Cite this article as:
Irene Papanicolas, Jonathan Cylus and Peter C. Smith
An Analysis Of Survey Data From Eleven Countries Finds That 'Satisfaction' With
Health System Performance Means Many Things
Health Affairs 32, no.4 (2013):734-742

The online version of this article, along with updated information and services, is
available at:
http://content.healthaffairs.org/content/32/4/734

For Reprints, Links &
Permissions : http://content.healthaffairs.org/1340_reprints.php
Email Alertings : http://content.healthaffairs.org/subscriptions/etoc.dtl
To Subscribe : https://fulfillment.healthaffairs.org

Health Affairs is published monthly by Project HOPE at 7500 Old Georgetown Road,
Suite 600, Bethesda, MD 20814-6133. Copyright ©
by Project HOPE - The People-to-People Health Foundation. As provided by United
States copyright law (Title 17, U.S. Code), no part of
may be reproduced, displayed, or transmitted in any form or by any means, electronic
or mechanical, including photocopying or by information storage or retrieval systems,
without prior written permission from the Publisher. All rights reserved.
ABSTRACT Measures of personal satisfaction with health systems play an increasingly important role in national and international performance assessments. Using data from the 2010 Commonwealth Fund International Health Policy Survey, we analyzed the determinants of personal perceptions of health system performance in eleven high-income countries. In most countries there was a clear relationship between overall satisfaction with the health system and perceptions of affordability and effectiveness of care, as well as ratings of one’s regular doctor. There is some evidence that waiting times for appointments and diagnosis were widely associated with discontent, although respondents’ perceptions of these factors explained relatively little of the observed variation in overall satisfaction across countries. We conclude that “satisfaction” appears to represent something different in each health system, and that policy makers can nevertheless use this type of analysis to determine priorities for improvement in their own country. Our findings also indicate that some of the keys to improving overall satisfaction with a health system may lie outside that system’s direct control and are related to differences in expectations across countries and to other factors that influence perceptions, such as national political debates, reporting in the news media, and national cultures.

There is growing interest in measuring satisfaction with health services and health system performance. Survey-based satisfaction metrics attempt to capture the degree to which a health system, or a health provider, meets the expectations of its service population. These metrics are typically used to identify whether a system is performing as well as it could, and to identify areas where it might improve.

In addition, satisfaction metrics are increasingly used as one aspect of international comparisons of health systems. Although such comparisons have enormous potential for informing changes in health policy, they also run the risk of being misinterpreted and leading to inappropriate policy responses.

Reports of satisfaction vary considerably depending on whose satisfaction is being measured: patients in receipt of specific health services or the general population. Most research in this area has involved studies of patients. Patient satisfaction metrics have been found to be sensitive to a multitude of factors, including certain experiences with health service delivery and individual sociodemographic characteristics. However, the magnitude and direction of associations have not always been consistent. Moreover, some studies have found that among those who use health care services, satisfaction may not be highly correlated with...
health outcomes or the quality of care provided. Rather, the literature suggests that the processes of health care delivery—such as having a choice of providers or a good patient-practitioner relationship—tend to be stronger influences on patient satisfaction.3–5 Furthermore, although these process measures may influence patient satisfaction with providers’ services,3–7 there is little evidence that they determine satisfaction with the health system as a whole.2

In surveys of the general population, satisfaction metrics seek to capture broader attitudes toward the health system.1,2 The limited research available suggests that experiences with service delivery explain only a small amount of variation in overall satisfaction with the system.2 Rather, researchers have noted that factors unrelated to health system performance, such as underlying expectations of public services, institutional design, or media portrayal of the system, may be strong influences on reported satisfaction.6–8 In addition, survey design issues such as differences in the number of answer categories and wording of questions may affect responses.3

We investigated how perceptions of overall health system performance varied within and across eleven high-income countries. We sought to understand the extent to which these perceptions were related to respondents’ own experiences with health services, as well as their perceptions of the following dimensions of their health system’s performance: the affordability of care, effectiveness of treatment, and performance of one’s regular doctor.

We conclude the article by discussing the implications for policy. The intention is to help policy makers understand what factors influence health system satisfaction, interpret variations in satisfaction across countries, and consider what further information and analysis are necessary to identify the priorities for action.

Study Data And Methods

DATA We used data from the 2010 Commonwealth Fund International Health Policy Survey.9 This survey was administered by telephone to a random sample of people ages eighteen and older in eleven high-income countries: Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States.

The survey asked respondents about their perceptions of different aspects of their health system and their experiences of using health services, including perceptions of access, cost burden, and quality. Experiences were measured by a number of questions asking respondents to report on areas such as waiting times, unmet needs due to cost, and assessments of the patient-practitioner relationship. The survey also recorded key socioeconomic characteristics of the respondents, relating to levels of coverage, income, and age.10

METHODS Our study focused on potential determinants of overall perceptions of the health system. We first used ordinal logistic regressions to estimate separately the odds of a respondent’s reporting favorably on four questions—asking for his or her opinions of the overall health system, affordability of care, and effectiveness of treatment, as well as the respondent’s rating of his or her regular doctor—conditional on the respondent’s experiences with the health system and controlling for his or her socioeconomic characteristics.

Previous research has shown that experiences alone are poor predictors of overall satisfaction with the health system but that institutional arrangements and the attitudes they create are better predictors.2,8 Therefore, we next investigated the extent to which the perceptions of affordability, effectiveness, and one’s regular doctor explained the odds of a respondent’s reporting a favorable overall opinion of the system. To do this we used an additional set of country-specific ordinal logistic regressions that modeled the association between overall ratings and these specific perceptions.

We used country-specific regressions instead of a pooled regression to better adjust for differences in the organization of each health system and the coding of control variables. We also undertook a pooled regression, which indicated that our results were broadly consistent, although a number of countries were dropped from some of the pooled models.

In the interest of space, we concentrate on results from Australia, Canada, France, Germany, the United Kingdom, and the United States. These countries were chosen to represent a spectrum of results, different geographical regions, and different types of health systems. A complete description of the data, methods, alternative models, and results for the other five countries can be found in the online Appendix.11

The analysis of two types of models gave us insights into how overall perceptions of the health system were formed. In particular, we were interested in exploring the extent to which perceptions of overall health system performance were associated with experiences of care, as well as perceptions of performance in the specific areas of affordability, effectiveness, and one’s regular doctor.

LIMITATIONS We note several limitations. The data collected, especially on insurance coverage,
were not strictly comparable across countries, which led to our decision to develop country-specific regressions rather than a single econometric model.

Although the Commonwealth Fund International Health Policy Survey was wide-ranging, there may be important determinants of opinions that it did not cover. There may also be systematic differences across countries in the interpretation of questions. More generally, surveys such as this cannot possibly collect information on all of the individual- and country-level characteristics that might affect opinions.

Finally, the data related to a single year. There may have been anomalous events affecting responses in some countries during that year.

**Study Results**

**DESCRIPTIVE STATISTICS** The survey asked respondents to choose which of three statements best expressed their overall view of the health care system in their country (Exhibit 1). A greater percentage of respondents from the United Kingdom—61.3 percent—than from any other country responded that only minor changes were needed in the health care system. Australia had the smallest percentage of respondents in that category. More survey respondents from the United States than any other country (25.4 percent) indicated that their health system was in need of complete rebuilding.

There were some apparent paradoxes across the perceptions of individual countries’ health care systems. For example, the United States had both a larger percentage of respondents who were very confident that they would receive effective treatment (34.7 percent) and a larger percentage of respondents who were not at all confident that they would (9.2 percent), compared to the other countries (Exhibit 1).

**PERCEPTIONS AND ACTUAL EXPERIENCES**

Across the eleven countries studied, our models suggested that experiences and socioeconomic variables together predicted 5–13 percent of the variance in overall perceptions. We found that
experiences and socioeconomic variables explained 7–17 percent of the variance in both confidence in receiving effective treatment and confidence in the affordability of care, and 13–24 percent of the variance in regular doctor rating.

Exhibit 2 summarizes the experiences that were significant in the selected country-level regression models for each type of perception. Despite the variations across countries in the numbers and types of experiences that explained overall satisfaction with health care systems, certain aspects of health care delivery tended to achieve significance more frequently.

Across all four perceptions—of the system in general, the affordability and effectiveness of care, and one’s regular doctor—waiting times for an appointment with a doctor or nurse in a nonhospital setting, receiving conflicting information from health care providers, and waiting a long time for a diagnosis were most often found to be significant.

Two of the experiences we included in these models related to whether respondents reported having seen a specialist or having spent the night in a hospital, both within the past two years. Although in most countries having seen a specialist had little association with overall satisfaction, in Germany it was associated with 1.5 times higher likelihood of rating the entire system favorably. Thus, seeing a specialist had the strongest influence of any experience on overall perceptions of the German health system.

### PERCEIVED PERFORMANCE IN SPECIFIC DIMENSIONS

We found that respondents’ experiences explained little of the variation in overall satisfaction. Therefore, we sought further insights by examining the extent to which respondents’ overall perception of their health system was associated with reported levels of confidence in the affordability of care (Exhibit 3) and effectiveness of care (Figure A3 in the Appendix) and with ratings of respondents’ regular doctors (Exhibit 4). In these analyses we controlled for all other factors.

In Exhibit 3 the line for the United Kingdom is relatively flat. This suggests that the probability of being satisfied with the overall health system did not differ with varying perceptions of confidence in the affordability of care. This lack of

### EXHIBIT 2

Health Care Experiences Associated With Survey Respondents’ Perceptions Of Health Systems In Four Selected Countries, 2010

<table>
<thead>
<tr>
<th>Experience</th>
<th>Fra</th>
<th>Ger</th>
<th>UK</th>
<th>US</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting for appointment</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received conflicting information from providers</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting a long time for diagnosis</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received duplicate tests</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test not available</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor allows opportunity for questions</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor knows patient’s medical history</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor spends enough time with patients</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor involves patients in decision making</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor explains things in easy to understand manner</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skipped needed care due to cost</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skipped prescriptions due to cost</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skipped medical test due to cost</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe medical error occurred</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access issues due travel difficulties</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saw a specialist</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In hospital overnight</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of variance explained by experiences and socioeconomic variables</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Authors’ analysis of data from the 2010 Commonwealth Fund International Health Policy Survey (Note 9 in text). **Notes:** Responses from France, Germany, the United Kingdom, and the United States only. A bullet indicates that the variable was significant (p < 0.1). “O” is overall perception of health system. “A” is confidence in affordability of care. “E” is confidence in effectiveness of treatment. “D” is rating of regular doctor. A version of this exhibit with results for all six countries in Exhibit 1 can be found in the online Appendix (see Note 11 in text). “Not applicable.” Pseudo R² values.
variation between perceptions of affordability and overall satisfaction is most likely related to
the structure of the National Health Service. In that system, access to providers is free to every-
one at the point of care, so affordability is unlikely to be a major determinant of opinions.

The lines for the other countries—particularly the United States, France, and Germany—are
steeper. This suggests that even after other individual factors were controlled for, overall satis-
faction with the health systems in those countries depended to some extent on respondents’
perceptions of the affordability of care.

The contrast between countries was even more evident when we considered the relationship
between respondents’ ratings of their regular doctor and their overall assessment of the health
system (Exhibit 4). Although the probability of rating the overall health system favorably de-
clined slightly as the rating of the regular doctor deteriorated, the rate of decline was consider-
ably sharper in the United Kingdom than in other countries. A respondent in the United
Kingdom who rated his or her regular doctor as “excellent” had an 82 percent probability of
reporting that the system at large worked well, while one rating his or her doctor as “poor” had
only a 10 percent probability.

The probability changed by only 29 percentage points in Sweden (data not shown) and less in
the other countries in the survey. In some countries, such as Switzerland, the respondent’s
rating of his or her regular doctor was not even significant in predicting overall satisfaction
with the health system, probably because of the relatively minor role played by family doctors
in controlling access to health services in those countries.

Perceptions of the effectiveness of treatment were found to vary with overall satisfaction with
the health system in all countries (see Figure A3 in the Appendix).11 As respondents’ confidence
in their ability to receive effective treatment declined, so did the probability of their favorable
overall assessment of the health system.

The most striking feature of this analysis was the marked variation across countries in the
probability of respondents’ choosing option 1—that is, reporting that only minor changes
were needed in the health care system—at particular levels of perceived performance in spe-
cific domains. For perceptions relating to both affordability and effectiveness of care, the “very
confident” group in the United Kingdom was almost 40 percent more likely to select option 1
than was the same group in the United States. For ratings of respondents’ regular doctors, this
difference was even larger (approximately 50 percent).

This gap between the United Kingdom and the United States was substantially reduced at lower
levels of confidence in the effectiveness of care and lower ratings of regular doctors. But for
affordability of care, the gap between the two countries increased to 50 percent for the “not
at all confident” group, because the United Kingdom did not exhibit the decline in the prob-
ability of choosing option 1 at lower levels of confidence that was typical of other countries
(Exhibit 3).

These international variations suggested very
substantial differences across countries in influences on perceptions that were not captured in the survey. These influences might have included the interpretation of questions—for example, variations in how people defined “effective” health care. Alternatively, the variations may have reflected differences in fundamental social values, such as the importance of affordable access to care.

Discussion

We examined factors that are important in determining overall satisfaction with the health system, using data from the 2010 Commonwealth Fund International Health Policy Survey. In line with the results of Sara Bleich and colleagues, we found that experiences explained only a small proportion of the observed variance in overall perceptions of the health system. Despite controlling for socioeconomic variables—including levels of coverage, health status, and income—and experiences related to health service delivery, we were unable to explain more than 13 percent of the variance in overall health system perceptions in any of the eleven countries using these models.

Overall health system satisfaction ratings were not consistently associated with particular types of patient experiences across countries. Nevertheless, information on those experiences may be of value to policy makers.

For example, waiting times for appointments were not significant in French or German models of overall perceptions of the health system. However, this may have been because of France and Germany’s high performance in this area. The underlying survey data indicated that of the eleven countries, France and Germany had the highest percentage of respondents (42 percent in both countries) who waited less than one day to see a doctor or a nurse.

In most countries there was a clear relationship between overall satisfaction with the health system and perceptions of performance in the domains of affordability and effectiveness of care and ratings of one’s regular doctor. However, the sensitivity of overall satisfaction to changes in perceptions of these specific domains differed substantially across countries.

Again, this was probably a by-product of the underlying design of health systems and their current levels of attainment. For example, in the United Kingdom overall satisfaction with the health system was largely independent of perceptions of affordability. Yet in most other countries, respondents who were not confident about being able to afford health care tended not to view the overall system favorably.

The United Kingdom was an even clearer outlier when we examined the relationship between respondents’ ratings of their regular doctor and their overall satisfaction. Respondents who were most content with their regular doctor were substantially more likely to be satisfied with the health system than those who rated their regular doctor less highly. This relationship was not so marked in the other countries, probably because the regular doctor plays a less important role there than in the United Kingdom—where he or she serves as both a medical home and a gatekeeper to specialists and other secondary care.

Australia and the United States reported the lowest levels of overall satisfaction in the survey. However, the survey data revealed substantial variation within these countries in individual ratings of overall satisfaction. In addition, our results did not indicate that respondents in these countries were particularly sensitive to any of the specific domains of performance that we measured.

For example, in the United States, a similar percentage of the sample reported feeling very satisfied with the health system (28.9 percent) and feeling that the system needed to be completely rebuilt (25.4 percent) (Exhibit 1). The variation among respondents was largely unexplained by health experiences, socioeconomic characteristics, or (perhaps surprisingly) perceptions of specific aspects of the health system’s performance.

Even within the domain of affordability—a key issue in the United States, given the large percentage of the population that was uninsured or underinsured in the survey year—American perceptions of affordability of care affected their overall assessments of the health system only slightly.

In general, we observed substantial country-specific effects that could not be accounted for by the available explanatory variables. Respondents in some countries were more likely to rate their health system highly at given levels of confidence in affordability and effectiveness of care and at different ratings of their regular doctor, compared to respondents in other countries.

There is always the possibility that some important health system determinant of satisfaction was overlooked or omitted from the survey. However, it is more likely that the observed variation in satisfaction across countries was related to factors beyond the immediate control of the health system.

A large amount of this effect may be related to differences in expectations across countries and to other exogenous factors that influence population perceptions, such as the national political debate, reporting in the news media, and
national culture. For example, the very positive country effect for the United Kingdom was probably related to the strong ideological support for the National Health Service as a national institution. It should be noted that the survey coincided with the heated debate in the United States surrounding passage of the Affordable Care Act. Therefore, some of the negative country effect in the United States may reflect the extensive reporting in the media at that time on weaknesses in the health system.

Data were not available on whether and how such factors might influence health system satisfaction. Future research might examine such broader influences on perceptions.

**Policy Implications And Conclusions**
Most modern health systems rely for their financial sustainability on the principle of solidarity—that is, the willingness of younger, richer, and healthier people to subsidize those who are older, poorer, and sicker. Satisfaction with one’s health system is likely to be an important determinant of the willingness of a country’s citizens to make such contributions. Therefore, understanding the determinants of national satisfaction with the health system is vital for assuring its sustainability.

This article takes a first step toward modeling the associations between popular satisfaction with the health system and personal experiences of receiving care. The international nature of the Commonwealth Fund data set offers considerable scope for novel insights because it permits the modeling of otherwise identical citizens exposed to different types of health systems.

Our study suggests that the factors associated with satisfaction with the health system, as well as with perceptions of particular domains of its performance, differ across countries. For example, a key factor associated with health system satisfaction in the United Kingdom was respondents’ ratings of their regular doctor. Thus, improving patients’ satisfaction with their regular doctor may be influential in improving public opinion of the UK health system. However, this policy lever cannot necessarily be applied in other countries, where regular doctors play a less prominent role in determining patients’ access to secondary care and often may not be the first point of contact with the health system.

Therefore, we conclude that overall satisfaction appears to represent something different in each health system, and that the factors that can inform policy actions for improvement are likely to differ depending on the design of a health system. Thus, although it may be interesting to compare a single indicator of satisfaction across countries, such comparisons are of limited value for drawing policy inferences.

Policy makers can nevertheless use this type of analysis to determine priorities for improvement in their own country and to identify areas where any deterioration in the performance of a country’s system might adversely affect satisfaction. In other words, detailed modeling allows policy makers to explore the reasons for given overall satisfaction levels and potential levers for improvement within their country.

Our analysis does indicate that there are a few levers within the control of the health system that may be of universal importance in securing or maintaining high levels of overall satisfaction. There is some evidence that waiting times for both appointments and diagnosis were widely associated with discontent. Furthermore, in some countries, concerns about the affordability and effectiveness of care, and the quality of care provided by one’s regular doctor, were associated with poorer overall ratings. However, relationships such as these were relatively weak and generally confined to a limited number of countries.

Of course, studies such as this one cannot confirm causality in any of these relationships. Nevertheless, most of the variation in overall satisfaction appears to derive from factors beyond the immediate control of the health system. Future research could investigate what these factors might be, and how they can be influenced.

Understanding the factors that determine general satisfaction with the health system is without question an important undertaking. However, our findings suggest that there is as yet no clear model of how personal opinions are formed and little uniformity across countries. We therefore recommend that—pending more extensive research on the determinants of overall satisfaction with a given health system—policy makers should concentrate their efforts on specific and actionable areas of reform that are known to be priorities for improvement in their own country.
The authors are immensely grateful to the Commonwealth Fund for making available the data on which this article is based. The analysis and conclusions remain the sole responsibility of the authors. The work of Jonathan Cylus is funded by the European Observatory on Health Systems and Policies.

NOTES


11 To access the Appendix, click on the Appendix link in the box to the right of the article online.
ABOUT THE AUTHORS: IRENE PAPANICOLAS, JONATHAN CYLUS & PETER C. SMITH

In this month’s *Health Affairs*, Irene Papanicolas and coauthors report on their study of personal perceptions of health system performance in eleven high-income countries and the drivers of those perceptions. Analyzing data from the 2010 Commonwealth Fund International Health Policy Survey, the authors found links between overall satisfaction with a given health system and perceptions of affordability and effectiveness of care, ratings of one’s regular doctor, and waiting times for appointments and diagnoses. However, respondents’ perceptions of these factors usually explained little of the observed variation in satisfaction across countries. The authors conclude that satisfaction appears to represent something different in each health system; that policy makers in each country can still use this type of analysis to determine priorities for system improvement; and that some perceptions may be outside a system’s direct control because they stem from such factors as differences in expectations from one country to the next, as well as national political debates about health care.

Irene Papanicolas is a lecturer in health economics in the Department of Social Policy at the London School of Economics and Political Science (LSE). Her research interests include measuring health system performance, international comparisons of health systems, and performance-based payment systems. Papanicolas holds a master’s degree in social policy from the University of Oxford and a doctorate in health economics from LSE.

Jonathon Cylus is a research fellow at the European Observatory on Health Systems and Policies and at LSE. His research focuses primarily on measuring health system performance and assessing the effects of the financial crisis on health care systems in Europe. Cylus holds a master’s degree in health economics from LSE.

Peter Smith is a professor of health policy and codirector of the Centre for Health Policy, Imperial College London. His main work has been in the economics of health and the broader public services. He was previously director of the Centre for Health Economics at the University of York. He has a bachelor’s degree in mathematics from the University of Oxford.