Quality assurance in dentistry: executive summary, part 1

ADA Quality Assurance Project

During the past two years, the American Dental Association has been actively studying quality assurance in dentistry. This effort, conducted under contract to the Health Standards and Quality Bureau, Department of Health, Education, and Welfare, has defined quality assurance for dentistry, determined what activity was directed in this area, identified who in dentistry was involved, found how they were involved, and investigated the implications of this activity to the profession.

The principal objectives of the research were to identify and describe methods of quality assurance currently performed in dentistry and to identify or develop systems of professional review for field testing that would be consistent with the requirements for care of ambulatory patients under the Professional Standards Review Organization program.

The descriptions of the dental quality assurance programs and the results and recommendations have been published in a two-volume report, Quality Assurance in Dentistry. Because of the importance of this timely topic, the Journal of the American Dental Association is publishing the Executive Summary of the study so that as many members of the profession as possible will be aware of the principal issues involved, the Association’s activities, and future directions in the area of quality assurance.

The Executive Summary will be presented in three consecutive issues. The first section clarifies some of the terminology used in the study, distinguishes quality assurance from peer review, and describes the tasks involved in gathering information for the study. The second segment will describe the examination of the collected data, and provide a characterization of the principal systems studied and a summary of 11 dental quality assurance systems that were reviewed in depth. The final segment will present the recommendations from the study and will include brief descriptions of three proposed field tests of review systems for dentistry.

Executive summary

As a health professional, each dentist is responsible to his patients for the care he provides. That responsibility includes proper diagnosis, appropriate treatment planning, and the provision of care with a high level of competence. Beyond this individual obligation, the professional has generally cooperated with public agencies in safeguarding the public's oral health through activities such as aptitude testing of dental school applicants, accreditation of schools, licensure, and encouragement of participation in continuing education.

The high quality of dental care that Americans enjoy is evidenced by the decreasing number of edentulous persons and the increasing use of preventive techniques. The quality of dental care received by Americans, however, has never been documented in detail. Nor have explicit quality assurance systems been implemented to demonstrate that the level of quality is what the profession believes it to be.

In July 1976, the American Dental Association entered an 18-month contract with the Health Standards and Quality Bureau (HSQB) of the Department of Health, Education, and Welfare to study current quality assurance activities in dentistry. Research efforts were directed toward identification of a dental quality assurance model that would be professionally created, professionally acceptable, and responsive to questions currently being raised about the quality of dental care.

Definition of quality assurance

A search of the literature produces an assortment of definitions of quality assurance and related functions. For purposes of clarity, an attempt was made to synthesize several of the more prominent definitions.

Quality assurance is the assessment or measurement of the quality of care and the implementation of any necessary changes to either maintain or improve the quality of care rendered.
For the purposes of this project, a quality assurance system, also referred to as a dental care evaluation program (DCEP), is considered to be a method of evaluating the quality of dental care and includes the following steps:

—selecting an aspect of dental care to be evaluated;
—establishing criteria for quality dental care and making these characteristics of quality the standard for review;
—comparing the care that has actually been given with the criteria;
—making a peer judgment on quality based on the results of the comparison;
—acting on the results of the evaluation to correct any deficiencies noted; and
—assuring that actions have favorable impact on the delivery of care by improving the normal delivery system through education.

This general outline of the steps in a quality assurance system must, of course, include specific factors such as the number of dentists and patients who will participate, the sources of information to be used, the approach to measurement of the care actually given, and the follow-up actions.

A distinction should be made between quality assurance and quality assessment. Quality assessment is the measurement phase of quality assurance and includes only the first four steps. Quality assurance goes beyond measurement and includes implementation of any necessary changes to maintain or improve the quality of care being delivered. This distinction is crucial for developing a system that will improve the delivery of care.

Reasons for evaluating dental care focus on three areas:
—supporting good dental practice through highlighting its efficacious and efficient elements;
—identifying areas of dental practice that need improvement;
—providing ongoing education to dentists and their auxiliaries about their practice.

The need for quality assurance systems in dentistry was heightened in 1972 by passage of the Professional Standards Review Organization (PSRO) legislation. This federal law is specifically directed toward monitoring at a peer level appropriateness and quality of care paid for under federal programs. Responsibility for implementation of the PSRO law at the federal level lies with the Health Standards and Quality Bureau (HSQB).

To date, PSRO review activities have focused on care—including dental care—provided in institutional settings such as hospitals that is paid for under federal programs. However, as the PSRO program has gained experience in review of hospital care, it now expands its review authority—as the law contemplated—to noninstitutional (ambulatory) care. With this expansion, the dental profession will soon be faced with quality assurance activities under the federal mandate. The impact will be felt by private practitioners who deliver care that is paid for under federally funded programs as well as private prepayment programs.

Another factor contributing to the urgency for quality assurance in dentistry is the activity of the medical profession. Most of the research in quality assurance in medicine has been in terms of medical care delivered in hospitals. The hospital setting lends itself more readily to quality review than do private offices because of the centralization of practitioners, patients, and records, and the relative standardization of medical record forms. The medical field has been active in developing models of quality assurance and is currently moving, though cautiously, into quality assurance programs for care of ambulatory patients.

A distinction should be made between quality assurance and peer review as it is commonly known in dentistry. Both utilize the concept of review of care by a group of peers. Either can be a vehicle for demonstrating high quality and for identifying problems in dental care. However, as currently understood, the peer review system is entered through grievances of either a dentist, a patient, or a third party, whereas quality assurance programs review dental care on an ongoing basis.

**Project objectives**

The Association's project had three objectives. The first, as mentioned, was to identify and describe quality assurance systems currently being used to evaluate dental care. These systems may be operating in hospitals, group practices, dental school clinical facilities, or private practitioners' offices. They also may be used by third party carriers. A second objective was to identify and develop quality assurance models that could be used for dental care evaluation. The model or models selected were to conform to the needs of dentistry and to requirements in the PSRO law.

It was anticipated that no single model would accommodate all delivery systems and that different models of evaluation would be required to correspond to different dental care delivery settings. The models were to be developed for possible field testing, although the field testing itself was not included in the contract between the Association and HSQB.

Third, the contract included development, by peer experts in the field, of sets of criteria for review of treatment procedures of four dental conditions, expected to be performed in hospital settings. These criteria could serve as screens with which the care actually given, as documented in the records, could be compared. Procedures that did not meet the screening criteria would be subject to peer review. Such criteria were to be used as guides for criteria development within each PSRO, with appropriate, professionally designed modifications to reflect local practices.

Early contract activities focused on administrative and planning functions. This was through meetings with the project staff, composed of Ms. Susan Kahn Stern, project director; Ms. Suzanne Morrissey, assistant project director; and Assoc-
ation resource staff composed of Dr. Helen Gift, Mr. Eric Bishop, Mr. Stephen Hardymon, Mr. John F. O’Donnell, and Dr. Lowell Daun. Ms. Jennifer Mauldin joined the project staff at a later date.

Core consultants representing the Council on Hospital and Institutional Dental Services and the Council on Dental Care Programs were selected and approved. These men served as the primary dental consultants to the project. Their clinical and practical expertise was invaluable.

Core consultants

Dr. Joseph Kelly (oral surgeon), chairman, Worcester, Mass, Council on Hospital and Institutional Dental Services.

Dr. William Booth (orthodontist), Sharon, Pa, Council on Dental Care Programs.

Dr. Leon Eisenbud (oral pathologist), New Hyde Park, NY, Council on Hospital and Institutional Dental Services.

Dr. Sidney Francis (general practitioner), San Francisco, Council on Dental Care Programs.

Dr. Emil Letchner (general practitioner), Jamaica Estates, NY, Council on Dental Care Programs.

Dr. Bernard Moran (general practitioner), Lincoln, Neb, Council on Dental Care Programs.

The role of the core consultants was to:

—provide input on review systems by evaluating them;

—accompany project staff on site visits;

—provide clinical expertise when scientific matters were involved, such as criteria development or review; and

—review drafts of plans, procedures, and materials prepared by staff.

Methodology

The first step in identifying and describing a model quality assurance program for ambulatory dentistry was the compilation of a comprehensive list of review systems currently being used in or developed for dentistry. To accomplish this, a two-part data collection process was used. The first was a search of the medical and dental literature for information relevant to quality review.

The second information-gathering activity consisted of mailing a letter to the dental community introducing the project, delineating the types of data sought, and requesting pertinent information. The letter was sent to the following:

—hospital dental services,

—group dental practices,

—dental school deans,

—state dental associations,

—large component dental societies,

—health maintenance organizations (HMOs) with full dental programs,

—third party carriers (Delta dental plans, Blue Cross/Blue Shield, commercial carriers),

—contact names provided by Dr. Joe T. Hillsman,

—contact names found through literature review,

—contact names obtained from other sources,

—dental specialty organizations, and

—selected neighborhood health centers suggested by White and others in their study of care for ambulatory patients.

Two hundred thirty responses were elicited from the mailing; 98 were from hospital dental programs, and the others were from ambulatory settings and third party carriers. Forty-nine systems of quality assurance were identified.

Hospital review systems

Alexian Brothers Hospital Review Procedure
California Medical Association Model for Patient Care Evaluation
Commission on Professional and Hospital Activities
Inpatient Dental Audit—Long Island Jewish-Hillside Medical Center (JCAH model)
Veterans Administration Systematic Internal Review Program

Ambulatory review systems

California Dental Association Task Force on Quality Evaluation
City of Houston Public Health Department—Dental Review
Cleveland Department of Public Health and Welfare
Connecticut Quality Assurance Program
Drew Ambulatory Care Review Team (DART)

Functional Task Analysis
Dr. Joseph Grasso—Crown and Bridge, Inlay Index
Grove Dental Associates P.C. Review System
Henry J. Austin Health Center
Hough-Nowood Quality Review System
Indian Health Service, Dental Services Branch
Medical University of South Carolina Review
Morehead Ambulatory Review System
New Jersey Dental Association Screening Criteria
New Mexico PSRO Review Procedure
Pennsylvania Dental Association
Philadelphia Department of Public Health
Prepaid Group Practice Dental Plan of Blue Cross of Wisconsin
Dr. Seymour Roistacher—Record Review System
Sunset Park Family Health Center
US Public Health Service, Region II
University of Mississippi School of Dentistry, Problem-Oriented Dental System
University of North Carolina Dental Care Evaluation System
University of Pennsylvania Dental Care Evaluation and Quality Assurance Project
University of Washington—Assessment of Care and Continuing Dental Education
Virginia Dental Association
Washington, D.C. Neighborhood Health Center

Third party carrier review systems

Aetna Life & Casualty Company
California Dental Service
Connecticut General Life Insurance Company
Delta Dental Plan of Michigan
Delta Dental Plan of Tennessee
Delta Plan, Salt Lake City, Utah
Group Health Association, Inc.
Group Health Incorporated
John Hancock Mutual Life Insurance Company
Maryland Dental Plan
Metropolitan Life Insurance Company
Michigan Blue Shield
Missouri Delta
New York City Bureau of Health Care Services
New York Medicaid Dental Rehabilitation Program
The Travelers Insurance Company
US Administrators

The next step in this initial phase of the project was to develop an instrument that could be used to objectively compare systems and aid in the selection of systems to be reviewed in depth. The parameters selected were those that best identified systems...
whose goals were congruous with the goals of the project, that is, to identify models of review of dentistry that look at the necessity, appropriateness, and quality of dental care and meet the specifications of the Professional Standards Review Organization program. In addition, the parameters chosen were those that could be assessed without an in-depth study of each system.

In order of priority, the characteristics chosen were:

I. Goal of the system.
II. Completeness of the evaluation.
III. Activity level.
IV. Replicability in other dental settings.
V. Dentist-nondentist participation.

For each of these items, a set of comprehensive and mutually exclusive criteria was established, based on a scale of 1 to 4. Each of the items received a weight based on its priority. Thus, the rating received on Item I was multiplied by 4; Item II by 2; Item III by 1; Item IV by 1; and Item V by 1.

After testing for inter-rater reliability, all the systems were rated and scored and then were compared within categories (hospital inpatient review, ambulatory review, and third party carrier review) so that, for example, each inpatient model of evaluation was compared only with other inpatient review methods.

Each system, having been summarized and rated, was then classified as to its setting—hospital inpatient, ambulatory, third party carrier, and fourth party carrier—and its principal data source:
- record review only,
- clinical evaluation only,
- data utilization only,
- record review and clinical evaluation,
- clinical evaluation and data utilization,
- record review and data utilization, and
- record, clinical, and data utilization.

In addition, a special category, “Criteria only,” was established to provide for programs that had developed criteria but have not established a protocol for using the criteria. This classification was done so that the similar systems of review could be compared to one another and representatives from the many varied approaches to review could be examined in depth.

The ratings received together with the comments of the core consultants and expert opinion were considered in selecting nine systems for in-depth review. Each system selected was the best representative of the various data sources and combination of sources.

**Inpatient hospital review**

Record review: Inpatient Dental Audit (Performance Evaluation Procedure), Long Island Jewish Hospital-Hillside Medical Center, New Hyde Park, NY.

**Ambulatory review**

Record review: Drew Ambulatory Care Review Team (DART), Los Angeles.


Record review and clinical examination: University of Mississippi, School of Dentistry, Problem-Oriented Dental System, Jackson, Miss.

Record review and data utilization: Dental Care Evaluation and Quality Assurance Project, University of Pennsylvania, Department of Dental Care Systems, School of Dental Medicine, Leonard Davis Institute and the National Health Care Management Center, Philadelphia.

Record review, clinical examination and data utilization: Indian Health Service, Dental Services Branch, Albuquerque, NM; Dental Care Evaluation Program, Dental Demonstration Practice, Dental Research Center, University of North Carolina at Chapel Hill, Chapel Hill, NC; and Demyb/Rosenthal Review System, Sunset Park Family Health Center of the Lutheran Medical Center, Brooklyn, NY.

**Third party carrier review**

Record review, clinical examination, and data utilization: Delta plan (Utah, Nevada, and Montana), Salt Lake City.

In addition, two systems were chosen to be reviewed as addenda to other systems. The first of these was the US Administrators program of review, which was chosen as an addendum to the third party review because of its role as a fourth party. It was thought that since a different level of implementing review programs is involved, attention should be given to the program’s specific activities. The other system, an addendum to the combined record review, clinical examination, and data utilization types of review, was the Connecticut Quality Assurance Program which includes Dr. Howard Bailit’s research in quality assurance.

After the selection of the systems to be studied in depth, an instrument to collect the descriptive information was developed as an aid during the site visits which were conducted on nine of the 11 systems.

A proposed site-visit agenda was prepared so that the participants could discuss the quality assurance program and actually watch or, in some cases, participate in the review process. The usual site-visit agenda included, on the first day, discussion of the project, thorough review of the completed data collection instrument, and subjective discussion of the review system. On the second day, the project staff saw the various steps of the review system being implemented, which provided an opportunity to talk to each staff member about his role in review.

Six weeks before each visit, the data collection instrument (DCI) was sent to the contact person who was instructed to complete all sections relevant to the review system and to the site. He was allowed to gather necessary information from appropriate personnel, but he was in charge of actually completing the DCI. He was asked to send copies of the completed DCI two weeks before the visit to the project staff and the consultants who would be attending. Approximately two weeks prior to each visit, the proposed agenda was sent to the contact person. This gave him an opportunity to change the agenda if necessary before the actual visit.

Nine site visits took place between the months of February and June 1977. Attempts were made to include one core consultant on each visit.

After the site visits, detailed re-
ports describing the systems were prepared, as were flowcharts to identify the decision-making points in the systems. Tapes of the visits, completed DCIs, and written documents provided by the sites served as the basis for these reports. After completion, each draft report was sent to the site contact person for verification. In most cases, others participating in the site visit were given the opportunity to review and comment on the draft. Final reports were then prepared.

Because it was thought that no quality assurance system can be effective unless it has the approval and support of the dentists whose care is being examined, the input of practicing dentists representing dental specialties and interests was sought. The project staff compiled a list of consultants to review the summary reports. All dental specialty organizations and many special dental interest groups were asked to name one of their members to serve as a consultant to the project. The groups that responded and their representatives were:

American Association of Oral and Maxillofacial Surgeons, Dr. N. Buford Jones III
American Association of Orthodontists, Dr. C. Moody Alexander
American Academy of Periodontology, Dr. John P. Derdivanis
Federation of Prosthodontic Organizations, Dr. Daniel F. Gordon
American Association of Hospital Dentists, Dr. R. Pat Hylton, Jr.
American Association of Oral and Maxillofacial Surgeons, Dr. N. Buford Jones III
American Association of Public Health Dentists, Dr. Richard F. Murphy
American Academy of Pedodontics, Dr. Robert J. Masselman
American Association of Endodontists, Dr. Arthur C. McFeters, Jr.
Academy of General Dentistry, Dr. Eugene J. Truono

In addition to these specialists, the list of consultants included Drs. James E. Lassiter, Jr., Frank L. Shuford, Jr., Dolores M. Franklin Suggs, Major W. Tappan, Edgar E. Cooper, and Lireka P. Joseph.

These 15 consultants received summary reports of the nine quality assurance systems for which site visits were made. For each report, the consultants were asked to consider the following questions:

1. Is any part of the system unclear? Should any other questions regarding the system be answered?
2. Which of the systems may be appropriate and feasible for dental quality assurance and which may not?
3. Which parts of any system may be appropriate and feasible (with or without modification) for dental quality assurance and which may not?
4. What modifications might be needed in any system or parts of the systems to make them workable, especially in the solo practice setting?

(Part 2 of this report will appear in the February issue.)

*Information about this system was obtained late in the project; it was not included in the rating or selection process.

This report was prepared by Susan Kahn Stern, Suzanne C. Morrissey, and Jennifer Mauldin.


---

**Health science on stamps**

On Sept 18, 1978, France placed on sale a semipostal stamp, in the denomination of 1.00F + 0.20F, honoring Claude Bernard. It was designed by Renée Halpern and engraved by Eugene Lacaque. A total of 3 million 22 x 36 mm stamps were printed in panes of 50. Bernard’s head and hand are in light brown, and his robe is charcoal gray and rose.

We owe part of our knowledge on the digestive and vasomotor systems to the great French physiologist Claude Bernard. Bernard was born in July 1813 in the village of Saint Julien, near Villefranche (Rhône), the son of a family of wine growers. Because of family circumstances he was forced to become a pharmacist’s assistant in Lyons. In 1834 he went to Paris in the hope of becoming a dramatist, but on the advice of the critic Girardin, he enrolled in medical school instead. Claude Bernard graduated in medicine in 1843; his thesis was on gastric juice and its role in digestion.

At the Sorbonne, under the guidance of Magendie he became a great experimenter in physiology. By 1857 he had extensively demonstrated and studied the glycogenic function of the liver, and had succeeded in isolating glycogen. His work on the physiology of the pancreatic juice was published between 1849 and 1856. Although the existence of pancreatic juice was known before Bernard, he was the scientist who demonstrated the preparatory function of gastric juice and the emulsifying functions of pancreatic juice, as well as its power to convert starch into smaller molecules. Bernard also did extensive research in the area of sympathetic control of the vasomotor mechanism. A special chair of general physiology was created for him at the Sorbonne, and in 1855 he succeeded Magendie as full professor of physiology at the College of France. He was admitted to the Académie Française in 1866. Napoleon III was impressed enough with his work to give him two fine laboratories and to make him a senator in 1869. Claude Bernard died in Paris on Feb 10, 1878.

Hannelore T. Loeyv, CD, PhD
Aletha Kowitz, MA