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UNIVERSITY OF CHICAGO

*The 1998
Index of
Hospital
Quality*

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The 1998 Index of Hospital Quality

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I. *Introduction*

Health care providers and consumers today face a dynamic and, often, puzzling array of choices with few tools to inform their critical decisions about quality of care. No single, standard measure of the quality of care is available for the 6,400 hospitals in the United States. In 1993, the National Opinion Research Center at the University of Chicago (NORC) developed a measure of the quality of care available in hospitals; this "report card" is supported and published annually by *U.S. News & World Report* in an issue entitled "America's Best Hospitals." With the development and release of this annual report card, NORC and *U.S. News & World Report* aim to inform and guide patients and their doctors in making critical health care decisions.

The Index of Hospital Quality (IHQ) assesses hospital quality through analysis of the three fundamental dimensions of health care delivery: process, structure, and outcome. Neither structure, process, or outcome alone can accurately and completely represent the quality of care at a hospital. This sequence, as applied to hospitals, begins with the structural characteristics of an institution, carries through the process of care, and results in an outcome for the patient. To be most useful to the consumer and provider of care, the index — our application of the Donabedian paradigm^{1,2} of structure, process and outcomes — combines robust and sensitive measures of each of these dimensions for the universe of tertiary-care hospitals across a wide range of medical and surgical practice specialities. The Index of Hospital Quality draws from secondary data sources, such as the American Hospital Association's Annual Survey of Hospitals, to provide measurements along these quality dimensions. We continually strive to identify improved data sources, the sensitivity of the measures derived from those data sources, and the specificity of the measures used.

In 1998, our principal refinements of the index include: the decision to survey nephrologists for the eventual inclusion of a new specialty -- nephrology; the retirement of a previously ranked specialty -- AIDS; the adoption of a new data collection procedure (intended to increase physician response rate); the revision of the physician questionnaire to refine the accuracy of the process measure and provide a concomitant review of past process scores; and a policy decision regarding how past nominations are coded for newly merged hospitals. These refinements will be described in detail in later sections of this report.

Also in 1998, we changed the titles of two specialties: *Cardiology* and *Neurology*. These specialties are now entitled *Cardiology and Cardiac Surgery* and *Neurology and Neurosurgery*, respectively. These title changes reflect an effort to better represent the medical *and* surgical aspects of these two specialties.

Finally, in 1998, we examined the impact that hospital mergers have on our rankings. For this release, three new mergers will appear on the lists:

- (1) Beth Israel/ Deaconess Hospital, Boston (merged hospitals -- Beth Israel Hospital, Boston and Deaconess Hospital, Boston);
- (2) Boston Medical Center (merged hospitals -- Boston City Hospital and Boston University Hospital); and
- (3) University of Pittsburgh Medical Center (merged hospitals -- University of Pittsburgh Medical Center and Montifiore Hospital, Pittsburgh).

These three hospitals responded as single corporate entities, for the first time, in the 1996 AHA database. Because the 1996 AHA database is the most current release of hospital-level structural data, and thus the database used in this release of the survey, the structural component of our model accurately reflected these mergers. Likewise, the mortality data for these mergers was adjusted to reflect the current status of these hospitals. Finally, most physicians, over the three years of pooled nominations data used in the 1998 release, did not nominate the newly merged hospitals. Instead, they only named one of the two component hospitals. Thus, to assign a process score to the newly merged hospitals, we summed the nominations attributed to each component hospital, and then averaged the total nominations made. This new value, the averaged nomination score, was assigned to the new merger. Until physicians consistently nominate the new merger explicitly, this averaged score, we contend, is the best way to attribute nominations to the new hospital.

Moreover, observing the impact of large-scale mergers, we have noted that, over time, the data values for merged hospitals can result in an immediate change in rank. Specifically, our data indicate that some large-scale mergers have occurred, and in the few years following the merger, the newly created hospitals may rise in the rankings largely as an artifact of the merger, and owing to a short-term increase in beds, staff, technology, and patient volume. However, as a newly merged

hospital streamlines operations, the hospital may “settle” in the rankings. We will continue to evaluate this artificial change in rank, due to merger, in future releases.

The following sections provide succinct descriptions of our definition of the universe of tertiary care hospitals; the definition of the structural components, the collection of the process measure; and the development of the standardized mortality rates. In the final section, we outline new directions anticipated for the index. For a more exhaustive review of the foundation as well as the development and use of the individual measures and the composite index, see "Best Hospitals: A Description of the Methodology for the Index of Hospital Quality."³

II. The Index of Hospital Quality

A. Universe Definition

We have implemented a two-stage approach to defining eligible hospitals for each of the IHQ specialty lists. First, in order to be identified as a tertiary care hospital, a hospital must meet at least one of the following criteria:

- COTH membership;
- medical school affiliation;
- a score of 9 or higher on our hospital-wide high-technology index
(see Appendix A);

Using this set of criteria, a total of 1,985 hospitals were identified as tertiary care hospitals and eligible for inclusion in any of the twelve IHQ rankings.

Hospitals for which data reports could not be found in our primary data sources (the 1996 American Hospital Association Annual Survey and the 1995 and 1996 MEDPARS data set of claims to HCFA) were necessarily excluded from the universe. For example, three hospitals that appeared on at least one of the published Best Hospital lists (featuring the top 42 hospitals in a specialty) of 1997 were excluded from the IHQ analysis in 1998. These hospitals are University of Cincinnati Hospital, Strong Memorial Hospital - Rochester University, New York, and Massachusetts Eye and

Ear Infirmary, Boston. Though Massachusetts Eye and Ear Infirmary was excluded from the IHQ analysis, it remained eligible for the four reputation-only lists.

The second step was to create a separate analytic universe for each of the 12 practice specialties using criteria such as specialty-specific technology, units, or facilities and a minimum number of discharges across appropriate related groups (see Figure 1).

Figure 1: 1998 Universe Definition by Specialty

<i>Specialty</i>	<i>Eligibility Criteria</i>	<i>Number of Hospitals</i>
Cancer	minimum of 296 discharges for relevant DRGs	894
Cardiology and Cardiac Surgery	have a cardiac catheterization lab, or offer open heart surgery, or offer angioplasty, and minimum of 398 surgical discharges for relevant DRGs.	664
Endocrinology	minimum of 238 discharges for relevant DRGs	875
Gastroenterology	minimum of 848 discharges for relevant DRGs	889
Geriatrics	score of 1 or more on the geriatrics service index, and minimum of 7,470 discharges for all DRGs	826
Gynecology	minimum of 74 discharges for relevant DRGs	887
Neurology and Neurosurgery	minimum of 581 discharges for relevant DRGs	890
Orthopedics	minimum of 562 discharges for relevant DRGs	885
Otolaryngology	minimum of 41 discharges for relevant DRGs	892
Pulmonary Disease	minimum of 549 discharges for relevant DRGs	1,335
Rheumatology	minimum of 22 discharges for relevant DRGs	878
Urology	minimum of 201 discharges for relevant DRGs	816

Note that we have not calculated scores for hospitals that provide care in ophthalmology, pediatrics, psychiatry, and rehabilitation. Unfortunately, the data for robust and meaningful structural and outcomes measures are not available for these specialties. Thus, as shown in Appendix G, we rank hospitals in these specialties solely by reputation.

B. Composite Measure of Structure

The structural dimension defines the tools and environment available to individual care providers in treating a patient; it represents the possibilities of care for a patient and physician. Health services research provides overwhelming evidence supporting the use of a measure of structure in assessing quality of care. However, no prior research has revealed a single indicator of quality that summarizes all others or represents the structure construct alone. Thus, the structure component of the index must be represented by a composite variable comprising a set of structural indicators that are specialty-specific and weighted relative to each other.

For the 1998 index, all structural elements, with the exception of volume, are derived from the 1996 American Hospital Association Annual Survey of Hospitals Data Base and are described below. For specific mapping of variables to the AHA data elements, see Appendix B.

COTH membership This dichotomous variable indicates membership in the Council of Teaching Hospitals.

Technology indices We have not changed the elements of the technology indices for any of the specialties from 1997. A complete list of the technologies considered for each specialty can be found in Appendix A.

Since the 1996 version of the index, we have allowed our technology indices to reflect the real cost of high technology services. While provision of a service within the hospital attended by the patient obviously benefits the patient, the cost of providing many services may not allow all hospitals to offer them. Many hospitals do, on the other hand, provide access to the technology through the hospital's health system, local community network, or through a formal contractual arrangement or joint venture with another provider in the local community. We have operationally

defined this reality by giving hospitals that provide an *on-site* technology, such as ultrasound, a full point for that element; but hospitals that provide the same technology within the local community through some formal arrangement receive a half-point for each element. A hospital receives no more than one point for each element of the index.

Volume The volume measure equals the number of total medical, surgical, or, if appropriate, medical and surgical, discharges (in the appropriate specialty-specific DRG groupings) submitted for HCFA reimbursement. Data from the two most recent years available are pooled and used in our measure. DRG groupings are shown in Appendix C.

R.N.s to beds The number of beds is defined by the AHA as beds set up and staffed at the end of the reporting period. Only nurses who have graduated with R.N. degrees, from approved schools of nursing, and who are currently registered by their state, are considered. Nurses must be full-time (35 hours/week or more), and on staff. Thus, private-duty nurses, nursing staff whose salary is financed entirely by outside sources (e.g., an agency or a research grant, etc.), and L.P.N.s are not counted. Moreover, registered nurses more appropriately classified in other occupational categories (e.g., supervisory nurses, facility administrators, etc.) are not counted.

Trauma The addition of this variable further refined the measure of structure. In 1992, the survey of board-certified physicians ranked the presence of an emergency room and a hospital's trauma provider level highly on a list of hospital quality indicators (4th and 9th highest ranked indicators). Physicians in nine of the focus specialties ranked trauma as one of the top five indicators of quality. The indications of these specialists and resultant high factor loadings supported the inclusion of this data for cardiology and cardiac surgery, endocrinology, gastroenterology, gynecology, neurology and neurosurgery, orthopedics, otolaryngology, pulmonary disease, and urology.

The trauma indicator is dichotomous and reflects two variables from the AHA database (whether the hospital has a certified trauma center *in* the hospital and the level of the trauma center). To receive credit for trauma services, hospitals must provide either Level 1 or Level 2 trauma services in-hospital (as opposed to providing trauma services only as part of a health system, network, or joint venture). Level 1 trauma service is defined as "a regional resource trauma center, which is capable of providing total care for every aspect of injury and plays a leadership role in

trauma research and education.”⁴ Level 2 is defined by the AHA as “a community trauma center, which is capable of providing trauma care to all but the most severely injured patients who require highly specialized care.”⁴

Discharge planning The three elements of discharge planning are patient education services, case management services, and patient representative services. To receive credit for a service, it must be provided in-hospital.

Service mix This indicator ranges from 0 to 10 points and comprises alcohol/drug abuse or dependency inpatient care, hospice, home health services, social work services, reproductive health services, psychiatric education services, women's health center/services, and psychiatric consultation/liaison services. Services must be provided within the hospital. We do not award a half-point for items in this measure.

Geriatric services This indicator ranges from 0 to 7 points and comprises arthritis treatment centers, adult day care programs, patient representative services, geriatric services, meals on wheels, assisted living, and transportation to health facilities. Again, to receive credit for a service, it must be provided in-hospital.

Gynecology services This indicator was introduced with the 1997 index.⁵ This measure provides a means to better rate the quality of services a hospital provides for its gynecological and obstetric patients. High factor loadings provide support to this variable's inclusion. With a range of 0 to 4, the services included are obstetric care, reproductive health care, birthing rooms, and women's health center. The half-point scheme used for the technology indices was not employed for this indicator.

To combine these structural variables, we weight the elements to create a final composite measure of structure. Using factor analysis, we force a one-factor solution and use the resultant loadings as “weight” values for each variable in the composite structure measure. The relative weight assigned to each element varies from specialty to specialty and from one release to the next within specialty. Figure 2 provides the factor weights assigned to each element for the 1998 release.

Figure 2: Factor Loading by Specialty

Specialty	COTH	Technical Indexes	Volume	R.N.s/ Beds	Trauma	Discharge Planning	Service Mix	Geriatric Services	Gynecology Services
Cancer	77	68	69	66					
Cardiology and Cardiac Surgery	77	53	63	63	51				
Endocrinology	79	56		68	67				
Gastroenterology	75	56	57	60	61				
Geriatrics	66	61		47		47	65	63	
Gynecology		68	61	58	51				63
Neurology and Neurosurgery	78	54		66	65				
Orthopedics	77	47	51	63	56				
Otolaryngology	80	53	58	64	58				
Pulmonary Disease	75	47	42	59	64	32			
Rheumatology	76	60		73		44			
Urology	79	57	68	63	54				

C. Process

The process dimension of the quality equation is the sum or net effect of physicians' clinical decision-making. Physicians' clinical choices about the use of medication or diagnostic tests, admission to the hospital or one of its units, and length of stay account for a large fraction of the outcomes experienced by patients. However, measurements of process on a national scale are extremely difficult to obtain. In order to measure process, we rely on an alternative measure to act as a proxy for "process." We contend that when a qualified expert identifies a hospital as one of the "best," he or she is, in essence, endorsing the process choices made at that hospital. Thus, we use the "nomination" of a hospital by a board-certified specialist as a measure of process. In order to collect these nominations, we conduct an annual survey of board-certified physicians. As in past releases, we have pooled nominations for the past three years (1996-98) to arrive at the process measure.

1998 Pretest Prior to the 1998 data collection, we conducted a pretest to investigate two survey design issues: a proposed revision of the nomination question and a proposed alteration in the method for non-response follow up.

Since our initial survey, physicians have been asked to nominate the best hospitals in their specialty, regardless of location or expense. Beginning in 1995, and to insure that each nomination was recorded correctly, physicians were also asked to indicate the city and state of each nominated hospital.⁶

While the instructions clearly indicate that physicians are to nominate *hospitals*, in past years many respondents have listed the names of medical schools. Although this often does not present a problem, there are several instances in which the relationship between a medical school and its hospital affiliation is not mutually exclusive or self-evident. Two such medical schools: the Harvard University Medical School, Boston and the Baylor College of Medicine, Houston, became our "test" cases to refine the question wording and, thus, the accuracy of our process measure.

A subset of three hundred 1997 respondents was selected for participation in the 1998 pretest. Physicians were assigned to three cohorts based on their 1997 nominations. Respondents were selected from the following cohorts:

- (1) physicians who nominated "Harvard" or "Harvard Medical School,"

- (2) physicians who nominated "Baylor" or "Baylor University," and
- (3) physicians who did not nominate any hospitals that are affiliated with the Harvard Medical School, the Baylor College of Medicine, Houston, or the Baylor University Medical Center, Dallas -- i.e., the control group.

Thirty-six physicians were selected from the "Harvard" group, 64 were selected from the "Baylor" group, and 200 were selected from the control group. All physicians received a \$2 bill as a token incentive. Approximately one-half of the physicians surveyed returned a completed questionnaire.

Physicians in the "Harvard" and "Baylor" groups received a questionnaire that requested a clarification of their 1997 nomination. These physicians were to select from a list of hospitals affiliated with the medical school nominated in 1997. After indicating the intended hospital, the physicians were to indicate, in an open-ended item, why they made their original selection. This item was intended to provide insight into the respondent's original decision-making process. Finally, respondents assigned to the "Harvard" and "Baylor" groups were asked to provide a new set of nominations. The nomination instructions were unaltered from the previous years' surveys. A copy of the questionnaires for the "Harvard" and "Baylor" groups may be found in Appendix I.

The control group received a questionnaire that contained refined wording for the nominations question. The new instructions indicated that, if a physician was uncertain of a hospital's medical school affiliation, the medical school may be nominated. The response format was modified to include space for "Outstanding Hospital" as well as "Affiliated Medical School (if appropriate)." Additional questions inquired about the physicians response patterns. The revised questionnaire may be found in Appendix I.

Results

In previous years, nominated medical schools were coded to specific hospitals based on affiliation. We were able to confirm, that, with regard to responses such as "Harvard" and "Baylor," our coding schemes have been accurate. It also became evident, that, even after being asked to clarify and consider their original nomination of a medical school, the existing instructions did not prompt the respondents to nominate hospitals instead of medical schools.

The new question wording, however, resulted in much clearer nominations. Respondents in this group were more likely to nominate hospitals *and then* additionally list the affiliated medical school. Moreover, physicians who received the questionnaire with revised nomination instructions were more likely to provide a more accurate and easily coded medical school nomination. Based on these results, the revised nomination instructions were adopted for the 1998 survey.

Survey sample The sample for the 1998 survey consists of 2,700 board-certified physicians selected from the American Medical Association's (AMA) Physician Masterfile of 650,000 physicians. From within the Masterfile, we selected a target population of 181,899 board-certified physicians who met the eligibility requirements listed in Figure 3. Stratifying by region and by specialty within region, we selected a sample of 150 physicians from each of 18 specialty areas for a total of 2,700 physicians. The final sample includes both non-federal and federal medical and osteopathic physicians residing in the 50 states and the District of Columbia. As shown in Figure 3, the list of specialties surveyed in 1998 includes, for the first time, nephrology. The decision to include nephrology reflects our efforts to continually increase the breadth of specialties assessed.

Eligibility requirements We defined a probability sample of physicians who could properly represent the 18 specialty groupings delineated by *U.S. News*. We used two rules of eligibility: one related to a mapping between the 18 specialties and the AMA's list of 85 self-designated specialties and the second related to a mapping between these 85 specialties and the 23 member boards of the American Boards of Medical Specialties (ABMS).

Under the first rule, we linked each of the 18 specialties to one or more relevant AMA specialties from the list of AMA self-designated practice specialty codes. Physician who designated a primary specialty in one of the 18 specialties were preliminarily eligible for the survey. Under the second rule, the physicians must also be certified by the corresponding member board of the ABMS. Figure 3 displays the correspondence between the specialty specified for *U.S. News & World Report*, AMA self-designated specialty, and the corresponding member board.

Figure 3: Physician Sample Mapping

U.S. NEWS SPECIALTY	AMA KEY CODE	AMA SELF-DESIGNATED	AMERICAN BOARD OF:
AIDS	ID/27	Infectious diseases	Internal medicine
Cancer	HEM/22 ON/24	Hematology Oncology	Internal medicine Internal medicine
Cardiology and Cardiac Surgery	CD/08 CDS/08	Cardiovascular diseases Cardiovascular surgery	Internal medicine Surgery
Endocrinology	END/14 DIA/12	Endocrinology Diabetes	Internal medicine Internal medicine
Gastroenterology	GE/17	Gastroenterology	Internal medicine
Geriatrics	FPG/38 IMG/38	Geriatrics	Internal medicine
Gynecology	GYN/21 OBG/42	Gynecology Obstetrics & gynecology	Obstetrics & gynecology Obstetrics & gynecology
Neurology and Neurosurgery	N/36 NS	Neurology Neurological surgery	Psychiatry & neurology
Nephrology	NEP	Nephrology	Internal Medicine
Ophthalmology	OPH/46	Ophthalmology	Ophthalmology
Orthopedics	ORS/85	Orthopedic surgery	Orthopedic surgery
Otolaryngology	OTO/48	Otolaryngology	Otolaryngology
Pediatrics	PD/55 ADL/01	Pediatrics Adolescent medicine	Pediatrics Pediatrics
Psychiatry	P/63	Psychiatry	Psychiatry & neurology
Pulmonary Disease	PUD	Pulmonary diseases	Internal medicine
Rehabilitation	PM/62	Physical medicine & rehabilitation	Physical medicine & rehabilitation
Rheumatology	RHU/74	Rheumatology	Internal medicine
Urology	U/91	Urological surgery	Urology

Stratification To compensate for the widely varying number of eligible physicians across the targeted specialties, we used different probabilities of selection for each grouping and used proportionate stratification across the four United States Census regions (West, Northeast, South, and North Central). Within each of the 18 strata, we achieved a sample that was also geographically representative of the spread of physicians across the country.

1998 Physician Survey Sampled physicians were mailed a three-page questionnaire with revised nomination instructions (see Appendix D), a cover letter, a specialty-specific reprint of the 1996 U.S. News & World Report "*America's Best Hospitals*" issue, and a prepaid return envelope. In order to prevent respondent bias, the specialty reprint did *not* include rankings or the "Honor Roll". The sole purpose of the reprint was to emphasize the saliency of the survey and thus to enhance the response rates. We also included a token incentive in the form of a two-dollar bill. One week after the initial survey mail-out, a reminder postcard was sent to the sampled physicians. Six weeks following the reminder mailing, we re-sent the questionnaire and a cover letter to all non-responding physicians.

Response rate 1,385 of the 2,550 1998-eligible physicians returned a useable questionnaire, yielding a response rate of 54.3 percent. (Response rate is calculated as the ratio of completed interviews to all sampled cases. For the 1998 survey, the 150 nephrologists surveyed were not included in the sampled-case pool. Because three years of pooled data is required for our analyses, two more waves of nephrology data need to be collected before inclusion of that specialty. Thus, for the 1998 survey, the relevant total for all sampled physicians is 2,550: 150 physicians across 17 specialties.) Figure 4 shows the response rates by specialty for the three years used for the 1998 index.

Figure 4: Response Rate by Year (150 sampled physicians per specialty per year)

SPECIALTY	1996		1997		1998		3-year total	
	n	%	n	%	n	%	n	%
AIDS	73	48.7%	65	43.3%	85	56.7%	223	49.6%
Cancer	70	46.7%	69	46.0%	77	51.3%	216	48.0%
Cardiology and Cardiac Surgery	71	47.3%	61	40.7%	62	41.3%	194	43.1%
Endocrinology	72	48.0%	71	47.3%	85	56.7%	228	50.7%
Gastroenterology	74	49.3%	69	46.0%	74	49.3%	217	48.2%
Geriatrics	82	54.7%	75	50.0%	92	61.3%	249	55.3%
Gynecology	78	52.0%	73	48.7%	89	59.3%	240	53.3%
Neurology and Neurosurgery	76	50.7%	82	54.7%	85	56.7%	243	54.0%
Ophthalmology	78	52.0%	72	48.0%	85	56.7%	235	52.2%
Orthopedics	81	54.0%	68	45.3%	86	57.3%	235	52.2%
Otolaryngology	72	48.0%	73	48.7%	82	54.7%	227	50.5%
Pediatrics	81	54.0%	76	50.7%	83	55.3%	240	53.3%
Psychiatry	72	48.0%	73	48.7%	82	54.7%	227	50.5%
Pulmonary Disease	72	48.0%	71	47.3%	76	50.7%	219	48.7%
Rehabilitation	70	46.7%	68	45.3%	81	54.0%	219	48.7%
Rheumatology	71	47.3%	83	55.3%	79	52.7%	233	51.8%
Urology	83	55.3%	72	48.0%	82	54.7%	237	52.7%
<i>TOTAL</i>	1,276	50.0%	1,221	47.9%	1,385	54.3%	3,882	50.7%

As we proceeded through the analytic phases of the survey, we decided to omit AIDS from the rankings. This decision was based on two national trends. First, data indicate that the number of individuals newly diagnosed with HIV is decreasing significantly.⁷ Second, data also indicate that individuals with HIV are seeking treatment from places other than hospitals (e.g., AIDS-care centers and other such out-patient facilities). We contend that, for the AIDS specialty, ranking only hospitals is no longer an accurate assessment of the treatment services available to patients with HIV. However, to include non-hospital AIDS-treatment centers in the rankings is out of the scope of this research effort.

Weighting We weighted the responses to the physician survey in two steps. First, weights were assigned to reflect the probability of selection within specialty groups and the overall rates of response within these groups. Second, we post-stratified the weights from the first step using selected marginals of the multi-dimensional contingency table of specialty (17 categories) by census region (West, North, South, and North Central) and by age (25-39, 40-54, and 55 and over).

To check the weights, we confirmed that the sum across the sample of the weights in each cell of the classifications (specialty \times region \times age) equaled the population size of that cell. When applied to the responding population as a whole, the weights do not make for large differences in marginal distributions nor do the weights change any substantive conclusions that would be drawn from the unweighted data.

D. Outcome

Many health care professionals have decried the use of mortality rates due to limitations in the methods for risk-adjustment. Nonetheless, health services research strongly suggests that there is indeed a positive correlation between a better-than-average risk-adjusted mortality rate and overall quality.⁸⁻¹⁷ Based on these findings, we used an adjusted mortality rate as the outcome measure for our quality of care model. All predicted mortality rates were provided by Sachs Group of Evanston, Ill. using the All Patient Refined Diagnosis Related Group (APR-DRG) method designed by 3M Health Information Systems. The APR-DRG adjusts expected deaths for severity of illness by

means of principle diagnosis and categories of secondary diagnoses. A detailed description of the full APR-DRG methodology is provided in Appendix E. The Sachs Group applied this method to the pooled 1995 and 1996 data set of reimbursement claims made to the HCFA by hospitals. These complete data sets were the most current available.

In 1998, we again investigated the specialty-specific DRG. The results of our investigations indicate that revisions were not necessary. The refinements from 1997, which focussed on fine tuning the ratio of medical and surgical procedures, removing procedures that have become more common-place since the initial definition of the ranges, and adding procedures that are now available for HCFA reimbursement, were sufficient. As in previous years, we used an "all-cases" mortality rate for four specialties (geriatrics, gynecology, otolaryngology, and rheumatology) rather than a specialty specific rate. For these specialties, we elected to use the all-cases rate either because the number of hospitals with a sufficient discharges in the particular DRG-grouping was too low, or the DRG groupings proved to be less robust than necessary. Please refer to Appendix C for a complete listing of the procedures used for each specialty specific rate.

E. The Calculation of the Index

The calculation of the index for every hospital within each specialty considers equally the three dimensions of quality of care: structure, process, and outcome. Although all three measures represent a specific aspect of quality, a single score not only provides an easier-to-use result, the synthesis yields a more accurate portrayal of overall quality than would the three aspects individually.

Therefore, in the final computation of scores for a particular specialty, the set of objective indicators used to represent structure, the nomination scores, and the mortality rates have been accorded arithmetically-equivalent importance.

The total formula for calculation of the specialty-specific IHQs is:

$$IHQ_i = \{(S_1 * F_1) + (S_2 * F_2) + (\dots S_n * F_n)\} + [P_i * F_{1-n}] + [M * F_{1-n}]$$

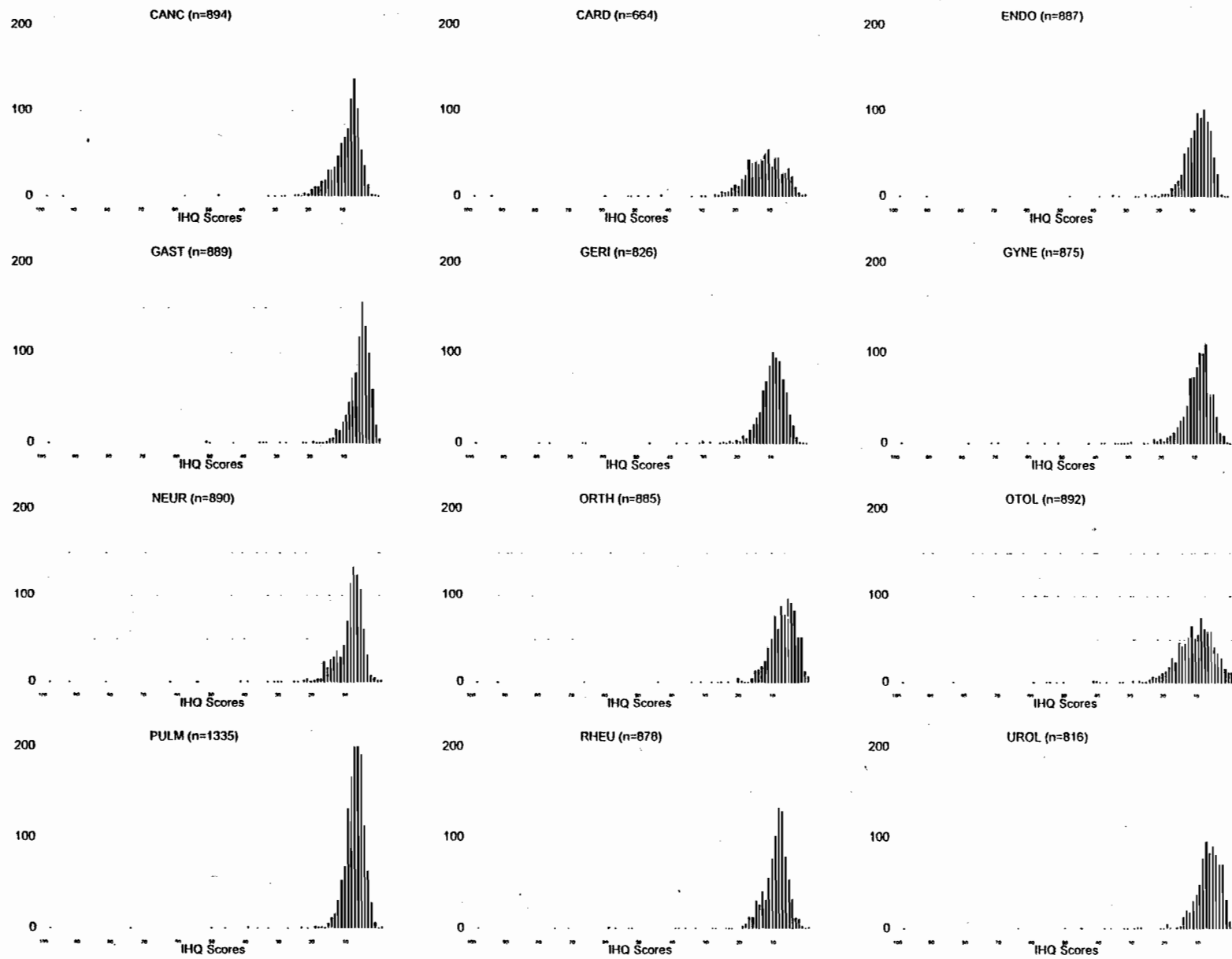
where:

- IHQ_{*i*} = Index for Hospital Quality for specialty *i*
- S_{1-n} = Structural indicators (STRUCTURE)
- F = Factor loading
- P = Nomination score (PROCESS)
- M = Standardized mortality ratio (OUTCOMES)

The general formula for the index scores for tertiary-level hospitals is the same as it began in 1993. Each of the three components--structure, process, and outcomes--is considered equally in the determination of the final, overall score. For presentation purposes, we standardized raw scores, then equated the raw IHQ scores as computed above to a 100-point scale, where the top hospital in each specialty received a score of 100.

By its nature, the index identifies the hospitals that truly are at the top of their craft. One conclusion that can be drawn from the curves of the scores (see Figure 5) is that there are a few extremely good hospitals, many hospitals bunched together providing competent care, and a few hospitals at the bottom end of the curve which, perhaps, need to devote more attention and resources toward improving the quality of care. Graphical representation of the curves for each specialty highlight the tendency of scores to cluster together around a value of 5 to 15. The small number of hospitals with a score clearly higher than the mean (a specialty-specific score more than one standard deviation above the mean) in each specialty clearly stand out as America's Best Hospitals, and the overwhelming majority of hospitals analyzed are solidly in the middle of the range of index scores.

Figure 5: 1998 Distribution of IHQ Score by Specialty



The mean and standard deviation of each of the 16 specialties are listed in Figure 6. Note that for the four reputation-only rankings, mean and standard deviation of the nominations score is presented. This data further illustrates that the spread of IHQ scores produces only a very small number of hospitals two and three standard deviations above the mean. Horizontal lines in each of the 16 specialty lists in Appendices F and G indicate the cutoff points of two and three standard deviations above the mean.

Although the four reputation-only specialties are ranked without the Index of Hospital Quality, standard deviations of the reputational scores are still useful in identifying truly superior hospitals (in terms of statistically relevant nomination scores).

Figure 6: Mean and Standard Deviations of IHQ and Reputational Scores

	Mean	Standard deviation	1 SD above the mean	2 SDs above the mean	3 SDs above the mean
<i>IHQ Score</i>					
<i>Cancer</i>	10.22	6.41	16.63	23.04	29.45
<i>Cardiology and Cardiac Surgery</i>	13.43	8.10	21.53	29.63	37.73
<i>Endocrinology</i>	9.82	6.01	15.83	21.84	27.85
<i>Gastroenterology</i>	6.81	5.65	12.46	18.11	23.76
<i>Geriatrics</i>	11.29	6.95	18.24	25.19	32.14
<i>Gynecology</i>	10.82	7.25	18.07	25.32	32.57
<i>Neurology and Neurosurgery</i>	10.01	6.83	16.84	23.67	30.50
<i>Orthopedics</i>	8.39	6.39	14.78	21.17	27.56
<i>Otolaryngology</i>	11.94	7.90	19.84	27.74	35.64
<i>Pulmonary Diseases</i>	8.72	4.77	13.49	18.26	23.03
<i>Rheumatology</i>	11.03	6.89	17.92	24.81	31.70
<i>Urology</i>	8.36	6.13	14.49	20.62	26.75
<i>Reputational Score</i>					
<i>Ophthalmology</i>	5.99	15.37	21.36	36.73	52.10
<i>Pediatrics</i>	2.93	6.44	9.37	15.81	22.25
<i>Psychiatry</i>	1.83	3.76	5.59	9.35	13.11
<i>Rehabilitation</i>	3.15	7.79	10.94	18.73	26.52

III. Directions for Future Releases

Our objective in developing and releasing this “report card” each year is to provide a tool to guide consumers and providers of care in making decisions that impact health care. As such, we must also strive to improve and enhance the index for each release. For future releases of the index, we anticipate continuing to seek new secondary data sources and refining the measures drawn from those sources. More specifically, we continue to seek alternative sources for structural measures that offer more discriminatory items for the technology indices; the service-based indices; and, in particular, commitment and quality of staff measures. Likewise, in an attempt to accurately reflect the status of hospitals, including, but not limited to the impact of hospital mergers, we will continue to seek the most current databases available. We plan to further our investigation of the specialization of outcome measures by performing regression analyses on the DRG groupings and other components of care. We also plan to investigate the role of risk adjustment factors as applied to mortality rates for various specialties. In addition, we intend to reevaluate the definition of the specialties to which we apply the index. And, finally, we seek to further enhance participation in the physician survey.

As in years past, we rely on the input and guidance of the users of the index in defining new directions the measures. Readers and users are encouraged to contact the authors with suggestions and questions regarding this tool.

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Appendix A

Technology Indices by Specialty

<p><i>All Hospital Index</i></p> <p><i>17 Elements (used to define eligible hospitals)</i></p>	<i>Angioplasty</i>
	<i>Cardiac Catheterization Lab</i>
	<i>Cardiac Intensive Care Beds</i>
	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Diagnostic Mammography Services</i>
	<i>Extracorporeal Shock Wave Lithotripter</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Medical/Surgical Intensive Care</i>
	<i>Neonatal Intensive Care Beds</i>
	<i>Open Heart Surgery</i>
	<i>Pediatric Intensive Care Beds</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Reproductive Health</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Cancer</i></p> <p><i>7 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Oncology Services</i>
	<i>Pediatric Intensive Care</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Cardiology and Cardiac Surgery</i></p> <p><i>9 Elements</i></p>	<i>Angioplasty</i>
	<i>Cardiac Catheterization Lab</i>
	<i>Cardiac Intensive Care</i>
	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Open Heart Surgery</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>

<p><i>Endocrinology</i></p> <p><i>7 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Gastroenterology</i></p> <p><i>8 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Extracorporeal Shock Wave Lithotripter</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Geriatrics</i></p> <p><i>8 Elements</i></p>	<i>Cardiac Catheterization Lab</i>
	<i>Cardiac Intensive Care</i>
	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Gynecology</i></p> <p><i>8 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Mammography Services</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Neonatal Intensive Care</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Neurology and Neurosurgery</i></p> <p><i>7 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Orthopedics</i></p> <p><i>5 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>

<p><i>Otolaryngology</i></p> <p><i>5 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>X-ray Radiation Therapy</i>

<p><i>Pulmonary Disease</i></p> <p><i>4 elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Radiation Therapy</i>
	<i>Ultrasound</i>

<p><i>Rheumatology</i></p> <p><i>5 Elements</i></p>	<i>Computed Tomography Scanner</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>

<i>Urology</i> <i>8 Elements</i>	<i>Extracorporeal Shock Wave Lithotripter</i>
	<i>X-ray Radiation Therapy</i>
	<i>Computed Tomography Scanner</i>
	<i>Diagnostic Radioisotope Facility</i>
	<i>Magnetic Resonance Imaging</i>
	<i>Positron Emissions Tomography Scanner</i>
	<i>Single Photon Emissions Computed Tomography</i>
	<i>Ultrasound</i>

Appendix B

Structural Variable Map

The following variables, used to construct structural elements of the 1998 IHQ, were taken from the 1996 Annual Survey of Hospitals Data Base published by the American Hospital Association.

ALL HOSPITAL INDEX - used to define hospital eligibility

1 point if ANGIOHOS=1, half point if ANGIOSYS, ANGIONET, or ANGIOVEN=1
1 point if CCLABHOS=1, half point if CCLABSYS, CCLABNET, or CCLABVEN=1
1 point if CICBDHOS=1, half point if CICBDSYS, CICBDNET, or CICBDVEN=1
1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
1 point if ESWLHOS=1, half point if ESWLSYS, ESWLNET, or ESWLVEN=1
1 point if MAMMHHOS=1, half point if MAMMHSYS, MAMMSNET, or MAMMSVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if MSICHOS=1, half point if MSICSYS, MSICNET, or MSICVEN=1
1 point if NICBDHOS=1, half point if NICBDSYS, NICBDNET, or NICBDVEN=1
1 point if OHSRGHOS=1, half point if OHSRGSYS, OHSRGNET, or OHSRGVEN=1
1 point if PEDBDHOS=1, half point if PEDBDSYS, PEDBDNET, or PEDBDVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if REPROHOS=1, half point if REPROSYS, REPRONET, or REPROVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Cancer Technology Index

1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if ONCOLHOS=1, half point if ONCOLSYS, ONCOLNET, or ONCOLVEN=1
1 point if PEDICHOS=1, half point if PEDICSYS, PEDICNET, or PEDICVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1

Cardiology and Cardiac Surgery Technology Index

1 point if ANGIOHOS=1, half point if ANGIOSYS, ANGIONET, or ANGIOVEN=1
1 point if CCLABHOS=1, half point if CCLABSYS, CCLABNET, or CCLABVEN=1
1 point if CICHOS=1, half point if CICSYS, CICNET, or CICVEN=1
1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if OHSRGHOS=1, half point if OHSRGSYS, OHSRGNET, or OHSRGVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Endocrinology Technology Index

1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Gastroenterology Technology Index

1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
1 point if ESWLHOS=1, half point if ESWLSYS, ESWLNET, or ESWLVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Geriatrics Technology Index

1 point if CCLABHOS=1, half point if CCLABSYS, CCLABNET, or CCLABVEN=1
1 point if CICHOS=1, half point if CICSYS, CICNET, or CICVEN=1
1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Gynecology Technology Index

1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if MAMMOSHOS=1, half point if MAMMOSYS, MAMMOSNET, or MAMMOSVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if NICHOS=1, half point if NICSYS, NICNET, or NICVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Neurology and Neurosurgery Technology Index

1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Orthopedics Technology Index

- 1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
- 1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
- 1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
- 1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
- 1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Otolaryngology Technology Index

- 1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
- 1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
- 1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
- 1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
- 1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1

Pulmonary Disease Technology Index

- 1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
- 1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
- 1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
- 1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Rheumatology Technology Index

- 1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
- 1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
- 1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
- 1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
- 1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Urology Technology Index

- 1 point if CTSCNHOS=1, half point if CTSCNSYS, CTSCNNET, or CTSCNVEN=1
- 1 point if DRADFHOS=1, half point if DRADFSYS, DRADFNET, or DRADFVEN=1
- 1 point if ESWLHOS=1, half point if ESWLSYS, ESWLNET, or ESWLVEN=1
- 1 point if MRIHOS=1, half point if MRISYS, MRINET, or MRIVEN=1
- 1 point if PETHOS=1, half point if PETSYS, PETNET, or PETVEN=1
- 1 point if RADTHHOS=1, half point if RADTHSYS, RADTHNET, or RADTHVEN=1
- 1 point if SPECTHOS=1, half point if SPECTSYS, SPECTNET, or SPECTVEN=1
- 1 point if ULTSNHOS=1, half point if ULTSNSYS, ULTSNNET, or ULTSNVEN=1

Discharge Planning

- 1 point if CMNGTHOS=1
- 1 point if PATEDHOS=1
- 1 point if PATRPHOS=1

Geriatric Services

- 1 point if ADULTHOS=1
- 1 point if ARTHCHOS=1
- 1 point if ASSTLHOS=1
- 1 point if GERSVHOS=1
- 1 point if MEALSHOS=1
- 1 point if PATRPHOS=1
- 1 point if TPORTHOS=1

Gynecology Services

- 1 point if BROOMHOS=1
- 1 point if OBLEV=2 or 3 and OBHOS=1
- 1 point if REPROHOS=1
- 1 point if WOMHCHOS=1

Service Mix

- 1 point if ALCHHOS=1
- 1 point if COUTRHOS=1
- 1 point if HOMEHHOS=1
- 1 point if HOSPCHOS=1
- 1 point if PSYEDHOS=1
- 1 point if PSYLSHOS=1
- 1 point if REPROHOS=1
- 1 point if SOCWKHOS=1
- 1 point if WOMHCHOS=1

COTH

"Yes" if MAPP8=1

R.N.'s to Beds

Full-time Registered Nurses (FTRNTF)
divided by Total Hospital Beds
(HOSPBD)

Trauma

"Yes" if TRAUML90=1 or 2 and
TRAUMHOS=1

Appendix C

Diagnosis-Related Group (DRG) Groupings by Specialty

Cancer

DRG #10	NERVOUS SYSTEM NEOPLASMS W CC
DRG #11	NERVOUS SYSTEM NEOPLASMS W/O CC
DRG #64	EAR, NOSE, MOUTH & THROAT MALIGNANCY
DRG #82	RESPIRATORY NEOPLASMS
DRG #172	DIGESTIVE MALIGNANCY W CC
DRG #173	DIGESTIVE MALIGNANCY W/O CC
DRG #199	HEPATOBIILIARY DIAGNOSTIC PROCEDURE FOR MALIGNANCY
DRG #203	MALIGNANCY OF HEPATOBIILIARY SYSTEM OR PANCREAS
	PATHOLOGICAL FRACTURES & MUSCULOSKELETAL & CONN TISS
DRG #239	MALIGNANCY
DRG #257	TOTAL MASTECTOMY FOR MALIGNANCY W CC
DRG #258	TOTAL MASTECTOMY FOR MALIGNANCY W/O CC
DRG #259	SUBTOTAL MASTECTOMY FOR MALIGNANCY W CC
DRG #260	SUBTOTAL MASTECTOMY FOR MALIGNANCY W/O CC
DRG #274	MALIGNANT BREAST DISORDERS W CC
DRG #275	MALIGNANT BREAST DISORDERS W/O CC
DRG #338	TESTES PROCEDURES, FOR MALIGNANCY
DRG #344	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROCEDURES FOR MALIGNANCY
DRG #346	MALIGNANCY, MALE REPRODUCTIVE SYSTEM, W CC
DRG #347	MALIGNANCY, MALE REPRODUCTIVE SYSTEM, W/O CC
DRG #354	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W CC
DRG #355	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W/O CC
DRG #357	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY
DRG #366	MALIGNANCY, FEMALE REPRODUCTIVE SYSTEM W CC
DRG #367	MALIGNANCY, FEMALE REPRODUCTIVE SYSTEM W/O CC
DRG #400	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE
DRG #401	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC W CC
DRG #402	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC W/O CC
DRG #403	LYMPHOMA & NON-ACUTE LEUKEMIA W CC
DRG #404	LYMPHOMA & NON-ACUTE LEUKEMIA W/O CC
DRG #405	ACUTE LEUKEMIA W/O MAJOR O.R. PROCEDURE AGE 0-17
DRG #409	RADIOTHERAPY
DRG #410	CHEMOTHERAPY W/O ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS
DRG #411	HISTORY OF MALIGNANCY W/O ENDOSCOPY
DRG #412	HISTORY OF MALIGNANCY W ENDOSCOPY
DRG #413	OTHER MYELOPROLIF DIS OR POORLY DIFF NEOPL DIAG W CC
DRG #414	OTHER MYELOPROLIF DIS OR POORLY DIFF NEOPL DIAG W/O CC
DRG #473	ACUTE LEUKEMIA W/O MAJOR O.R. PROCEDURE AGE >17
DRG #492	CHEMOTHERAPY W ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS

Cardiology and Cardiac Surgery

DRG #103	HEART TRANSPLANT
DRG #104	CARDIAC VALVE PROCEDURES W CARDIAC CATH
DRG #105	CARDIAC VALVE PROCEDURES W/O CARDIAC CATH
DRG #106	CORONARY BYPASS W CARDIAC CATH
DRG #107	CORONARY BYPASS W/O CARDIAC CATH
DRG #108	OTHER CARDIOTHORACIC PROCEDURES
DRG #110	MAJOR CARDIOVASCULAR PROCEDURES W CC
DRG #111	MAJOR CARDIOVASCULAR PROCEDURES W/O CC
DRG #112	PERCUTANEOUS CARDIOVASCULAR PROCEDURES
DRG #115	PERM CARDIAC PACEMAKER IMPLANT W AMI, HEART FAILURE OR SHOCK
DRG #116	OTH PERM CARDIAC PACEMAKER IMPLANT OR AICD LEAD OR GENERATOR PRO
DRG #117	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT
DRG #118	CARDIAC PACEMAKER DEVICE REPLACEMENT
DRG #121	CIRCULATORY DISORDERS W AMI & C.V. COMP DISCH ALIVE
DRG #122	CIRCULATORY DISORDERS W AMI W/O C.V. COMP DISCH ALIVE
DRG #123	CIRCULATORY DISORDERS W AMI, EXPIRED
DRG #126	ACUTE & SUBACUTE ENDOCARDITIS
DRG #127	HEART FAILURE & SHOCK
DRG #128	DEEP VEIN THROMBOPHLEBITIS
DRG #129	CARDIAC ARREST, UNEXPLAINED
DRG #130	PERIPHERAL VASCULAR DISORDERS W CC
DRG #131	PERIPHERAL VASCULAR DISORDERS W/O CC
DRG #132	ATHEROSCLEROSIS W CC
DRG #133	ATHEROSCLEROSIS W/O CC
DRG #135	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE >17 W CC
DRG #136	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE >17 W/O CC
DRG #137	CARDIAC CONGENITAL & VALVULAR DISORDERS AGE 0-17
DRG #138	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W CC
DRG #139	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W/O CC
DRG #140	ANGINA PECTORIS
DRG #141	SYNCOPE & COLLAPSE W CC
DRG #142	SYNCOPE & COLLAPSE W/O CC
DRG #144	OTHER CIRCULATORY SYSTEM DIAGNOSES W CC
DRG #145	OTHER CIRCULATORY SYSTEM DIAGNOSES W/O CC

Endocrinology

DRG #286	ADRENAL & PITUITARY PROCEDURES
DRG #287	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DISORDERS
DRG #288	O.R. PROCEDURES FOR OBESITY
DRG #289	PARATHYROID PROCEDURES
DRG #290	THYROID PROCEDURES
DRG #292	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W CC
DRG #293	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W/O CC
DRG #294	DIABETES AGE >35
DRG #295	DIABETES AGE 0-35
DRG #296	NUTRITIONAL & MISC METABOLIC DISORDERS AGE >17 W CC
DRG #297	NUTRITIONAL & MISC METABOLIC DISORDERS AGE >17 W/O CC
DRG #298	NUTRITIONAL & MISC METABOLIC DISORDERS AGE 0-17
DRG #299	INBORN ERRORS OF METABOLISM
DRG #300	ENDOCRINE DISORDERS W CC
DRG #301	ENDOCRINE DISORDERS W/O CC

Gastroenterology

DRG #146	RECTAL RESECTION W CC
DRG #147	RECTAL RESECTION W/O CC
DRG #148	MAJOR SMALL & LARGE BOWEL PROCEDURES W CC
DRG #149	MAJOR SMALL & LARGE BOWEL PROCEDURES W/O CC
DRG #150	PERITONEAL ADHESIOLYSIS W CC
DRG #151	PERITONEAL ADHESIOLYSIS W/O CC
DRG #152	MINOR SMALL & LARGE BOWEL PROCEDURES W CC
DRG #153	MINOR SMALL & LARGE BOWEL PROCEDURES W/O CC
DRG #154	STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES AGE >17 W CC
DRG #155	STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES AGE >17 W/O CC
DRG #156	STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES AGE 0-17
DRG #170	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W CC
DRG #171	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W/O CC
DRG #174	G.I. HEMORRHAGE W CC
DRG #175	G.I. HEMORRHAGE W/O CC
DRG #176	COMPLICATED PEPTIC ULCER
DRG #177	UNCOMPLICATED PEPTIC ULCER W CC
DRG #178	UNCOMPLICATED PEPTIC ULCER W/O CC
DRG #179	INFLAMMATORY BOWEL DISEASE
DRG #180	G.I. OBSTRUCTION W CC
DRG #181	G.I. OBSTRUCTION W/O CC
DRG #182	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS AGE >17 W CC
DRG #183	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS AGE >17 W/O CC

DRG #184	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS AGE 0-17
DRG #188	OTHER DIGESTIVE SYSTEM DIAGNOSES AGE >17 W CC
DRG #189	OTHER DIGESTIVE SYSTEM DIAGNOSES AGE >17 W/O CC
DRG #190	OTHER DIGESTIVE SYSTEM DIAGNOSES AGE 0-17
DRG #191	PANCREAS, LIVER & SHUNT PROCEDURES W CC
DRG #192	PANCREAS, LIVER & SHUNT PROCEDURES W/O CC
DRG #193	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W CC
DRG #194	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W/O CC
DRG #195	CHOLECYSTECTOMY W C.D.E. W CC
DRG #196	CHOLECYSTECTOMY W C.D.E. W/O CC
DRG #197	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W CC
DRG #198	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W/O CC
DRG #200	HEPATOBIILIARY DIAGNOSTIC PROCEDURE FOR NON-MALIGNANCY
DRG #201	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES
DRG #202	CIRRHOSIS & ALCOHOLIC HEPATITIS
DRG #204	DISORDERS OF PANCREAS EXCEPT MALIGNANCY
DRG #205	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA W CC
DRG #206	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA W/O CC
DRG #207	DISORDERS OF THE BILIARY TRACT W CC
DRG #208	DISORDERS OF THE BILIARY TRACT W/O CC
DRG #493	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W CC
DRG #494	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W/O CC

Geriatrics

ALL CASES

Gynecology

DRG #353	PELVIC EVISCERATION, RADICAL HYSTERECTOMY & RADICAL VULVECTOMY
DRG #356	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
DRG #358	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W CC
DRG #359	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W/O CC
DRG #360	VAGINA, CERVIX & VULVA PROCEDURES
DRG #361	LAPAROSCOPY & INCISIONAL TUBAL INTERRUPTION
DRG #362	ENDOSCOPIC TUBAL INTERRUPTION
DRG #363	D&C, CONIZATION & RADIO-IMPLANT, FOR MALIGNANCY
DRG #364	D&C, CONIZATION EXCEPT FOR MALIGNANCY
DRG #365	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES
DRG #368	INFECTIONS, FEMALE REPRODUCTIVE SYSTEM
DRG #369	MENSTRUAL & OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS

Neurology and Neurosurgery

DRG #1	CRANIOTOMY AGE >17 EXCEPT FOR TRAUMA
DRG #2	CRANIOTOMY FOR TRAUMA AGE >17
DRG #3	CRANIOTOMY AGE 0-17
DRG #4	SPINAL PROCEDURES
DRG #5	EXTRACRANIAL VASCULAR PROCEDURES
DRG #6	CARPAL TUNNEL RELEASE
DRG #7	PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W CC
DRG #8	PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W/O CC
DRG #9	SPINAL DISORDERS & INJURIES
DRG #12	DEGENERATIVE NERVOUS SYSTEM DISORDERS
DRG #13	MULTIPLE SCLEROSIS & CEREBELLAR ATAXIA
DRG #14	SPECIFIC CEREBROVASCULAR DISORDERS EXCEPT TIA
DRG #15	TRANSIENT ISCHEMIC ATTACK & PRECEREBRAL OCCLUSIONS
DRG #16	NONSPECIFIC CEREBROVASCULAR DISORDERS W CC
DRG #17	NONSPECIFIC CEREBROVASCULAR DISORDERS W/O CC
DRG #18	CRANIAL & PERIPHERAL NERVE DISORDERS W CC
DRG #19	CRANIAL & PERIPHERAL NERVE DISORDERS W/O CC
DRG #20	NERVOUS SYSTEM INFECTION EXCEPT VIRAL MENINGITIS
DRG #21	VIRAL MENINGITIS
DRG #22	HYPERTENSIVE ENCEPHALOPATHY
DRG #23	NONTRAUMATIC STUPOR & COMA
DRG #24	SEIZURE & HEADACHE AGE >17 W CC
DRG #25	SEIZURE & HEADACHE AGE >17 W/O CC
DRG #26	SEIZURE & HEADACHE AGE 0-17
DRG #27	TRAUMATIC STUPOR & COMA, COMA >1 HR
DRG #28	TRAUMATIC STUPOR & COMA, COMA <1 HR AGE >17 W CC
DRG #29	TRAUMATIC STUPOR & COMA, COMA <1 HR AGE >17 W/O CC
DRG #30	TRAUMATIC STUPOR & COMA, COMA <1 HR AGE 0-17
DRG #31	CONCUSSION AGE >17 W CC
DRG #32	CONCUSSION AGE >17 W/O CC
DRG #33	CONCUSSION AGE 0-17
DRG #34	OTHER DISORDERS OF NERVOUS SYSTEM W CC
DRG #35	OTHER DISORDERS OF NERVOUS SYSTEM W/O CC

Orthopedics

DRG #209	MAJOR JOINT & LIMB REATTACHMENT PROCEDURES OF LOWER EXTREMITY
DRG #210	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE >17 W CC
DRG #211	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE >17 W/O CC
DRG #212	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE 0-17
DRG #213	AMPUTATION FOR MUSCULOSKELETAL SYSTEM & CONN TISSUE DISORDERS
DRG #214	BACK & NECK PROCEDURES W CC
DRG #215	BACK & NECK PROCEDURES W/O CC
DRG #216	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE
DRG #217	WND DEBRID & SKN GRFT EXCEPT HAND, FOR MUSCSKELET & CONN TISS DIS
DRG #218	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR AGE >17 W CC
DRG #219	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR AGE >17 W/O CC
DRG #220	LOWER EXTREM & HUMER PROC EXCEPT HIP, FOOT, FEMUR AGE 0-17
DRG #221	KNEE PROCEDURES W CC
DRG #222	KNEE PROCEDURES W/O CC
DRG #223	MAJOR SHOULDER/ELBOW PROC, OR OTHER UPPER EXTREMITY PROC W CC
DRG #224	SHOULDER, ELBOW OR FOREARM PROC, EXC MAJOR JOINT PROC, W/O CC
DRG #225	FOOT PROCEDURES
DRG #226	SOFT TISSUE PROCEDURES W CC
DRG #227	SOFT TISSUE PROCEDURES W/O CC
DRG #228	MAJOR THUMB OR JOINT PROC, OR OTH HAND OR WRIST PROC W CC
DRG #229	HAND OR WRIST PROC, EXCEPT MAJOR JOINT PROC, W/O CC
DRG #230	LOCAL EXCISION & REMOVAL OF INT FIX DEVICES OF HIP & FEMUR
DRG #231	LOCAL EXCISION & REMOVAL OF INT FIX DEVICES EXCEPT HIP & FEMUR
DRG #232	ARTHROSCOPY
DRG #233	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W CC
DRG #234	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W/O CC
DRG #235	FRACTURES OF FEMUR
DRG #236	FRACTURES OF HIP & PELVIS
DRG #237	SPRAINS, STRAINS, & DISLOCATIONS OF HIP, PELVIS & THIGH
DRG #238	OSTEOMYELITIS
DRG #240	CONNECTIVE TISSUE DISORDERS W CC
DRG #241	CONNECTIVE TISSUE DISORDERS W/O CC
DRG #471	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY
DRG #485	LIMB REATTACHMENT, HIP AND FEMUR PROC FOR MULTIPLE SIGNIFICANT T
DRG #491	MAJOR JOINT & LIMB REATTACHMENT PROCEDURES OF UPPER EXTREMITY

Otolaryngology

DRG #49	MAJOR HEAD & NECK PROCEDURES
DRG #50	SIALOADENECTOMY
DRG #51	SALIVARY GLAND PROCEDURES EXCEPT SIALOADENECTOMY
DRG #55	MISCELLANEOUS EAR, NOSE, MOUTH & THROAT PROCEDURES
DRG #57	T&A PROC, EXCEPT TONSILLECTOMY &/OR ADENOIDECTOMY ONLY, AGE >17
DRG #58	T&A PROC, EXCEPT TONSILLECTOMY &/OR ADENOIDECTOMY ONLY, AGE 0-17
DRG #61	MYRINGOTOMY W TUBE INSERTION AGE >17
DRG #62	MYRINGOTOMY W TUBE INSERTION AGE 0-17
DRG #63	OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES
DRG #65	DYSEQUILIBRIUM
DRG #66	EPISTAXIS
DRG #67	EPIGLOTTITIS
DRG #68	OTITIS MEDIA & URI AGE >17 W CC
DRG #69	OTITIS MEDIA & URI AGE >17 W/O CC
DRG #70	OTITIS MEDIA & URI AGE 0-17
DRG #71	LARYNGOTRACHEITIS
DRG #72	NASAL TRAUMA & DEFORMITY
DRG #73	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES AGE >17
DRG #74	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES AGE 0-17

Pulmonary Disease

DRG #76	OTHER RESP SYSTEM O.R. PROCEDURES W CC
DRG #77	OTHER RESP SYSTEM O.R. PROCEDURES W/O CC
DRG #78	PULMONARY EMBOLISM
DRG #79	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE >17 W CC
DRG #80	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE >17 W/O CC
DRG #81	RESPIRATORY INFECTIONS & INFLAMMATIONS AGE 0-17
DRG #85	PLEURAL EFFUSION W CC
DRG #86	PLEURAL EFFUSION W/O CC
DRG #87	PULMONARY EDEMA & RESPIRATORY FAILURE
DRG #88	CHRONIC OBSTRUCTIVE PULMONARY DISEASE
DRG #89	SIMPLE PNEUMONIA & PLEURISY AGE >17 W CC
DRG #90	SIMPLE PNEUMONIA & PLEURISY AGE >17 W/O CC
DRG #91	SIMPLE PNEUMONIA & PLEURISY AGE 0-17
DRG #92	INTERSTITIAL LUNG DISEASE W CC
DRG #93	INTERSTITIAL LUNG DISEASE W/O CC
DRG #94	PNEUMOTHORAX W CC
DRG #95	PNEUMOTHORAX W/O CC
DRG #96	BRONCHITIS & ASTHMA AGE >17 W CC
DRG #97	BRONCHITIS & ASTHMA AGE >17 W/O CC

DRG #98	BRONCHITIS & ASTHMA AGE 0-17
DRG #99	RESPIRATORY SIGNS & SYMPTOMS W CC
DRG #100	RESPIRATORY SIGNS & SYMPTOMS W/O CC
DRG #101	OTHER RESPIRATORY SYSTEM DIAGNOSES W CC
DRG #102	OTHER RESPIRATORY SYSTEM DIAGNOSES W/O CC
DRG #475	RESPIRATORY SYSTEM DIAGNOSIS WITH VENTILATOR SUPPORT

Rheumatology

DRG #242	SEPTIC ARTHRITIS
DRG #244	BONE DISEASES & SPECIFIC ARTHROPATHIES W CC
DRG #245	BONE DISEASES & SPECIFIC ARTHROPATHIES W/O CC
DRG #246	NON-SPECIFIC ARTHROPATHIES
DRG #247	SIGNS & SYMPTOMS OF MUSCULOSKELETAL SYSTEM & CONN TISSUE
DRG #256	OTHER MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE DIAGNOSES

Urology

DRG #302	KIDNEY TRANSPLANT
DRG #303	KIDNEY, URETER & MAJOR BLADDER PROCEDURES FOR NEOPLASM
DRG #304	KIDNEY, URETER & MAJOR BLADDER PROC FOR NON-NEOPL W CC
DRG #305	KIDNEY, URETER & MAJOR BLADDER PROC FOR NON-NEOPL W/O CC
DRG #306	PROSTATECTOMY W CC
DRG #307	PROSTATECTOMY W/O CC
DRG #308	MINOR BLADDER PROCEDURES W CC
DRG #309	MINOR BLADDER PROCEDURES W/O CC
DRG #310	TRANSURETHRAL PROCEDURES W CC
DRG #311	TRANSURETHRAL PROCEDURES W/O CC
DRG #312	URETHRAL PROCEDURES, AGE >17 W CC
DRG #313	URETHRAL PROCEDURES, AGE >17 W/O CC
DRG #314	URETHRAL PROCEDURES, AGE 0-17
DRG #315	OTHER KIDNEY & URINARY TRACT O.R. PROCEDURES
DRG #323	URINARY STONES W CC, &/OR ESW LITHOTRIPSY
DRG #324	URINARY STONES W/O CC
DRG #328	URETHRAL STRICTURE AGE >17 W CC
DRG #329	URETHRAL STRICTURE AGE >17 W/O CC
DRG #330	URETHRAL STRICTURE AGE 0-17
DRG #334	MAJOR MALE PELVIC PROCEDURES W CC
DRG #335	MAJOR MALE PELVIC PROCEDURES W/O CC
DRG #336	TRANSURETHRAL PROSTATECTOMY W CC
DRG #337	TRANSURETHRAL PROSTATECTOMY W/O CC
DRG #339	TESTES PROCEDURES, NON-MALIGNANCY AGE >17
DRG #340	TESTES PROCEDURES, NON-MALIGNANCY AGE 0-17
DRG #341	PENIS PROCEDURES
DRG #342	CIRCUMCISION AGE >17

DRG #343	CIRCUMCISION AGE 0-17
DRG #348	BENIGN PROSTATIC HYPERTROPHY W CC
DRG #349	BENIGN PROSTATIC HYPERTROPHY W/O CC
DRG #350	INFLAMMATION OF THE MALE REPRODUCTIVE SYSTEM
DRG #351	STERILIZATION, MALE
DRG #352	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES

Appendix D

1997 Sample Physician Questionnaire



September 15, 1997

Dear Doctor:

The National Opinion Research Center at the University of Chicago is conducting a study for *U.S. News & World Report*. We request your judgement on three topics of considerable public interest: 1) what are this nation's preeminent hospitals for treating the most serious or difficult medical problems; 2) what role does faith and spirituality play in medicine; and, 3) what has been the impact of managed care on your profession?

You were chosen as part of a national random sample of 2,700 board-certified physicians, stratified by region and by 18 specialties. We are asking specialists with your expertise to help us create a profile of the best hospital care for cancer.

The National Opinion Research Center has been conducting survey research in the public interest for more than 50 years. Throughout its history, it has engaged in diverse health studies in such areas as access to health care, maternal and infant health, drug addiction, medical utilization and expenditure patterns, and AIDS. Findings from this study will inform a broad spectrum of the American public.

Responding to this short questionnaire should take only a few minutes. Your responses will be kept strictly confidential and all results will be reported only in statistical, summary form.

Please take a few minutes now to complete this questionnaire and return it to us in the enclosed, postage-paid envelope. We have also included a two-dollar bill as a small gesture of our appreciation and as a thank you for sharing your views.

If you have any questions about this study, please contact me at (312) 759-4244. Collect calls will be accepted.

Sincerely yours,

Craig A. Hill, Ph.D.
Research Vice President
National Opinion Research Center

The National Opinion Research Center at the University of Chicago is conducting a nation-wide survey of board-certified specialists for *U.S. News & World Report*. The purpose of this study is to 1) identify hospitals that excel in treating patients with the most serious or difficult medical problems, 2) determine physicians' perceptions of the role spirituality and faith play in medicine, and 3) assess the impact of managed care on the medical profession.

1. In your estimation, which are the **five** hospitals in the United States that provide the best care for cancer, regardless of location or expense?

In answering this question, please consider the principal clinics, medical schools, or organizational affiliations of the physicians that provide the best care and list below the names of the hospitals in which they principally practice.

To ensure the accurate recording of your response, or if you are unclear of an medical school's hospital affiliation, you may also list the name of the medical school associated with the hospital if appropriate.

In identifying the best hospitals, please think about patients with the most serious or difficult medical problems.

List these outstanding hospitals in any order.

OUTSTANDING HOSPITAL	AFFILIATED MEDICAL SCHOOL (if appropriate)	CITY	ST
and/or			
and/or			
and/or			
and/or			
and/or			

Recently, several medical schools around the country have begun to offer courses dealing with the role of faith and spirituality in medicine.

2. To help us gauge the opinions of physicians concerning various issues related to this topic, please indicate how strongly you disagree or agree with each of the following statements.

Please circle a "strength score" of 0 to 7 for each item.

	Strongly Disagree							Strongly Agree								
a. Better clinical outcome can result directly from a patient's spirituality	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
b. There is no evidence to associate spirituality and spiritual practices with favorable health care outcomes	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
c. A doctor's religious beliefs can improve quality of care	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
d. It is important for doctors to understand the religious beliefs and spiritual practices of their patients	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
e. Patients' religious beliefs are often a barrier to the best care possible	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
f. Physicians should not have to consider a patient's religious preferences when making a decision to withdraw life support	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
g. Patients with pessimistic outlooks on their illness are less likely to recover compared with more optimistic patients	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
h. Near Death Experiences are not clinically valid phenomena	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7

Now, we'd like to ask you few questions about managed care.

3. Over the past five years, would you say the health care system in this country has gotten better, stayed about the same, or gotten worse in terms of:

	Better	Worse	Same
a. Providing health care to everyone	1	2	3
b. Holding down the costs of health care to families	1	2	3
c. Making sure the quality of the health care Americans receive is the best it can be	1	2	3
d. Making sure Americans can choose their own doctors	1	2	3

4. After each of the following statements, please indicate whether you agree or disagree with each statement.

Please circle the appropriate response, 1-4.

	Strongly agree	Agree	Disagree	Strongly disagree
a. Insurance companies should be required to cover any medical treatment or test, regardless of cost	1	2	3	4
b. Health insurance should pay for non-traditional types of care, such as acupuncture, herbal medicine, and homeopathy	1	2	3	4
c. People who smoke or drink should pay more for health insurance than people who do not smoke or drink	1	2	3	4
d. Insurance companies should be required to cover only medical treatments and tests that are proven to be worth the cost	1	2	3	4
e. In general, if someone is very sick and has almost no chance of survival, only those treatments that help make the patient more comfortable should be covered by health insurance	1	2	3	4
f. In general, if someone is very sick and has almost no chance of survival, all medical treatments, even heroic measures, should be covered by health insurance no matter how costly the care is	1	2	3	4
g. Due to managed care, doctors often release patients from the hospital before they would otherwise discharge the patient	1	2	3	4
h. Due to restrictions, doctors are less likely to refer a patient to a hospital outside of the patient's managed care plan than they otherwise would	1	2	3	4

5. Approximately what percentage of your patients, if any, are covered by a managed care plan?

%

6. What is your current religious preference?

Please Circle One

- Protestant 1 None 4
 Catholic 2 Other (Please specify): 5
 Jewish 3

7. In the past 12 months, how often have you attended a worship service (like a church or synagogue service or mass)?

Please Circle One

- Never 1 About twice a month 5
 Once or twice 2 About once a week 6
 Less than once a month 3 Several times a week 7
 About once a month 4 Everyday 8

Thank you for your time and consideration. Please return this survey in the enclosed, postage-paid envelope.

Appendix E

Predicted Mortality: APR-DRG Methodology

Introduction to DRGs

The All Patient Refined Diagnosis Related Groups (APR-DRGs) were developed by 3M Health Information Systems (3M-HIS) in conjunction with the National Association of Children's Hospitals and Related Institutions (NACHRI). The APR-DRGs expand the basic diagnosis related group (DRG) structure to address patient severity of illness, risk of mortality, and resource intensity. The APR-DRG Version 14.0 uses the Health Care Financing Administration (HCFA) Version 14.0 DRG methodology. APR-DRGs are based on DRGs and All Patient DRGs (AP-DRGs), therefore a brief explanation of both structures will be reviewed.

Current HCFA DRG Structure

Created from Adjacent Diagnosis Related Groups (ADGs) which combine patients into groups with common characteristics, DRGs were developed by Yale University in the 1970's to relate a hospital's case mix index to the resource demands and associated costs experienced by the hospital.

ADGs were created by subdividing an MDC² into two groups based on the presence or absence of an operating room procedure. Second, surgical patients, identified as those having an operating room procedure, were then classified by type of procedure to form surgical ADGs. Patients with multiple procedures were assigned to the highest surgical class. Third, medical patients were split into more detailed groups based on their principal diagnosis to form medical ADGs.

DRGs use ADGs as a base, and then further classify patients into selected disease and procedure categories based on whether or not they have substantial comorbidity or complications (CC). Approximately 3,000 diagnosis codes have been designated by HCFA as substantial CCs, (defined by a list of additional diagnosis codes that a panel of physicians felt would increase the length of stay by at least one day for 75% of the patients). This list covers a broad range of disease conditions, and no differentiation in severity or complexity level was made among the additional diagnoses. The patient's age and discharge status were sometimes used in the definition of DRGs.

² Major Diagnostic Categories (MDCs) are broad medical and surgical categories one step hierarchically higher than DRGs (several DRGs roll-up into an MDC). MDCs are divided by body systems such as nervous; ear, nose, and throat; and respiratory.

Current AP-DRG Structure

In 1987, the New York State Department of Health entered into an agreement with 3M-HIS to evaluate the applicability of DRGs to a non-Medicare population with a specific focus on neonates and patients with Human Immunodeficiency Virus (HIV) infections. The DRG definitions developed by this relationship are referred to as the AP-DRGs.

The AP-DRGs are modeled after the HCFA DRGs and attempt to improve the DRGs in an effort to more accurately predict a hospital's resource demands and associated costs for all acute care patients. In the creation of AP-DRGs, the modifications made to the DRG structure can be summarized as follows:

Except for neonates who die or are transferred within the first few days of life, AP-DRGs define six ranges of birth weight that represent distinct demands on hospital resources. Within each birth weight range, neonates are then subdivided based on the presence of a significant operating room procedure, and then further subdivided based on presence of multiple major, minor, or other problems.

Assignment to the neonatal MDC is based on the patient's age. Specifically, the AP-DRGs assign a patient to the neonatal MDC when the age of the patient is less than 29 days at admission regardless of the principal diagnosis.

MDC 25 was created to account for the highly specialized treatment of multiple trauma patients. Patients assigned to MDC 25 have at least two significant trauma diagnoses from different body sites.

MDC 20 for alcohol and substance abuse was restructured to differentiate patients based on the substance being abused.

Across all MDCs, patient with a tracheostomy were put into either of two tracheostomy AP-DRGs: tracheostomy performed for therapeutic reasons and tracheostomy representing long-term ventilation.

All liver, bone marrow, heart, kidney, and lung transplant patients were assigned to an AP-DRG independent of the MDC of the principal diagnosis.

For several MDCs, a single major comorbidity and complication (CC) AP-DRG was formed across all surgical patients within an MDC and a single major CC AP-DRG was formed across all medical patients within an MDC.

The AP-DRGs introduced changes to the HCFA DRGs in an attempt to depart from using the principal diagnosis as the initial variable for assignment. The AP-DRGs were designed to more accurately group patients into like groups that provide an operational means of defining and measuring a hospital's case mix complexity.

All Patient Refined DRGs

APR-DRG Objectives

The primary objective of the HCFA DRG and AP-DRG patient classification systems was to relate the type of patients treated to the hospital resources they consumed. This limited focus on resource intensity does not allow providers to classify patients into other groups for meaningful analysis. The APR-DRG patient classification system goes beyond traditional resource intensity measures and was designed with the ability to address the following needs:

- Compare hospitals across a wide range of resource and outcome measures
- Evaluate differences in inpatient mortality rates
- Implement and support critical pathways
- Identify continuous quality improvement initiatives
- Support internal management and planning systems
- Manage capitated payment arrangements.

In order to meet these needs, the APR-DRG system classifies patients according to severity of illness, risk of mortality, and resource intensity. Therefore, in the APR-DRG classification system a patient is assigned three distinct descriptors: base APR-DRG, severity of illness subclass, and risk of mortality subclass.

Severity of illness can be defined as the extent of physiologic decompensation or organ system loss of function experienced by the patient. In contrast, risk of mortality is defined as the patient's likelihood of dying.

For analyses such as evaluating resource intensity or patient care outcomes, the base APR-DRGs in conjunction with the severity of illness subclass is used. For evaluating patient mortality, the base APR-DRGs in conjunction with the risk of mortality subclass is used.

Development of the APR-DRGs

The AP-DRGs were used as the base DRGs in the development of the APR-DRGs because they were representative of the entire inpatient population and accounted for populations not included in DRGs at the time of development. Several consolidations, additions, and modifications were made to the AP-DRGs to

form the list of APR-DRGs used in the severity of illness and risk of mortality subclass assignments. The following list summarizes the revisions made to the AP-DRGs in the creation of the APR-DRGs:

All age, CC, and major CC splits were consolidated.

Splits based on discharge status or death were consolidated.

Definitions based on the presence or absence of a complicated principal diagnosis were consolidated.

Additional APR-DRGs were created for pediatric patients.

APR-DRGs for newborns were completely restructured to create medical and surgical hierarchies within each birth weight range.

Low volume APR-DRGs were consolidated into other related APR-DRGs.

APR-DRGs that could be explained by the severity of illness subclasses were consolidated into one APR-DRG.

Due to risk of mortality subclasses, several APR-DRGs were split to account for significant differences in mortality between patient groups.

APR-DRG Severity of Illness Subclass Assignment

With the exception of neonatal patients, after a patient has been given an APR-DRG code, a Severity of Illness Subclass is assigned based on the level of the secondary diagnoses, presence of certain non-OR procedures, and the interaction among secondary diagnoses, age, APR-DRG and principal diagnosis. Neonatal patients have their own hierarchical method for determining severity of illness and will be discussed later. The four severity of illness subclasses are:

Subclass (PSC)	Severity of Illness
1	Minor (Includes non CC)
2	Moderate
3	Major
4	Extreme

The severity of illness subclass is used in conjunction with the patient's base APR-DRG for analysis such as evaluating resource intensity or patient care outcomes. A patient's severity of illness subclass should

not be used with their DRG because several DRGs may form one APR-DRG. Therefore, since severity of illness subclasses correspond to the APR-DRG number and not the DRG, it is important to use the APR-DRG number to accurately interpret data.

The process for assigning a patient a severity of illness subclass is a three phase process and is summarized as follows:

Phase I

Secondary diagnoses that are closely related to the principal diagnosis are eliminated from further analysis.

Remaining secondary diagnoses are assigned one of four distinct Standard Severity of Illness Levels. Figure 1 presents examples of secondary diagnoses in each severity of illness level.

Figure 1. Examples of Secondary Diagnoses by Severity of Illness Level

Severity of Illness Level	Examples of Secondary Diagnoses
Minor	Benign hypertension, acute bronchitis, lumbago
Moderate	Chronic renal failure, viral pneumonia, diverticulitis
Major	Diabetic ketoacidosis, chronic heart failure, acute cholecystitis
Extreme	Septicemia, acute myocardial infarction, cerebral vascular accident

The Standard Severity of Illness Level is modified for some secondary diagnoses based on age, APR-DRG, and presence of non-OR procedures. Figure 2 displays an example of modifications to the standard severity of illness level based on the APR-DRG.

Figure 2. Examples of Standard Severity of Illness Modifications

Secondary Diagnosis	Standard Severity of Illness Level	APR-DRG	Modified Severity of Illness Level
Stridor	Moderate	Bronchitis and asthma	Minor
Chronic renal failure	Moderate	Diabetes	Major
Cardiomegaly	Moderate	Chronic heart failure	Minor
Uncomplicated diabetes	Minor	Vaginal delivery	Moderate

Phase II

All secondary diagnoses that are closely related to other secondary diagnoses are eliminated from further analysis, and the secondary diagnosis with the highest Severity of Illness Level is retained. This prevents double counting clinically similar diagnoses.

The Base Severity of Illness Subclass of the patient is set to the highest Standard Severity of Illness Level of any of the secondary diagnoses.

Patients with a Base Severity of Illness Subclass of major (3) or extreme (4), will be reduced to the next lower subclass unless the patient has multiple secondary diagnoses with a high Standard Severity of Illness Level. Figure 3 displays the requirements for keeping a severity of illness subclass of major or extreme.

Figure 3. Multiple Secondary Diagnoses Requirements

Base Severity of Illness Subclass	Multiple Secondary Diagnoses Requirements to Prevent Reduction of Severity of Illness Subclass
Major	Two or more secondary diagnoses that are major or one secondary diagnosis that is major and at least two secondary diagnoses that are moderate
Extreme	Two or more secondary diagnoses that are extreme or one secondary diagnosis that is extreme and at least two secondary diagnoses that are major

Phase III

A minimum Severity of Illness Subclass is established based on the patient's principal diagnosis. This accounts for patients assigned to codes that contain both the underlying disease and an associated manifestation of the disease (i.e. diabetes with hyperosmolar coma), but is only assigned to the APR-DRG that accounts for the underlying disease.

A minimum Severity of Illness Subclass is established based on combinations of principal diagnosis and age for specific APR-DRGs.

A minimum Severity of Illness Subclass is established for some APR-DRGs with certain APR-DRG and non-OR procedure combinations as well as principal diagnosis and non-OR procedure combinations.

A minimum Severity of Illness Subclass is established based on the presence of certain combinations of secondary diagnoses. Figure 4 shows the combination of secondary diagnoses necessary to increase the severity of illness subclass to a minimum severity of illness level. For example, a type 1 combination would be a major bacterial infection with pleural effusion. If a diagnosis from both of these categories is present plus at least one other secondary diagnosis that is at least a major severity of illness level, then the minimum patient severity of illness subclass will be extreme.

Figure 4. Minimum Severity of Illness Requirements

Combination Type	Combination of Categories	Additional Secondary Diagnoses Required	Minimum Severity of Illness
1	Specified combinations of two major categories	At least one additional major secondary diagnosis	Extreme
2	Specified combinations of two moderate categories	At least one additional moderate secondary diagnosis	Major
3	Specified combinations of a moderate and a minor category	At least one additional moderate secondary diagnosis	Major
4	Specified combinations of two minor categories	At least two additional minor secondary diagnoses	Moderate
5	Specified combinations of two moderate categories	None	Major

The final patient Severity of Illness Subclass is selected based on the maximum of the Phase II Base Patient Severity of Illness Subclass and the Phase III minimum Severity of Illness Subclass

Both medical and surgical patients are assigned a severity of illness level of 1-4 based on the assignment process outlined previously.

APR-DRG Risk of Mortality Subclass Assignment

Similar to the Severity of Illness Subclass assignment, the Risk of Mortality Subclass assignment is based on the level of the secondary diagnoses and the interaction among secondary diagnoses, age, APR-DRG, and principal diagnosis. In general, the patients Risk of Mortality Level and Subclass will be lower than the Severity of Illness Level and Subclass, respectively. Neonatal patients have their own hierarchical method for determining risk of mortality and will be discussed later. The four severity of illness subclasses are:

Subclass (PSC2)	Risk of Mortality
1	Minor (includes non CC)
2	Moderate
3	Major
4	Extreme

The risk of mortality subclass is used in conjunction with the patient's base APR-DRG for evaluating patient mortality. Like the severity of illness subclass, a patient's risk of mortality subclass should not be used with their DRG because several DRGs may form one APR-DRG. Therefore, since risk of mortality subclasses correspond to the APR-DRG number and not the DRG, it is important to use the APR-DRG number to accurately interpret data.

The process for assigning a patient a risk of mortality subclass is a three phase process and is summarized as follows:

Phase I

Secondary diagnoses that are closely related to the principal diagnosis are eliminated from further analysis.

Remaining secondary diagnoses are assigned one of four distinct Risk of Mortality Levels.

The Risk of Mortality Level is modified for some secondary diagnosis based on the patients age and APR-DRG.

Phase II

All secondary diagnoses that are closely related to other secondary diagnoses are eliminated from further analysis, and the secondary diagnosis with the highest Risk of Mortality Level is retained. This prevents double counting clinically-similar diagnoses.

The Base Risk of Mortality Subclass of the patient is set to the highest Risk of Mortality Level of any of the secondary diagnoses.

Patients with a Base Risk of Mortality Subclass of major (3) or extreme (4), will be reduced to the next lower subclass unless the patient has multiple secondary diagnoses with a high Risk of Mortality Level.

Phase III

A minimum Risk of Mortality Subclass is established based on the patients principal diagnosis. This accounts for specific APR-DRGs that have a principal diagnosis indicative of a higher risk of mortality relative to the other principal diagnoses in the APR-DRG.

A minimum Risk of Mortality Subclass is established based on the presence of certain combinations of secondary diagnoses.

The final patient Risk of Mortality Subclass is selected based on the maximum of the Phase II Base Risk of Mortality Subclass and the Phase III minimum Risk of Mortality Subclass.

Appendix F

Index of Hospital Quality (IHQ) Scores by Specialty

1998 Cancer Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 7)	Discharges	R.N.'s to beds
1	Memorial Sloan-Kettering Cancer Center, New York	100.0	76.3	0.89	Yes	6.0	3740	1.72
2	University of Texas, M. D. Anderson Cancer Center, Houston	94.7	69.6	0.63	Yes	6.0	3511	1.82
3	Johns Hopkins Hospital, Baltimore	58.7	35.5	0.63	Yes	7.0	1400	1.40
4	Mayo Clinic, Rochester, Minn.	48.3	27.9	0.55	Yes	6.0	2506	1.16
5	Dana-Farber Cancer Institute, Boston	48.1	35.5	1.03	No	4.5	455	1.88
6	Duke University Medical Center, Durham, N.C.	33.9	12.5	0.72	Yes	7.0	2724	1.52
7	Stanford University Hospital, Stanford, Calif.	31.1	14.8	0.87	Yes	5.5	800	1.12
8	University of Washington Medical Center, Seattle	29.6	10.0	0.65	Yes	6.0	619	2.76
(+3 SDs)								
9	University of Chicago Hospitals	28.6	6.6	0.63	Yes	7.0	1254	1.58
10	UCLA Medical Center, Los Angeles	25.9	6.6	0.81	Yes	7.0	834	1.41
11	Roswell Park Cancer Institute, Buffalo	25.6	6.4	0.77	Yes	5.5	1588	2.58
12	Fox Chase Cancer Center, Philadelphia	24.9	7.0	0.54	Yes	4.0	983	1.66
13	Massachusetts General Hospital, Boston	24.0	4.5	0.77	Yes	7.0	1923	1.24
14	Indiana University Medical Center, Indianapolis	23.6	3.6	0.75	Yes	7.0	887	1.50
(+2 SDs)								
15	Barnes-Jewish Hospital, St. Louis	22.5	4.0	0.68	Yes	6.5	1122	0.98
16	University of California, San Francisco Medical Center	22.4	4.0	0.69	Yes	7.0	358	1.44
17	Hospital of the University of Pennsylvania, Philadelphia	22.3	3.4	0.91	Yes	6.0	1463	1.96
18	Cleveland Clinic	22.3	1.3	0.78	Yes	7.0	1760	1.77
19	University of Pittsburgh Medical Center	21.8	2.4	0.62	Yes	6.0	1808	1.33
20	University of Michigan Medical Center, Ann Arbor	21.7	1.2	0.63	Yes	7.0	1254	1.26
21	Vanderbilt University Hospital and Clinic, Nashville	21.7	1.4	0.75	Yes	7.0	901	1.58
22	University of Minnesota Hospital and Clinic, Minneapolis	20.9	0.9	0.56	Yes	7.0	870	1.27
23	University of Virginia Health Sciences Center, Charlottesville	20.6	0.0	0.46	Yes	6.0	1093	1.79
24	University Hospitals of Cleveland	20.6	0.4	0.86	Yes	7.0	1492	1.65
25	Allegheny General Hospital, Pittsburgh	20.4	0.3	0.55	Yes	6.0	933	1.64
26	Mount Sinai Medical Center, New York	20.4	2.2	1.26	Yes	6.5	2883	1.68
27	Brigham and Women's Hospital, Boston	20.1	2.9	0.88	Yes	6.0	937	1.28
28	University of Wisconsin Hospital and Clinics, Madison	20.1	1.2	0.68	Yes	7.0	905	1.04
29	North Carolina Baptist Hospital, Winston-Salem	20.0	0.0	0.71	Yes	7.0	1517	1.34
30	Henry Ford Hospital, Detroit	19.9	0.4	0.78	Yes	6.0	1304	2.00
31	New York Hospital-Cornell Medical Center	19.7	2.0	1.00	Yes	6.5	1692	1.30
32	William Beaumont Hospital, Royal Oak, Mich.	19.6	0.0	1.03	Yes	7.0	1600	1.72
33	Rush-Presbyterian-St. Luke's Medical Center, Chicago	19.5	1.4	0.83	Yes	7.0	955	1.07
34	University of Iowa Hospitals and Clinics, Iowa City	19.4	1.0	0.86	Yes	7.0	1314	1.16
35	University of California, Davis Medical Center, Sacramento	19.3	0.8	0.76	Yes	6.5	518	2.16
36	Shands Hospital at the University of Florida, Gainesville	19.2	1.1	0.60	Yes	7.0	567	1.05
37	Columbia-Presbyterian Medical Center, New York	19.0	0.7	1.07	Yes	7.0	2191	1.38
38	University Hospital, Portland, Ore.	19.0	0.0	0.59	Yes	6.0	567	2.16
39	Medical Center of Delaware, Wilmington	19.0	0.0	0.77	Yes	6.0	1416	1.56
40	Emory University Hospital, Atlanta	19.0	0.9	0.80	Yes	5.5	872	1.68
41	University Medical Center, Tucson, Ariz.	18.7	2.2	0.52	Yes	6.0	344	1.21
42	The Toledo Hospital, Toledo, Ohio	18.7	0.0	0.90	Yes	7.0	693	1.63

1998 Cardiology and Cardiac Surgery Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 9)	Surgical volume	R.N.'s to beds	Trauma Center
1	Cleveland Clinic	100.0	57.7	0.66	Yes	9.0	5675	1.77	No
2	Mayo Clinic, Rochester, Minn.	94.3	53.6	0.78	Yes	8.0	4638	1.16	Yes
3	Massachusetts General Hospital, Boston	60.9	28.9	0.88	Yes	9.0	3353	1.24	Yes
4	Duke University Medical Center, Durham, N.C.	53.9	21.7	0.82	Yes	9.0	3704	1.52	Yes
5	Texas Heart Institute-St. Luke's Episcopal Hospital, Houston	52.2	28.3	1.09	Yes	8.0	3800	1.30	No
6	Brigham and Women's Hospital, Boston	50.1	22.2	0.92	Yes	8.5	2237	1.28	Yes
7	Emory University Hospital, Atlanta	47.0	18.6	0.86	Yes	9.0	3056	1.68	No
8	Johns Hopkins Hospital, Baltimore	43.7	16.6	0.91	Yes	9.0	2073	1.40	Yes
9	Stanford University Hospital, Stanford, Calif.	43.2	16.9	0.89	Yes	8.5	1796	1.12	Yes
10	Barnes-Jewish Hospital, St. Louis	34.6	8.7	0.81	Yes	9.0	1245	0.98	Yes
11	Cedars-Sinai Medical Center, Los Angeles	31.0	9.4	1.00	Yes	9.0	2247	0.93	Yes
12	University of Washington Medical Center, Seattle	30.2	9.1	0.94	Yes	9.0	801	2.76	No
13	Beth Israel Deaconess Medical Center, Boston	27.4	3.3	0.84	Yes	8.0	4092	1.34	Yes
14	University of Chicago Hospitals	27.4	2.2	0.79	Yes	9.0	986	1.58	Yes
15	William Beaumont Hospital, Royal Oak, Mich.	27.1	2.0	0.75	Yes	9.0	4921	1.72	No
16	Columbia-Presbyterian Medical Center, New York	26.0	7.0	1.04	Yes	9.0	1869	1.38	No
17	University of California, San Francisco Medical Center	26.0	5.2	0.90	Yes	9.0	735	1.44	No
18	UCLA Medical Center, Los Angeles	25.9	3.8	0.91	Yes	9.0	954	1.41	Yes
19	North Carolina Baptist Hospital, Winston-Salem	25.7	0.6	0.82	Yes	9.0	2461	1.34	Yes
20	Hospital of the University of Pennsylvania, Philadelphia	25.5	2.8	0.90	Yes	9.0	1346	1.96	Yes
21	University of Alabama Hospital at Birmingham	25.4	6.2	1.01	Yes	7.0	3635	1.29	Yes
22	University Medical Center, Tucson, Ariz.	25.2	2.4	0.60	Yes	8.0	563	1.21	Yes
23	Henry Ford Hospital, Detroit	25.1	1.2	0.76	Yes	8.0	1171	2.00	Yes
24	Indiana University Medical Center, Indianapolis	24.5	1.5	0.79	Yes	9.0	839	1.50	No
25	Mount Sinai Medical Center, New York	24.5	3.9	0.94	Yes	8.5	2310	1.68	No
26	St. Louis University Hospital	24.4	0.6	0.82	Yes	9.0	1024	1.39	Yes
27	Orlando Regional Medical Center, Orlando, Fla.	24.3	0.0	0.80	Yes	8.0	1948	1.62	Yes
28	Lehigh Valley Hospital, Allentown, Pa.	24.1	0.4	0.83	Yes	8.5	3057	1.17	Yes
29	Rush-Presbyterian-St. Luke's Medical Center, Chicago	23.9	1.5	0.73	Yes	9.0	1177	1.07	No
30	New England Medical Center, Boston	23.9	0.0	0.71	Yes	8.0	1538	2.11	Yes
31	St. Vincent Hospital and Health Center, Indianapolis	23.7	1.2	0.70	No	8.0	4939	2.40	Yes
32	Lahey Hitchcock Clinic, Burlington, Mass.	23.1	0.9	0.86	Yes	8.0	1810	1.35	Yes
33	Baylor University Medical Center, Dallas	23.1	0.5	0.87	Yes	8.0	3225	1.48	Yes
34	Mary Hitchcock Memorial Hospital, Lebanon, N.H.	23.0	0.5	0.84	Yes	8.0	1381	1.59	Yes
35	Medical University of South Carolina, Charleston	22.9	0.0	0.84	Yes	8.5	1293	1.81	Yes
36	Ochsner Foundation Hospital, New Orleans	22.8	1.2	0.74	Yes	8.0	1464	1.15	No
37	Fairfax Hospital, Falls Church, Va.	22.7	0.5	0.86	Yes	8.0	2251	1.35	Yes
38	Sinai Samaritan Medical Center, Milwaukee	22.5	0.0	0.73	Yes	7.5	1098	1.42	Yes
39	University of Pittsburgh Medical Center	22.4	1.3	0.93	Yes	8.5	2121	1.33	Yes
40	University of Miami, Jackson Memorial Hospital	22.3	1.4	0.85	Yes	7.5	593	1.41	Yes
41	Pitt County Memorial Hospital, Greenville, N.C.	22.1	0.6	0.91	Yes	8.0	2721	1.37	Yes
42	Hermann Hospital, Houston	22.0	0.0	0.83	Yes	8.5	879	1.23	Yes

1998 Endocrinology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 7)	R.N.'s to beds	Trauma Center
1	Mayo Clinic, Rochester, Minn.	100.0	62.0	0.61	Yes	6.0	1.16	Yes
2	Massachusetts General Hospital, Boston	91.6	57.2	1.06	Yes	7.0	1.24	Yes
3	Johns Hopkins Hospital, Baltimore	48.1	21.9	0.59	Yes	7.0	1.40	Yes
4	Barnes-Jewish Hospital, St. Louis	39.7	18.8	0.95	Yes	7.0	0.98	Yes
5	Brigham and Women's Hospital, Boston	35.5	12.9	0.53	Yes	6.5	1.28	Yes
6	University of Chicago Hospitals	35.4	11.8	0.48	Yes	7.0	1.58	Yes
7	University of Virginia Health Sciences Center, Charlottesville	33.3	10.9	0.48	Yes	6.0	1.79	Yes
8	UCLA Medical Center, Los Angeles	28.8	7.3	0.47	Yes	7.0	1.41	Yes
9	Duke University Medical Center, Durham, N.C.	27.9	7.6	0.70	Yes	7.0	1.52	Yes
10	Beth Israel Deaconess Medical Center, Boston	25.9	6.8	0.64	Yes	6.0	1.34	Yes
11	University of Michigan Medical Center, Ann Arbor	25.8	6.7	0.42	Yes	7.0	1.26	Yes
12	Stanford University Hospital, Stanford, Calif.	25.7	6.0	0.28	Yes	6.5	1.12	Yes
13	Parkland Memorial Hospital, Dallas	25.7	7.0	0.68	Yes	6.0	1.35	Yes
14	Vanderbilt University Hospital and Clinic, Nashville	23.6	6.5	0.85	Yes	7.0	1.58	No
15	University Hospital, Portland, Ore.	22.8	3.1	0.54	Yes	6.0	2.16	Yes
16	Hospital of the University of Pennsylvania, Philadelphia	22.0	2.2	0.61	Yes	7.0	1.96	Yes
17	Northwestern Memorial Hospital, Chicago	21.0	2.9	0.49	Yes	6.0	1.12	Yes
18	University of Iowa Hospitals and Clinics, Iowa City	20.7	1.8	0.55	Yes	7.0	1.16	Yes
19	University of California, Davis Medical Center, Sacramento	20.6	1.1	0.40	Yes	6.5	2.16	Yes
20	University of Pittsburgh Medical Center	20.6	1.7	0.38	Yes	6.5	1.33	Yes
21	Cleveland Clinic	20.3	3.6	0.79	Yes	7.0	1.77	No
22	Ohio State University Medical Center, Columbus	19.9	2.4	0.54	Yes	5.5	1.17	Yes
23	Mount Sinai Medical Center, New York	19.5	5.3	1.41	Yes	6.5	1.68	No
24	University of Texas, M. D. Anderson Cancer Center, Houston	19.3	1.5	0.61	Yes	7.0	1.82	No
25	Medical University of South Carolina, Charleston	19.1	0.8	0.64	Yes	6.5	1.81	Yes
26	Temple University Hospital, Philadelphia	18.7	0.4	0.50	Yes	6.0	1.52	Yes
27	New England Medical Center, Boston	18.6	0.0	0.56	Yes	6.0	2.11	Yes
28	Mary Hitchcock Memorial Hospital, Lebanon, N.H.	18.4	0.0	0.56	Yes	6.0	1.59	Yes
29	St. Louis University Hospital	18.3	1.6	0.70	Yes	6.0	1.39	Yes
30	Good Samaritan Regional Medical Center, Phoenix	17.9	0.0	0.56	Yes	7.0	1.03	Yes
31	Memorial Medical Center, Savannah, Ga.	17.9	0.0	0.61	Yes	6.0	1.83	Yes
32	University of Maryland Medical System, Baltimore	17.9	0.3	0.54	Yes	5.0	1.68	Yes
33	University Hospitals of Cleveland	17.8	0.4	0.80	Yes	7.0	1.65	Yes
34	University of Wisconsin Hospital and Clinics, Madison	17.5	0.0	0.59	Yes	7.0	1.04	Yes
35	Hermann Hospital, Houston	17.4	0.0	0.29	Yes	6.0	1.23	Yes
36	University of Minnesota Hospital and Clinic, Minneapolis	17.4	0.4	0.30	Yes	7.0	1.27	No
37	Emory University Hospital, Atlanta	17.3	1.2	0.71	Yes	6.5	1.68	No
38	Columbia-Presbyterian Medical Center, New York	17.1	3.6	1.33	Yes	7.0	1.38	No
39	Indiana University Medical Center, Indianapolis	17.0	0.9	0.71	Yes	7.0	1.50	No
40	Sinai Hospital of Baltimore	16.9	0.0	0.75	Yes	6.5	1.56	Yes
41	Cook County Hospital, Chicago	16.9	0.4	0.54	Yes	5.0	1.25	Yes
42	Cedars-Sinai Medical Center, Los Angeles	16.8	1.9	0.94	Yes	7.0	0.93	Yes

1998 Gastroenterology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 8)	Discharges	R.N.'s to beds	Trauma Center
1	Mayo Clinic, Rochester, Minn.	100.0	63.9	0.51	Yes	7.0	4676	1.16	Yes
2	Cleveland Clinic	52.2	28.9	0.65	Yes	7.0	3079	1.77	No
3	Johns Hopkins Hospital, Baltimore	52.2	28.4	0.84	Yes	8.0	2189	1.40	Yes
4	Massachusetts General Hospital, Boston	51.5	28.5	0.91	Yes	8.0	2935	1.24	Yes
5	Mount Sinai Medical Center, New York	44.0	24.4	1.06	Yes	7.5	3047	1.68	No
6	University of Chicago Hospitals	36.7	16.6	0.71	Yes	8.0	1408	1.58	Yes
7	UCLA Medical Center, Los Angeles	35.0	16.6	0.90	Yes	8.0	1531	1.41	Yes
8	University of California, San Francisco Medical Center	34.8	16.8	0.69	Yes	8.0	1133	1.44	No
9	Duke University Medical Center, Durham, N.C.	30.5	12.5	0.90	Yes	8.0	2164	1.52	Yes
10	Brigham and Women's Hospital, Boston	28.7	11.0	0.56	Yes	7.5	1746	1.28	Yes
11	University of Pittsburgh Medical Center	23.8	7.3	0.76	Yes	7.5	2760	1.33	Yes
12	University of Michigan Medical Center, Ann Arbor	22.2	7.6	0.80	Yes	8.0	1855	1.26	Yes
13	Hospital of the University of Pennsylvania, Philadelphia	20.7	4.4	0.68	Yes	8.0	1513	1.96	Yes
14	Baylor University Medical Center, Dallas	20.4	4.5	0.64	Yes	7.0	3131	1.48	Yes
15	Yale-New Haven Hospital, New Haven, Conn.	19.2	5.8	0.96	Yes	7.5	1973	0.83	Yes
16	Indiana University Medical Center, Indianapolis	18.7	5.8	0.86	Yes	8.0	1154	1.50	No
17	Beth Israel Deaconess Medical Center, Boston	17.6	2.6	0.70	Yes	7.0	3141	1.34	Yes
18	University of Miami, Jackson Memorial Hospital	16.4	4.2	0.91	Yes	6.5	1100	1.41	Yes
19	New York Hospital-Cornell Medical Center	16.1	2.8	0.94	Yes	7.5	1872	1.30	Yes
20	Northwestern Memorial Hospital, Chicago	15.9	2.1	0.59	Yes	7.0	1637	1.12	Yes
21	Shands Hospital at the University of Florida, Gainesville	15.5	3.1	0.63	Yes	8.0	1141	1.05	No
22	Stanford University Hospital, Stanford, Calif.	15.3	2.3	0.69	Yes	6.5	1313	1.12	Yes
23	University of North Carolina Hospitals, Chapel Hill	15.1	2.7	0.95	Yes	6.5	1609	1.49	Yes
24	Medical University of South Carolina, Charleston	15.0	2.8	1.06	Yes	7.0	1328	1.81	Yes
25	University of Iowa Hospitals and Clinics, Iowa City	14.5	0.9	0.70	Yes	8.0	1247	1.16	Yes
26	Henry Ford Hospital, Detroit	14.5	0.6	0.82	Yes	7.0	2345	2.00	Yes
27	University of Virginia Health Sciences Center, Charlottesville	14.4	0.9	0.80	Yes	7.0	1623	1.79	Yes
28	Cedars-Sinai Medical Center, Los Angeles	14.4	1.1	0.82	Yes	8.0	3062	0.93	Yes
29	Columbia-Presbyterian Medical Center, New York	14.3	2.5	1.02	Yes	8.0	2106	1.38	No
30	Barnes-Jewish Hospital, St. Louis	14.2	2.2	1.02	Yes	8.0	1692	0.98	Yes
31	Memorial Sloan-Kettering Cancer Center, New York	13.9	1.1	0.66	Yes	7.0	1597	1.72	No
32	William Beaumont Hospital, Royal Oak, Mich.	13.9	0.0	0.68	Yes	8.0	3377	1.72	No
33	Emory University Hospital, Atlanta	13.9	2.1	0.85	Yes	7.0	1459	1.68	No
34	Allegheny General Hospital, Pittsburgh	13.6	0.0	0.80	Yes	7.0	1894	1.64	Yes
35	Hospital of the Good Samaritan, Los Angeles	13.3	0.0	0.73	Yes	7.0	1223	1.73	Yes
36	University of Wisconsin Hospital and Clinics, Madison	13.2	0.0	0.66	Yes	8.0	1375	1.04	Yes
37	Fairfax Hospital, Falls Church, Va.	13.2	0.4	0.75	Yes	6.0	1863	1.35	Yes
38	Temple University Hospital, Philadelphia	13.2	0.9	0.66	Yes	6.0	907	1.52	Yes
39	Orlando Regional Medical Center, Orlando, Fla.	13.2	0.0	0.89	Yes	7.0	2550	1.62	Yes
40	Mary Hitchcock Memorial Hospital, Lebanon, N.H.	13.2	0.4	0.74	Yes	7.0	990	1.59	Yes
41	Ochsner Foundation Hospital, New Orleans	13.1	1.0	0.69	Yes	7.0	1829	1.15	No
42	Virginia Mason Medical Center, Seattle, Wash.	13.1	4.1	0.68	No	7.0	1607	0.49	No

1998 Geriatrics Best Hospital List

Rank	Hospital	IHQ	Reputational score	Hospitalwide mortality rate	COTH Member	Technology score (of 8)	R.N.'s to beds	Discharge planning (of 3)	Service mix (of 10)	Geriatric services (of 7)
1	UCLA Medical Center, Los Angeles	100.0	29.9	0.87	Yes	8.0	1.41	3	6	4
2	Mount Sinai Medical Center, New York	80.5	23.7	1.15	Yes	7.5	1.68	3	8	3
3	Johns Hopkins Hospital, Baltimore	77.4	21.5	0.83	Yes	8.0	1.40	3	7	4
4	Duke University Medical Center, Durham, N.C.	67.5	18.3	0.87	Yes	8.0	1.52	3	6	3
5	Massachusetts General Hospital, Boston	66.9	17.9	0.96	Yes	8.0	1.24	3	8	5
6	Mayo Clinic, Rochester, Minn.	47.6	10.4	0.66	Yes	7.0	1.16	3	10	5
7	University of Michigan Medical Center, Ann Arbor	39.5	7.9	0.93	Yes	8.0	1.26	3	9	4
8	Beth Israel Deaconess Medical Center, Boston	36.6	6.6	0.79	Yes	7.0	1.34	3	9	4
9	Cleveland Clinic	32.4	4.4	0.74	Yes	8.0	1.77	3	10	4
10	St. Louis University Hospital	31.6	6.0	0.78	Yes	8.0	1.39	1	5	3
11	University of Washington Medical Center, Seattle	31.3	5.4	0.78	Yes	8.0	2.76	2	6	2
12	University of Chicago Hospitals	31.2	4.5	0.78	Yes	8.0	1.58	3	6	4
13	University of California, San Francisco Medical Center	29.6	3.6	0.82	Yes	8.0	1.44	3	8	5
14	Brigham and Women's Hospital, Boston	29.0	4.3	0.81	Yes	7.5	1.28	3	7	3
15	Barnes-Jewish Hospital, St. Louis	26.8	3.2	0.87	Yes	8.0	0.98	3	10	4
16	Stanford University Hospital, Stanford, Calif.	25.6	3.2	0.81	Yes	7.5	1.12	3	7	3
17	Hospital of the University of Pennsylvania, Philadelphia	25.4	2.9	0.92	Yes	8.0	1.96	3	8	3
18	Yale-New Haven Hospital, New Haven, Conn.	24.6	4.0	1.01	Yes	7.5	0.83	3	7	2
19	University of Wisconsin Hospital and Clinics, Madison	23.9	2.2	0.78	Yes	8.0	1.04	3	8	3
20	Long Island Jewish Medical Center, New Hyde Park, N.Y.	23.3	2.7	1.15	Yes	7.0	1.24	3	8	6
21	University Hospitals of Cleveland	23.1	2.5	0.98	Yes	8.0	1.65	2	8	4
22	University of Pittsburgh Medical Center	22.7	2.2	0.90	Yes	7.5	1.33	3	8	3
23	Emory University Hospital, Atlanta	21.9	2.2	0.83	Yes	7.5	1.68	3	6	1
24	Montefiore Medical Center, Bronx, N.Y.	21.6	1.9	1.29	Yes	8.0	1.64	3	8	5
25	North Carolina Baptist Hospital, Winston-Salem	21.4	1.4	0.88	Yes	8.0	1.34	3	8	3
26	University of North Carolina Hospitals, Chapel Hill	21.4	2.0	0.95	Yes	7.0	1.49	3	7	3
27	University of Iowa Hospitals and Clinics, Iowa City	20.9	1.1	0.85	Yes	8.0	1.16	3	8	4
28	University Hospital, Portland, Ore.	20.8	1.1	0.74	Yes	7.0	2.16	3	8	3
29	Boston Medical Center	20.0	0.8	0.90	Yes	7.0	2.04	3	8	5
30	William Beaumont Hospital, Royal Oak, Mich.	19.9	0.7	0.82	Yes	8.0	1.72	3	7	3
31	New England Medical Center, Boston	19.7	0.8	0.81	Yes	7.0	2.11	3	6	4
32	Rush-Presbyterian-St. Luke's Medical Center, Chicago	19.7	1.0	0.81	Yes	8.0	1.07	1	10	5
33	Methodist Hospital, Houston	19.6	1.9	1.23	Yes	7.0	1.20	3	10	3
34	Baylor University Medical Center, Dallas	19.5	0.9	0.82	Yes	7.0	1.48	3	8	2
35	Northwestern Memorial Hospital, Chicago	19.2	1.1	0.85	Yes	6.0	1.12	3	9	4
36	Evanston Hospital, Evanston, Ill.	19.2	0.8	0.82	Yes	7.0	0.77	3	10	4
37	University of Minnesota Hospital and Clinic, Minneapolis	19.2	0.8	0.68	Yes	7.0	1.27	3	7	3
38	Sinai Samaritan Medical Center, Milwaukee	19.1	0.3	0.80	Yes	6.5	1.42	3	8	5
39	University of Alabama Hospital at Birmingham	18.7	2.1	1.01	Yes	6.0	1.29	2	8	3
40	F.G. McGaw Hospital at Loyola University, Maywood, Ill.	18.6	0.8	0.95	Yes	7.0	1.54	3	9	3
41	Allegheny General Hospital, Pittsburgh	18.4	0.6	0.90	Yes	8.0	1.54	2	9	3
42	St. Joseph's Hospital and Medical Center, Phoenix	18.3	0.3	0.90	Yes	8.0	1.04	3	9	4

1998 Gynecology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Hospitalwide mortality rate	Technology score (of 8)	Discharges	R.N.'s to beds	Trauma Center	Gynecology services (of 4)
1	Johns Hopkins Hospital, Baltimore	100.0	25.5	0.83	8.0	168	1.40	Yes	4
2	Mayo Clinic, Rochester, Minn.	79.8	19.5	0.66	7.0	844	1.16	Yes	3
3	Massachusetts General Hospital, Boston	72.1	17.0	0.96	8.0	378	1.24	Yes	4
4	University of Texas, M. D. Anderson Cancer Center, Houston	70.9	18.2	0.67	7.0	178	1.82	No	0
5	Brigham and Women's Hospital, Boston	61.1	13.6	0.81	7.5	312	1.28	Yes	3
6	Memorial Sloan-Kettering Cancer Center, New York	56.7	14.4	0.88	7.0	117	1.72	No	0
7	Duke University Medical Center, Durham, N.C.	52.5	10.4	0.87	8.0	330	1.52	Yes	4
8	UCLA Medical Center, Los Angeles	43.0	7.7	0.87	8.0	216	1.41	Yes	4
9	Columbia-Presbyterian Medical Center, New York	39.4	8.1	1.16	8.0	254	1.38	No	3
10	Northwestern Memorial Hospital, Chicago	38.9	7.2	0.85	7.0	175	1.12	Yes	4
11	Cleveland Clinic	35.9	6.1	0.74	7.0	503	1.77	No	3
12	Hospital of the University of Pennsylvania, Philadelphia	34.2	5.2	0.92	8.0	133	1.96	Yes	4
13	University of Chicago Hospitals	33.7	4.7	0.78	8.0	139	1.58	Yes	4
14	Stanford University Hospital, Stanford, Calif.	32.8	5.2	0.81	6.5	201	1.12	Yes	4
15	New York Hospital-Cornell Medical Center	31.8	5.2	1.09	7.5	297	1.30	Yes	3
16	Cedars-Sinai Medical Center, Los Angeles	30.6	4.5	1.00	8.0	311	0.93	Yes	4
17	University of Michigan Medical Center, Ann Arbor	30.2	4.6	0.93	8.0	281	1.26	Yes	4
18	Vanderbilt University Hospital and Clinic, Nashville	26.7	3.4	0.91	8.0	180	1.58	No	4
19	Barnes-Jewish Hospital, St. Louis	25.7	2.7	0.87	7.5	343	0.98	Yes	4
20	Yale-New Haven Hospital, New Haven, Conn.	23.7	2.7	1.01	7.5	299	0.83	Yes	4
21	University of Washington Medical Center, Seattle	23.6	2.0	0.78	8.0	154	2.76	No	4
22	Indiana University Medical Center, Indianapolis	23.5	2.2	0.79	8.0	203	1.50	No	3
23	Rush-Presbyterian-St. Luke's Medical Center, Chicago	23.4	2.3	0.81	8.0	218	1.07	No	4
24	University of North Carolina Hospitals, Chapel Hill	23.3	2.1	0.95	7.0	216	1.49	Yes	4
25	University Hospital, Portland, Ore.	22.7	1.7	0.74	7.0	96	2.16	Yes	4
26	Emory University Hospital, Atlanta	22.1	3.7	0.83	6.0	139	1.68	No	0
27	University of Miami, Jackson Memorial Hospital	22.0	2.0	1.04	6.5	270	1.41	Yes	4
28	North Carolina Baptist Hospital, Winston-Salem	21.9	1.9	0.88	8.0	204	1.34	Yes	2
29	Mount Sinai Medical Center, New York	21.9	2.9	1.15	7.5	239	1.68	No	2
30	Ohio State University Medical Center, Columbus	21.5	2.3	0.84	6.5	75	1.17	Yes	4
31	University of Utah Hospitals and Clinics, Salt Lake City	21.5	2.0	0.80	6.0	94	1.49	Yes	4
32	University of Virginia Health Sciences Center, Charlottesville	21.5	1.1	0.89	7.0	236	1.79	Yes	4
33	Methodist Hospital, Houston	20.5	3.0	1.23	6.0	318	1.20	No	4
34	Long Beach Memorial Medical Center, Long Beach, Calif.	20.4	1.0	0.92	8.0	277	0.99	Yes	4
35	University of Iowa Hospitals and Clinics, Iowa City	20.2	0.9	0.85	8.0	186	1.16	Yes	4
36	Medical College of Virginia Hospitals, Richmond	19.6	1.7	1.02	6.0	148	1.72	Yes	4
37	William Beaumont Hospital, Royal Oak, Mich.	19.6	0.5	0.82	8.0	422	1.72	No	4
38	Beth Israel Deaconess Medical Center, Boston	19.5	0.8	0.79	7.0	220	1.34	Yes	3
39	New England Medical Center, Boston	19.3	0.8	0.81	7.0	160	2.11	Yes	3
40	University of Alabama Hospital at Birmingham	19.0	2.0	1.01	5.0	249	1.29	Yes	3
41	Baylor University Medical Center, Dallas	19.0	0.4	0.82	6.5	424	1.48	Yes	4
42	Magee-Womens Hospital, Pittsburgh	19.0	1.6	0.33	5.5	492	1.07	No	4

1998 Neurology and Neurosurgery Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 7)	R.N.'s to beds	Trauma Center
1	Mayo Clinic, Rochester, Minn.	100.0	55.2	0.65	Yes	6.0	1.16	Yes
2	Massachusetts General Hospital, Boston	93.3	50.5	0.98	Yes	7.0	1.24	Yes
3	Johns Hopkins Hospital, Baltimore	82.7	42.6	0.76	Yes	7.0	1.40	Yes
4	Columbia-Presbyterian Medical Center, New York	63.1	31.8	1.04	Yes	7.0	1.38	No
5	University of California, San Francisco Medical Center	55.8	26.3	0.81	Yes	7.0	1.44	No
6	Cleveland Clinic	42.3	16.6	0.65	Yes	7.0	1.77	No
7	UCLA Medical Center, Los Angeles	40.5	14.5	0.70	Yes	7.0	1.41	Yes
8	Duke University Medical Center, Durham, N.C.	34.2	10.8	0.94	Yes	7.0	1.52	Yes
9	Hospital of the University of Pennsylvania, Philadelphia	32.9	9.8	0.98	Yes	7.0	1.96	Yes
10	New York Hospital-Cornell Medical Center	31.5	10.2	1.07	Yes	6.5	1.30	Yes
11	Barnes-Jewish Hospital, St. Louis	30.6	9.8	1.02	Yes	7.0	0.98	Yes
12	St. Joseph's Hospital and Medical Center, Phoenix	26.8	7.1	0.97	Yes	7.0	1.04	Yes
13	University of Iowa Hospitals and Clinics, Iowa City	25.5	5.7	0.85	Yes	7.0	1.16	Yes
14	Brigham and Women's Hospital, Boston	23.3	4.2	0.79	Yes	6.5	1.28	Yes
15	University of Virginia Health Sciences Center, Charlottesville	23.2	4.1	0.94	Yes	6.0	1.79	Yes
16	Emory University Hospital, Atlanta	22.9	4.7	0.85	Yes	6.5	1.68	No
17	University of Chicago Hospitals	22.5	2.6	0.79	Yes	7.0	1.58	Yes
18	Methodist Hospital, Houston	22.4	6.5	1.18	Yes	6.0	1.20	No
19	University of Michigan Medical Center, Ann Arbor	22.0	5.1	1.07	Yes	7.0	1.26	Yes
20	Stanford University Hospital, Stanford, Calif.	21.6	3.2	0.64	Yes	6.5	1.12	Yes
21	North Carolina Baptist Hospital, Winston-Salem	20.8	2.4	0.94	Yes	7.0	1.34	Yes
22	Mount Sinai Medical Center, New York	20.4	3.3	0.95	Yes	6.5	1.68	No
23	University of Pittsburgh Medical Center	19.7	2.2	1.01	Yes	6.5	1.33	Yes
24	Henry Ford Hospital, Detroit	19.5	1.5	0.85	Yes	6.0	2.00	Yes
25	University Hospitals of Cleveland	19.4	1.0	1.06	Yes	7.0	1.65	Yes
26	University of Minnesota Hospital and Clinic, Minneapolis	19.0	2.2	0.55	Yes	7.0	1.27	No
27	University of North Carolina Hospitals, Chapel Hill	18.2	1.5	1.09	Yes	6.0	1.49	Yes
28	Shands Hospital at the University of Florida, Gainesville	18.1	2.4	0.81	Yes	7.0	1.05	No
29	Medical University of South Carolina, Charleston	18.0	0.0	0.82	Yes	6.5	1.81	Yes
30	University of California, Davis Medical Center, Sacramento	18.0	0.4	1.04	Yes	6.5	2.16	Yes
31	Sinai Hospital of Baltimore	17.8	0.0	0.81	Yes	6.5	1.56	Yes
32	St. Louis University Hospital	17.8	1.1	0.92	Yes	6.0	1.39	Yes
33	Hospital of the Good Samaritan, Los Angeles	17.7	0.0	0.74	Yes	6.0	1.73	Yes
34	University of Miami, Jackson Memorial Hospital	17.7	1.7	1.04	Yes	5.5	1.41	Yes
35	Indiana University Medical Center, Indianapolis	17.7	0.7	0.55	Yes	7.0	1.50	No
36	Yale-New Haven Hospital, New Haven, Conn.	17.6	1.7	0.89	Yes	6.5	0.83	Yes
37	Mary Hitchcock Memorial Hospital, Lebanon, N.H.	17.6	0.0	0.72	Yes	6.0	1.59	Yes
38	Boston Medical Center	17.5	0.5	1.02	Yes	6.0	2.04	Yes
39	Beth Israel Deaconess Medical Center, Boston	17.5	0.5	0.74	Yes	6.0	1.34	Yes
40	Temple University Hospital, Philadelphia	17.5	0.0	0.68	Yes	6.0	1.52	Yes
41	Rush-Presbyterian-St. Luke's Medical Center, Chicago	17.4	1.6	0.67	Yes	7.0	1.07	No
42	Georgetown University Hospital, Washington, D.C.	17.4	1.6	0.54	Yes	6.0	0.80	Yes

1998 Orthopedics Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 5)	Discharges	R.N.'s to beds	Trauma Center
1	Mayo Clinic, Rochester, Minn.	100.0	53.3	0.68	Yes	4.0	5677	1.16	Yes
2	Hospital for Special Surgery, New York	93.8	48.4	0.25	Yes	4.5	3905	1.51	No
3	Massachusetts General Hospital, Boston	67.5	33.8	1.02	Yes	5.0	2648	1.24	Yes
4	Johns Hopkins Hospital, Baltimore	45.0	19.8	0.97	Yes	5.0	1134	1.40	Yes
5	Cleveland Clinic	35.2	12.1	0.73	Yes	5.0	2622	1.77	No
6	Duke University Medical Center, Durham, N.C.	32.8	11.6	1.07	Yes	5.0	1788	1.52	Yes
7	University of Washington Medical Center, Seattle	29.3	8.2	0.51	Yes	5.0	706	2.76	No
8	University of Iowa Hospitals and Clinics, Iowa City	27.1	9.0	0.99	Yes	5.0	979	1.16	Yes
9	UCLA Medical Center, Los Angeles	26.9	8.6	1.09	Yes	5.0	1284	1.41	Yes
10	Brigham and Women's Hospital, Boston	24.7	4.2	0.60	Yes	4.5	1684	1.28	Yes
11	Northwestern Memorial Hospital, Chicago	21.7	4.2	0.68	Yes	4.0	1358	1.12	Yes
12	Hospital for Joint Diseases-Orthopedic Institute, New York	21.5	5.4	0.11	No	4.0	1763	1.13	No
13	University of Pittsburgh Medical Center	21.4	5.0	1.05	Yes	4.5	2266	1.33	Yes
14	Emory University Hospital, Atlanta	21.2	2.3	0.59	Yes	5.0	1351	1.68	No
15	University of California, San Francisco Medical Center	21.1	3.9	0.66	Yes	5.0	757	1.44	No
16	Barnes-Jewish Hospital, St. Louis	20.4	3.1	0.68	Yes	5.0	918	0.98	Yes
17	Rush-Presbyterian-St. Luke's Medical Center, Chicago	20.3	3.6	0.72	Yes	5.0	1552	1.07	No
18	Stanford University Hospital, Stanford, Calif.	19.0	2.7	0.77	Yes	4.5	1433	1.12	Yes
19	Thomas Jefferson University Hospital, Philadelphia	18.0	3.7	0.80	Yes	4.0	1214	1.24	No
20	Shands Hospital at the University of Florida, Gainesville	17.9	1.3	0.35	Yes	5.0	976	1.05	No
21	University of Chicago Hospitals	17.6	1.4	0.79	Yes	5.0	916	1.58	Yes
22	Columbia-Presbyterian Medical Center, New York	17.6	3.7	1.26	Yes	5.0	1827	1.38	No
23	University of Utah Hospitals and Clinics, Salt Lake City	17.5	3.7	0.91	Yes	3.0	1151	1.49	Yes
24	University Hospitals of Cleveland	17.5	0.9	0.87	Yes	5.0	1769	1.65	Yes
25	Hospital of the University of Pennsylvania, Philadelphia	16.9	2.5	1.16	Yes	5.0	1127	1.96	Yes
26	St. John's Mercy Medical Center, St. Louis	16.8	0.0	0.61	Yes	5.0	1355	0.76	Yes
27	Henry Ford Hospital, Detroit	16.7	0.3	0.69	Yes	4.0	1438	2.00	Yes
28	North Carolina Baptist Hospital, Winston-Salem	16.6	1.7	1.03	Yes	5.0	1495	1.34	Yes
29	University of Minnesota Hospital and Clinic, Minneapolis	16.6	0.5	0.35	Yes	5.0	707	1.27	No
30	Hennepin County Medical Center, Minneapolis	16.5	1.2	0.60	Yes	3.0	797	1.41	Yes
31	Summa Health System, Akron, Ohio	16.5	0.0	0.56	Yes	3.0	2898	1.34	Yes
32	William Beaumont Hospital, Royal Oak, Mich.	16.4	1.1	0.85	Yes	5.0	3221	1.72	No
33	Cedars-Sinai Medical Center, Los Angeles	16.4	1.1	0.88	Yes	5.0	1794	0.93	Yes
34	St. Louis University Hospital	16.3	0.5	0.71	Yes	5.0	673	1.39	Yes
35	University of California, Davis Medical Center, Sacramento	16.3	0.9	0.76	Yes	4.5	771	2.16	Yes
36	University of Michigan Medical Center, Ann Arbor	16.2	1.8	0.84	Yes	5.0	1325	1.26	Yes
37	Penn State's Milton S. Hershey Medical Center, Hershey	16.0	0.0	0.63	Yes	4.0	857	1.54	Yes
38	Medical College of Virginia Hospitals, Richmond	16.0	0.4	0.60	Yes	3.0	929	1.72	Yes
39	Allegheny General Hospital, Pittsburgh	15.9	0.0	0.89	Yes	5.0	1827	1.64	Yes
40	F.G. McGaw Hospital at Loyola University, Maywood, Ill.	15.8	0.9	0.73	Yes	4.0	781	1.54	Yes
41	Loma Linda University Medical Center, Loma Linda, Calif.	15.8	1.6	0.66	Yes	3.0	1174	1.88	No
42	New York University Medical Center	15.8	1.4	0.75	Yes	4.5	1334	1.20	No

1998 Otolaryngology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Hospitalwide mortality rate	COTH Member	Technology score (of 5)	Discharges	R.N.'s to beds	Trauma Center
1	Johns Hopkins Hospital, Baltimore	100.0	41.1	0.83	Yes	5.0	204	1.40	Yes
2	University of Iowa Hospitals and Clinics, Iowa City	84.2	33.1	0.85	Yes	5.0	152	1.16	Yes
3	University of Michigan Medical Center, Ann Arbor	60.4	22.4	0.93	Yes	5.0	148	1.26	Yes
4	Barnes-Jewish Hospital, St. Louis	56.4	19.0	0.87	Yes	5.0	137	0.98	Yes
5	University of Pittsburgh Medical Center	55.5	18.8	0.90	Yes	4.5	293	1.33	Yes
6	UCLA Medical Center, Los Angeles	53.7	17.0	0.87	Yes	5.0	139	1.41	Yes
7	Mayo Clinic, Rochester, Minn.	51.0	14.1	0.66	Yes	4.0	321	1.16	Yes
8	University of Washington Medical Center, Seattle	42.6	11.3	0.78	Yes	5.0	55	2.76	No
9	University of Texas, M. D. Anderson Cancer Center, Houston	42.3	10.1	0.67	Yes	5.0	65	1.82	No
10	University of California, San Francisco Medical Center	42.1	11.2	0.82	Yes	5.0	110	1.44	No
11	Hospital of the University of Pennsylvania, Philadelphia	41.1	10.5	0.92	Yes	5.0	148	1.96	Yes
12	Mount Sinai Medical Center, New York	41.0	14.1	1.15	Yes	4.5	162	1.68	No
13	Cleveland Clinic	40.7	8.2	0.74	Yes	5.0	168	1.77	No
14	Stanford University Hospital, Stanford, Calif.	38.5	9.3	0.81	Yes	4.5	77	1.12	Yes
15	Vanderbilt University Hospital and Clinic, Nashville	34.0	7.6	0.91	Yes	5.0	189	1.58	No
16	University of Virginia Health Sciences Center, Charlottesville	33.7	7.2	0.89	Yes	4.0	114	1.79	Yes
17	Duke University Medical Center, Durham, N.C.	30.8	5.2	0.87	Yes	5.0	100	1.52	Yes
18	St. Louis University Hospital	30.4	3.9	0.78	Yes	5.0	75	1.39	Yes
19	University of Minnesota Hospital and Clinic, Minneapolis	28.2	2.5	0.68	Yes	5.0	105	1.27	No
20	University of Chicago Hospitals	28.2	2.5	0.78	Yes	5.0	73	1.58	Yes
21	Shands Hospital at the University of Florida, Gainesville	27.1	2.1	0.75	Yes	5.0	130	1.05	No
22	University of Wisconsin Hospital and Clinics, Madison	26.9	1.8	0.78	Yes	5.0	124	1.04	Yes
23	Thomas Jefferson University Hospital, Philadelphia	25.9	2.1	0.76	Yes	4.0	124	1.24	No
24	University Hospital, Portland, Ore.	25.4	0.6	0.74	Yes	4.0	81	2.16	Yes
25	Georgetown University Hospital, Washington, D.C.	25.4	1.9	0.65	Yes	4.0	61	0.80	Yes
26	Northwestern Memorial Hospital, Chicago	25.0	3.1	0.85	Yes	4.0	79	1.12	Yes
27	University of Illinois Hospital and Clinics, Chicago	24.9	1.3	0.69	Yes	3.0	49	1.84	Yes
28	Ohio State University Medical Center, Columbus	24.9	2.8	0.84	Yes	3.5	98	1.17	Yes
29	Memorial Sloan-Kettering Cancer Center, New York	24.8	2.2	0.88	Yes	5.0	186	1.72	No
30	Indiana University Medical Center, Indianapolis	24.4	1.8	0.79	Yes	5.0	53	1.50	No
31	Henry Ford Hospital, Detroit	24.4	0.7	0.81	Yes	4.0	129	2.00	Yes
32	Methodist Hospital, Houston	24.3	7.4	1.23	Yes	4.0	98	1.20	No
33	Emory University Hospital, Atlanta	24.0	1.6	0.83	Yes	4.5	113	1.68	No
34	St. Vincent Hospital and Health Center, Indianapolis	23.8	0.5	0.71	No	4.0	136	2.40	Yes
35	Beth Israel Deaconess Medical Center, Boston	23.1	0.0	0.79	Yes	4.0	144	1.34	Yes
36	Hennepin County Medical Center, Minneapolis	23.0	0.0	0.62	Yes	3.0	101	1.41	Yes
37	Ochsner Foundation Hospital, New Orleans	23.0	0.5	0.70	Yes	4.0	106	1.15	No
38	University Hospital of Arkansas, Little Rock	23.0	2.9	0.86	Yes	3.0	88	2.24	No
39	University Medical Center, Tucson, Ariz.	23.0	0.4	0.61	Yes	4.0	41	1.21	Yes
40	Greater Baltimore Medical Center, Baltimore	22.8	0.0	0.74	Yes	3.0	142	1.59	No
41	University of California, Davis Medical Center, Sacramento	22.8	0.0	0.80	Yes	4.5	88	2.16	Yes
42	North Carolina Baptist Hospital, Winston-Salem	22.8	0.9	0.88	Yes	5.0	125	1.34	Yes

1998 Pulmonary Disease Best Hospital List

Rank	Hospital	IHO	Reputational score	Mortality rate	COTH Member	Technology score (of 4)	Discharges	R.N.'s to beds	Trauma Center	Discharge planning (of 3)
1	National Jewish Center, Denver	100.0	58.1	0.81	No	2.0	41	0.78	No	3
2	Mayo Clinic, Rochester, Minn.	75.9	37.1	0.69	Yes	4.0	2535	1.16	Yes	3
3	Barnes-Jewish Hospital, St. Louis	51.4	23.5	0.90	Yes	4.0	1484	0.98	Yes	3
4	Johns Hopkins Hospital, Baltimore	47.0	20.8	0.87	Yes	4.0	844	1.40	Yes	3
5	Massachusetts General Hospital, Boston	40.5	17.6	1.25	Yes	4.0	2043	1.24	Yes	3
6	University of California, San Francisco Medical Center	40.4	18.4	1.05	Yes	4.0	642	1.44	No	3
7	University Hospital, Denver	37.3	14.1	0.76	Yes	4.0	679	1.57	Yes	3
8	Duke University Medical Center, Durham, N.C.	34.2	12.3	0.93	Yes	4.0	1800	1.52	Yes	3
9	Cleveland Clinic	28.2	8.7	0.83	Yes	4.0	2060	1.77	No	3
10	UCLA Medical Center, Los Angeles	24.5	6.4	0.80	Yes	4.0	978	1.41	Yes	3
11	Brigham and Women's Hospital, Boston	24.0	6.0	0.82	Yes	4.0	1419	1.28	Yes	3
12	University of Iowa Hospitals and Clinics, Iowa City	22.4	5.4	0.78	Yes	4.0	816	1.16	Yes	3
13	University of Michigan Medical Center, Ann Arbor	20.8	5.2	0.86	Yes	4.0	1098	1.26	Yes	3
14	Hospital of the University of Pennsylvania, Philadelphia	20.6	4.7	0.94	Yes	4.0	963	1.96	Yes	3
15	University of Pittsburgh Medical Center	20.3	4.8	1.14	Yes	4.0	2115	1.33	Yes	3
16	Vanderbilt University Hospital and Clinic, Nashville	19.6	3.5	0.74	Yes	4.0	1027	1.58	No	3
17	University of Chicago Hospitals	19.6	4.4	1.01	Yes	4.0	902	1.58	Yes	3
18	Stanford University Hospital, Stanford, Calif.	18.8	4.6	1.07	Yes	4.0	892	1.12	Yes	3
19	Parkland Memorial Hospital, Dallas	18.3	3.7	0.94	Yes	4.0	668	1.35	Yes	3
20	Henry Ford Hospital, Detroit	17.5	1.4	0.82	Yes	4.0	2503	2.00	Yes	3
21	Yale-New Haven Hospital, New Haven, Conn.	16.8	3.1	1.06	Yes	4.0	1481	0.83	Yes	3
22	University of California, Davis Medical Center, Sacramento	16.5	1.3	0.80	Yes	4.0	1043	2.16	Yes	3
23	University of Utah Hospitals and Clinics, Salt Lake City	16.3	1.6	0.79	Yes	4.0	551	1.49	Yes	3
24	Georgetown University Hospital, Washington, D.C.	16.1	1.8	0.65	Yes	4.0	576	0.80	Yes	3
25	Baylor University Medical Center, Dallas	16.0	0.6	0.82	Yes	4.0	2212	1.48	Yes	3
26	Temple University Hospital, Philadelphia	16.0	1.7	0.87	Yes	4.0	759	1.52	Yes	3
27	New England Medical Center, Boston	15.9	0.8	0.69	Yes	4.0	679	2.11	Yes	3
28	Mount Sinai Medical Center, New York	15.8	3.1	1.40	Yes	4.0	1844	1.68	No	3
29	University of North Carolina Hospitals, Chapel Hill	15.7	0.9	0.86	Yes	4.0	1440	1.49	Yes	3
30	Boston Medical Center	15.7	1.3	0.93	Yes	4.0	1294	2.04	Yes	3
31	Rush-Presbyterian-St. Luke's Medical Center, Chicago	15.6	2.3	0.82	Yes	4.0	1441	1.07	No	1
32	Beth Israel Deaconess Medical Center, Boston	15.2	0.9	0.95	Yes	4.0	2327	1.34	Yes	3
33	University of Maryland Medical System, Baltimore	15.2	1.5	0.94	Yes	4.0	760	1.68	Yes	3
34	Cedars-Sinai Medical Center, Los Angeles	15.2	1.4	0.98	Yes	4.0	2353	0.93	Yes	3
35	Orlando Regional Medical Center, Orlando, Fla.	15.2	0.0	0.83	Yes	4.0	2462	1.62	Yes	3
36	Cook County Hospital, Chicago	15.2	0.6	0.75	Yes	4.0	916	1.25	Yes	3
37	University of Alabama Hospital at Birmingham	15.1	1.9	1.06	Yes	4.0	1531	1.29	Yes	2
38	Hennepin County Medical Center, Minneapolis	15.0	0.0	0.48	Yes	4.0	1246	1.41	Yes	3
39	Columbia-Presbyterian Medical Center, New York	14.9	2.9	1.32	Yes	4.0	2153	1.38	No	2
40	University of Virginia Health Sciences Center, Charlottesville	14.9	1.0	0.97	Yes	4.0	1299	1.79	Yes	3
41	Berkshire Medical Center, Pittsfield, Mass.	14.8	0.0	0.78	Yes	4.0	1330	1.45	Yes	3
42	University Hospitals of Cleveland	14.8	1.0	0.98	Yes	4.0	1587	1.65	Yes	2

1998 Rheumatology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Hospitalwide mortality rate	COTH Member	Technology score (of 5)	R.N.'s to beds	Discharge planning (of 3)
1	Mayo Clinic, Rochester, Minn.	100.0	43.9	0.66	Yes	4.0	1.16	3
2	Johns Hopkins Hospital, Baltimore	76.7	30.4	0.83	Yes	5.0	1.40	3
3	Hospital for Special Surgery, New York	72.0	28.3	0.25	Yes	4.5	1.51	3
4	Brigham and Women's Hospital, Boston	60.9	22.9	0.81	Yes	4.5	1.28	3
5	University of Alabama Hospital at Birmingham	60.0	24.7	1.01	Yes	3.0	1.29	2
6	UCLA Medical Center, Los Angeles	58.3	20.8	0.87	Yes	5.0	1.41	3
7	Massachusetts General Hospital, Boston	54.9	19.4	0.96	Yes	5.0	1.24	3
8	Cleveland Clinic	53.6	18.2	0.74	Yes	5.0	1.77	3
9	University of Michigan Medical Center, Ann Arbor	40.9	12.1	0.93	Yes	5.0	1.26	3
10	Duke University Medical Center, Durham, N.C.	39.3	10.9	0.87	Yes	5.0	1.52	3
11	Stanford University Hospital, Stanford, Calif.	37.6	11.0	0.81	Yes	4.5	1.12	3
12	University of California, San Francisco Medical Center	34.4	8.3	0.82	Yes	5.0	1.44	3
13	University of Pittsburgh Medical Center	32.6	8.1	0.90	Yes	4.5	1.33	3
14	Hospital of the University of Pennsylvania, Philadelphia	29.0	5.5	0.92	Yes	5.0	1.96	3
15	New York University Medical Center	28.2	6.2	1.04	Yes	4.5	1.20	3
16	Hospital for Joint Diseases-Orthopedic Institute, New York	25.4	6.9	0.05	No	4.0	1.13	3
17	Barnes-Jewish Hospital, St. Louis	24.5	4.0	0.87	Yes	5.0	0.98	3
18	Parkland Memorial Hospital, Dallas	23.4	3.8	0.88	Yes	4.0	1.35	3
19	University of Chicago Hospitals	20.6	1.0	0.78	Yes	5.0	1.58	3
20	Indiana University Medical Center, Indianapolis	20.4	1.5	0.79	Yes	5.0	1.50	2
21	Vanderbilt University Hospital and Clinic, Nashville	20.3	1.0	0.91	Yes	5.0	1.58	3
22	University of Iowa Hospitals and Clinics, Iowa City	20.1	1.3	0.85	Yes	5.0	1.16	3
23	New York Hospital-Cornell Medical Center	19.8	1.7	1.09	Yes	4.5	1.30	3
24	University of Wisconsin Hospital and Clinics, Madison	19.7	1.2	0.78	Yes	5.0	1.04	3
25	University Hospitals of Cleveland	19.6	1.3	0.98	Yes	5.0	1.65	2
26	Montefiore Medical Center, Bronx, N.Y.	19.4	0.8	1.29	Yes	5.0	1.64	3
27	University Hospital, Denver	19.2	1.3	0.80	Yes	4.0	1.57	3
28	University of Minnesota Hospital and Clinic, Minneapolis	19.0	0.4	0.68	Yes	5.0	1.27	3
29	William Beaumont Hospital, Royal Oak, Mich.	18.6	0.0	0.82	Yes	5.0	1.72	3
30	Emory University Hospital, Atlanta	18.6	0.0	0.83	Yes	5.0	1.68	3
31	Northwestern Memorial Hospital, Chicago	18.6	1.6	0.85	Yes	4.0	1.12	3
32	Cedars-Sinai Medical Center, Los Angeles	18.5	1.0	1.00	Yes	5.0	0.93	3
33	Baylor University Medical Center, Dallas	18.3	0.9	0.82	Yes	4.0	1.48	3
34	Hermann Hospital, Houston	18.3	0.8	0.92	Yes	4.5	1.23	3
35	Temple University Hospital, Philadelphia	18.2	0.8	0.85	Yes	4.0	1.52	3
36	St. Louis University Hospital	18.1	1.0	0.78	Yes	5.0	1.39	1
37	North Carolina Baptist Hospital, Winston-Salem	18.1	0.0	0.88	Yes	5.0	1.34	3
38	University of Virginia Health Sciences Center, Charlottesville	18.1	0.8	0.89	Yes	4.0	1.79	3
39	Ochsner Foundation Hospital, New Orleans	18.1	1.8	0.70	Yes	4.0	1.15	2
40	Columbia-Presbyterian Medical Center, New York	18.0	0.7	1.16	Yes	5.0	1.38	2
41	Beth Israel Deaconess Medical Center, Boston	18.0	0.9	0.79	Yes	4.0	1.34	3
42	Allegheny General Hospital, Pittsburgh	17.9	0.3	0.90	Yes	5.0	1.64	2

1998 Urology Best Hospital List

Rank	Hospital	IHQ	Reputational score	Mortality rate	COTH Member	Technology score (of 8)	Discharges	R.N.'s to beds	Trauma Center
1	Johns Hopkins Hospital, Baltimore	100.0	68.5	1.13	Yes	8.0	814	1.40	Yes
2	Mayo Clinic, Rochester, Minn.	65.8	39.8	0.35	Yes	7.0	2469	1.16	Yes
3	UCLA Medical Center, Los Angeles	51.7	29.8	1.08	Yes	8.0	974	1.41	Yes
4	Cleveland Clinic	46.9	25.2	0.35	Yes	7.0	1191	1.77	No
5	Duke University Medical Center, Durham, N.C.	39.0	17.2	0.52	Yes	8.0	1179	1.52	Yes
6	Massachusetts General Hospital, Boston	37.4	18.7	1.09	Yes	8.0	1046	1.24	Yes
7	Stanford University Hospital, Stanford, Calif.	33.0	14.3	0.37	Yes	6.5	703	1.12	Yes
8	Barnes-Jewish Hospital, St. Louis	32.8	16.1	1.22	Yes	8.0	724	0.98	Yes
9	Memorial Sloan-Kettering Cancer Center, New York	30.2	11.8	0.37	Yes	7.0	1028	1.72	No
10	University of Texas, M. D. Anderson Cancer Center, Houston	29.0	11.9	0.54	Yes	7.0	479	1.82	No
11	Methodist Hospital, Houston	29.0	15.4	1.42	Yes	6.0	903	1.20	No
12	University of California, San Francisco Medical Center	28.7	10.8	0.56	Yes	8.0	653	1.44	No
13	New York Hospital-Cornell Medical Center	28.2	9.2	0.39	Yes	7.5	1310	1.30	Yes
14	Columbia-Presbyterian Medical Center, New York	22.6	5.9	0.69	Yes	8.0	1159	1.38	No
15	Brigham and Women's Hospital, Boston	21.8	5.1	0.55	Yes	7.5	515	1.28	Yes
16	Hospital of the University of Pennsylvania, Philadelphia	20.6	3.6	0.83	Yes	8.0	965	1.96	Yes
17	Northwestern Memorial Hospital, Chicago	20.5	4.4	0.11	Yes	7.0	592	1.12	Yes
18	Vanderbilt University Hospital and Clinic, Nashville	20.5	4.7	0.63	Yes	7.5	529	1.58	No
19	University of Iowa Hospitals and Clinics, Iowa City	20.4	3.6	0.42	Yes	8.0	575	1.16	Yes
20	Indiana University Medical Center, Indianapolis	20.3	6.0	0.89	Yes	8.0	512	1.50	No
21	University of Virginia Health Sciences Center, Charlottesville	20.2	3.1	0.48	Yes	7.0	648	1.79	Yes
22	Emory University Hospital, Atlanta	19.5	3.4	0.56	Yes	7.0	764	1.68	No
23	University of Michigan Medical Center, Ann Arbor	19.0	5.1	1.06	Yes	8.0	870	1.26	Yes
24	University of Chicago Hospitals	17.8	1.3	0.59	Yes	8.0	459	1.58	Yes
25	Penn State's Milton S. Hershey Medical Center, Hershey	17.7	1.7	0.59	Yes	7.0	519	1.54	Yes
26	Yale-New Haven Hospital, New Haven, Conn.	16.9	0.9	0.22	Yes	7.5	811	0.83	Yes
27	University of Washington Medical Center, Seattle	16.3	3.0	0.85	Yes	8.0	328	2.76	No
28	Allegheny General Hospital, Pittsburgh	16.1	0.0	0.60	Yes	7.0	601	1.64	Yes
29	Lehigh Valley Hospital, Allentown, Pa.	16.0	0.0	0.64	Yes	7.0	905	1.17	Yes
30	Boston Medical Center	15.9	0.6	0.22	Yes	7.0	381	2.04	Yes
31	William Beaumont Hospital, Royal Oak, Mich.	15.8	0.8	0.81	Yes	8.0	1050	1.72	No
32	University of California, Davis Medical Center, Sacramento	15.6	0.3	0.52	Yes	7.5	302	2.16	Yes
33	Cedars-Sinai Medical Center, Los Angeles	15.6	0.9	0.87	Yes	8.0	998	0.93	Yes
34	University of North Carolina Hospitals, Chapel Hill	15.5	0.5	0.48	Yes	6.5	485	1.49	Yes
35	University Hospital, Portland, Ore.	15.5	0.4	0.67	Yes	6.5	511	2.16	Yes
36	Baylor University Medical Center, Dallas	15.4	1.0	0.96	Yes	7.0	893	1.48	Yes
37	Thomas Jefferson University Hospital, Philadelphia	15.4	1.0	0.29	Yes	7.0	683	1.24	No
38	Mount Sinai Medical Center, New York	15.3	1.4	0.89	Yes	7.5	751	1.68	No
39	University of Pittsburgh Medical Center	15.3	0.4	0.87	Yes	7.5	839	1.33	Yes
40	Medical Center of Delaware, Wilmington	15.2	0.0	0.67	Yes	6.5	591	1.56	Yes
41	North Carolina Baptist Hospital, Winston-Salem	15.1	0.7	0.90	Yes	8.0	589	1.34	Yes
42	University of Wisconsin Hospital and Clinics, Madison	15.0	0.4	0.88	Yes	8.0	874	1.04	Yes

Appendix G

Reputational Rankings for Special-Service Hospitals

1998 Ophthalmology Reputational Score

Rank	Hospital	Reputational Score	
1	University of Miami (Bascom Palmer Eye Institute)	74.4	
2	Johns Hopkins Hospital (Wilmer Eye Institute), Baltimore	72.5	
3	Wills Eye Hospital, Philadelphia	61.5	(+3 SDs)
4	Massachusetts Eye and Ear Infirmary, Boston	48.8	(+2 SDs)
5	UCLA Medical Center (Jules Stein Eye Institute), Los Angeles	28.1	
6	University of Iowa Hospitals and Clinics, Iowa City	21.2	
7	University of California, San Francisco Medical Center	10.8	
8	Los Angeles County-USC Medical Center (Doheny Eye Institute)	10.3	
9	Duke University Medical Center, Durham, N.C.	8.7	
10	Mayo Clinic, Rochester, Minn.	7.6	
11	Manhattan Eye, Ear, and Throat Hospital, New York	7.5	
12	Barnes-Jewish Hospital, St. Louis	5.7	
13	New York Eye and Ear Infirmary	5.7	
14	Emory University Hospital, Atlanta	5.5	
15	Methodist Hospital (Cullen Eye Institute), Houston	5.4	
16	University of Wisconsin Hospital and Clinics, Madison	5.4	
17	University of Illinois Hospital and Clinics, Chicago	3.4	

1998 Pediatrics Reputational Score

Rank	Hospital	Reputational Score
1	Children's Hospital, Boston	48.6
2	Children's Hospital of Philadelphia	37.7
3	Johns Hopkins Hospital, Baltimore	28.4
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4	Childrens Hospital, Los Angeles	13.5
5	Children's National Medical Center, Washington, D.C.	11.3
6	Children's Hospital of Pittsburgh	11.2
7	Children's Memorial Hospital, Chicago	11.0
8	Children's Hospital Medical Center, Cincinnati	10.9
9	Columbia-Presbyterian Medical Center, New York	10.5
10	Univ. Hospitals of Cleveland (Rainbow Babies & Childrens Hosp.)	10.2
11	Children's Hospital, Denver	9.7
12	Mayo Clinic, Rochester, Minn.	9.7
13	Duke University Medical Center, Durham, N.C.	6.1
14	Children's Hospital and Medical Center, Seattle	5.9
15	Stanford University Hospital, Stanford, Calif.	5.6
16	University of Miami, Jackson Memorial Hospital	5.5
17	Texas Children's Hospital, Houston	5.3
18	UCLA Medical Center, Los Angeles	5.0
19	University of California, San Francisco Medical Center	4.5
20	St. Louis Children's Hospital	4.3
21	New England Medical Center, Boston	3.7
22	Cleveland Clinic	3.6
23	St. Christopher's Hospital, Philadelphia	3.2
24	Massachusetts General Hospital, Boston	3.1

1998 Psychiatry Reputational Score

Rank	Hospital	Reputational Score
1	Massachusetts General Hospital, Boston	24.3
2	C. F. Menninger Memorial Hospital, Topeka, Kan.	23.4
3	McLean Hospital, Belmont, Mass.	19.4
4	Johns Hopkins Hospital, Baltimore	13.5
5	New York Hospital-Cornell Medical Center	11.8
6	Mayo Clinic, Rochester, Minn.	9.4
7	UCLA Neuropsychiatric Hospital, Los Angeles	9.3
8	Columbia-Presbyterian Medical Center, New York	8.9
9	Sheppard and Enoch Pratt Hospital, Baltimore	8.3
10	Yale-New Haven Hospital, New Haven, Conn.	8.0
11	University of California, San Francisco Medical Center	5.9
12	University of Michigan Medical Center, Ann Arbor	4.7
13	Duke University Medical Center, Durham, N.C.	4.6
14	Barnes-Jewish Hospital, St. Louis	3.7
15	Mount Sinai Medical Center, New York	3.4
16	Hospital of the University of Pennsylvania, Philadelphia	3.3
17	Stanford University Hospital, Stanford, Calif.	3.3

1998 Rehabilitation Reputational Score

Rank	Hospital	Reputational Score
1	Rehabilitation Institute of Chicago	58.1
2	University of Washington Medical Center, Seattle	33.0
3	TIRR (Texas Institute for Rehabilitation and Research), Houston	28.0
4	Kessler Institute For Rehabilitation, West Orange, N.J.	26.2
5	Craig Hospital, Englewood, Colo.	26.2
6	Mayo Clinic, Rochester, Minn.	20.5
7	New York University Medical Center (Rusk Institute)	14.8
8	Ohio State University Medical Center, Columbus	13.1
9	Los Angeles County-Rancho Los Amigos Med. Ctr., Downey, Calif.	12.1
10	Thomas Jefferson University Hospital, Philadelphia	12.0
11	University of Michigan Medical Center, Ann Arbor	11.9
12	Albert Einstein Medical Center (Moss Rehabilitation Hospital), Philadelphia	10.9
13	Spaulding Rehabilitation Hospital, Boston	7.7
14	Mount Sinai Medical Center, New York	6.4
15	Baylor Institute for Rehabilitation, Dallas	5.9
16	National Rehabilitation Hospital, Washington, D.C.	5.6
17	Johns Hopkins Hospital, Baltimore	4.4
18	Magee Rehabilitation Hospital, Philadelphia	4.0
19	Santa Clara Valley Medical Center, San Jose, Calif.	3.5
20	Medical College of Virginia Hospitals, Richmond	3.4
21	University Hospital, Denver	3.1

Appendix H

The 1998 "Honor Roll"

“The Honor Roll”

To lend additional perspective, we have constructed a measure called “The Honor Roll” that indicates excellence across a broad range of specialties.

To be eligible, a hospital had to rank at least 2 standard deviations above the mean in at least 6 of the 16 specialties. Hospitals could earn points in two ways:

For ranking between 2 and 3 standard deviations above the mean in a specialty, a hospital received one point.

For ranking at least 3 standard deviations above the mean, a hospital received two points.

The use of standard deviations has three advantages over focusing on the sum of individual specialty rankings: (1) the number of outstanding hospitals varies from specialty to specialty, which is realistic; (2) it gives more information because it also allows one to measure a level of “almost excellent” by using a 2 standard deviation criterion; and (3) it gives some measure of the distance between hospitals, which rankings do not.

"THE 1998 HONOR ROLL"

Rank	Hospital	Points	3 SDs over the mean	2 SDs over the mean
1	Johns Hopkins Hospital, Baltimore	30	15	0
2	Mayo Clinic, Rochester, Minn.	26	12	2
3	Massachusetts General Hospital, Boston	24	11	2
4	Duke University Medical Center, Durham, N.C.	22	10	2
5	UCLA Medical Center, Los Angeles	21	9	3
6	Cleveland Clinic	20	10	0
7	Stanford University Hospital, Stanford, Calif.	15	6	3
8	Brigham and Women's Hospital, Boston	14	6	2
9	Barnes-Jewish Hospital, St. Louis	13	5	3
10	University of California, San Francisco Medical Center	13	6	1
11	Hospital of the University of Pennsylvania, Philadelphia	11	3	5
12	University of Michigan Medical Center, Ann Arbor	10	3	4
13	University of Chicago Hospitals	10	3	4
14	University of Washington Medical Center, Seattle	10	4	2

Appendix I

1998 Pretest Questionnaires

“Baylor” Questionnaire

The National Opinion Research Center at the University of Chicago is conducting a nation-wide survey of board-certified specialists for *U.S. News & World Report*. The purpose of this study is to examine the reasons related to physicians' selections of the nation's best hospitals.

Recently, we asked you what you thought were the five best hospitals for cancer. We would like to ask you a few questions about how you made that nomination.

Our records indicate that you named "Baylor" as one of the best places for care in your specialty.

Specifically, which *hospital* from the following list best represents your nomination?
(Check one box only)

Baylor Center for Restorative Care, Dallas	Ben Taub General Hospital, Houston
Baylor Institute for Rehabilitation, Dallas	Community Centers, Houston
Baylor Medical Center at Grapevine, Dallas	Harris County Hospital District (HCHD), Houston
Baylor Medical Center at Garland, Dallas	The Methodist Hospital, Houston
Baylor Medical Center Ellis County, Dallas	St. Luke's Episcopal Hospital, Houston
Baylor/Richardson Medical Center, Dallas	Texas Children's Hospital, Houston
Baylor University Medical Center, Dallas	The Institute for Rehabilitation and Research, Houston
Hopkins County Memorial Hospital, Dallas	Veterans Affairs Medical Center, Houston
Irving Healthcare System, Dallas	
St. Joseph's Hospital & Health Center, Dallas	OTHER (specify): _____
Texoma Health Care System, Dallas	_____

(continued on other side)

Why did you originally select "Baylor?"

Now, please answer the following question.

In your estimation, which are the **five** hospitals in the United States that provide the best care for cancer, regardless of location or expense? In answering, think about patients with the most serious or difficult medical problems.

List these outstanding hospitals in any order.

OUTSTANDING HOSPITAL	CITY	STATE

Thank you for your time and consideration. Please return this survey in the enclosed, postage-paid envelope.

“Harvard” Questionnaire

The National Opinion Research Center at the University of Chicago is conducting a nation-wide survey of board-certified specialists for *U.S. News & World Report*. The purpose of this study is to examine the reasons related to physicians' selections of the nation's best hospitals.

Recently, we asked you what you thought were the five best hospitals for cancer. We would like to ask you a few questions about how you made that nomination.

Our records indicate that you named "Harvard" as one of the best places for care in your specialty.

Specifically, which *hospital* from the following list best represents your nomination?
(Check one box only)

Beth Israel Deaconess Medical Center - East Campus (Beth Israel)	Massachusetts Eye and Ear Infirmary
Beth Israel Deaconess Medical Center - West Campus (Deaconess)	Massachusetts General Hospital
Brigham & Women's Hospital	Massachusetts Mental Health Center
Brockton/West Roxbury Veterans Administration Medical Center	McLean Hospital
Cambridge Hospital	Mount Auburn Hospital
Center for Blood Research	Schepens Eye Research Institute
Children's Hospital	Spaulding Rehabilitation Hospital
Dana Farber Cancer Institute	OTHER (specify): _____
Joslin Diabetes Center	_____

(continued on other side)

Why did you originally select "Harvard?"

Now, please answer the following question.

In your estimation, which are the **five** hospitals in the United States that provide the best care for cancer, regardless of location or expense? In answering, think about patients with the most serious or difficult medical problems.

List these outstanding hospitals in any order.

OUTSTANDING HOSPITAL	CITY	STATE

Thank you for your time and consideration. Please return this survey in the enclosed, postage-paid envelope.

Control Group Questionnaire

The National Opinion Research Center at the University of Chicago is conducting a nation-wide survey of board-certified specialists for *U.S. News & World Report*. The purpose of this study is to 1) identify hospitals that excel in treating patients with the most serious or difficult medical problems, and 2) obtain a greater understanding of the requests made of physicians' opinions.

In your estimation, which are the **five** hospitals in the United States that provide the best care for cancer, regardless of location or expense? In answering this question, please consider the principal clinics, medical schools, or organizational affiliations of the physicians that provide the best care in otolaryngology and list below the names of the hospitals in which they principally practice.

To ensure the accurate recording of your response, or if you are unclear of an medical school's hospital affiliation, you may also list the name of the medical school associated with the hospital if appropriate.

In answering, think about patients with the most serious or difficult medical problems.

List these outstanding hospitals in any order.

OUTSTANDING HOSPITAL	AFFILIATED MEDICAL SCHOOL (if appropriate)	CITY	STATE
and/or			
and/or			
and/or			
and/or			
and/or			

Because doctors such as yourself provide vital information to medical and health care researchers, we are interested in the amount and type of contacts you receive requesting information or your opinion.

Please note that this information will **not** be used to resolicit or recontact you. We are asking you because we believe you to be representative of other physicians.

<i>Type of delivery</i>	About how many surveys in each of the following media do you receive per week?	About what percent of these do you complete and return?	Which of these methods do you most prefer? (Check all that apply)
a) U.S. Mail		%	___
b) FedEx or UPS		%	___
c) Telephone at the office		%	___
d) Telephone at home		%	___
e) In-person interview		%	___
f) E-mail		%	___

g) Do you have a computer? (Circle one)

- 1 Yes, at home only
- 2 Yes, at the office only
- 3 Yes, at home and at the office
- 4 No

h) At the computer you use most often, do you have the ability to: (Circle all that apply)

- 1 Send and receive intraoffice e-mail?
- 2 Send and receive Internet e-mail?
- 3 Browse the World Wide Web?

Thank you for your time and consideration. Please return this survey in the enclosed, postage-paid envelope.