

# Review of the Literature on Survey Instruments Used to Collect Data on Hospital Patients' Perceptions of Care

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**Objective.** To review the existing literature (1980–2003) on survey instruments used to collect data on patients' perceptions of hospital care.

**Study Design.** Eight literature databases were searched (PubMed, MEDLINE Pro, MEDSCAPE, MEDLINEplus, MDX Health, CINAHL, ERIC, and JSTOR). We undertook 51 searches with each of the eight databases, for a total of 408 searches. The abstracts for each of the identified publications were examined to determine their applicability for review.

**Methods of Analysis.** For each instrument used to collect information on patient perceptions of hospital care we provide descriptive information, instrument content, implementation characteristics, and psychometric performance characteristics.

**Principal Findings.** The number of institutional settings and patients used in evaluating patient perceptions of hospital care varied greatly. The majority of survey instruments were administered by mail. Response rates varied widely from very low to relatively high. Most studies provided limited information on the psychometric properties of the instruments.

**Conclusions.** Our review reveals a diversity of survey instruments used in assessing patient perceptions of hospital care. We conclude that it would be beneficial to use a standardized survey instrument, along with standardization of the sampling, administration protocol, and mode of administration.

**Key Words.** Patient reports of hospital care, patient satisfaction instruments, hospital quality, patient care

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Patient evaluations of hospital care can be useful to payers, regulatory bodies, accrediting agencies, hospitals, and consumers. All of these parties can use this information to gauge quality of hospital care from the patients' perspective (Marino, Marino, and Hayes 2000). Hospitals can use this information to focus on specific areas for improvement, strategic decision making (Sower et al.

2001), managing the expectations of patients (Hickey et al. 1996), and benchmarking (Dull, Lansky, and Davis 1994). Ultimately, the reporting of patient evaluations can influence the delivery of care (Howard et al. 2001).

Many of the benefits of measuring and reporting patient evaluations of hospital care result from using standardized performance information. Clearly, to adequately make comparisons across hospitals requires each facility to measure and report the same information. As described elsewhere in this issue (Goldstein et al. 2005), systematic efforts are underway by the Centers for Medicare and Medicaid Services (CMS) to make standardized performance information on hospitals publicly available. As part of the background for this effort, we reviewed the existing literature on survey instruments used to collect data on patients' perceptions of hospital care. We describe and compare the format, content, and administration issues associated with these previously used survey instruments.

## METHODS

### *Literature Search*

We searched the PubMed, MEDLINE Pro, MEDSCAPE, MEDLINEplus, MDX Health, CINAHL (Cumulative Index for Nursing and Allied Health Literature), ERIC, and JSTOR databases. These searches were conducted with a combination of key words. We limited the searches to articles in English and those with abstracts. Searches returning more than 250 articles were further filtered by using terms such as "questionnaire" and "hospital." We undertook 51 searches with each of the eight databases, for a total of 408 searches.

After the searches were conducted, the abstracts of the returned articles were examined, to determine their applicability for review. Relevant studies were defined liberally to be those that included any discussion of perceptions of hospital care. Articles that included a survey instrument were included in the analyses. When more than one article was identified reportedly using the same survey instrument, all the articles were included in the analyses; we did not restrict this review to one article per survey instrument. This approach was

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used because it provided more information on the instruments, such as response rates and psychometric properties.

### *Analyses*

We identified articles that included a patient survey of hospital care for further examination. We also consulted several survey development texts (Krowinski and Steiber 1996; Cohen-Mansfield, Ejaz, and Werner 2000) to construct our approach for characterizing the hospital survey instruments.

These texts describe how to develop the content of a survey instrument, implementation issues to have a usable survey, and performance of the instrument. To characterize hospital survey instruments, we followed these same general steps. First, we provide some basic information, including the name of the instrument. Second, the contents of the instruments are presented, including the number of domains used. Third, implementation characteristics associated with conducting the surveys are presented, including the sample size per facility. Fourth, performance characteristics of the instruments are presented, including the response rates and psychometric properties.

### *Descriptive Information*

We first identified the study author(s) and the name of the survey instrument developed (if any). Some instruments were modified from preexisting instruments, or were amalgams of preexisting instruments. Details on the origins/modifications of the survey instrument are given. The setting includes the number and type of hospitals in which the study was conducted. We also identified the type of respondent from whom the instrument was designed to collect data: patients, family, or staff. The number of respondents in the study is also provided.

### *Instrument Content*

Second, the contents of the survey instruments are further described. We note the number of items in the instrument, excluding demographic and other background questions. Patient survey instruments often classify "like" questions together; for example, capabilities of staff, staff politeness, and the caring nature of staff might be sorted into a staff "bucket" or category. These similar questions are generally referred to as "domains." We present the number of domains included in each instrument.

In addition, we present the type of domains included in each survey instrument. We also present the type of rating scale used in the instruments

(Krowinski and Steiber 1996), and categorize the response scale in terms of whether it is open-ended or close-ended, the number of close-ended response options (dichotomous or multiple categories), and the nature of the response scale. The nature of the response scale included: evaluation (e.g., poor, fair, good, very good, excellent), frequency (e.g., none of the time to all of the time), satisfaction (e.g., very satisfied to very dissatisfied), visual analog, or Chernoff face formats. A visual analog format (also called graphic scaling) is a pictorial scale that usually has some implied interval value (e.g., scale from 0 to 10). Chernoff faces are a pictorial representation with smiles and frowns.

### *Implementation Characteristics*

Third, we present characteristics of how the survey instrument was used—that is, implementation characteristics. We present whether any information is provided as to when the instrument was given (or mailed) to respondents (e.g., 2 days after discharge). Survey initiatives can also differ on the target sample size of respondents per facility (or unit). We record these target sample sizes. We also report whether the survey was administered by in-person interviews, telephone, mail, or drop-box.

In some cases, specific sample inclusions are given—for example, including only persons 18 years and older. These sample inclusions are also noted. In addition, in some cases sample restrictions are made—for example, excluding patients receiving hospice services. We record whether any such restrictions are made.

### *Performance Characteristics*

Fourth, we document the performance characteristics of the survey instruments. This includes the response rates and whether information about the reliability (internal consistency, test–retest, and interrater) and construct validity are reported.

We provide information on the time to conduct interviews and further psychometric properties of the instruments. In the interest of space, we do not report the actual levels of reliability and validity achieved for each instrument, instrument domains, or individual questions. Rather, we report whether reliability or validity of the instrument was evaluated (yes or no). Nevertheless, we do note any unusual results (e.g., poor performance), what analyses were used (e.g., factor analysis), or whether any other instrument assessment was undertaken.

## RESULTS

The key words and results for the first nine key word searches are summarized in the on-line Appendix Table A. The results in the first column of figures of this table show the number of articles identified from the PubMed literature database. For example, 1,289 articles were identified in PubMed using the search term “survey and data collection protocols.” Results in subsequent columns show the number of additional articles identified, using the other literature databases. For example, using this same search term (“survey and data collection protocols”) eight additional articles were identified using MEDLINE Pro. This literature search identified 246 articles, of which all of the abstracts were reviewed. From these 246 abstracts, 84 full-length articles were subsequently examined, with 59 presenting sufficient information to be included in this review.

### *Descriptive Information*

The descriptive characteristics of the survey instruments are shown in Table 1. The study settings are diverse, ranging from single hospitals to a system comprised of 135 medical centers. Studies are also geographically diverse coming from many regions of the U.S., Europe, and the Middle East. Likewise, the number of respondents included in these studies varied widely from 70 to approximately 25,000. Most studies used patients as respondents, although a few assessed family or caregivers. Twenty-six studies used mail surveys, 13 telephone, four drop-boxes, and 12 used in-person interviews.

### *Instrument Content*

Summary characteristics of the content, implementation, and performance of the survey instruments are shown in Table 2. The information is also provided by each of the major modes of survey administration (mail, telephone, drop-box, and in-person interviews). The number of items included in the instruments varied from eight to 121. The average values show more questions were generally asked in mail surveys (average = 45 questions) and fewer in drop-box surveys (average = 16 questions). Likewise, the number of domains varied and included instruments with one domain to as many as 14. However, the average number of domains by mode of administration seemed quite consistent at about six.

We also identified various response formats; however, the most common was an evaluation type response format. The names of the domains and response formats are shown in the on-line Appendix Table B. Looking across

Table 1: Descriptive Characteristics of Instruments Collecting Patient Perceptions of Hospital Care

<i>Author(s)</i>	<i>Name of Instrument</i>	<i>Origins or Modification of Instrument</i>	<i>Setting</i>	<i>Respondent</i>	<i>Number of Respondents in Study</i>
Stamps and Lapriore (1987)	None		Small community hospital (72 beds)	Patient	130
Abramowitz, Cote, and Berry (1987)	None		Teaching hospital with 900 beds	Patient	841
Barkley and Furse (1996)	NGC patient viewpoint survey		76 medium to large, nonprofit, community and teaching hospitals	Patient	19,556
Brédart et al. (1999)	Comprehensive assessment of satisfaction with care		Oncology institute in Italy	Patient	290
Bruster et al. (1994)	Patient's charter		36 hospitals in England	Patients	5,150
Burroughs et al. (1999)	None		One health system	Patient	7,083
Burstin et al. (1999)	None		Five urban teaching hospital emergency departments	Patient	3,719
Camilleri and Callaghan (1998)	None	Questionnaire design was based on SERVQUAL	Private and public hospitals in Malta	Patient	N/G
Candlish et al. (1998)	Patient needs questionnaire		Two hospitals in Australia	Patient	148
Carman (2000)	None	Dimensions reliable in previous studies	One hospital	Patient	298
Charles et al. (1994)	None	Adapted from Cleary et al. (1991)	57 public acute care hospitals (Canada)	Patient	4,599
Cleary et al. (1989)	None		Brigham and Women's Hospital	Patient	598
Conover et al. (1999)	None	Medical Outcomes Study questions	13 hospitals in Tennessee and 10 hospitals in North Carolina	Patient	1,691
Covinsky et al. (1998)	None	Adapted from Ware and Hays (1988)	University Hospitals of Cleveland	Patient	445

*Continued*

Table 1: *Continued*

<i>Author(s)</i>	<i>Name of Instrument</i>	<i>Origins or Modification of Instrument</i>	<i>Setting</i>	<i>Respondent</i>	<i>Number of Respondents in Study</i>
Coyle and Williams (2001)	None		Major teaching hospital in Scotland	Patient	97
Deeks and Byatt (2000)	None		Teaching hospital (U.K.)	Patient	152
Dozier et al. (2001)	Patient perception of hospital experience with nursing		Ten hospitals	Patient	1,148
Duff, Lamping, and Ahmed (2001)	Bangladeshi women's experience of maternity services		Four hospitals in London (U.K.)	Patient	136
Eisen et al. (2002)	Perceptions of care (PoC) survey		14 inpatient behavioral health and substance abuse programs	Patient	6,972
Gasquet, Falissard, and Ravaud (2001)	None		Public teaching, short-stay, hospital for adults (Paris, France)	Patient	482
Goupy et al. (1991)	None		Eight hospitals in France	Patient	7,066
Grimmer and Moss (2001)	Prescriptions, ready to re-enter community, education placement, assurance of safety, realistic expectations, empowerment, directed to appropriate services (prepared)		One large tertiary public hospital in Adelaide (Australia)	Patient, caregiver	500 (patient), 431 (caregiver)
Gustafson et al. (2001)	None		Three community hospitals	Patient	91
Guzman et al. (1988)	The patient satisfaction questionnaire		One 150 bed, not-for-profit, community and teaching hospital	Patient (or representative)	2,156
Harding et al. (1994)	None		One hospital	Patient	200
Hargraves et al. (2001)	None	Adapted from Cleary et al. (1991)	22 regional hospitals and 51 in a health system in one state	Patients	12,726 (regional), 12,680 (state)

Hays et al. (1994)	Short-form physician judgment system questionnaire	44 hospitals owned by the Hospital Corporation of America	Physician	3,435
Hays et al. (1994)	Short-form employee system questionnaire	44 hospitals owned by the Hospital Corporation of America	Employees	17,315
Hiidenhovi, Nojonen, and Laippala (2002)	None	One hospital in Finland	Patients	7,679
Hoff et al. (1999)	None	VA medical centers	Patients	38,789
Horne et al. (2001)	Satisfaction with information about medicines scale	Hospitals in London and Brighton (U.K.)	Patient	
Howard et al. (2001)	Kentucky consumer satisfaction instrument	Public psychiatric hospital	Patient	189
Jamison et al. (1997)	Patient discharge questionnaire	University-based tertiary hospital	Patient	119
John (1992)	None	Three hospitals	Patient	353
Ketefian et al. (1997)	None	One medical center	Patient	619
Lanford et al. (2001)	Pickler Institute Pediatric Inpatient survey	20 hospitals	Family	4,872 (year 1), 4,518 (year 2)
Larsson (1999)	Quality of care from the patient's perspective	Three county Swedish hospitals	Patient	1,056
Larsson, Larsson, and Munck (1998)	Quality of care from the patient's perspective	Swedish hospital	Patient	611
Marino, Marino, and Hayes (2000)	None	One hospital	Family	3,676
McNeill et al. (2001)	American pain society patient outcome questionnaire	One 400 bed regional hospital	Patient	104
Meterko, Nelson, and Rubin (1990)	Patient judgments of hospital quality (PJHQ) questionnaire	Ten hospitals	Patient	1,367
Mokhtar et al. (1991)	None	One general hospital in Kuwait	Patient	493
Oz et al. (2001)	None	11 hospitals within 60 miles of NYC	Patient	261
Rogers and Smith (1999)	Picker-commonwealth survey of patient-centered care	50 hospitals in Massachusetts	Patient	12,680
Rosenheck, Wilson, and Meterko (1997)	None	135 Veterans Administration medical centers	Patient	4,968

Continued



Table 1: Continued

<i>Author(s)</i>	<i>Name of Instrument</i>	<i>Origins or Modification of Instrument</i>	<i>Setting</i>	<i>Respondent</i>	<i>Number of Respondents in Study</i>
Shannon, Mitchell, and Cain (2002)	Medicus viewpoint		25 critical care units in 14 hospitals	Patients, nurses, and physicians	489 (patients), 518 (nurses), 515 (physicians)
Simon et al. (1998)	Picker-commonwealth survey of patient-centered care	Physician-patient communication questions	Brigham and Women's Hospital	Patient	637
Sower et al. (2001)	Key quality characteristics assessment for hospitals scale		3 hospitals	Patient	663
Stamps and Lapriore (1987)	None		Small community hospital (72 beds)	Patient	130
Thi et al. (2002)	Patient judgments of hospital quality questionnaire		One hospital in France	Patient	533
Weaver et al. (1993)	Physicians' humanistic behaviors questionnaire		One hospital	Patient	119
Welton and Parker (1999)	None		One hospital	Patient	1,008
Wilson et al. (2002)	None	Adapted questions from Picker survey	N/G	Patient	1,074
Woodbury, Tracy, and McKnight (1998)	Inpatient perceptions of quality questionnaire	Abridged version of long form used	23 hospitals	Patient	3,720
Woodside and Shinn (1988)	None		One hospital	Patient	70
Zifko-Baliga and Krampf (1997)	None		Large Midwestern hospital	Patient	529

Table 2: Summary Statistics for Implementation, Content, and Performance Characteristics of Instruments Used to Collect Patient Perceptions of Hospital Care

Survey Characteristic	Mail Surveys (N = 26 studies)*	Telephone Surveys (N = 13 studies)*	Drop Box (N = 4 studies)*	In-Person Interviews (N = 12 studies)*
<i>Content characteristics</i>				
Average number of items (range)	45 (15-72)	23 (8-39)	16 (12-30)	33 (10-121)
Average number of domains (range)	8 (1-14)	5 (2-10)	6 (4-10)	7 (3-14)
<i>Implementation characteristics</i>				
When survey is administered: percent of studies (N)	12% (3) Less than 2 weeks postdischarge 12% (3) 2-4 weeks postdischarge 19% (5) > 4 weeks postdischarge 510 (100-1400)	0% (0) Less than 2 weeks post discharge 31% (4) 2-4 weeks post discharge 15% (2) > 4 weeks postdischarge 115 (80-150)	On-site	On-site
<i>Performance characteristics</i>				
Target sample size (range)			10 (NA) <sup>†</sup>	160 (NA)
<i>Performance characteristics</i>				
Average response rate (range)	47% (15-77)	70% (24-91)	63% (27-95)	75% (53-84)
Psychometrics reported: percent of studies (N)	54% (14) internal consistency 19% (5) test-retest NA interrater 19% (5) concurrent 15% (4) construct	15% (2) internal consistency 8% (1) test-retest 0% (0) interrater 8% (1) concurrent 8% (1) construct	75% (3) internal consistency 25% (1) test-retest 0% (0) interrater 50% (2) concurrent 25% (1) construct	58% (7) internal consistency 33% (4) test-retest 8% (1) interrater 17% (2) concurrent 17% (2) construct

NA, not applicable.

\*Eighty-four articles were reviewed, 59 were included in this review; we were unable to determine the mode of administration in three articles and a further five articles used more than one mode of administration. Therefore, the number of studies cited in this table does not total 59.

<sup>†</sup>This information was only given in one study.

studies, we found that the five most-common domains were nursing, physicians, food, services, and care (not shown in the table).

### *Implementation Characteristics*

The lag postdischarge until mailing of the survey instrument varied from 1 week to 6 months, although many (19 percent) studies using mail surveys were sent more than 4 weeks postdischarge. Telephone surveys had a shorter lag time; among the studies for which data were available, most were conducted between 2 and 4 weeks postdischarge. The majority of studies using drop-box surveys or in-person interviews were conducted on-site prior to patient discharge. Few studies provided a target sample size when using the survey instrument. Studies that did give target sample sizes varied from 10 per department to 1,400 per hospital. The target sample size averaged 510 per hospital for mail surveys and 10 per hospital for drop-box surveys. Sample inclusions and exclusions are also shown in the on-line Appendix Table C.

### *Performance Characteristics*

Response rates varied widely, with one study having a 17 percent response rate and another study having a 92 percent response rate. The average response rate for mail surveys was 47 percent, telephone interviews 70 percent, drop-box surveys 63 percent, and in-person interviews 75 percent. The majority of studies provided little information on instrument reliability or validity. For example, 54 percent of studies using mail surveys provided measures of internal consistency; but only 15 percent provided measures of construct validity.

More detailed information on the performance characteristics of the survey instruments, including the completion time, reliability and validity, are provided in the on-line Appendix Table D. However, few studies provided information on the time needed to complete the instrument. For the six studies that provided this information, the time needed to complete instruments varied from 10 to 60 minutes.

## DISCUSSION

Prior reviews of the literature on patient perceptions of hospital care have cited the existence of relatively few survey instruments (e.g., Rubin 1990). In this review we examined 59 studies providing information on 54 different survey

instruments. This provides some evidence of the increasing salience of use of patient survey instruments addressing hospital care in recent years.

In examining these survey instruments we provide details on descriptive information, instrument content, implementation characteristics, and performance characteristics. Following these general categories a critique of these existing instruments follows, along with suggestions for future research.

### *Descriptive Information*

The survey instruments varied greatly with respect to both the number of institutional settings in which they had been used and the number of patients to whom they had been administered (see Table 1). On the one hand, many survey instruments have been administered in only a few institutional settings and to a limited number of patients; on the other hand, we identified instruments that haven been administered at hundreds of hospitals with thousands of patients. The SERVQUAL, Press Ganey Associates instrument, and Picker questionnaires are notable examples of survey instruments falling in the latter category.

### *Instrument Content*

A variety of different domains of patient perceptions are represented (see Table 2 and on-line Appendix A). In some cases this occurs because survey instruments were developed for very specific purposes (e.g., for use in the ER). The more general instruments measuring patient perceptions of hospital care did yield domains common to these instruments: nursing, physicians, food, services, and care. However, these domains differ in the level of detail of questions and number of items. This divergence in emphasis may be a consequence of the fact that many instruments were developed using expert opinion rather than patient input. Expert opinion is often confounded with clinical measures of care quality (Oermann and Templin 2000) and does not necessarily correspond with patient evaluation of care quality. Indeed, of the 54 different survey instruments we examined, 13 (24 percent) were developed using expert opinion, six (11 percent) used patient input, seven (13 percent) used both expert opinion and patient input, and for 28 survey instruments (52 percent) we could not determine how they were developed.

In future questionnaire development initiatives, consulting studies that have examined patients' evaluations of care may be useful. The Institute of Medicine's (IOM 1999) nine domains of care were developed from patient input and can provide useful guidelines for survey-item development. These

nine domains are: respect for patient's values; attention to patient's preferences and expressed needs; coordination and integration of care; information, communication, and education; physical comfort; emotional support; involvement of family and friends; transition and continuity; and access to care. The CAHPS Hospital Survey domains (nurse communication, nursing services, doctor communication, physical environment, pain control, communication about medicines, and discharge information) were derived from the IOM domains (Goldstein et al. 2005). These domains derived from patient input may be influenced by cultural factors, and may not apply to settings outside of the U.S. For example, some modifications to items (e.g., race/ethnicity questions) were made and items were added in a recent adaptation of the CAHPS hospital survey for use in Dutch hospitals (Arah et al. 2005).

It was not surprising that we identified survey instruments developed for very specific purposes (e.g., for use in the ER [Burstin et al. 1999], nuclear medicine [Harding et al. 1994], psychiatric care [Eisen et al. 2002], oncology [Brédart et al. 1999], and critical care [Conover et al. 1999]). General instruments may not be specific enough to identify areas for quality improvement in all hospital departments. Longer instruments can be advantageous, as they can provide more detailed information to departments, but there are limits on how many questions can be included in a survey instrument before response rates are adversely affected. An alternative approach to extending the length of instruments is to use a brief core set of questions, followed by a series of specific questions more relevant to individual departments. States and accreditation bodies can use the core instrument to assess perceptions of care in the aggregate, and the more-specific items could be used by the facility for quality improvement. However, this requires a more-sophisticated targeting approach that would require a patient receive the correct department-specific instrument.

### *Implementation Characteristics*

Instruments measuring patient perceptions of hospital care were administered by telephone, mail, and interview; or were collected by drop-box (see Table 2 and on-line Appendix C). However, the majority of survey instruments were administered by mail. No web-based patient surveys were identified.

No agreement on when the instruments should be administered was evident. Many instruments were mailed months after patient discharge. This may have something to do with the limits of hospital administrative databases that are used to construct the mailing lists. Still, a potential bias to collecting

information is recall bias. That is, over time patients' abilities to reliably remember their hospital care may decline (Krowinski and Steiber 1996). For example, Ley et al. (1976) found ratings of care to be less positive at 8 weeks compared with those at 2 weeks. However, we cannot simply generalize that a shorter lag time is more beneficial. If patients' perceptions become more or less negative as time passes, this does not necessarily mean that they are based on less reliable recollections. Recollections may be just as accurate, but the features of care patients regard as important may change over time. It may also be that additional time postdischarge gives patients additional data points to consider (e.g., regarding coordination or care and/or success of treatment) by the time they are asked to evaluate their care. In these cases, it would be reasonable for patients' evaluations to be affected by this new, additional data, and thus change/differences in evaluations associated with the passage of time may not necessarily reflect memory reliability at all.

Several studies found telephone interviews to be advantageous in terms of more-rapid contact with patients and higher response rates (e.g., Woodside and Shinn 1988; Hargraves et al. 2001). However, a potential bias to surveys involves social desirability, leading to more positive assessments of care (Hays and Ware 1986). Social desirability might be more of a problem with telephone administration because this involves more-direct contact, and it may be more difficult for the respondent to feel anonymous. In addition, phone interviews may cost more than mail surveys.

The length of the survey instruments was highly varied. As discussed above, short, very general instruments may be less useful than longer detailed instruments. But, longer instruments carry more response burden and may lower response rates. Indeed, examining the instruments in this review, we find a  $-.65$  correlation between response rate and number of questions.

### *Performance Characteristics*

One of the limitations of surveys of patient perceptions of hospital care can be low response rates (Barkley and Furse 1996). Low response rates are cited as providing different results from high response rates (Barkley and Furse 1996). Our review of the literature identified both relatively high and low response rates (see Table 2 and on-line Appendix D). Nonrespondents may have less favorable perceptions of care than respondents (Barkley and Furse 1996; Mazor et al. 2002; Elliott et al., 2005). However, often very little information is provided on how the response rates are calculated.

A related issue is the representativeness of the patients selected to receive a survey instrument. In some cases the sampling criteria that were used in the studies reviewed appear to have been biased (e.g., by including only patients hospitalized for 3 days or more). In other cases, the sampling criteria may be appropriate, but precision of estimates and power to detect differences was limited by small sample size. Few studies reviewed provided information on whether a sufficiently large sample size was selected such that reasonably accurate point estimates could be reported or that meaningful differences between units of interest at a given point in time could be reported. In addition, Ehnfors and Smedby (1993) report, such problems in sampling can greatly influence survey results.

We identified few articles providing extensive psychometric properties (see Table 2 and on-line Appendix D). In many studies even basic psychometric properties were often not reported. This is important because poor survey instruments “. . . act as a form of censorship imposed on patients. They give misleading results, limit the opportunity of patients to express their concerns about different aspects of care, and can encourage professionals to believe that patients are satisfied when they are highly discontented” (Whitfield and Baker 1992, p. 152).

## CONCLUSION

The plethora of survey instruments measuring patient perceptions of hospital care is heartening; but, the advantages of a standardized core instrument cannot be realized when multiple different instruments are used. For example, benchmarking and report cards facilitating consumer choice may be impeded. Our review clearly shows that there are a variety of approaches regarding the instrument domains, how they are measured, and when perceptions of care are elicited. We conclude that a standardized instrument would be beneficial. Moreover, our results also show that it may also be beneficial to standardize the sampling, administration protocol, and mode of administration of survey instruments.

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## SUPPLEMENTARY MATERIAL

The following supplementary material for this article is available online:

APPENDIX A. Results of Literature Search (1980–2003).

APPENDIX B. Content Characteristics of Instruments Collecting Patient Perceptions of Hospital Care.

APPENDIX C. Implementation Characteristics of Instruments Collecting Patient Perceptions of Hospital Care.

APPENDIX D. Performance Characteristics of Instruments Collecting Patient Perceptions of Hospital Care.