know your surgeon until you are going in to surgery.” When asked what the participant would do if they did have choice in picking a surgeon, the participant responded, “I think my doctor [PCP] knows and I trust him.”
 - Many participants also said that their choices with regard to providers were limited by two factors: insurance networks and proximity to their residence.
 - Lack of awareness of online resources comparing provider quality was also a barrier. None of the participants in any of the groups were aware of the *Compare* Tools before seeing them during the groups, although a small number had tried to find online comparative information or used consumer rating sites.
- With regard to social media, one barrier was simply that use was largely limited to Facebook (81 percent of participants used Facebook, followed by 22 percent for Twitter).⁴ This may have been largely a function of the age of participants (the average age across all groups was 59.9 years).
- Most participants did not use social media as a resource for finding provider recommendations from friends, but many were open to using it with social media contacts with whom they are most connected. One participant (who was significantly younger than the average participant at 43 years of age) joined a private Facebook group

⁴ About 78 percent of respondents checked the answer choice for “Google+” in the question about social media website usage. However, discussion during the groups revealed that when asked about social media, participants answered that they used “Google” to search for information. When asked, they were unaware of a social media service similar to Facebook called “Google plus.” Therefore, it is assumed that by circling “Google+,” these participants intended to indicate that they use the Google search engine. Because of this perceived misunderstanding among participants, we chose not to include findings related to Google+.

for young parents that she used for provider recommendations. Another participant said he was open to using Facebook friends as a resource for finding providers.

- With regard to facilitating awareness of the *Compare Tools*, many participants made two suggestions: making the websites more prominent and accessible in search results and placing printed information in doctors' offices.
 - Many suggested that the *Hospital Compare* and *Physician Compare* should be more accessible via search engines, indicating that they use Google to find information on health conditions and to look for information to inform their selection of providers.
 - Participants also said they tended to rely on their doctors as an important source of healthcare information. Many participants suggested that doctors' offices are a key way to reach people with comparative quality information.

RQ4: Circumstances when Consumers Would Use Social Media to Learn More about Quality Ratings of Providers

- In an online environment, people are more cautious about sources of information. In an online context, the government tended to be viewed as an important source of information.
- Personal connections tended to be important as well. Because people encounter strangers or connections less close to them online, participants tended to be willing to click on links or use information provided by an online contact if they were a close friend or family member.
- There were mixed views about obtaining information about providers through social media sites. Participants were generally aware that in online environments trustworthiness of information is a concern. However, participants were interested in receiving information through social media when it came from personal connections or people like them.
- Most participants said they would be open to using an online support group for health information if they felt they could find useful information from people with experience in similar situations. A few participants said they had used online support groups, particularly when they were caregivers of people with complex healthcare needs, and found them helpful.
- Most participants said that they were more likely to use information if friends they consider "close" provided it. For example, many participants volunteered that they would be more likely to visit a website with comparative quality information if it was provided in a personal email message than on a social media site or support group.

- Advertising on social media was not well-received as a way to reach consumers.⁵ Most said they would never click on advertisements on Facebook, and would probably not notice them in the first place.
- Some participants volunteered that they would be more likely to share an information source (such as a comparative quality data website) with family or friends in person or virtually if their personal experience confirmed the information source. For example, if they found positive reviews for a doctor, went to the doctor and had a good experience, they would likely share the information source with others.
- Some participants saw value in using comparative quality information for future healthcare decisions, while a few thought they could bring the information to their doctor for discussion.

RQ5: Most Engaging Types of Digital Health Information Sources

- Participants were concerned about websites with commercial motivations, for example, questioning funding sources of websites and wanting to avoid anything that looks like an ad in a social networking environment.
- As mentioned above, content that people perceive as accessible and easy to understand appealed to participants; they found *Physician Compare* and *Hospital Compare* most often appealing. Some participants also liked the look-and-feel of Checkbook.org. Surgeon Scorecard was challenging to comprehend quickly.
- Upon seeing the four website URLs,⁶ the Medicare.gov URLs (*Physician Compare* and *Hospital Compare*) sometimes turned off non-Medicare participants. Younger participants felt those sites were geared towards older people (above 65). For instance, one participant commented, “The word ‘Medicare’ turns me off because I don’t have Medicare, so I wouldn’t think I could use that to compare hospitals.”
- As stated above, participants tended to trust .gov websites, as providing trustworthy information, regardless of their a priori views of the government. Sites with .gov conveyed trust, even among individuals who were originally skeptical of the government; in the context of the online environment, participants tended to know that “.gov” meant the information was trustworthy and credible.
- “Checkbook,” used in Surgeon Rating’s web address, carried a financial connotation for some, which was unappealing.

⁵ Participants were asked to imagine an advertisement on Facebook posted by from HHS (and ads in general). Participants were shown the following website URLs and asked to react to the web address. They were later shown the content of each.

1. Physician Compare – <http://www.medicare.gov/physiciancompare>
2. Hospital Compare – <http://www.medicare.gov/hospitalcompare/search.html>
3. Surgeon Ratings – <http://www.checkbook.org/surgeonratings/>
4. Surgeon Scorecard – <https://projects.propublica.org/surgeons/>

- Participants tended to view the content of the websites with caution about their trustworthiness and wanted to know more about the sources/funding behind the websites.
- In general, participants were interested in the content and organization of the results pages on *Physician Compare* and *Hospital Compare*, and some preferred the content of Checkbook.org. Participants also tended to appreciate the relatively simple homepages of *Physician Compare* and *Hospital Compare*.
- Some participants saw value in using comparative quality information for future healthcare decisions, while a few thought they could bring the information to their doctor for discussion.

At the end of the groups, participants were shown the homepage of Carefinder.gov prototype and given a short explanation of the “Care Guide” feature.

- Participants found the homepage and “Care Guide” feature as a potentially useful gateway and introduction to find ratings of providers.
- However, the name and look-and-feel of the prototype tended to give participants the mistaken impression that it is targeted to the elderly population and primarily about institutional care and long-term caregiving (e.g., nursing home care). Older participants, some with parents or spouses in need of caregiving, found the website more appealing.

Recommendations for Improving Awareness and Use of Quality Information

Although our findings are limited to a small sample of consumers from one metropolitan area and are not nationally representative, some findings might warrant CMS attention to increase awareness and use of quality information.

- When possible, make information available to consumers *when* they need it and are seeking it. Participants suggested that CMS could (1) take steps to ensure *Compare* websites appear in search results when consumers search for provider information via online search engines, (2) advertise on the highest-profile health information and provider comparison sites (e.g. WebMD, or ZocDoc or Yelp), and (3) make information about *Compare* websites available around doctor visits and in physician offices.
 - Search engine optimization is relatively straightforward approach that can be executed with little delay.
 - Advertising on existing provider comparison websites would be a way HHS could differentiate its data from comparison websites that depend more heavily on consumer feedback rather than government data.
 - Making information available in physician offices is relatively more difficult, mainly because it requires cooperation from physicians, who are not currently incentivized to encourage consumers to compare and contrast doctors, specialists, and hospitals. However, with increasing focus on patient-centered care and value-based purchasing, this may be more acceptable over time.

- Messages promoting the *Compare* websites should capitalize on the finding that participants responded favorably to “.gov” websites – even though they responded negatively when a website was introduced as being sponsored “by the government. The findings suggest the authority implied in the “.gov” website name tended to reassure participants, while the phrase “compiled by the government” often prompted skepticism.
- To maximize trust in the *Compare* websites, any design updates should maintain a simple design that facilitates ease of use. The more complicated presentation of information in the “Surgeon Scorecard” discouraged participants – even though the website presented a large amount of information.
- Before launching a new landing page website for the *Compare* tools, consider using an alternative to “Carefinder.gov” that would more clearly convey that the website is not intended just for finding information on the elderly and institutional care. Participants suggested adding pictures of non-elderly people, including families. Name suggestions included “Total Care Finder” or “Healthcare Finder.”

Issues to Explore for Future Research

Some findings warrant further research that could help CMS identify fruitful avenues for increasing awareness of the *Compare* tools. A larger scale survey more representative of the adult population might allow CMS to better understand:

- **Internet use among “hard-to-reach” segments.** Despite the small sample size of the pre-focus-group questionnaire, the “hard-to-reach” group consisting of V&U and P&S participants was much less likely than other segments to say that they look online for health information. A survey would allow CMS to raise awareness among these segments by gathering information about (1) the precise extent of Internet use (how often do they use?) and (2) the nature of the Internet use (what are the circumstances of Internet use? For what purpose?) and (3) the mode of Internet use (do they rely on a hand-held smart phone for most of their information?)
- **Characteristics of “Active” vs. “Passive” consumers of health information.** Several participants shared that they don’t do research on providers or healthcare facilities because they have no choice — they must get referrals from their PCPs for specialists in order to get the procedures covered by insurance, etc. Despite those constraints, participants seemed to be unaware of their amount of choice of providers, hospitals and surgeons. A survey could identify what are the key characteristics of “active” healthcare consumers who perceive choice and make comparisons versus “passive” healthcare consumers who tend to take paths of least resistance. Identifying these traits will help identify key beliefs and attitudes driving passivity that a future messaging campaign could target.

References

- Miller, Lisa M.S., and Robert A. Bell. "Online Health Information Seeking: The Influence of Age, Information Trustworthiness, and Search Challenges." *Journal of Aging and Health*, vol. 24, no. 3, 2012, pp. 525–541.
- Ye, Yinjiao. "Correlates of Consumer Trust in Online Health Information: Findings from the Health Information National Trends Survey." *Journal of Health Communication*, vol. 16, no. 1, 2010, pp. 34–49.