FALL • 1989

The JOURNAL of the AMERICAN COLLEGE of DENTISTS

OBJECTIVES of the AMERICAN COLLEGE of DENTISTS

The American College of Dentists in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding, and extend the benefits of dental health to the greatest number, declares and adopts the following principles and ideals as ways and means for the attainment of these goals.

(a) To urge the extension and improvement of measures for the control and prevention of oral disorders;

(b) To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;

(c) To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;

(d) To encourage, stimulate and promote research;

(e) To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;

(f) To encourage the free exchange of ideas and experiences in the interest of better service to the patient;

(g) To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;

(h) To make visible to professional persons the extent of their responsibilities to the community as well as to the field of health service and to urge the acceptance of them;

(i) To encourage individuals to further these objectives, and to recognize meritorious achievements and the potentials for contributions to dental science, art, education, literature, human relations or other areas which contribute to human welfare—by conferring Fellowship in the College on those persons properly selected for such honor.

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FROM THE EDITOR'S DESK

A COMING SHORTAGE OF DENTISTS?

There are many signs that point to a coming shortage of dentists in the United States early in the next century.

Undoubtedly, the general population of our country will be increasing at a faster rate over the next ten years than will the number of dentists, given the present predictions of decreasing numbers of dental students. During this same period, there is expected to be an increase in demand for dental care, especially from the growing numbers of the over-65 segment of our population.

Enrollment in dental schools has already decreased substantially in recent years and could drop to as low as 3000 graduates a year, the same level as it was in the early 1950's. College and high school counselors have been guiding students away from careers in dentistry because of the current surplus of dentists and because, for a variety of reasons, dentistry is not as attractive for students as it was ten years ago.

Most medical and dental schools draw their applicants from biology majors and the number of biology graduates has steadily declined over the last fifteen years. Where previously dental schools were able to select their students from only the best of the many applicants some schools are now finding it difficult to fill their classes, even after reducing their present classes to nearly half of their former class size. Several universities have closed their dental schools because of declining enrollment and a shrinking applicant pool.

One of the main factors affecting the decline in the number of dental school applicants is the high cost of attending a dental school. Many students acquire an education debt of $40,000, or more, by graduation time.

Keith P. Blair

Formerly, one of the leading reasons why many people chose dentistry over other health professions was because dental practitioners had the advantage of being relatively independent in managing their practices and in being generally free from government regulations and other controls. With the advent of increasing government intrusion into the health professions, over the past fifteen years, much of that former independence and freedom has been eliminated for dentists. At the same time, the responsibility and liability in dental practice has steadily increased.

Government actions to contain health care costs have also unintentionally contributed to this diminishing interest and lower esteem for careers in dentistry. By categorizing and treating the health professions as trades, the Federal Trade Commission has initiated and encouraged a process of deprofessionalization for all of the health professions, an action that should be of great concern to all those who respect true professional values and principles.

In spite of these problems that have developed in recent years, dentistry will continue to be a highly regarded profession and will remain in increasing demand as a personal health service. Solo practice will continue to be the main delivery form for dental care. The doctor-patient relationship is desired by the majority of the public and government intrusion will not change that.

Dentistry is currently going through some trying times and the predictions for a shortage of dentists appear to be very real. However, sometimes the greatest advances, in any field, come at such times of strain, conflict and change. Dentistry must demonstrate its charactor and resourcefulness by adapting to the changing times.

Hopefully, the American Dental Association's *SELECT* Program, with the participation of dental practitioners throughout the country, will help to recruit the most highly qualified students to careers in dentistry and in sufficient numbers so that the predicted shortage of dentists will never develop.

A career in dentistry has much to offer. There is a bright future for the dental profession. △

Keith P. Blair

A CHALLENGE TO THE COLLEGE

Campaign for the 90's

James A. Harrell, Sr., Chairman

By now the Fellows of the College are aware that the *Campaign for the 90's* is the first capital fund drive and most ambitious project in the history of the College Foundation, seeking three quarters of a million dollars to establish a national headquarters. This headquarters will provide for a center for scholarship and ethics and professionalism in dentistry, an archives for the history of American dentistry, a conference center for scholarly research and study, and a national headquarters facility for the College.

We are aware, with four years to go, that we must focus on the full support of the College. It is no accident that the initial approach was made to the current leadership of the College including the Officers and Board of Regents. The response was one hundred percent. The next step was to approach all those who held leadership in the past. This response was most gratifying. Even Fellows with fixed incomes, having been retired for many years, have wanted to be included in this project.

The initial appeal to the Fellows of the College throughout the country by means of telephone solicitation brought a favorable response of approximately $350,000.00 in total pledges. Almost all of these have been confirmed in writing by a subsequent follow-up. This is most encouraging at this stage of the campaign. Many Fellows of the College were caught off guard by the telephone call and were not

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Officers of the William J. Gies Foundation for the Advancement of Dentistry, Dr. George W. Sferra, Sr., Treasurer, and Dr. Alfred J. Keck, Vice President, center, present a check to the President of the American College of Dentists Foundation, Dr. Robert W. Elliott, Jr., right. The Gies Foundation has pledged $40,000 to the ACD Foundation in support of the "Campaign for the 90's". This contribution will provide for a W. J. Gies Room in the newly developed facility which will include a permanent display of Gies memorabilia.

The William J. Gies Foundation for the Advancement of Dentistry, Inc. was formally organized in 1950 as an outgrowth from the W. J. Gies Endowment Fund for the Journal of Dental Research initiated in 1936 by the American College of Dentists.

The College is where the W. J. Gies Foundation had its origin and where Dr. Gies served as Assistant Secretary, Editor, Assistant Editor, Chairman of the Board of Editors, Historian, Essayist, and Research Committee Chairman.

Today, it continues to provide support to the Journal of Dental Research as well as to the Dental Teacher Training Fellowship Program of the American Fund for Dental Health.

Other projects include the W. J. Gies Awards in Editorial Writing, Research in Oral and Maxillofacial Surgery, and Research in Periodontology. Grants have been made to "Rare Book" sections of dental libraries for the preservation of historical documents of G. V. Black and W. J. Gies. Additionally, the W. J. Gies Student Research Scholarship at Columbia University School of Dental and Oral Surgery has been developed.

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really prepared to receive a call from a stranger soliciting funds for the College. Regardless of the situation, however, the courtesies and kind words that were expressed to the callers with few exceptions were most surprising. Seldom had they been treated with such grace according to the supervisor of those who were calling. This type of a response would be expected from Fellows of the College.

The interest in the objectives of the *Campaign for the 90's* has grown to become a topic of discussion at every Section meeting. The Regents of the College address the subject at every opportunity. Sections are getting involved to support the Campaign both with direct contributions as well as projects to raise funds.

The status of the *Campaign for the 90's* as of July 31, 1989, is most gratifying with $497,465 confirmed pledges and payments on those pledges of $181,694. The total confirmed contributors to date is nearly 680. A number of Fellows have pledged but have not confirmed their pledges as yet. The names of those Fellows who have confirmed their pledges to date are listed below. △

Pledges made to the Campaign for the 90's

PLEDGES

Leadership	$ 223,155
General Solicitation	
Confirmed	274,310
Unconfirmed	98,250
TOTAL TO DATE	$ 595,715

Pledges of $10,000 & Over

Fain, C.W. Jr., F. Stone Foundation
Gies Foundation, W. J.
Harrell, James A., Sr.
Harris, Samuel D.
Olsen, Norman H.
Reynolds, Richard J.
Vernetti, James P.

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Pledges of $1000 to $9,999

Academy of Continuing Education
Allen, William E.
Arnett, G. William
Ashjian, Leon H.
Auvenshine, Ronald C.
Bell, Leslie B.
Bentley, Keith L.
Biddington, W. Robert
Bissell, Stephen L.
Blair, Frank C., Jr.
Blair, Keith P.
Bluitt, Juliann S.
Campbell, James A.
Carey, Asher B., Jr.
Christensen, Gordon J.
Coker, Robert C.
Connor, Francis A., Jr.
Coppola, Samuel J.
Coulson, Billy Don
Croft, Lloyd
D'Anton, Erbert W.
Deeb, Edward
DiMango, Anthony L.
Doerr, Robert E.
Dolezal, Wilbur F.
Draffin, William C.
Dugoni, Arthur A.
Earle, Lewis S.
Elliott, James C.
Elliott, Robert W., Jr.
English, Leon J.
Fain, Charles W., Jr.
Farrell, Charles V.
Finley, Leo R., Jr.
Fountain, Stuart B.
Fridley, John Samuel
Friedman, Ruth S.
Fujioka, John M.
Gafford, William L.
Gaines, James H.
Galblum, Harry S.
Gardner, Thomas V., Jr.
Gelb, Harold
Glazer, Sanford A.
Gloudeman, Eugene A.
Gonzalez, Frank I., Jr.
Goodwin, William C., Jr.
Hammer, Wade B.
Hamrick, Fitzhugh N.
Hargrave, John W.
Harrell, Gavin G.
Harrell, James A., Jr.
Hester, H. Curtis
Higgins, Howard W.
Holden, John W., Jr.
Horton, Charles W.
Howell, S. Robert
Hubbert, Robert J.
Huckelberry, James W.
Indresano, A. Thomas
Ito, Allen M.
Jendresen, Malcolm D.
Johnson, Dana J.
Johnson, William R., Jr.
Kanazawa, Kanemi
Kaplan, Irvin N.
Kerr, I. Lawrence
Koffler, Dean D.
Kornblau, Donald J.
Kuebker, William A.
Lamb, Robert E.
Lawrence, Robert M., Jr.
Legler, Donald W.
Little, Robert W.
Locke, Franklin H., Jr.
Mackoul, Victor P.
Markley, Miles R.
McCallum, Charles A.
McClelland, William D., Jr.
Mehlman, Edwin S.
Merchant, Eugene S.
Miller, Larry C.
Morawa, Arnold P.
Morikawa, Harry H.
Morrow, Geraldine T.
Muench, George J.
Mullen, Robert A.
Mynatt, William A.
Nakashima, Yoshio
O'Grady, George L.
Oishi, Masaichi
Orr, John R., Jr.
Parise, Frank B.
Parke, Gerald L.
Pelton, Walter J.
Phillips, Alfred J.
Pink, Thomas C.
Posteraro, Anthony F.
Potter, Dalzell J.
Pressman, Harold A.
Ragan, Robert T.
Reynolds, Donald
Rogers, Sam W., Jr.
Rothstein, Irving M.
Rovelstad, Gordon H.
Rucho, Robert A.
Sawrie, Stephen M.
Schroeder, Frank A.
Schuette, George J.
Scures, Chris C.
Shankle, Robert J.
Sharma, Prem S.
Shows, Clarence O.
Shulman, Israel
Simms, Richard Arthur
Sjoren, Hans S.
Slack, Thomas W.
Sowter, John B.
Stackhouse, Donald B.
Stoll, John B.
Stoll, Kenneth
Tarrson, Linda C.
Thompson, Donald
Tolman, Dan E.
Tracey, Charles C.
Triftshauser, Roger W.
Truono, Eugene J.
Waddell, James E.
Walker, Joe T.
Walker, Robert V.
Wasserman, Albert
Watson, Raleigh H., Jr.
Watts, J. Glezen
Watts, Thomas C.
Weber, Faustin N.
Wilbanks, David S.
Wilkinson, Robert M.
Williams, Larry A.
Yamamoto, George M.
Yanase, Roy T.
Yent, Donald R.
Young, George W.

SECTION CONTRIBUTIONS

Carolinas Section, ACD
Florida Section, ACD
Indiana Section, ACD
Michigan Section, ACD

Pledges of $500 to $999

Abernethy, G. Shuford
Akal, Calvin C.
Anderson, Arthur R., Jr.
Andrews, Victor L., Jr.
Balbo, Michael P.
Balkin, Burton E.
Bens, Foster W.
Bitter, Norman C.
Boero, Edward P.
Bonnie, Herbert H.
Brown, Benjamin W.
Cabler, James T.
Caffey, Albert E., Jr.
Carter, James E., Jr.
Casares, Ernest L.
Cavalaris, C. J.
Cetron, Allan H.
Chase, Robert H.
Colchamiro, Esther K.
Creason, William M.
Dailey, Stephen R.
Dalton, Dennis N.
Davis, Conan Erskin
De Steno, Cosmo V.
Dummett, Clifton O.
Dusza, Gerald R.
Farber, E. Monroe
Fenner, David T., Jr.
Fielder, Fred C.
Forney, John A.
Fraze, R. Lawrence
Gabriel, Herbert F.
Gannon, Norbert O.
Gardner, Robert P.
Garner, Stacey A.
Goosby, Charles F.
Greene, John C.
Greenwald, Saul W.
Grothaus, Bernard J.
Hall, Robert P.
Henry, Joseph L.
Hickey, Judson C.
Hicks, M. Lamar
Hills, Dale A.
Hover, Richard L.
Howell, Francis V.
Iacono, John M.
Jackson, James T.
Johnson, Dean L.
Karczewski, Robert J.
Katzoff, Morris B.
Kinney, Barry D.
Kolin, Irwin
La Morte, Gregory C.
Lake, Charles L.
Leggett, Richard H.
Loveridge, Larry N.
Ludwigsen, Lawrence R., Jr.
Marchand, Lewis J.
Martin, Max M., Jr.
Mascola, Richard F.
Mayner, Joseph
McCabe, Eugene J.
McCasland, John P.
McDermott, Charles F.
McGinnis, J. Perry, Jr.
McGrath, Terence J.
Meadows, J. Thomas
Medina, Jose E.
Mitchell, William A., Jr.
Morris, Alvin L.
Mossberg, David
Mosteller, John H.
Movius, David L.
Mowbray, Perry D., Jr.
Murtaugh, James N.
Nedelman, Irving
Nelson, Dennis Z.
Noffel, S. Edwin
Noonan, Melvin A.
O'Neil, Durl W.
Olsen, Robert A.
Ormes, Walter M., Jr.
Pesce, Louis
Petrovsky, Maurice E.
Phillips, Ronald H.
Pollack, Joseph
Price, Madison R.
Pryse, Thomas D.
Radtke, Laurence V., Jr.
Randolph, Kenneth V.
Rodriguez, Roberto E.
Rowan, Robert J.
Rudolph, C. E., Jr.
Salamat, Khodabakhsh
Searl, Frank V.
Selbe, Jane W.
Shaffer, C. David
Shimoff, Marcus
Smith, Robert T.
Steinacher, Ray H.
Stewart, Kenneth L.
Stringer, Dale E.
Swimmer, Alan J.
Thanos, Andrew John
Thomas, George W.
Towner, Francis W.
Trapp, Theodore T.
Wallace, Donald F.
Walton, DeWitt T., Jr.
Watson, William H.
Wesch, Jack C.
Whiteside, Daniel F.
Williams, Donald M.
Williams, Quinton E.
Willis, Weston A.
Winder, Ronald L.
Yaple, Newell H.
Young, Leo E.
Yuen, Stephen S.
Ziegler, John T.
Ziehm, Harold W.

Pledges of under $500

Abbott, Fred B.
Abrams, Leonard
Adams, John D.
Addison, James P.
Aks, Harry
Allen, J. David
Alpert, Brian
Alpha Omega Foundation
Anderson, Frank H.
Antonson, Donald E.
Asnis, Saul Baxt
August, George S.
Avery, David R.
Baba, Mike J.
Bacharach, John H.
Bacon, Edgar S.
Bakland, Leif K.
Balshi, Thomas J.
Bandt, Carl L.
Barber, Thomas K.
Barker, Charles T.
Barr, Charles E.
Barrett, Clarence F.
Barrow, Don H.
Bash, Percy W.
Bayley, James W.
Beard, Joseph R.
Beardmore, Stanley J.
Beavers, Thomas H.
Bentley, Billy C.
Bewley, Ross E.
Binnie, William H.
Bishop, David R.
Bitler, Glenn F.
Blackerby, Philip E., Jr.
Blackburn, Mark W.
Bodo, Joseph P., Jr.
Bongard, Donald W.
Bonness, Bryce W.
Bowles, Richard M.
Box, Joseph J.
Brandes, James C.
Bressman, Edward

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Brotman, I. Norton
Brown, Pearson W.
Buchsieb, Walter C.
Burch, Robert H.
Burzynski, Norbert J.
Bush, Gerald A.
Carin, Alfred
Carmona, Jesus E.
Carney, Robert B.
Carpenter, Herbert A.
Chapman, William R.
Chasens, Abram I.
Chiaravalli, Peter C.
Chibbaro, Anthony J.
Chillemi, Richard R.
Christensen, Leslie E.
Clark, Lawrence
Claypool, James F.
Clemons, W. Bryan
Colclasure, Ray E.
Coleman, Edwin T.
Collings, George J.
Colombo, Dino S.
Colton, Harris N.
Cooper, Leo K.
Cornell, R. William
Cresswell, Jacqueline
Crowe, Patrick D.
Curry, Richard C.
Cusenza, Anthony J.
Dahl, Eva C.
Danzig, William N.
Davis, Dupree
Denney, Robert P.
DiSantis, Theodore A.
Dietz, Bernard
Divack, Morton L.
Dixon, Mervyn
Doherty, Joseph M.
Downs, Robert A.
Dumke, Melvin P.
Dybowski, Eugene L.
Eames, Wilmer B.
Edwards, James B.
Eggleston, Franklin K.
Eggnatz, F. Lee
Eleazer, Paul D.
Evans, Hugh R, Jr.
Evans, Joseph R.
Ewan, George E.
Ewbank, Robert L.
Fadjo, D. Lawrence
Fairchild, James M.
Felix, James E.
Ferry, Edward T.
Finger, Walter W.
Fingeroth, Abraham I.
Fischer, Theodore E.
Fisher, Alton K.
Fisher, Ben, J.
Fixott, Henry C., Jr.
Fixott, Rupert E.
Fleckenstein, Leo J.
Flinton, Robert J.
Fowler, James A., Jr.
Frome, William J.
Gamboa, George C.
Garland, Raymond O,
Gaston, Lawrence G.
George, Philip P.
Georges, Ramon P.
Geyer, Richard J.
Ghugasian, Vartan
Gildone, Mario E.
Gilmore, Richard F., Jr.
Gilmore, Richard H.
Giuditta, Nicholas A.
Glass, Neil M.
Glover, Joel F.
Goddard, Leonard H.
Goldblatt, Lawrence I.
Goldfogel, Marvin H.
Golec, Thomas S.
Goodall, Henry A.
Gordon, Glenn E.
Gould, Joseph R.
Greer, E. Vann
Haasch, Eugene A.
Hahn, Eitel H.
Hale, Jerre R.
Hallberg, Richard W.
Halpert, Wesley
Hartwell, Gary R.
Hasler, John F.
Hawley, Charles E.
Heinrich, David L.
Henderson, Davis
Heston, Alfred C.
Hewitt, Robert W.
Hiatt, N. Wayne
Hines, Richard N., Jr.
Hinterman, John V.
Hirsch, Edward H.
Hirshberg, Saul M.
Hoffman, Roy Donald
Holliday, Peter O., Jr.
Holmes, John B.
Holt, Jarrell D.
Hombs, Roger
Hopkins, Stephen C., Jr.
Horne, Robert K.
Horowitz, Jerome M.
Huntington, Robert E.
Impaglia, Michael A.
Ireland, Ralph L.
Isaacson, Bernard
Jacobs, Donald W.
James, Robert A.
Jeansonne, Edmund E.
Jensen, Vernon L.
Jerles, William R.
Jones, William T.
Jusczyk, Walter F.
Kamen, Saul
Kartheiser, Phillip J.
Katz, Nathan
Kays, B. Thomas
Keenan, Hugh A. T.
Keil, David M.
Kelly, John J.
Kent, Robert F.
Kerkhove, B. Charles, Jr.
Kies, Vinyard L.
Kincaid, Hunter C.
Kline, Joseph M.
Klinesteker, Robert W.
Koosed, Bernard H.
Kopel, Hugh M.
Krajewski, Joseph J.
Kraushaar, David H.
Kreski, Harold P.
Krizer, John C.
Krouse, Charles D.
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La Forgia, Anthony
Lainson, Phillip A.
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Landa, Lloyd S.
Landman, Norman K.
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Lawrence, William I.
Lawrence, C. S.
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Lockard, Myers W., Jr.
Long, James E.
Loving, Robert H.
Lucca, John J.
Ludwick, William E.
Lytle, James D.
Magaziner, Frederick
Mahan, Parker E.
Maihofer, Glenn T.
Maitland, Ronald I.
Mann, John R., Jr.
Mann, N. Horace, Jr.
Mansour, Raouf Manoli
Marino, Louis
Markos, Simon G.
Markowitz, Aaron
Master, E. Byron
Mastorakos, Leo W.
Matz, P. Marshall
McCaine, Irvin L., Sr.
McCaslin, Alston, J. V.
McCauley, H. Berton
McClanahan, Bill L.
McDavid, P. Thomas
McDermott, Charles E.
McFarland, Paul H., Jr.
McIntyre, Daniel E.

McKechnie, Alex J., Jr.
McKinley, Theodore E.
McKinney, Sewell, R.
McLeod, Carlton J.
Menken, George
Meyers, Robert A.
Miller, H. Franklin
Miller, Preston D., Jr.
Minatra, Randolph D.
Mollenkopf, Jack P.
More, Frederick G.
Morlock, Wallace J.
Morris, Albert W.
Morrissey, William J.
Mulcahy, Lawrence L.
Murakami, Raymond S.
Murphy, Robert P.
Murray, Robert C.
Murrell, Charles F.
Nash, Larry L.
Neger, Milton
Nelson, Douglas A.
Neurohr, Ferdinand G.
Newman, Michael G.
Nielsen, Harold W.
Niiranen, Victor J.
North, George F.
Olson, James Gary
Opin, Perry M.
Ostrow, Bargara S.
Ott, Robert J.
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Packard, Ronald C.
Palmer, Raymond W.
Palmisano, James L.
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Phillips, Robert N.
Platt, James R.
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Poindexter, J. B.
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Price, Robert N.
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Purvis, P. C.
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Reed, W. Marion
Reiner, Abraham
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Roberts, William J.
Roebuck, Tommy G.
Rogers, Edward W.
Rogers, Michael B.
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Romans, Mildred
Rooney, George E., Jr.
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Ross, James Robert
Ross, Thurston H., Jr.
Rossi, Richard E.
Rowe, David K.
Rowland, John F., Jr.
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Ruliffson, Franklin R.
Runzo, Robert S.
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Salvo, Joseph A.
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Sausen, Robert E.
Say, John N.
Scandrett, Forrest R.
Schatz, Clarence F., Jr.
Schelhas, Charles H.
Schoor, Robert S.
Schraft, Robert O.
Schwartz, Stephen F.
Seldin, Leslie W.
Sendax, Victor I.
Seymour, Jack G.
Shaddock, Warren M.
Shannon, John L.
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Smith, Fred J.
Smith, William B., Jr.
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Spasser, Herbert F.
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Stenberg, Ralph G.
Stepanovich, John J.
Stoner, Donald A.
Streelman, Robert F.
Strife, Peter H., II
Stroud, Herschel L.
Stukes, Ollie L.
Stumpf, Arthur J., Jr.
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Sumnicht, Russell W.
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CHEMICAL DEPENDENCY

There are 18,000 Dentists Who Need Our Special Attention (Part II)

(Part I appeared in the Spring 1989 issue of the ACD JOURNAL)

S. William Oberg*

My phone rang one morning. The dentist on the other end of the line asked me what he could do to help a younger dentist who was in trouble with cocaine. I referred him to the Dentists Concerned for Dentists telephone "help line" in his state. Within three days, Dentists Concerned for Dentists committee members converged from several parts of the state to the city where the young dentist practiced. An intervention "team" which included the dentist who had originally called me lovingly confronted the young colleague and he entered treatment for his addiction. Early in treatment the young dentist wrote a letter to his older dentist friend, thanking him for having cared enough to reach out for help on his behalf. Today the young dentist is back in practice and growing in recovery.

That's the way it's supposed to work. A sensitive, caring colleague calls for help. A knowledgeable team of concerned dentists which usually includes a recovering alcoholic/addict verify the facts of the case in question and then intervene in the chemical dependency disease process. The chemically dependent dentist enters the open door of treatment, and more importantly, the open door of life-long recovery from the otherwise fatal disease.

Unfortunately, that scenario isn't common enough, especially in light of the 18,000 or more dentists who are at risk to become chemically dependent. (You probably know one or more of these dentists personally.)

A minimum number of 18,000 dentists are at risk to become dependent upon alcohol or other drugs. Each member of the broader dental family surrounding those dentists can either contribute to an addict's continuing dependence or help the addict to enter the realm of recovery from the disease. Those contrasting contributions will be examined in this second article in a two-part series.

Why is the above-mentioned scenario not repeated daily in every constituent dental society in America? The reasons are many and varied, but a few major ones stand out:

1. There is personal and organizational denial that chemical dependency really is an illness which, if untreated, is fatal.
2. There is, therefore, a personal and organizational shame present which makes one want to sweep the "problem" under the rug and pretend it doesn't exist.
3. If addicted dentists are viewed as immoral, lacking control or possessing "other psychological/psychiatric problems" instead of being ill with the primary disease of chemical dependency, personal and organizational attitudes and actions of retribution and punishment, not compassion and therapeutic concern, will prevail.
4. Even in light of increasing public acceptance of chemical dependency as a disease, there is little public understanding of the *nature* of the disease, including how to recognize it in its early stages and why those who are ill cannot recognize the illness after leaving those early stages.
5. There is a lack of public awareness of how to help a person addicted to alcohol and/or other drugs get into treatment and start on the road to life-long recovery. A pioneer study by Peterson and Avery[1] discusses discrepancies between Michigan dentists' knowledge of alcoholism and concern for colleagues in need of assistance when contrasted with the limited understanding of the intervention process.
6. Dental society programs to help chemically dependent colleagues are often understaffed and insufficiently funded. They are not given high visibility or high activity priority. Volunteers are required to pay their own expenses for continuing education and for carrying on the

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business of their "committees."

A Matter of Open Doors to Recovery

The fact that the American Dental Association has adopted a strong, caring policy statement on chemical dependency, urging all constituent (and where appropriate, component) societies to develop programs and committees which can help any member of the dental family begin treatment for and recovery from chemical dependency should be perceived as an **open door** to recovery. The fact that all but a handful of states have reported that they have a chemical dependency help program in place should be perceived as an **open door** as well.

The fact that the University of Utah School Dental Section (meeting June 18-23, 1989) has been designated by the American Dental Association's Council on Dental Practice as the prime available educational resource for any members of the dental family to increase their chemical dependency knowledge and intervention skills should be perceived as an **open door**.

The fact that other national and regional conferences on chemical dependency are being conducted, (like the Fourth National Conference on Chemical Dependency in the Dental Profession, to be held July 25-26, 1990 at ADA Headquarters in Chicago), should be perceived as an **open door**.

The fact that articles such as this are appearing in national, state and local dental publications should be perceived as an **open door**.

These **open doors** should provide chemically dependent members of the dental family an entry into recovery from almost certain death. These **open doors** should provide non-chemically dependent colleagues entry into the realm of learning more about how to help the addicted dentist. These **open doors** should help recovering chemically dependent colleagues walk away from the terrible stigma society has placed on their disease and walk into new avenues of service in reaching out to colleagues who are currently suffering from the disease.

If we do not walk through the **open doors**, we become a hindrance to those who are ill. We become a part of the *problem*. If we *do* walk through the open doors, wherever we find them, we help those who are ill. We become part of the *solution* to the problem. The following outline of contrasting behavior can apply to the reader as an individual, as a member or leader in his/her dental society or other organization, or to those larger dental macrocosms themselves. For a discussion of the macrocosms of addiction refer to the recent writings of Schaef[2,3].

Are We Part of the *Problem?*

We are part of the problem if we hold to these kinds of views:

1. Any person who can't control his/her drinking or drugging (including nitrous oxide sniffing) is either a bad person or has mighty weak will power.
2. Doctors don't *do* those sort of things. (Sometimes this is known as DMDeity.)
3. Doctor Smith knows so much about drugs. He couldn't possibly get addicted to them. (Especially nitrous oxide!)
4. Doctor Smith's drinking and drugging embarass me.
5. I'll just have to cover up for Doctor Brown until she gets her life together.
6. Even though Doctor Smith is a friend and a fellow Board member, what and where and how much he drinks or snorts is *his* business.
7. If I do get courage enough to talk to Dr. Brown about her drinking problem, somebody might think "I had the problem, too!"
8. An ex-drunk or coke-head like Dr. Smith should certainly never be allowed to hold a leadership position in our dental organization.
9. I can't intervene in Dr. Smith's life. I wouldn't know what to do or say.
10. Dr. Brown couldn't possibly afford time out of the office to go into treatment. Besides, what would her patients say?
11. We've been understanding with Dr. Smith during his recent treatment for chemical dependency. How can we be guaranteed that he won't "fall off the wagon" again?

Are We Part of the Solution?

We can be part of the solution if we hold to these kind of views and take these kind of actions:

1. If I *think* that Dr. Smith has a problem with alcohol or drugs, he probably *does*.
2. Dr. Smith isn't a weak-willed person who simply can't control what and when and where he drinks. Dr. Smith has an illness, just as if he had diabetes. He's not responsible for the illness. He didn't ask for the illness or plan on developing it! It is more than likely that he was genetically predisposed to be at risk to develop it.
3. Until intervened on, Dr. Brown will deny her chemical dependency, a pathological response to the illness.[4]
4. Doctors are *human*, not di-

vine. They have limits. Somehow the expectations of society and the professional training create the need for doctors to deny the existence of any personal problems.[5] Their perfectionism, compulsivity, isolation, need to control, authoritarianism, arrogance, inability to ask for help, intellectualism, and extreme external referenting keep them from obtaining healthy support when illness strikes.[6]

5. It is not an imposition to courageously have loving care and compassion for an addicted colleague, even if and when actions to help are rejected. The "conspiracy of silence", deciding to do nothing, is unacceptable!
6. Recovery from chemical dependency is not accomplished alone. Reaching out to help dependent colleagues should not be done alone (unless absolutely necessary). Seek assistance from your dental society's chemical dependency committee. They will help you intervene with an addicted colleague. If you don't know how to contact the committee in your state, call the ADA toll-free number, extension 2622, and ask for Bill. He'll tell you the person to contact.
7. If you want to learn more about the disease of chemical dependency contact the above extension to ask about resource materials and educational meetings developed by the American Dental Association to assist you.
8. There is no final, ultimate cure for chemical dependency. If untreated, it usually leads to premature death. It is a disease of relapse. Thankfully it can be treated again and again and death need not result. Persons can live comfortably with the disease, one day at a time, for the rest of their lives. For alcoholics this is usually with the help of the program of Alcoholics Anonymous, described in the book of the same title[7]. The Twelve Steps of recovery from alcoholism, listed in the book, are reproduced as Table One. Other anonymous programs have been given approval by A.A. World Services to adapt the Twelve Steps to other addictions. These include such programs as Narcotics Anonymous, Cocaine Anonymous, Gamblers Anonymous and Sex and Love Addicts Anonymous.
9. Since chemical dependency is a "family disease", because it affects every person who lives and works in close proximity to an addict, all such "significant others" are in need of their own personal recovery. Many treatment centers require the family to be involved in family treatment simultaneously with the treatment of the primary dependent. However, personal recovery of significant others can come from participation in anonymous Twelve-Step programs designed specifically for them. Al-Anon, Alateen and Al-Atots for family members and significant others of alcoholics, Nar-Anon, for family members and significant others of drug addicts, should be joined by family members, *even if the alcoholic or addict doesn't go*

Table 1. The Twelve Steps of A.A.*

1. We admitted we were powerless over alcohol—that our lives had become unmanageable.
2. Came to believe that a Power greater than ourselves could restore us to sanity.
3. Made a decision to turn our will and our lives over to the care of God *as we understood Him.*
4. Made a searching and fearless moral inventory of ourselves.
5. Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
6. Were entirely ready to have God remove all these defects of character.
7. Humbly asked Him to remove our shortcomings.
8. Made a list of all persons we had harmed, and became willing to make amends to them all.
9. Made direct amends to such people wherever possible, except when to do so would injure them or others.
10. Continued to take personal inventory and when we were wrong promptly admitted it.
11. Sought through prayer and meditation to improve our conscious contact with God *as we understood Him*, praying only for knowledge of His will for us and the power to carry that out.
12. Having had a spiritual awakening as the result of these Steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs.

*The Twelve Steps reprinted with permission of Alcoholics Anonymous World Service, Inc.

Table 2. Family Anonymous Support Groups and Organizations

Al-Anon Family Groups, Inc.
P.O. Box 862, Midtown Station
New York, N.Y. 10018
(212) 302-7240

Alateen Family Groups, Inc.
Box 182, Madison Square Garden
New York, N.Y. 10159-0182
(212) 683-1771

Co-Dependents Anonymous, Inc.
P.O. Box 33577
Phoenix, Arizona 85067-3577
(602) 944-0141

Families Anonymous, Inc.
P.O. Box 528
Van Nuys, California 91408
(818) 989-7841

NarAnon
P.O. Box 2562
Palo Verdes, CA 90274
(213) 547-5800

National Association of Children of Alcoholics
31706 Coast Hwy., Ste. 201
South Laguna, CA 92677
(714) 499-3889

into treatment himself/herself. Learning how to live one's own life of recovery, with or without the active or recovering alcoholic/addict is the purpose of such programs. A listing of these anonymous support groups and organizations is found in Table 2.

The Importance of Going to Meetings

Most meetings of the anonymous fellowships mentioned in this article are "closed" meetings, only open to members of those fellowships for obvious reasons. "Open" meetings of the fellowships, available to anyone who desires to attend, frequently feature members who tell their stories—of what it used to be like, what happened to them, and what life is like now. Consult your Yellow Pages under A.A. or Al-Anon, etc. for the local phone number to call to find the day, time and place of "open" meetings.

Ask your dental society chemical dependency help committee to arrange for an open A.A. or Al-Anon meeting at *every* national, regional or state meeting of your dental society or dental organization (like the American College of Dentists.)

Attend "open" meetings of the anonymous fellowships as frequently as your schedule will allow. Such meetings will help the observer better understand the addictive process and to better identify with the strength and hope which is available each day to addicted colleagues.

Incidentally, living by the principles embodied in the Twelve-Step programs can enhance and enrich *anyone's* life.

Conclusion

There are 22 million people in America drinking alcoholically, millions more addicted to other drugs. Included in the total are at least 18,000 dentists. It's o.k. to acknowledge those numbers of our colleagues who are ill. Each alcoholic/addict affects from four to twenty other people whose lives can become as unmanageable as the lives of the chemically dependent persons themselves. That translates into an additional 72,000-360,000 members of the dental family who need to recover from the ravages of the addictive process. It's o.k. to acknowledge that as well. Let us seek to do *nothing* which will hinder those who need help from getting it. Rather, let us seek to do *everything* in our power to see that the suffering members of the dental family enter into lives of recovery, no matter what it costs us. △

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Council on Dental Practice
American Dental Association
211 East Chicago Avenue
Chicago, Illinois 60611

For Confidential Help...

If you are a dentist in trouble with alcohol or drugs . . . or know of such a dentist or other member of the dental family . . . call extension 2622 and ask for Bill via any one of the ADA's toll-free numbers:

U.S., Puerto Rico, Virgin Islands: 800-621-8099
Hawaii and Alaska: 800-621-3291
Illinois: 800-572-8309

Agents for the Management of Plaque and Gingivitis

Sebastian G. Ciancio*

Numerous chemical agents have been evaluated to supplement or even replace patient-dependent mechanical plaque control and thus reduce or prevent oral disease (Table 1). Five categories of agents or approaches have been considered: 1) broad spectrum antiseptics, 2) enzymes that could modify plaque structure or activity, 3) plaque dispersing or modifying agents, 4) antibiotics, and 5) agents that could affect bacterial attachment. The success of these approaches can be evaluated clinically by the use of standard scoring methods for measuring plaque and gingivitis and their safety established by soft tissue and microbiologic examination.

Effective use of agents effective against plaque and gingivitis offers the practitioner a variety of therapeutic considerations not previously available, considerations which will also be reviewed in this paper.

In 1986, the establishment by the American Dental Association (Council on Dental Therapeutics) of guidelines for acceptance of these products has served to stimulate properly designed clinical studies for evaluating potential therapeutic agents.

These guidelines were based on sound principles of pharmacology and require that the following criteria be met.

1. Proof of human safety
2. Absence of adverse effects on oral soft and hard tissues
3. Absence of adverse effects on the oral microflora
4. Effects on plaque and gingivitis observed which were significant both clinically and statistically
5. Efficacy shown in at least two independently conducted studies of at least six months duration

Based on these guidelines, two products have been accepted by the Council, i.e. Peridex and Listerine.

Although a number of chemicals have been evaluated for reduction of plaque and gingivitis (Table 1), attention has been focused in recent years on chlorhexidine, oxygenating agents, phenolic compounds, quaternary ammonium agents, sanguinarine, and stannous fluoride. Many of these products were first tested in vitro and then, in vivo, in both animal and human studies.

The development of a number of in vitro techniques for the evaluation of antiplaque effects of test agents has followed the characterization and culturing of plaque-forming microorganisms. Studies of the mechanism of action of effective topical antimicrobials and clinical observation have assisted in defining critical aspects of these in vitro techniques (Coburn, R.A., 1979). Such assays may play an increasingly important role in screening potential new agents as well as in the optimization of properties by chemical modification of new agents. In addition, data generated in the in vitro assays have assisted the design of in vivo evaluations of new agents. Proper selection of in vitro techniques for these various functions in the preclinical development process has reduced the time and cost involved in the development of new antiplaque agents.

Table 1. Potential Oral Antimicrobial Agents

Alexidine
Antibiotics
Benzydamine hydrochloride
Chlorhexidine
Enzymes
Hexetidine
Iodine
Octenidine hydrochloride
Oxygenating compounds
Phenolic compounds
Quaternary ammoniums
Sanguinarine
Stannous fluoride
Zinc chloride

Specific Antiseptic Agents

Oxygenating Agents

Hydrogen peroxide is an unstable disinfectant which is acted on by tissue and bacterial-derived enzymes, releasing oxygen and hydrogen and an associated effervescence.

Historically, dental textbooks have recommended hydrogen peroxide for a variety of uses. It has been used as a mouthrinse for treating oral disorders, including acute necrotizing ulcerative gingivitis, (Wade AB, Mirza KB, 1964) as an aid to the removal of plaque and debris (Rich SK, Horii AD, Newman MG, 1980) and in combination with baking soda and salts as a topical form of treatment for peri-

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odontal disease (Keyes PH, Wright WE, Howard SA, 1978)

In evaluating the efficacy of oxygenating agents, one must evaluate the end points selected for efficacy and their method of measurement. Oxygenating agents have anti-inflammatory properties. Therefore, less bleeding on probing, a major sign of inflammation, would be expected following their use but the bacteria producing the disease process would not necessarily have been reduced. Long-term studies of the effect of oral hygiene regimens which include oxygenating agents are unimpressive and short-term studies offer contradictory findings (Pihlstrom, et al, 1987). As early as 1967, physicians warned that the application of 3% hydrogen peroxide to a wound may increase the amount of the injury and delay wound healing (Branemark and Ekholm, 1967). In addition, serious safety questions have been raised with chronic use (Weitzman, et al, 1986; Rees, et al, 1986).

Fluorides

Fluorides are purported to have some antiplaque properties. The most widely used topical fluorides are stannous fluoride, acidulated phosphate fluoride, and sodium fluoride. Short-term studies of stannous fluoride have been promising (Tinnanof, et al, 1980: Larson et al 1985). However, long-term studies have shown minimal beneficial effects on plaque and gingivitis (Leverett et al, 1984, Wolf et al, 1988) with the exception of a recent six month study in 64 patients which showed a significant reduction in plaque and gingivitis (Tinnanof, 1988).

With stannous fluoride, the mechanism of action appears to be related to an alteration of bacterial aggregation and metabolism. Adverse effects have been taste and black stain lines on teeth. Stannous fluoride is most often available as an aqueous gel.

Stannous fluoride products are approved by the ADA for their ability to deliver fluoride but have not been approved for their plaque-reducing properties.

Chlorhexidine

Of the products included in this paper, chlorhexidine appears to be the most effective agent for reduction of both plaque and gingivitis with reductions in short term studies averaging 60% (Flötra, 1982) and three-long-term studies in over 700 subjects showed reductions in plaque averaging 55% and in gingivitis 45% (Löe et al, 1976, Grossman et al, 1986; Manhart et al, 1988).

The mechanism of action of chlorhexidine is related to a reduction in pellicle formation, alteration of bacterial absorption and/or attachment to teeth, and an alteration of the bacterial cell wall so that lysis occurs. It has a high substantivity. Adverse effects reported include staining of teeth, reversible desquamation in young children, alteration of taste and an increase in supragingival calcified deposits. Long-term and microbiologic studies do not demonstrate the development of resistant strains. It is sold in the United States by prescription in a 0.12% concentration in a mouthrinse, Peridex, which contains 11.6% alcohol with a pH of 5.5. Peridex is approved by the Council on Dental Therapeutics of the American Dental Association. In Europe chlorhexidine is available in a variety of concentrations with 0.2% being most often used.

Phenolic Compounds

Short-term studies of phenolic compounds have shown plaque and gingivitis reductions averaging 35% (Gomer et al, 1972, Fornell et al, 1975) and long-term studies have shown plaque reduction averaging 28% and gingivitis reduction averaging 30%.

Listerine

The only product in this category that has been adequately studied is Listerine with studies of six months or longer supporting its effect (De Paola, et al 1986, Lamster et al, 1983, Gordon et al, 1985). Listerine is a mixture of essential oils-thymol, menthol, eucalyptol, and methylsalicylate.

The mechanism of action appears to be related to alteration of the bacterial cell wall. Adverse effects reported have been a burning sensation, bitter taste, and a possible staining of teeth. It is available in a 26.9% alcohol vehicle with a pH of 4.3. The product is approved by the American Dental Association for the control of plaque and gingivitis.

Plax

Only short term clinical studies in small numbers of patients have been published (Emling et al, 1985). These pilot studies suggested some reduction in plaque when this product was used as a prebrushing rinse. More recent

controlled studies have shown no effect of this product (Grossman, 1988). In addition, beneficial effects on gingivitis have not been reported. Additional short and long-term studies in both plaque and gingivitis are needed to determine its efficiency and potential benefits.

The active ingredient is stated to be sodium benzoate. However, the product also has lower levels of some of the ingredients found in Listerine. It contains 7.5% alcohol. Manufacturer suggested usage is as a prebrushing rinse. It is not ADA approved.

Quaternary Ammonium Compounds

Quaternary ammonium compounds have been evaluated in a number of short-term studies relative to their effect on plaque and gingivitis. In these studies an average plaque reduction of 35% has been reported with mixed effects on gingival health (Ciancio, et al, 1975; Carter and Barnes, 1975, Sturzenberger, et al, 1969). One 6-month study has been reported showing a 14% reduction in plaque and a 24% reduction in gingivitis (Lobene, et al 1977). Cepacol and Scope are two well-known representatives of this group with concentrations of 0.05% and 0.045% cetylpyridinium (CPC), respectively. In addition, Scope contains .005% Domiphen bromide. The mechanism of action is related to increased bacterial cell-wall permeability which favors lysis, decreased cell metabolism, and a decreased ability for bacteria to attach to tooth surfaces. These agents are categorized as being cationic which favors their attraction to anionic surfaces of teeth and plaque. They are surface-active agents which alter surface tension, and have some substantivity.

Adverse effects have been some tooth staining and a burning sensation in the oral cavity. These agents are available in a 14% to 18% alcoholic vehicle with a pH ranging between 5.5 and 6.5, are recommended as twice a day rinses and are not ADA approved for reduction of plaque and gingivitis.

Sanguinarine

Short-term studies of sanguinarine have shown some plaque and gingivitis reduction (Wennstrom and Lindhe, 1985; Klewansky, 1984). In two long-term studies of the product in a dentifrice form, no significant reduction in plaque or gingivitis occurred (Lobene et al 1986; Mauriello and Bader, 1988). A recent 6 month study in 24 subjects showed a significant reduction in plaque and gingivitis when patients used both the mouthrinse and dentifrice, suggesting that combination usage may be of therapeutic value (Hanna et al, 1988).

The proposed mechanism of action is by alteration of bacterial cell surfaces so that aggregation and attachment is reduced.

The chemical name of sanguinarine is benzophenathradine; it is derived from the bloodroot plant (Sanguinaria canadensis). The extract concentration in the product is 0.03%, which equals 0.01% sanguinarine. It also contains 0.2% zinc chloride. Adverse effects have been a burning sensation and in one study staining was reported. It is available as Viadent dentifrice and Viadent mouthrinse. The mouthrinse pH is 3.0, the dentifrice pH is 4.3, and the alcohol content of the rinse is 11.5%. It is not ADA approved.

The summary of the various above products discussed in this paper is presented in Table 2.

Enzymes

A number of enzymes have been evaluated for their ability to alter plaque and are listed in Table 3.

Amylases and proteases were evaluated in 1970 by Shuter and Schiff who found a reduction in plaque of 34%. When used as a mouthwash in a seven week study, Dextranase, an enzyme which effects water soluble extracellular glucans gave disappointing results (Caldwell 1971, Lobene 1971) Mutanases, which affect the ability of bacteria to adhere to teeth have shown beneficial effects against plaque but adverse effects on soft tissues (Kelstrup, et al (1973, 1978). More recently amyloglucosidase and glucoseoxidase (Zendium) have been evaluated since they have the ability to produce a reaction resulting in a strong oxidizing agent which is antibacterial. However, these study results have not been exciting (Midda and Cooksey, 1986 Afseth and Rölla, 1983).

As a group, the enzymes do not appear to be promising for the reduction of plaque and gingivitis although they appear to be promising as a concept.

Plaque Modifiers

Two products have been evaluated in short term studies for their combination of antibacterial and plaque-disruptive properties, ascoxal and urea peroxide (Johanson

Table 2. Summary

SIX MONTH OR LONGER STUDIES

		Number	Used	# of Subjects	% Plaque Redn.	% Gingivitis Redn.	Activity Against Candida	Activity Against S. Mutans
Chlorhexidine								
Loe et al., 1976	0.2%	1	bid	150	45	27	Yes	Yes
Grossman et al., 1986	0.12%	1	bid	430	61	40		
Lang et al., 1982	0.1%	1	bid	158	60	67		
Manhart et al., 1988	0.12%	1	bid	481	49	31		
Cetylpyridinium Chloride								
Lobene et al., 1977		1	bid	99	14	24	Yes	Yes
Phenolic compounds								
Lamster et al., 1983		1	bid	145	20	28	Yes	Yes
DePaolo et al., 1986		1	bid	109	34	34		
Gordon et al., 1985		1	bid	85	20	24		
Overholzer et al., 1988		1	bid	124	35	37		
Sanguinarine								
Lobene et al., 1976		1	bid	120	0	0*	NR	Probable
Mauriello and Bader 1988		1	bid	100	0	0		
Hanna et al., 1988		1	qid**	24	31	38		
Stannous fluoride								
Leverett et al., 1984		1	bid	281	0	?	NR	Yes
Wolf et al., 1988		1	bid	268	0	0		
Tinnanoff et al., 1988		1	bid	64	77	72		

*In this study, the GI scores increased by 71% for the placebo group and 49% for the Sanguinarine group.
NR = not reported.
**Patients used Sanguinarine dentifrice twice daily and a Sanguinarine rinse twice daily.

et al 1970, Shipman et al. 1971, Chilton & Didio, 1971). These products have shown good reductions in plaque but not in gingivitis with the exception of one study (Zinner et al 1970).

Agents Affecting Bacterial Attachment

No agents with specific mechanism of action have been developed at this time. Agents which alter pellicle formation or surface characteristics of bacteria may be of value when development is complete. However, efforts to coat teeth with materials which alter plaque attachment such as silicones and polystyrene membranes have been unsuccessful (Weinstein and Mandel, 1964).

Antibiotics

At this time antibiotics are not indicated for the control of plaque and gingivitis. They may play a definite role as adjuncts to periodontal disease. Antibiotics have been of value in short-term studies of periodontal disease with emphasis on systemic use (Ciancio et al., 1982, Loesche et al., 1981). For reduction of plaque and gingivitis, three topical antibiotics have been the subject of clinical studies—niddamycin, vancomycin, and kanamycin (Stallard et al., 1969; Mitchell and Holmes, 1965; Loesche and Nafe, 1973). Topical usage has been of limited value due to the

Table 3. Enzymes Evaluated For Effect on Plaque

Mucinases
Pancreatin
Amylase-Protease
Dextranase
Mytanase
Zendium

development of sensitivity with certain agents, concern about the development of resistant bacteria, and the lack of a prolonged effect. Additionally, it is the consensus that usage for plaque and gingivitis reduction is overshadowed by the potential for adverse effects of such usage. The development of slow-release devices which can be bonded to teeth and of materials which can be placed into crevicular areas of disease offers promise for future therapy (Goodson et al., 1983). Questions to be answered include whether crevicular placement is topical or subcutaneous and how this affects the development of hypersensitivity reactions. Therefore, although antibiotics are not effective as intraoral antimicrobials today, this may change as delivery systems change.

Antimicrobial Agents and Irrigators

Should plaque control agents be used in irrigation devices? The answer to this question is positive when the objective is to apply the agent subgingivally. However, unless the product has been shown in controlled clinical studies to be more effective than water as an irrigant, the product should not be recommended for this purpose. Additionally, the product must be shown to not cause damage when applied into the gingival crevice. Studies with Peridex, Listerine and Cepacol have suggested that these products can be used as irrigants both with safety and efficacy (Lang et al., 1981; Ciancio et al., 1987; Ciancio and Mather, 1980). In studies with chlorhexidine, it has been shown that effective plaque reduction and improved gingival health can be produced using an irrigation system with a dose of 0.06% chlorhexidine (Newman et al., 1988). This study also showed that irrigation with water significantly reduced gingivitis but the effect on gingivitis significantly increased when chlorhexidine was used as an irrigant.

These various findings show that antimicrobial mouthrinses may be of value as irrigants in the management of gingivitis and may favor improved wound healing. However, unless the solution is placed subgingivally with special devices, the depth of penetration with most powered irrigating units when directed supragingivally is approximately 3–4mm (Eakle et al., 1985).

Should these agents be used in rinses or irrigants as adjuncts to periodontal therapy? At this time, there are no studies to show these agents to be of significant value in treating periodontitis, nor to support their safety in treating this disease.

Should these agents be used as irrigants after scaling and root-planing? The long term benefits of this procedure as a single in-office procedure is still questionable since the contact of the chemical agent with both teeth and plaque would be minimal. However, it deserves further investigation.

Other uses of antimicrobials

Medication-related problems are found in those patients taking drugs which initiate hyperplasia as a side effect. Included in this group are phenytoin, nifedipine, cyclosporin, and amphetamines. Since the severity of the hyperplasia has been associated with poor plaque control, these patients may benefit from oral antimicrobial agents (Ciancio et al., 1972; Barak et al., 1987; Savage et al., 1987). Noteworthy also, are recent studies which have evaluated the use of antimicrobials following periodontal surgery. These studies were based on the concepts that plaque control is most difficult immediately following periodontal surgery, and that the oral flora may adversely affect the progress of wound healing. In a study by Sanz et al. (1987), patients rinsed with Peridex for up to four weeks following periodontal surgery. Compared to controls, plaque reduction by Peridex resulted in significantly improved wound healing which was most noticeable in the first post-surgical week and persisted through the fourth week. A study by Zambon and co-workers utilized Listerine as a post-surgical rinse (Zambon et al., 1987). Compared to controls, plaque reduction by Listerine resulted in significantly improved wound healing which was most noticeable in the first post-surgical week.

Both of these studies show that, at a time when plaque control is

most difficult i.e. after periodontal surgery, the use of adjunctive chemotherapeutic agents not only reduces plaque but also improves wound healing. Similar findings were also reported by Yukna (1986) in an earlier study.

In terms of protection of dental personnel, it is possible that use of antimicrobial rinses prior to use of ultrasonic scalers or high-speed handpieces may reduce the "bacterial back spray" associated with this procedure and thus reduce the chance of patient pathogens infecting dental personnel (Litsky et al., 1970). In the study by Litsky et al., 89 percent less bacteria were noted in the aerosol spray in patients rinsing with Cepacol as compared to controls.

Conclusion

The development of safe and effective antimicrobial agents as mouthrinses offers a new dimension in therapy which may result in predictable patient maintenance of healthy gingival tissues. Antimicrobial agents which are absorbed by plaque may alter the ability of plaque bacteria to metabolize, adhere, and co-aggregate. At this time, these agents offer interesting opportunities for inclusion in the program of prevention and reduction of plaque and gingivitis. △

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Eighth Annual Dunning Memorial Symposium

Information Transfer in Dentistry: Opportunities and Concerns

Introduction: Sidney L. Horowitz*

The *Dunning Memorial Symposia* are sponsored annually by the School of Dental and Oral Surgery and the School of Public Health of Columbia University. Initiated in 1980 as a tribute to William B. Dunning and Henry S. Dunning, early leaders of the dental school, each symposium is devoted to discussion of public policy issues as they impact on dentistry.

Earlier conferences dealt with such problems as marketplace competition, the impact of changing patterns of dental disease, geriatrics and gerontology, liberty versus equity in access to care, the dentally underserved, changing perception of the professions, and society's expectations for oral health. The papers that follow were presented on April 29, 1988, and comprise the proceedings of the Eighth Annual Dunning Memorial Symposium which dealt with some of the concerns and opportunities involved in the process of information transfer in dentistry.

Several questions relating to the topic of information transfer were considered by the distinguished participants. For example, how can we insure that the active professional is kept abreast of latest advances in the field? What is the role of the media (newspapers, radio and television) in keeping the public informed of health-related developments, and, who should determine what information is worthy of publication or media exposure? What are some of the ethical issues involved? Finally, how do we provide for quality assurance in information transfer? The participants dealt with these issues from somewhat different viewpoints. As their contributions attest, they provided answers that were both informative and provocative.

In his presentation, William F. Wathen outlines the charge of the American Dental Association to provide timely information to its membership on all aspects of dentistry, and speaks to the problems inherent in publishing a professional journal for a large readership with diverse interests. Richard J. Simonsen, editor-in-chief of *Quintessence International,* addresses difficult ethical questions of editorial policy such as the propriety of co-authorship, fraud, and advertising, while Barnet M. Levy, a former editor of the *Journal of Dental Research,* deals with the problems of peer review of manuscripts and the impact of escalating costs of professional journals.

Two representatives of the public media provide insight into how journalists select health news for presentation to a lay audience. In his presentation, Dr. Lawrence K. Altman of the *New York Times* points out the growing relationship between taxpayers and the professions, and the historic obligation of the press to keep the public accurately and well-informed on new developments in the health sciences. Ms. Kim Schiller, producer of the ABC Television News program *The Health Show* illustrates the care that is required when a producer selects stories that will be seen by millions of people, and stresses the need to maintain objectivity without sacrificing timeliness.

David McMullen writes of the efforts being made by the American Dental Association in both public relations and advertising to keep the public informed. The library of the future is the subject of Rachael K. Anderson's contribution to the Symposium. Mrs. Anderson points out that not only are library finances and facilities being strained and drained by the proliferation of books and journals, but that new machines and formats are finally beginning to affect the way in which libraries are used. In the final paper, sociologist John Colombotos provides an analysis of some of the exchanges that take place between the research scientist who develops new knowledge and the clinical practitioner who uses it.

Information transfer proved to be a more timely subject for this symposium than we had expected. Some of the very serious scientific controversies that made front page news in the months preceding our conference included these stories:

- the editor of JAMA became embroiled in a conflict on the propriety and ethics of publishing the article "It's over Debbie". AMA members, editors and public officials are still deeply involved in the debate;
- there were confirmed reports that an important completed

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study on male sexuality conducted under the auspices of the Kinsey Foundation is being withheld from publication because of a controversy over authorship;
- the editor of the NEJM took on Reuters and several aspirin manufacturers over the issue of embargoing.

These are only a few of the items that have come to public attention in recent months. In addition, there were some accusations of outright fraud and two research workers at the NIH appointed themselves fraud whistle blowers. Of course, fraud is not a new problem in the professions and sciences. There is a long tradition of fudging data that includes Piltdown Man, Cyril Burt's claims on the inheritance of intelligence and countless other examples. Editors have almost no insurance against such data manipulation.

Finally, apart from controversy, —which is inevitable, and fraud,— which is sometimes almost impossible to detect, editors must exercise constant vigilance to guard against the well-meaning but overenthusiastic investigator whose presentation of some new procedure finds willing adherents. A classic example, often quoted, is the fad that followed publication of a paper in the JAMA (1962) that proposed gastric freezing as a nonsurgical treatment for duodenal ulcer. Other papers and feature articles in the public press followed quickly. Only after a large collaborative study by the NIH was completed in 1968 (it showed no significant benefits) was the procedure discarded.

There is a long pathway that leads from discovery to publication. Along the way it involves an investigator (often multiple), the editor, referees, and reporters to the public media. While the path is rarely smooth or easy, publishing results promptly benefits everyone. On the other hand, submitting work for publication prematurely in an attempt to gain priority may profit the author but not the editor or the reader. Unfortunately, there is often a significant correlation between priority and financial success. The modern counterpart of "publish or perish" is "publish and profit."

With 40,000 journals in publication and about 1 million new articles being printed each year, editors must spend a large proportion of their time as our gatekeepers, our guardians, and our mentors in controlling the information overload. Responsible journalists and television writers share the task and the message is clear. *Information transfer is not a benign enterprise.* Controversies and outright fraud may produce headlines, but the hard work of deciding what's fit to print rests with a handful of dedicated individuals, several of whom contributed to this symposium.

It is of interest that the Eighth Annual Dunning Memorial Symposium should focus on information transfer. It was another founder of the Columbia University School of Dental and Oral Surgery, William John Gies, Ph.D., who focused attention on "information transfer" in dental research. Dr. Gies, Professor of Physiological Chemistry at Columbia, was concerned about the lack of basic science in the dental curriculum and, therefore, concentrated on dental education in which the transfer of knowledge from the laboratory to the patient care situation was stressed. To accomplish this he sought to develop publications, library reference systems and research conferences. The methods in the twenties were crude compared to the methods of today. Nevertheless, the purpose was the same.

The William J. Gies Foundation for the Advancement of Dentistry, Inc., exists today to honor Dr. Gies and to continue the crusade he started in the 1920s, espousing his ideals for ethical journalism and broad communication in dental research.

Taken together, the proceedings of the Eighth Annual Dunning Symposium present a rare view of the concerns and ethical issues that surround the transmission of health-related news to both the profession and the lay public. The Columbia University Schools of Dental and Oral Surgery and of Public Health are pleased to have provided the vehicle for airing these concerns as a means of strengthening the standards of our professions.

Sidney L. Horowitz, D.D.S.
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The Eighth Annual Dunning Memorial Symposium was held on Friday, April 29, 1988 at the Columbia-Presbyterian Medical Center, New York. The Symposium was supported, in part, by grants from the Dunning Memorial Fund and from the following corporations: Block Drug, Colgate-Palmolive, Helene-Curtis, Johnson & Johnson Products and Warner-Lambert.

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Eighth Annual Dunning Memorial Symposium

The Role of the Professional Journal

William F. Wathen*

Two immediate issues are raised when we consider the role of a professional journal. First, let's make some general statements about what a professional journal is. Next we will examine specific cases and the attendant variations of those cases.

Using a general definition, we can say a profession is a vocation requiring knowledge of some department of learning or science (Random House Dictionary of the English Language, ed 2). It follows then that a professional journal is a publication that addresses issues pertinent to that field of learning or science.

Dentistry accounts for about one thousand journals out of the world's 45,000 journals that deal in some manner with science. These dental publications vary from one-page mimeographed occasional issues to highly sophisticated, tightly refereed masterpieces. Many are specialty oriented, and a growing number are aimed at subspecialty levels. Others are of a more general nature, with wider audience.

Today we shall speak of the latter journals, in general, and the publications of the American Dental Association in particular.

Role of professional publications

The role of any professional publication is to inform the reader. Although writing style and design may vary, the end result must always be the transfer of knowledge from some source to the pages of the publication for the eventual benefit of the reader. In that role, professional journals become translators and abstractors of hundreds of thousands of papers written every year and submitted for publication.

The geometric progression of the knowledge curve in the past several decades exacerbates the unrelenting demand on dental editors to choose those papers that are most important to the readers of that particular journal. *The Journal of the American Dental Association* alone receives more than 700 manuscripts a year. As we publish only an average of ten manuscripts per issue, the rejection rate for JADA is around 80%. This makes life difficult for the editor and reviewers, and frustrating for authors. It is an inevitable fact of life though.

An overview of American Dental Association publications and membership profile lends perspective to the type of articles most likely to be printed. A discussion of specific publication goals follows.

American Dental Association publications

The flagship publication of the Association, is of course, *The Journal of the American Dental Association.* A typical issue has two lead articles, three clinical reports, two clinical technique pieces, and three research reports as the core scientific material. Additional features include a special focus report called Emphasis, Association Reports, Special Reports, Review Articles, Diagnosing Oral Disease, Letters to the Editor, People and Meetings, Legislation and Litigation, and Classified Advertising.

The ADA News is a twice-monthly four-color tabloid newspaper that deals with current news matters of interest to our members. It provides the most expeditious route of information dissemination to our 140,000 readers. Editorially, the guidelines are simply to write fully and objectively about the issues of the profession. This publication is a first-class newspaper that our readers can rely on for the best and most accurate information available at the time.

Special Care in Dentistry is aimed at those dentists and other health care workers who deal with aged, handicapped, hospitalized, or otherwise disadvantaged dental patients. Although this group is relatively small, demographic projections indicate the rapid growth of aged and compromised people. It is the purpose of *Special Care* to address this area of concern.

Dental Abstracts surveys world literature for items of interest to the dental community. With a thousand dental publications and many thousands of other health-related journals, the task is formidable. There is no better nor quicker way to survey the contents of primary world health journals.

Dental Teamwork is the newest publication of the ADA, aimed at the people who make up individual dental office teams. No dentist can operate efficiently without some sort of support system. It is this system that we address with Teamwork. Our goal is to foster mutual understanding, appreciation, and growth among all members of the dental delivery system we call "the practice".

Esthetic Dentistry is an example of special issues produced to address special areas. The first *Esthetic Dentistry* was published in December, 1987. It has become one

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of the most popular issues we have ever done, and a second esthetic supplement will come out in the fall of 1988. Other special issues are planned as time, money, writers, and demand allow.

The Guide to Dental Health, a departure from other supplements, is aimed at consumers. An overview of dentistry and how various applications of our profession fit patients' needs provide the focus of this special issue, which has proven popular with profession and public alike.

Membership profile

The 140,000 dentists who make up the American Dental Association are distinct individuals and we are at risk in attempting to propose a composite member. Let's do it anyway.

The typical ADA member is a 44-year-old general dentist in private solo practice with about a thousand active patients. In any given year, those patients will have three and a half dental visits and will receive, in descending order of frequency, routine oral prophylaxis and examination, radiographs, amalgam restorations, composite restorations, single extractions, various types of crowns, endodontics, build-ups, removable partial dentures, and fixed partial dentures.

From this information, priorities for clinical topics are established. In any given instance, the greater the clinical impact of a manuscript, the greater the chances for publication. Obviously if there are no manuscripts on a top priority topic, we move down the list until a suitable paper is found.

It is important to note that although our composite member represents the majority of our readers, we will continue to address the spectrum of the profession. I have visualized dentistry as a triangle, with clinical dentistry on one apex, academia on another, and associations on the other. ADA publications will be in the middle of that triangle, reaching out to all components of the profession.

Specifically, we must realize that beneath the general heading of clinical practice lies every dentist who treats patients, along with a dental team to support the delivery of that care plus the manufacturers, suppliers, and maintenance people who keep us up and running. This category includes general and specialty practices, private and institutional, hospital and military: in short, any treatment in any environment by any dentist. On the apex of academia lie teachers and researchers, administrators and students, universities and state governments. Likewise, the association leg of the triangle embraces the tripartite ADA, specialties, students, auxiliaries, manufacturers and suppliers.

Clinical practice is supported by research findings. Without a healthy body of researchers, dental knowledge grows stale and we make no advances. It is the task of research journals to trumpet basic research articles, while publications such as *JADA* enter after the research is done to elucidate the clinical significance of the work. Our thrust is always based on three questions:

1. What does this manuscript mean to the profession in general?
2. What does it mean to individual doctors who may use the information to treat their patients?
3. What does it mean to the general public?

Another area of significance for JADA is that of new techniques and fields of interest in which research is incomplete but clinical activity is heavy. Implants and temporomandibular disorders are two good examples of areas in which basic scientific research is lacking and clinical consensus is absent, but interest by practitioners and the public is growing. We intend to enter these fields with vigor to sort fact from opinion. It is in the best interest of the public and the profession that controversial issues be discussed fully to uncover the truth. As dentistry tomorrow moves from acute care to chronic care, we will find many other areas of uncertainty. Our desire to diagnose and correct a condition right away is the typical surgeon's personality, and most of us fit that pattern. The management of chronic conditions calls on us to treat lingering problems in a more physician-like manner. The ultimate goal must always remain factual discovery and verification.

A final intent for ADA publications is to be bridgebuilders. Dentistry has many components, and is diminished with the loss or estrangement of any of them. To address the issues of the day in a timely, accurate, and forthright manner is the ultimate goal. We certainly will not be perfect in our endeavors, but the intent remains the same: the careful evaluation, interpretation, condensation, and dissemination of health research into clinical knowledge and technique for the good of the patients we treat. △

Eighth Annual Dunning Memorial Symposium

Information Transfer to The Profession: Opportunities and Concerns

Richard J. Simonsen*

I have been asked to address the issue of information transfer in dentistry, opportunities and concerns, specifically as it relates to clinical journals. As editor-in-chief of *Quintessence International* I thought it appropriate to spend a short time on some of the differences that this publication faces in carrying out the important function of information transfer.

In *Quintessence International* 12 section editors have been appointed. Each one represents a specific area of expertise in practice and/or in academia. Among the section editors are a university president, several university-based researchers, university chairpersons, an associate dean, and two other editors in our editorial review board.

Quintessence International (QI) publishes articles from all over the world in high quality color reproduction. QI is faced with some unique problems, not the least of which is the fact that production is carried out in two different countries. Maintaining very high standards in terms of layout and color reproduction, in addition to their intrinsic quality in terms of information transfer, is a major goal of the publication.

When a manuscript is received by my office it starts on a long journey resulting in either publication (generally after some revision) or rejection (Fig. 1). Although this path is probably quite similar to many journals, it will vary somewhat since QI is edited in, produced in, and distributed from, two countries to many countries throughout the world. When a manuscript arrives, it is acknowledged and a copy sent out to one or more section editors depending on the subject area of the paper. The section editors will utilize additional referees or send it back to me after their review, depending on their own particular area of expertise.

The final decision on acceptance or rejection is made by the editor-in-chief based on the recommendation of the referees and the section editors. The paper is then either sent to the managing editor in Chicago for editing and processing, back to the author for further revision, or it is rejected. At the editorial offices in Chicago the bulk of the language and grammatical editing takes place. This can sometimes be a formidable task since QI receives manuscripts from many countries in the world and many authors do not possess good English-language skills.

After correction, the manuscript is sent to the production manager

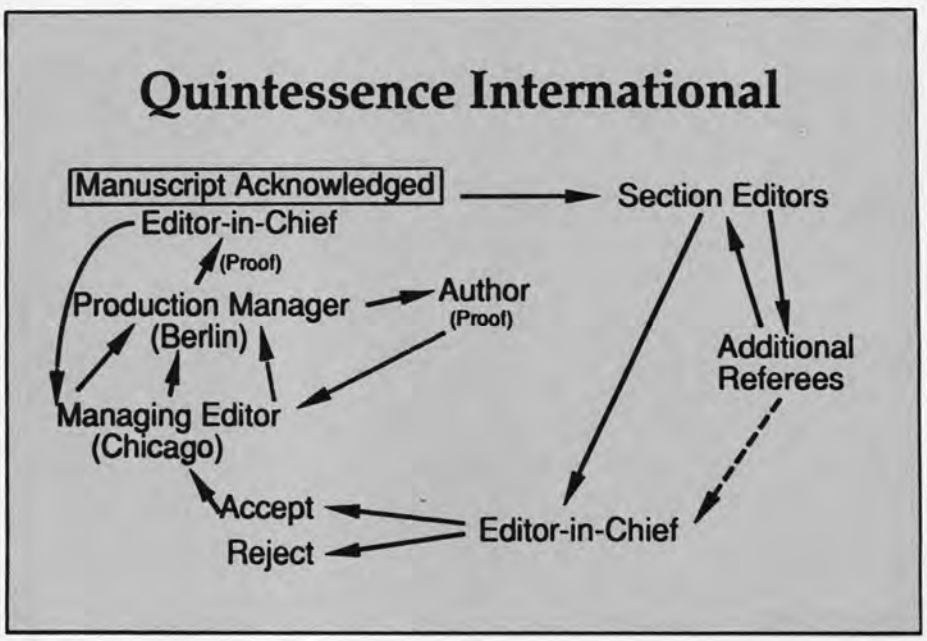

Figure 1: Manuscript route for *Quintessence International*

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in Berlin (West) in the Federal Republic of Germany where the typesetting and printing take place. Once proof is completed one copy is sent to the editor-in-chief, one copy to the managing editor, and a third copy to the senior author. Once corrected by author and editor-in-chief, the proof copies are assembled by the managing editor and the final changes are made. The proof is then sent back to Berlin. This process can therefore be quite time-consuming in this particular situation where production responsibility is shared between three offices in two continents.

Similarly, when dealing with authors from countries as far apart and diverse as The People's Republic of China, Turkey, or Japan, or even countries at war such as Iraq and Iran, one can understand that production delays can easily occur simply from logistical and communications problems.

I have been asked to address concerns and opportunities in clinical journals, and one of the problems all editors face is one of work load and the potential for errors in published articles. Deadlines are always looming overhead, and most dental editors are part-time editors with primary responsibility to a university or a dental practice. Multiple responsibilities of editors as teachers, researchers, practitioners, and/or administrators, undoubtedly affect the time it takes to transfer information in our profession, as well as adding to the potential for errors.

Dr. Horowitz, in his introduction, touched on the subject of the ethical standards of authors. I have some major concerns along these lines. When I see a paper with a dozen authors, it raises questions in my mind. For example, what are the standards of co-authorship qualification that the senior author is applying? Is this study of such a magnitude as to warrant so many authors? (Of course a large multisite epidemiological study over many years may well require a team approach.) While I do not think editors should have to confirm the ethical standards of co-author selection and order, questioning senior authors about the criteria used for selection of co-authorship could sometimes be justified.

For example, I do not believe that a technician, hired to perform a service, merits co-authorship. This, of course, would be different if the technician provides valuable insight and suggestions on experimental design, rather than simply technical service. Many co-authors should more properly be listed in acknowledgments.

Other problems stem from differing traditions in different countries. In some countries, particularly in Japan and Europe, the tradition is to put the chief's name (particularly the university department chairman) on every paper, even if the chief had nothing specific to do with the work. In my opinion this is unethical, but my judgment is of course flavored by my background, and when dealing so often as we do with authors from widely different backgrounds, differing backgrounds and standards must be taken into account. Some institutions in the United States apparently also share in this variable assessment of co-authorship credit.

Another way in which author order may be a little misused is perhaps a more sympathetic and understanding one and that is a senior, well-respected author may well give up his first place on the list of authors, which he in fact deserves, to a younger person who needs it more for career development. This may be a noble gesture, but it is not particularly honorable in my opinion. The whole question of the qualifications for, and order of, authorship of scientific and clinical publications is one that requires review and some accepted, across-the-board criteria. Presently we assume that the senior author is the author who has done the most work and that co-authors have contributed significantly to the work. Regrettably, this is not always the case.

Another conflict in information transfer is the inevitable (it seems) clash of science versus business. For example, Quintessence Publishing Company is a business. It is a publishing concern that publishes almost exclusively dental books and journals to a very limited market. No governmental or organizational (such as a dental association) support is available. Without

financial stability, the company would cease to exist and a leader in international information transfer in dentistry would be lost to the international dental community. One of the ways in which the economic equation is balanced is through advertising. Sometimes what is best for business is not always best for science and conflicting goals between the business side of the production and the impartial scientific side occur. An editor can therefore be caught in the middle and must defend the scientific and ethical side as he or she sees it, while still remembering that if the business fails, information transfer ceases.

Another potential problem area is fraud. The review system at *Quintessence International* is designed to catch mistakes. It is not designed to catch fraud in science. If an investigator or practitioner wants to cheat, he or she will be able to do it, at least for some time until the pieces of the puzzle no longer seem to fit. As funding becomes harder to get, the temptation to cheat is going to get even greater. Additionally, the "publish or perish" mentality is still prevalent in our academic institutions. In fact the pressures to publish are probably increasing as stricter guidelines for promotion and tenure are being enacted at many universities. The "publish or perish" problem has added to the seemingly ever-increasing number of dental journals, giving impetus to those authors fond of breaking a single study into several small publications. Each publication takes up the same amount of space in a curriculum vitae and thus one could well argue that *quantity* of publications rather than *quality* of publications is the goal in order to secure promotion and tenure.

What about editorial policy? One important aspect in any editor's position is to set editorial policy and to write a monthly (in our case) editorial. I have chosen to take certain positions in editorials which tend to favor a consumer advocate point of view, rather than one supporting the self interest of dentists. Controversial issues have been tackled and the input from many different countries on these matters has had a positive impact on the somewhat narrow point of view we sometimes hear in the United States. Since QI is truly an international publication it is our responsibility to address issues more from a global, than a North American, point of view.

Quintessence International is not affiliated with organized dentistry directly in any way. Thus it is free to take positions that may on occasion run counter to the prevailing thoughts of organized dentistry, whereas some dental editors may have to reflect, editorially, the position of organized dentistry on certain issues. Thus we have approached some sensitive international issues that some would argue are inappropriate for a clinical journal, i.e. political issues. Politics, however, is intrinsic in health care. There is hardly a health-care decision that we can make as practicing dentists that does not involve some political component. The American Dental Association and its constituent state and local dental societies supports political action committees. To argue therefore that we should keep health care issues separate from politics in a scientific publication is utopian.

Changes in information transfer methods are in the offing. We are in the age of the computer; we are in an age where information transfer with visual impact is important. We are all competing with the television media because we are so used to the high quality of the visual impact seen every day on our home television screens. In dentistry and science we need to compete in order to get our message heard.

As everywhere, resistance to change is rife in dentistry, particularly, and most unfortunately, at our institutions of higher learning. As Woodrow Wilson once said, "The only thing harder to move than a cemetery is a university faculty." Clinical journals can help to provide impetus for change and therefore maintain their function as an invaluable link between the various arms of dentistry in communicating the changing world of dentistry to both the academic and practicing communities. △

Eighth Annual Dunning Memorial Symposium

Trouble Right Here in River City: Can We Ignore It?

Barnet M. Levy*

Trouble Right Here in River City: Can we ignore it?

I begin my talk with a rather long quote from James Lloyd[1] because it identifies the issues I plan to talk about in a succinct and literate manner. "Knowledge is a river . . . Some folks visit the river as children and then have no other firsthand contact with it. Others of us live on the river. We ply it and apply it; we fish it, tap it, pan it, pump it to irrigate, put stuff in it, get from here to there on it; we see it and make it change every day. It is our life. But, friends, I tell you, we got trouble right here in River City, and that starts with T and that rhymes with P, and that stands for peer . . . and publication and promotion and priority, profit, prestige, progress and pernicious." As Lloyd sees it, ". . . not since medieval hellfires dried it back into stagnant, cloistered pools has the river been more threatened." He called the sinners in his sermon "bloody-handed" pseudo-peers who perpetrate crimes against the lifework of others in the name of science; journal editors who do not perform to the professional and ethical standards demanded by their exalted position in the publication process; and academic administrators who, oblivious to these problems, which are the real ones in their sacred covenant with history, attempt to solve fiscal financial woes of their institutions with grant-overhead and industrial dollars, thereby turning houses of science into brothels, rendering unto Caesar things that are of the spirit, and measuring academic achievement like barrels of oil, with production records and quotas."

It is surprising that the charges and accusations leveled by Lloyd at peer-review, yes, at the very information exchange system we are talking about today, have not been challenged. Unless, of course, there is nothing to challenge.

As a scientist, a writer, an editor, and a referee, I believe there is trouble right here in River City. I will attempt to identify some of the trouble areas: editorship, peer-review and publication. Most of all, I make a plea for research-good, valid research—into scientific journalism in all its aspects.

EDITORS come in a variety of shapes and forms. At one end of the spectrum are the "paper shufflers." They receive manuscripts and send them to two or three referees for consensus. Acceptance or rejection is then determined entirely by the referees. At the opposite pole, papers are received, read, accepted or rejected by the editor alone. The majority of the scientific publications, certainly the prestigious journals, fall somewhere in-between.

But the system needs to be alerted. There are questions we must ask and answers we must seek. For example, Gordon[2] pointed out that the editorial decision rule in journals with high rejection rates was, "when in doubt, reject," and in ones with low rejection rates, "when in doubt, accept." But who establishes these rules? Many of the journals publishing dental research are affiliated, if not owned by, an organization. Does the organization set the rules for rejection or is that exclusively the editor's function? Lock[3], on the other hand, identifies an editor's responsibilities to the author as follows: He should act as an ombudsman[2], protecting the author from any unfairness by the referees. He should also help the author to improve both the scientific aspects and the presentation of his manuscript. Papers may be rejected because they are presented poorly or because they report bad science. While many editors feel justified in rejecting poorly written papers, if the research is good, I believe they should help the author produce a manuscript suitable for publication. Because many scientists find writing papers tedious and/or difficult, they are easily discouraged by editors who simply send a message of "poor grammar." This only leads to delays in publication, or worse, no publication. Sci-

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ence suffers.

Authors should expect prompt and courteous treatment of their manuscripts. They should be able to reasonably question why a paper was rejected and should be able to ask the editor to reconsider it, either after revision or with a critique and rebuttal of the review.

In addition to these responsibilities to the author, the editor has responsibilities to the journal and to science. The editor must recognize that the very act of selecting good papers means that some sort of censorship is in operation however much we dislike that idea.[4] "Research workers who accept public money and then delay or do not publish their results could be considered guilty of fraud to the scientific community."[4]

What should a "good" editor do? Initially, he should carry out triage: classifying articles into self-evident good and "obviously rubbish."[3] When a manuscript arrives he should check it in and record such details as length, number of illustrations, etc. He should read it to decide which referees to send it to. The choice of referees is not haphazard. An editor must have a large list of reviewers so that he can match the paper with the appropriate reviewer without overloading him with too many requests. Both the referee and the author should know that the referee is advisory to the editor and not the final decision maker. When the referees reports are back, the editor must then decide whether to accept the paper, reject it, or ask the author to rework it within specified guidelines. Although some editors[5] may insist that the decision for rejection is final, I believe the author(s) has a right to challenge the review, with further assessment by other referees, when necessary. *Science*[5] recently published two editorials on its policy. Initially, all manuscripts will be rank ordered by an editor on a scale of 10 to 1. On this basis, 60% of the manuscripts will be "returned" within 10 days and the remaining 40% will be peer-reviewed, with a 50% chance of these being published. The one rule accompanying these changes: no resubmissions.

PEER-REVIEW is said to be essential for maintaining scientific standards, the reviewers being the gatekeepers of science.[6] Peer-reviewers, the protectors of our "literature", if it can be called that, judge the papers submitted for publication, which means they may also act as judges for job applicants, for research grant applications and for promotion and tenure. We have the right, no, the responsibility, to ask, how competent are the judgments? Does peer-review produce better scientific journals than editor discretion alone? Does it improve articles? How much does it delay publication? What does it cost and is it worth it? In other words, does peer-review accelerate or retard progress in science?

With all these questions, and many more unasked, there must be many answers—some negative—some positive.

What are the problems in the peer-review system? To begin with, there are over 40,000 current scientific journals publishing two new papers per minute (2,880 per day and over one million per year).[7] If only half of these journals use peer-review systems, the load of refereeing some 20,000 journals (500,000 papers per year) must be enormous, especially if most of the reviewers have other commitments such as reviewing grant applications, serving on various committees, teaching and researching. Relman[8] estimated the cost of refereeing one article to be $40.00 in 1979. Today, that figure would be about $60.00 per paper or a total of something around thirty million dollars a year just to peer review half of the scientific journals. Can we justify such costs?

Although the line between biomedical (biodental) sciences and other sciences might be obscure or very narrow at best, there is some evidence that more peer-reviewers disagree about biomedical articles than they do about others.[3] The study by Peters and Ceci[9], flawed as it might be, has made many of us stop and think about the issues of peer-review. They looked into the preliminary finding that eminent authors from prestigious institutions are more likely to be successfully published than their less visible colleagues. The argument against this finding was that eminent researchers are more likely to write high quality papers and be recruited by prestigious institutions.[7] Peters and Ceci took 12 recently-published papers from 12 respected journals, altered the authors names, titles, institutional affiliations and introductory paragraph, and then resubmitted them to the same journal they previously appeared in. The "repeat" submission was detected in three instances. Eight of the remaining nine manuscripts were soundly rejected. It is interesting to note that the journal that finally published Peters and Ceci's paper was accompanied by commentaries invited from 59 experts. The whole article, including the findings and comments, add up to what many scientists believe: that peer-review is incompetent, heavily biased, and open to abuse because of research and/or commercial conflicts of interest.

Lock[3] points out that any rigorous study to confirm or refute their findings would be inordinately costly and complicated. But we need to do some such study. We cannot afford to have the charges of personal bias[10,11,12] or commercial conflict of interest[13–19] persist.

Yalow, who won the Nobel prize for her work on radio-immunoassay said "the truly imaginative are not being judged by their peers. They have none."[3] Her original article was rejected by *Science* and initially by the J. Clinical Investigation. Her Nobel essay contains part of the JCI's initial letter of rejection. She says she eventually reached a compromise with the editors, including the apparently trivial insistence on omitting "insulin antibody" from the title so her manuscript was eventually published.[20,21]

There is no time to discuss the problems of fraud in science. Besides, Broad and Wade[22] have amply covered the topic in their remarkable book *Betrayers of the Truth*. I can only support their contention that peer-review has not detected even such obvious fraud as Long's published photographs of chromosomes alleged to be human but which were not.

There is another matter which must be discussed here and that is the inexcusable use by referees (and editors) of words of an "acerbic and derisive flavour"[3] when reporting to authors. Words such as: naive, ridiculous, gross stupidity, waste of effort and money, lacking all qualifications[23] have no place in reports sent to authors, unless supported by documentary evidence.[24]

McCutchen[25] also has some ideas on peer-review worthy of note. He insists that referees suppress new discoveries, deny innovators direct access to publication and reject good ideas because reviewing inflates their egos and puts peoples careers in their hands. He exclaims that the review system is poisoning the atmosphere in science and suggests that if "innovations were freely published the establishment would still decide which of them to develop." He goes on, "if a reviewer felt strongly that readers should be warned he could have his signed comments published next to the offending article." He sees the quantity of submitted manuscripts decreasing and the quality improving under such conditions. Since publication would be no accomplishment, each article would stand on its intrinsic value and there would be little reward for quantity of publications. He also recommends a journal that would actively solicit rejected articles and print the good ones beside foolish parts of rejecting reviews.

Lock[3] and others claim that consensus between two or more referees is not much higher than

chance. If that is true, we must ask whether the scientific literature is any better with peer-review than it is without. After all, "the scientific journal did not evolve to serve as the 'gatekeeper' to jobs for scientists, however, but as an aid to the exchange of information among professionals."[7] An encouraging development is the recent announcement[26] that the American Medical Association will sponsor an International Congress on Peer-review in Biomedical Publication to be held in Chicago in the spring of 1989. The goal is to "stimulate research and reflection on the peer-review process and the responsibilities of authors, referees, and editors."

There is an obvious need for reappraisal and possible reform in our system of publication, on evaluation of "research productivity" and on the peer-review process. Such self-scrutiny is a critically important priority in the future development of dental and all biomedical sciences.

Even though peer-review has many defects, those that are inherent will have to be accepted, but those that are not must be corrected. I agree with Lock[3] who says (Chapter 8) that we should try to improve it (peer-review) before considering abandoning it. The primary responsibility falls on the editor, who must select and monitor his referees. He must help them give adequate reviews. He should establish guidelines for reviews, such as those issued by the Royal Society.[27] The description in Lock's[3] monograph of Whimster's bewilderment at receiving an original article with a letter from the BMJ asking for his opinion on its originality, scientific reliability, clinical importance and suitability for that journal is a case in point. "What the letter should also have contained, Whimster suggested in the light of experience, was a statement why he had been chosen as an assessor for the article; whether another referee was also being used (and if so for what aspects); a description of the etiquette of peer-review; whether outside assessment of the statistics was being obtained; how much the referee should correct the English style; how much feedback the referee would get; how much the author would be told; how quickly his report was needed; and whether he would be paid for his services."

There is an obvious need for guidelines for peer-review. A good place to start is with the guidelines suggested by the Council of Biology Editors.[28] In addition, books by Bishop[29] and by O'Connor[30] have helpful guidelines. A code prepared for referees to *Physics Today*[31] is must reading for editors and others interested in improving peer-review.

Campbell[32] discussed the economics of journal PUBLISHING and pointed out the trend of using copies of single articles rather than whole issues of journals. Lest you think this is a trivial matter, he found that in 1981, some 6.5 million serial interlibrary lending requests were filled with photocopies. He also found that some 34.4 million article reprints were sold in 1980, a clear demonstration of the trend toward using copies of single articles rather than whole issues. I quote these figures because I believe they reflect a new and different use of the library. Because of computerized searches, there is little "browsing" in journals. This means that libraries need fewer journals and researchers can "purchase" photocopies of papers directly related to their work. I believe science is the loser in this situation. Browsing touches the imagination—excites the innovative mind—bombards the receptive brain with peripheral ideas, any one of which may set off a chain reaction of intellectual activity that leads to new ideas, new research protocols. Add to this the fact that library budgets are being cut, and we begin to wonder just where new knowledge and new ideas will interact with new researchers.

Now we witness America's quest to improve its balance of trade by allowing the dollar to fall in relation to other currencies. George Black, Science Librarian at Southern Illinois University,[33] has pointed out that, as a result, there has been a precipitous increase in

the price of foreign library materials. In 1987, the price of many European and Japanese journals increased 30–50%. The difference between available funds and materials' costs at Southern Illinois University led to a deficit of about $200,000, at University of Illinois at Champaign-Urbana more than $200,000, at both Stanford and Cornell Universities over $600,000. The University of California system revealed that systemwide acquisitions will decrease from 150,000 to 80,000 this year. The system plans to cancel 3,000 journals and foreign acquisitions will be reduced by 50% on some campuses. In addition, book purchases in science and technology will be reduced by more than 33%. Book collections are sacrificed to maintain journal subscriptions because journal cancellations would represent a more serious threat to science. They, after all, contain the original literature on which science is based—on which books are written—and on which research decisions are made.

At a time when U.S. scientific eminence is being challenged internationally can we afford to reduce the availability of the literature on which innovation is based? "Few research libraries are expected to successfully weather the current budget shortfalls without losing subscriptions. Library reductions are always insidious. By the time the damage is recognized, remediation is difficult, if not impossible, because few libraries are allowed the luxury of playing catch-up, if the missed books and journals are available at all."[33]

Yes, there is trouble right here in River City—and that begins with T and that stands for Try, and that is what I did. I tried to identify some of our troubles. I still believe if we can identify a problem, we can solve it. Let's all try. Δ

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Eighth Annual Dunning Memorial Symposium

Information Transfer to the Public: Print Media

Lawrence K. Altman*

As we move on in our discussion of information transfer we come to the public sector.

You probably read, hear or see something about medicine in the news every day, and to many of you that may seem new. Yet, it is not.

From almost the founding of this country, medical advances have made news in the United States, particularly those that have affected public health.

In 1799, for example, when Dr. Benjamin Waterhouse learned about Dr. William Jenner's smallpox vaccination technique, Dr. Waterhouse said he "was struck with the unspeakable advantages" that smallpox vaccination could offer. (Ref: 1.)

Dr. Waterhouse then proposed its routine use for his fellow Americans through the usual channel of communications—a newspaper article. "As the ordinary mode of communicating even medical discoveries in this country is by newspapers, I drew up the following account of the cow pox, which was printed in the "Columbian Centinal" March 12, 1799," Dr. Waterhouse said. The Columbian Centinal was a semi-weekly newspaper published in Boston. Unfortunately, it has gone the way of so many other publications since then.

So has smallpox. The eradication of a naturally occurring disease for the first time in history can be described no other way than as a spectacular accomplishment. It was a milestone in the history of medicine and one that was duly recorded in newspapers.

But the eradication of smallpox is but one example of the progress of medicine and just one among thousands of subjects in medicine and dentistry.

Please join me in taking a step back for a broader perspective of why a greater need exists for information transfer in these two fields. I will focus on an historical overview of medicine and the press. Through such a perspective we can glance at medicine and society. The reason is that the serious press, when it is doing its job correctly, is a mirror of society.

Although the media thrive on controversy, other functions are also served. With regard to science, the media transfer knowledge and promote understanding, among other things. The quality of the reporting varies with the individual and the publication or program.

The ultimate aim is to help promote the practice of the best brand of preventive and curative medicine. The audience is not just the public but also the medical profession.

In effect, the media serve as a form of primary and continuing medical education.

Yet, for reasons that are not clear, many doctors in recent years have tended to overlook the importance of this relationship. Although human interest and welfare are probably the basic reasons for journalism's interest in medicine, as third party payments, particularly those from the taxpayer, have become the way of life in American medicine, funding has been the impetus for much recent interest. The funding reflects some revolutionary changes in the United States.

Taxpayers not only foot the bill for many of the costs involved in every day medical practice in American hospitals and offices, they also are the prime support for medical research and have been an important source of payment for medical education in the United States.

Medical research and medical practice once were conducted almost exclusively on a private basis in the United States. Even medical education once was primarily a private enterprise.

This is no longer the case. Now the American taxpayer funds a large share of the costs of medical practice, medical education, and medical research—and in our systems of government, if the public pays, the public has the right to accountability and the right to determine how those tax monies are spent.

That is why there is so much public discussion about the costs of medicine and physicians' incomes—not just the size of those incomes, but how they are derived.

Once upon a time, the physician was an individual entrepreneur in

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the strict sense. The patient-doctor relationship was rigidly confidential. The patient paid his or her fee directly to the doctor.

But in recent years, revolutionary changes have occurred in the financing of medicine. Today, a major share of the incomes of most American doctors comes from tax monies or third party contracts. However, the real growth has come from the recent expansion of the partnership between the United States government and medicine that started with the creation of the U. S. Public Health Service.

After World War II, the federal government had begun to become a partner in the construction of community hospitals through federal monies and since 1965, with enactment of Medicare and Medicaid, the United States government has become a partner in the care of patients in most of those hospitals. Even more recently, the U. S. government moved into the area of covering catastrophic illnesses.

Public funds in the form of taxes have also affected medical education. More than half of the medical schools in the United States are classified as publicly supported institutions. Medical education always has been expensive, but costs have risen much higher because of the increased complexity of medical care, research and technology, and the effects of those factors on the education of younger doctors.

All these changes have tended to make medical schools more dependent on public funds.

For several years until recently, we have had a record number of applicants for a record number of places available in a record number of medical schools, more of which have become publicly supported.

That, in turn, has spurred debates over the prospects of a doctor glut.

It also meant that until recently there were a record number of rejected applicants, many of whom have been deemed qualified to become M. D.'s by American medical school officials.

The problem has forced a more public discussion of the criteria for acceptance of medical students —the emphasis on examination scores, interviews, grades, and so forth. And it has led to a Supreme Court case—The Bakke Case.

There are many other aspects of medical care and medical education that you and the public know about because they have been reported in the press.

The reason they have made news is because they are important public policy problems and they reflect debatable points with taxpayer funding—a subject traditionally in the news in the United States.

In short, what is new in the United States is that medicine has become a public institution.

What that means is that when doctors receive their degrees, they not only join a learned profession, but also—if they accept public funds—they become public servants in the best sense of the phrase, subject to all the factors that govern individuals privileged to hold such positions.

With medicine now a public institution, as I have defined it, politicians debate the total expenditures allocated to medicine vis a vis education vis a vis defense budgets and so forth.

Points that once were discussed mainly on rounds and in hospital corridors have now become public issues. The reason is simple: as I said, the taxpayer foots a large share of the bill.

Accordingly, the medical community now is subject to the same scrutiny that the press applies to such American government institutions as the Defense Department or the State Department.

That is precisely why so much attention has been focused on scientific fraud recently. I think you would agree that fraud is wasteful, and if federal money is being wasted, that is subject to public accountability as well as journalistic inquiry and coverage. After all, those who break federal laws are subject to the penalties prescribed.

Clearly, cheating in science and fraud in the laboratory or in clinical trials are no longer subjects that medical scientists can deal with strictly as private matters. No longer can the head of the laboratory handle such matters by him or her self, allowing the individual to resign from the laboratory or medical school or institution to do research or to practice elsewhere and not report publicly in medical journals that the results of the previ-

ously published research studies are now in question.

Medical journal editors have a public responsibility that, unfortunately, they do not always live up to. For example, journals have declined to publish letters of retraction from authors.

Let us pause a moment to reflect on where medicine and dentistry stand today as compared to just a few decades ago.

Public health and preventive medicine practices were rudimentary. Research as we know it was more a dream than a reality. What little research was done generally was done by the physician in his spare time or when a freak opportunity presented itself. Those who chose to take advantage of the situation to satisfy their curiosity or to improve man's lot did so at their own personal expense.

Recall Dr. William Beaumont, who in 1825 saw the research potential in the hole that a bullet had created in the stomach of Alexis St. Martin.

Dr. Beaumont was an army surgeon who made his discoveries about fundamental aspects of human gastric physiology by nursing, feeding, clothing, lodging, and supporting St. Martin at much personal inconvenience and expense for nearly two years in return for observing his fistula, and without federal funds for his research. It was a different era. Attitudes were vastly different. So were the rules.

We all know that relatively little can be done today without special medical tools and instruments. Technology is an integral part of research and practice for all fields of medicine.

We cannot expect many more Beaumonts to appear on the horizon.

Nevertheless, financing of one's own research extended into this, the twentieth century.

In the 1920's, Banting and Best were sort of a transition when they sought to discover insulin in Canada. However, times had changed. Banting and Best worked as a team with others in an institution—the University of Toronto—that was publicly financed. In other words, Canadian taxpayers paid for the roof over their heads.

Few discoveries have involved as much controversy as the discovery of insulin, and for those of you who are interested I would recommend a recently published book by Professor Michael Bliss of the University of Toronto that is called "The Discovery of Insulin." (Ref: 2.)

The major turning point in the funding of medicine came after World War II. It brought great changes on medicine.

The pressing needs of a group of countries, unprepared for war and fighting against a threatened way of life, accelerated applied research. Responding to needs, researchers came up with penicillin. They did not discover it then, they went back to a breakthrough others had made years before. Still other scientists produced anti-malarial drugs, and surgeons learned the lifesaving benefits of blood banking —all from research funded by government in a period of ultimate stress: war.

When the war ended, alert public officials realized the potential of medical research for everyday medical practice. Congress poured money into research and medical and dental schools throughout the country.

A few deans saw potential dangers for the day when the faucet was turned off. But most researchers seemed awed by the sudden affluence. Then the competition began to build bigger and better research units. The net effect was an investment that paid huge dividends to society.

But where were the annual reports to the stockholders—the taxpayers?

News organizations covered some aspects. The gee-whiz nature of the science and medicine involved drew much of the journalistic attention. Medical leaders did not offer guidance. The press did not probe as deeply as it might have into the impact that federal funding would have on medical practice, medical education, the distribution of younger physicians, the costs of medicine, and other socioeconomic factors.

Many among the modern generation of doctors lost sight of what Dr. Waterhouse knew was so important: responsibly reporting advances in newspapers. Instead of supporting such efforts, many doctors looked down on their col-

leagues as publicity seekers. In my medical school days, the general attitude among doctors toward the lay press could be summed up in the phrase: fear and disdain.

Few doctors tried to communicate directly with the public. Physicians and scientists said they considered it more important to communicate with their peers in technical jargon than to the public in simpler terms. What happened? The public perceived many physicians and researchers as arrogant.

The situation was not confined to the United States.

In an article, "The Press and Us," Dr. Harry Nelson, the medical officer of Pretoria, South Africa, rebutted a statement made in another article: that "The press is capable of doing more damage to more people in a very short time than almost any other known organization." (Ref: 3.)

But Dr. Nelson himself said: "This statement about the press which is an oft-repeated accusation by many of our colleagues, is exaggerated and out of proportion to the good publicity which we do get and can still get from the press. Indeed, so much more could be done through the willing cooperation of the press to give the public intelligent, useful, and health-promoting information, if only we would make better and correct use of it."

Dr. Nelson went on to offer testimony to the rare instance in which he was misquoted, saying: "Pressmen are just as acutely conscious and conscientious about giving correct information as you or I. They also have to safeguard their own reputations and the security of their jobs. A newspaperman's success depends on his reputation for accuracy. It is perhaps true that we may be misquoted, but this is often our own fault, because we have not been careful enough about the way in which we give information."

There is another key area that all of us need to learn more about. That is human experimentation.

Recall that there is no constitutional basis for medical research. It flourishes because there has been a favorable climate for medical research over recent decades. The public, through its legislators and elected public officials, has given the medical profession a mandate to seek improved treatments and preventions for the myriad diseases that afflict us. That mandate comes from political campaigns and laws and translates into budgets.

I doubt that the day will come when people stop putting money into biomedical research. But climates do change. Groups expressing certain points of view can put thorns in the paths of what you think is a reasonable approach to progress.

It behooves the medical and dental professions to remember that point.

Moreover, the public, not the Mr. Rockefellers, is now the patron of science. Accordingly, there is an underlying need for the public to understand that progress in medicine and dentistry can only come from experiments on humans. If you expect support, you need to tell the public how research is done.

Remember, human experimentation is a relatively new phenomenom in history. It is a complex issue about which we know much less than we think we do.

For most of history, we physicians were mostly passive observors, able to do little to alleviate suffering.

Only in modern times have doctors tried to intervene with the natural history of disease, to try to find cures and to shorten the course of illness.

What the public and many doctors do not appreciate is that many died before the procedures and treatments became successful. Often we don't know how many because the specific facts are not reported in the medical literature. All too often, negative results are not reported in medical journals.

How can we expect the public, which is supporting medical research, to properly fund it if it does not understand that medical research involves the huge costs of making mistakes, following blind avenues.

Medical journal accounts sometimes contribute to the problem by not telling readers about how serendipidity, learning curves, experience, and host of other factors played crucial roles in making the advances.

Also, many medical advances were linked to controversy. Yet the

disputes are often omitted in the teaching in medical schools—as if they were not an important part of the process. Our knowledge of some controversies surrounding advances is limited because they were made without eyewitnesses and contemporary accounts. I submit that such over-simplified and romanticized accounts do a disservice to everyone.

One reason for the attitude I have described is the wish to keep the controversies associated with experiments within medical circles. Perhaps that was the way it was done when private interests paid the costs of medical research.

Now that the public is paying, I submit that the public is better served if it understands that the results are not always as neat and clear-cut as they often are portrayed.

In closing, let me touch on the mutual obligations between medicine and dentistry and the press.

From the perspective of a medically trained journalist writing for the lay audience, I would say:

First,

Doctors should learn to communicate in a way their friends can understand and without talking down to them. There has been improvement and in this regard I suspect that dentists are much better at this than physicians.

Second,

Doctors could do more to let the public know what the problems are and why the costs are what they are such as by talking more to local groups and civic organizations at lunch. I do not mean as lobbies for vested interest groups. Rather, I mean physicians and researchers speaking as humans, as interested citizens, speaking out as patient advocates.

Third,

There is a need for a more honest approach in the sometimes exaggerated promises and claims made by both journalists, doctors and health organizations for what medicine can do.

Let me be clear. This is a two way street.

Journalists' errors must be corrected by prompt replies from scientists and doctors. But scientists' overenthusiasm must be stopped by comments from peers lest there be public overexpectation.

What can readers or viewers do when they detect factual errors in reporting?

There are, of course, letters to the editor. But that is only one method. There are administrative letters that can be sent to the responsible executives at the newspapers, magazines, television and radio stations. They can point out specific errors of fact and distortions. When the executives receive enough such letters they are bound to have an effect because credibility is the basis of journalism. Once a publication or program loses its credibility, it loses its audience and its livelihood.

And if you think the management has not responded appropriately, then copies of those letters could be sent to journalism reviews for possible commentary and to the federal agencies that regulate the airwaves.

Fourth,

Journalists must probe more into the ways things are done in medicine because much research and patient care is publicly funded. Because we are societies with limited resources and fighting inflation, costs have become critical. One important function of journalism is to cut down on waste and to improve efficiency.

Fifth, and not the least important:

Doctors must learn that it is honorable to speak out to the press, to provide facts, to correct errors, and to give reasonable testimony on controversial issues.

In concluding, may I remind you that the times and reasons are different, but the principle is not. Do not overlook what Dr. Waterhouse said about communicating the news of medicine to the public 189 years ago.

Thank you for listening. △

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Eighth Annual Dunning Memorial Symposium

Television

R. Kim Schiller*

Following Dr. Altman, as you can imagine, is a little intimidating. What could I possibly have to contribute compared with the comments of such a well known and respected medical journalist? After all, I'm just a TV Producer.

But in a sense, that's the whole point of my being here today. We have a saying in television news. It usually goes something like this: as the producer, you're sitting in the back of the room, with a telephone at each ear, speaking into a microphone into the anchor's ear. Some momentous event is about to happen live on the air and you're responsible for how the information is transfered to the viewing public. At the height of the intensity, the man or woman sitting in the front of the room, who's pushing the buttons and physically causing things to happen will lean back in their chair and repeat *the* phrase: "Hey, it ain't brain surgery!" It has a way of putting things in perspective. After all, television is not *that* difficult, and if things go wrong, at least you're not going to maim or kill anyone. As the saying goes, it's only television.

For the past year, I have been in the wonderful position of creating, developing and producing a television news broadcast devoted to health and medical news. When they lean back and tell me "it ain't brain surgery" I can just smile at them because sometimes it is.

On *The Health Show* we're not likely to maim or kill anyone, but health and medical information makes a difference to people, and sometimes it can make a life or death difference. It's information people can do something about in their own lives.

When a tanker is hit in the Persian Gulf, and it's reported on the evening news, most people absorb the information and form some opinion of it. But there's really nothing they can do about it. If the medical research community comes out with guidelines on cholesterol numbers and it's reported on the news, people can actually do something about it. They can go get their cholesterol checked, they can work with their doctor to develop a low-cholesterol diet. They can start eating oatmeal and stop eating saturated fats.

This is all by way of explaining something you already know. Information about health and medicine is very important to most people. And the medium of television is one of the most powerful and effective ways to transfer such information to the public. Research shows that people get most of their health news from television. Just as an example, while thousands of people can read Dr. Altman's pieces in the New York Times, literally millions of viewers see health news on Good Morning America, or The Evening News. The little Health Show which airs in the middle of the day on Saturdays has an average viewership of 2-million people. In a three month period, we received over ten-thousand calls to our 800 number from viewers looking for more information about subjects covered on the show. That puts a lot of responsibility on our shoulders to get it right, and I think even more importantly, to put it into perspective.

Today, as a representative of the first network news show devoted to health and medical news, I'd like to give a thumbnail sketch of how decisions are made and some of the procedures we go through to put on the Health Show weekly. I'd also like to talk about a disturbing trend which, in different ways, affects both the people who would like to see their stories on television and those who pick and choose what should be broadcast.

Unlike what most of you are involved with, this is not a science. It is a group of professional journalists producing a broadcast with the express purpose of reporting medical and health news and providing information to a public clamoring for more. Mistakes are made, sometimes misleading information even goes out over the airwaves, but we try and we most often succeed, and besides, it ain't brain surgery.

Let me first give you a little background about myself, not because it's very interesting, but because it's part of a point I'm going to attempt to make. I have a Bachelor of Arts degree from a public University in California. I was not a science major, and apart from a natural affinity for the sciences I have no expertise in the field. I started working in television news when I was 18 years old, and I've been doing it ever since. For you calculators out there my first summer in television I answered phones at the local CBS affiliate in Atlanta during the Watergate Hearings in 1973. Since then I've done a lot of things, but as I said at the beginning, I'm just a television producer.

That may be cause for alarm for you out there who are thinking, this woman is in control of a broadcast on health and medicine that reaches millions of people and she has no scientific background. Let me just say, number 1, I have a lot of help from people who do have a

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scientific background, and number 2, news is news, and I could be called an expert in news. The same process of decision making that goes into producing evening news, goes into The Health Show. It is a complicated series of actions and reactions which we in the business refer to as news judgment. My job is to make informed decisions based on available resources and information. My job is also to understand what an audience cares about and what would be interesting and even entertaining for them to watch. If people don't continue to watch I have failed.

A scientific background wouldn't hurt, but it also is not absolutely necessary. Many of our viewers don't care about science, they want someone to tell them what their choices are in a way that makes sense. Any television news should be a balanced, fair, objective rendering of the facts, and that's what I try to provide along with interesting presentation.

I have the highest regard for Dr. Relman and the New England Journal of Medicine, but I guarantee you, if the American people relied on that esteemed publication for their medical news, we would have a whole slew of ignorant citizens. One of my duties is to sift through the Journal every week, and I know for a fact, the most colorful thing about the publication is the big red embargo stamp on the front cover.

I'd like to show you a tape in a few minutes, because I hope it will do two things . . . give us a common reference . . . and give you all a break from having to continue to listen to me indefinitely. You will be seeing the first two segments of a Health Show which aired at the beginning of the month. I'm not presenting it as an example of what a good show we do, unfortunately it was not one of our better shows, but it is illustrative of several points I'd like to make.

But let me explain first, to those of you who haven't seen our show, what we attempt every week. Our first segment is used to report the top medical news of the week. It often includes a report from ABC's Medical Editor Dr. Tim Johnson. Tim, besides being our medical guru, also has the job of translating and putting into perspective any major research published in the medical journals each week. When the New England Journal of Medicine reports on the possible misuse of carotid endartarectomy in stroke prevention, it is Tim's job to explain to our viewers what that mouthful means and why it should matter to them. We also report whatever news is deemed appropriate and useful to viewers.

Each week we also broadcast a piece from our medical correspondent George Strait. We fondly refer to this segment as the disease of the week. Of course, that's not really fair, George has a free reign to report on just about anything from the big medical news story of the week, to ethics, to single individuals coping with an orphan disease.

The remainder of the show usually includes an informational piece on nutrition and one on fitness, plus one or two other feature stories, contributed by our doctor-reporters or by ABC News correspondents. These feature stories can be anything from investigative stories on anti-depression drugs, to the latest "gee-whiz" technology, to whether your children should have their tonsils removed. The TPA story is clearly one of the big medical stories of the 12 months. We chose to report on it based on the same criterion any news broadcast would use for any ongoing story. Heart attack is a very common killer, and the larger area of heart disease is obviously of concern to the public. In the past we had reported on the experimental use of the genetically engineered drug. We followed the TPA story through it's FDA approval process and it makes sense to report the latest news that medicare would not reimburse hospitals for use of the expensive drug. The reactions of both the hospital industry and the Health Care Financing Administration were reported on this particular show. So far so good.

Another troublesome story is also an example of something that worries me a great deal: the way stories are pushed by interested parties. Hypertension effects 60 million Americans. It is clearly a legitimate health news story. The Swedish study showed that BETA blockers, in some cases, were more effective in reducing high blood pressure than diuretics. The results were published in the respected medical journal JAMA. It was also a good study, based on our criteria of such things. The study was comprehensive, the study group relatively large, and it was done by a respected legitimate medical research team. So far so good.

The problem, in my view, was the way the story was provided, and the trap that any news organization especially a broadcast news organization can fall into. Some able public relations work made this story more tempting than it probably should have been. They provided all the element necessary to broadcast the story. This is what happened.

There was a news conference

held in New York to announce the study results. What we call in the business a news peg, a reason to do the story. The production company the Journal of the American Medical Association uses provided video related to the story, a so called video press release. In addition they made the study director available, by satellite, to speak live to any television organization with the money and capability of taking the signal out of the air.

It's pretty simple these days. The company rents a studio, buys satellite time, sits the good doctor in the studio and offers his time to all takers, one after another. A television organization gets something that time and money constraints would normally make impossible, it gets an interview with *the* principal in the story without any effort and very little expense. In return, the study can get a huge amount of publicity, and perhaps unwarranted emphasis.

If you remember we took great pains to put the study in perspective, but the mere presence of Dr. Wickstrand on our broadcast gave the study and BETA blockers added and perhaps disproportionate significance. In hind sight we should probably have declined the offer of a live interview. I don't think there was any harm done, at best the whole thing was slightly confusing. At worst, in my view, we didn't provide our audience with enough useful information.

When a news organization is deciding what to report a number of questions are asked. Is it news? Is the story legitimate? Do people care about it? What are all the sides? Who if anyone stands to benefit? Is there a way to illustrate it?

Sometimes the story answers all the questions, but in television news, if the answer to the last question is no, you've got a problem. A medical or dental procedure may be revolutionary, it may be really big news, but there has got to be a way to show it on TV or it loses it's impact. Producers can and do get around this problem in a variety of ways. If not, you would never see a story about colon cancer or ostomy or impotence. But the easier it is made for them the more likely the story will get on the air.

I'm here to tell you if you want a story to get on the air, provide video. It works better than anything. Some stories are so big and affect so many people that they will be reported no matter what. Stories that aren't so big have a much better chance of getting on if video or live elements are provided.

We live in the era of the video press release, and in my view it is troubling. You have to understand that the television news business is changing. It costs a great deal of time and money to do television. The networks are spreading their resources out over more and more broadcasts. Many local stations don't have that many resources to go around as it is. If elements are provided via video press release all that time and money can be saved. It makes a story particularly tempting when there's a convenient way to illustrate it on television.

You may be wondering what the big deal is. So a public relations firm or a hospital or a research facility provides a video press release? The problem is that good journalists don't publish press releases, and neither should good television journalists broadcast press releases. People who put out a press release have an inherent self interest. They want public attention. If the story warrants attention a reporter may choose to use elements of the press release after confirming their validity, but those elements should be part of the story not the whole story. And the story should be reported and confirmed first hand not bought hook line and sinker from an interested party.

We journalists have a responsibility not to let the convenience of provided elements overly effect our judgment of whether or not to air a story. There is a big difference between providing information to the public and providing publicity to an interested organization.

I showed you the George Strait piece because it also raises some pertinent questions. I will let his conclusions stand. Reporting medical and health news is a sometimes confusing proposition, and in the final analysis it is the nature of the beast. As George said, there are no absolutes in science and journalists and scientists have a responsibility to put their work in perspective. Perhaps these issues will give us some fodder for the discussion that follows.

Medical news and television live in precarious balance with one another. Our viewers tell us in many ways that health and medical news is important to them, they want more of it, and we are attempting to provide it. Our biggest challenge is to provide them with useful information while weeding out blatant attempts for publicity. We are hampered by our own constraints of time and money and sometimes lack of expertise. But it is my great hope that responsible journalists with the right motives can provide good information to people, get it right, and put it into perspective. And that we can succeed more often than we fail.

Afterall it's not brain surgery, but it's close. △

Eighth Annual Dunning Memorial Symposium

The Role of the ADA in Information Transfer to the Public

David McMullen*

For almost 150 years organized dentistry has been a leader in the field of public information. Our past, present and future communications activities are linked together by a unifying theme: dentistry's commitment to the health of the American public. This article will examine what we have done, what we are doing, and what we *will* do in our public information efforts.

According to R. W. McCluggage, author of *A History of the American Dental Association,* our communications efforts began with the founders of the American Society of Dental Surgeons, who in 1840 "assumed a whole range of professional responsibilities. Their vision included the problems of relations with the public (and) public information . . . ."

In 1923, the ADA House of Delegates created a Department of Dental Health Education.

The new department's early educational efforts included preparing and distributing printed materials, photographic slides and motion pictures on dental health.

In 1928, the Association became an active participant in National Child Health Day and began exploring ways of working more closely with such groups as the American Medical Association, the Parent-Teacher Association and the American Public Health Association.

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I wish to acknowledge the valuable assistance provided by Alanna Gordon, Manager of Editorial Services, American Dental Association.

Our modern public information and education program was born in the aftermath of World War II. A report of the ADA Bureau of Public Information, submitted to the House in 1947, highlights a sophisticated communications program.

For example, the bureau was responsible for:

- Preparing and distributing news releases on scientific articles and editorials appearing in the *Journal of the American Dental Association;* speeches and reports of ADA officers and staff members; and conferences, workshops and the ADA's Annual Meeting;
- Advising ADA members and officers on how to solve public relations problems;
- Preparing and reviewing talks, pamphlets, special reports, public statements and policy matters;
- Correcting misinformation and discouraging dissemination and publication of erroneous, misleading and undignified statements about dentistry and dental health;
- Planning and implementing publicity programs for a limited number of state/local meetings;
- Developing a publicity series for state society distribution to local newspapers;
- Developing radio scripts for local programs;
- Providing information to members, and responding to their complaints on topics ranging from health insurance to organizational details of the ADA;
- Publishing a bimonthly *Clipsheet* containing cartoons and news stories on dental health.

With the birth of National Children's Dental Health Month, the ADA launched a program of national scope that achieved a degree of success unparalleled at that time. As the program expanded from a single day in 1949 to a full week in 1955, it reached millions of youngsters born during the Baby Boom era, and their parents and teachers as well. During these same years—the formative years of a huge generation—dentistry discovered the value of fluoride, and incorporated it into our public health message.

For baby-boomers such as myself, organized dentistry's message of prevention became almost as much a part of growing up as the Mickey Mouse Club or Charlie Brown. National Children's Dental Health Month, which will celebrate its 40th anniversary next year, remains a cornerstone of our communications activities.

Another cornerstone began when we started promoting better dental health for athletes. In 1959, the Bureau of Dental Health Education was authorized to form a joint committee with the American Association for Health, Physical Education and Recreation to learn more about oral injuries among football players.

We wanted to know how many injuries were taking place, how serious they were, and whether protective equipment could eliminate or reduce these injuries.

The investigation revealed that

when high school football players failed to wear faceguards or mouth protectors, half of all injuries occurred in or around the mouth. Every player had one chance in 10 of sustaining such an injury during the playing season.

As a result, the ADA House of Delegates passed a resolution asking all agencies concerned with interscholastic athletics to urge that mouth protectors be required for body contact sports.

Moreover, the resolution encouraged that mouth protectors be made individually, for a proper fit. And the resolution directed the Association's agencies to do all they could to implement the recommendation. Vigorous communications activities were integral to this effort.

By 1962, the Association had achieved impressive results. The National Alliance Football Rules Committee mandated the use of mouth protectors and faceguards. This alliance included the National Federation of High Schools, the National Junior College Athletic Association and the National Intercollegiate Athletic Association. Later, the National Collegiate Athletic Association adopted a similar rule.

The public health payoff was tremendous. By 1967, high school football players governed by National Alliance rules sustained 25,000 to 50,000 fewer oral injuries than would normally have been expected. As someone who played high school football in the early '60s, I sincerely appreciate the efforts of the ADA in this area.

By the early 1980s, about 3 million football players wore faceguards and mouth protectors. As a result, more than 200,000 injuries a year were prevented—a conservative estimate. Through public information, we did a good thing for public health, raised the profile of dentistry in the public eye, and showed how effective our communications efforts could be.

One of the key population groups to benefit from our promotion of mouth protectors were the baby boomers—the selfsame group who grew up with National Children's Dental Health Month and our fluoridation campaign. Later, many of these children would be labelled "Yuppies," and become the most sought-after consumers of the '80s.

As the baby-boomers grew up and became more sophisticated, so did the ADA's television public service announcements, progressing from basic black-and-white cartoons in the '50s to sophisticated state-of-the-art computer imaging today.

In 1988, the ADA directs a comprehensive national communications program. Our mission is simple—to inform and educate the public about the basic principles of good oral health. Our programs are multi-dimensional.

Vertically, they are designed to involve all levels of organized dentistry, starting with the individual practicing dentist and including a role for local, state and national societies, as well as dental educators and dental manufacturers.

And a program that is vertically integrated is a program that marshalls all the creativity at its disposal.

The Communications Division develops resources for use by all three levels of the tripartite structure; then, with the help of our 54 constituent societies and 501 component societies, representing 140,000 members, we implement our communications efforts.

Horizontally, we strive to utilize every available communications channel to take our message to the 240 million dental consumers in this country.

Today, we are involved in a variety of programs. Some of the newest and most innovative include:

- National Senior Smile Week, designed to reach one of our fastest-growing population groups. The number of adults over age 65 will rise 30 percent by the year 2000, to 36 million people. This age group is better off financially and better educated than it has ever been.

Moreover, their unmet need for dental care is substantial. Root caries, periodontitis and edentulousness are common. We want these Americans to know that losing one's teeth is not an inevitable part of aging, and that, with proper care, "A Healthy Smile Can Last a Lifetime."

This is the theme of National Senior Smile Week, celebrated in May.

The ADA has developed extensive Senior Smile Week materials for constituent and component societies, including a program planning kit containing ideas for activities, publicity and presentations, as well as a four-color poster and brochure.

Individual practitioner's guides are also available. The Association is also distributing a radio public service announcement, featuring Lloyd Bridges, to 3,500 radio stations across the country. Our goal is to achieve maximum impact for the Senior Smile Week campaign.

By the way, the campaign recently received the National Volunteerism in Action for the Aging Award, sponsored by the National Council on the Aging. The program was cited for responding innovatively to the needs of older adults, for expanding services to them in a measurable way, and for potential service as a model to other national organizations and their local affiliates.

Other innovative communications activities the Association offers include:

- National newspaper and magazine supplements in publications ranging from *U.S.A. Today* to *Cosmopolitan,* informing millions of readers about everything from oral hygiene to cosmetic dentistry.

Dental advertisers approved by the ADA pay the costs of these supplements, while the Communications Division prepares the articles. This kind of high-gloss publicity doesn't cost the ADA a cent.

- Workshops that teach dental society leaders how to improve their skills as spokespersons and in public relations. These even include on-camera training and strategies for reaching target audiences. Some of our trainees have appeared on nationally syndicated shows like "Donahue."
- An award-winning rock video, a high-impact, cost-efficient piece that entertains and informs teenagers about the dangers of smokeless tobacco. The video has been distributed to schools, cable television outlets and community colleges. It has even been shown at movie theaters, as a short feature before the main attraction.
- An extensive library of patient education materials, some in Spanish as well as English, covering subjects as diverse as periodontal disease, bonding, veneers, TMJ, orthodontics, endodontics, amalgam and X-rays. Many publications are targeted to the interests and needs of a specific group—children, teen-agers, parents or seniors.
- We unify our efforts with state and local dental organizations with *Communications Update,* an award-winning newsletter that brings these societies up to date with communications activities at all three levels of the tripartite structure. It also reports on trends shaping the field of communications, and in turn, our society.

If the ADA has one continuous, unifying theme, it is prevention. This theme stretches throughout the history of our communications activities. As times have changed, we have reinterpreted and expanded that message.

Once, prevention meant brushing your teeth, avoiding sweets, and seeing your dentist regularly. Today, it means so much more.

It means wearing mouthguards; flossing your teeth; using fluoridated toothpastes and mouth rinses; supporting community water fluoridation; utilizing sealants; avoiding tobacco—especially smokeless tobacco; and understanding that cariogenicity encompasses a broader range of foods than simply refined sugar.

Finally, I would like to turn to a more difficult aspect of our public information program—AIDS.

And prevention is also the key word here—prevention of misinformation.

In fact, the epidemic of misinformation is, some ways, as serious as the epidemic of the virus.

To correct misunderstandings, the ADA recently joined the American Medical Association and the American Hospital Association in a Washington, D.C. press conference sponsored by the U.S. Department of Health and Human Services.

We emphasized that there is virtually no risk of transmission of AIDS in the dental office if proper infection control procedures are followed.

In addition, the ADA's public information and education department combats misconceptions about AIDS every day, working with consumers and the news media to set the record straight.

Also, we offer dentists a special patient education brochure, that explains infection control procedures, and why they are needed. A companion sheet, designed for the dentist, provides sample answers to sensitive questions patients may

ask. Prevention of misinformation about AIDS is as important as prevention of oral disease.

Now that we've discussed the past and the present of communications with the public, I'd like to share some perspectives for the future.

If the key word in our activities up until now has been *"preventive,"* I'd like our future activities to be *proactive* as well. A recent article in *Editor and Publisher,* written by Bill Cantor, defines well the proactive approach. It says:

> "Emphasis on public relations . . . is shifting from just communications toward motivating, reinforcing, and modifying human behavior. Increasingly, PR is expected to make something tangible happen."

Moreover, a proactive approach means that, while continuing our traditions, we must also use them as a springboard to develop new messages, new approaches, new programs.

How can we appeal to an increasingly health-conscious public . . . a public that shows a trend toward impulse buying of many things, but not of dentistry?

How can we focus our message to reach publics we may not have approached in the past, such as adult males and single women?

How can we tap the resources of corporations, government agencies, other national associations and social agencies? How can we expand special project opportunities beyond National Children's Dental Health Month and National Senior Smile Week?

And what important questions are we forgetting to ask? Until we ask the right questions, we can hardly expect to discover the right answers.

For example, in spite of all our proactive efforts on behalf of fluoridation, a recent University of Michigan dental school survey indicates that, though school teachers could identity fluoride as an oral health aid, they could not rank its effectiveness in preventing dental caries. In planning our communications activities, we need to ask ourselves, "Why not?"

Clearly, many opportunities for better communication are there for us. A recent survey of 104 television stations published in the *TV News Journal* found that 45 percent of them planned to increase their coverage of health news; that 40 percent of them already include health news in their broadcasts; and that 84 percent expanded health coverage in the last year.

Moreover, a recent article by Jagdish N. Sheth, published in the *Public Relations Journal,* underscores the tremendous potential proactive communication activities can have:

> "Marketing experts believe that health preservation will become the largest American sector in the near future, surpassing the automobile and housing sectors, which drove the American economy in the '40s, '50s and '60s.
> "This health consciousness will not be limited strictly to the physical care of the body, but will extend to all phases of human life, affecting the foods consumers eat, the beverages they drink, the clothing they wear, the housing in which they live, etc.
> "The question, 'Is it healthy or is it not healthy?' will be a major force in the economy.
> "As a consequence, interest in physical fitness will continue to rise, as will everything related to health. This phenomenon can already be seen in the fact that it is almost impossible to sell food, housing or even clothing without some emphasis on their health benefits."

However, I would add, there is a widespread tendency among Americans to overlook dental care as an important part of overall fitness and health. So how do we turn this situation around? Recently, the Board of Trustees considered a marketing program designed to dovetail with these trends.

The program, which originally included both paid advertising and a public relations campaign, was modified last month, because the cost of a national advertising campaign was simply too expensive.

However, the Board of Trustees has directed my division to intensify our public relations efforts. You will be hearing a great deal more about our efforts in the future.

I'm looking forward to taking an already successful communications effort and helping it reach even greater levels of success. △

Eighth Annual Dunning Memorial Symposium

The Health Sciences Library of the Future

Rachel K. Anderson*

What is a library? Generally, one has in mind a place which houses books, journals, and similar reading materials. The word "library" frequently conjures up the image of a room or a building with certain physical attributes which create an environment conducive to reading and study. For some, "library" evokes a particular ambience. There are those who regard it as a refuge. Some people value it as a retreat, a place where they can go to escape from telephones and from other people.

The most common dictionary definitions of "library" relate to collections of books and to buildings and rooms which house these collections. We generally think of libraries as places with fixed boundaries to which one goes. But libraries are not just books and places. I would like first to call your attention to the library as a function, since it is on its functional attributes, not its physical characteristics, that many aspects of the future health sciences library are predicated.

The key library function is providing access to information. A library is not just a repository and should not be equated with an archive. A library in an active academic, or other medical, institution is a dynamic organism and its major objectives are to bring constituents and the information they need together, to develop an information access infrastructure for scholarship, and to develop systems which will enable clinicians, researchers and students to get the information they need, when they need it, and where they need it.

Historically, the format in which information has been packaged has, in large measure, defined the extent of its availability. The contents of a clay tablet or of a manuscript could only be available at a single place at a given time. The printing press enabled identical information to be in multiple locations simultaneously, but geography still imposed restraints on access. One had to have the volume in hand; either the book came to you or you traveled to a copy of the book.

The advent of computers has stimulated visions of actually bringing information to wherever it is needed, whenever it is needed, not bound by the limits of buildings and scheduled hours. In effect, we will be able to take the library out of the library—take the library function of providing access to information out of the library place.

The future health sciences library can be as close as the nearest microcomputer or terminal—in offices, laboratories, homes, and at points where clinical care is delivered. What will be available ranges from machine-readable versions of books and journals, now commonly used in print, to capabilities of capturing and managing information which are not even conceivable without computers.

The use of computers to manage biomedical information dates back almost thirty years. In 1960 the National Library of Medicine began to transfer parts of the *Index Medicus* to a computer. This was the genesis of MEDLINE, a computerized index of citations to articles from about 3200 biomedical journals published in the United States and abroad from 1966 to the present. MEDLINE includes all the information from the *Index to Dental Literature* as well as abstracts for most articles.

The view I present of the future library assumes that computer workstations are ubiquitous and that one's microcomputer becomes, in effect, a personalized desktop library. Here are some ways you could use it in the course of the day.

- You could search databases such as MEDLINE or *Current Contents* from your office, lab, or home at whatever time of day or night is convenient. After identifying relevant articles, you transfer their full citations and abstracts directly into your own computer where they are automatically interfiled with citations already residing there to create an electronic reprint file.
- When you run into problems

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while searching, online consultation with trained librarians is available in an interactive mode.

- A profile of your interests resides on the main library system. Whenever the database is updated, you are notified of new publications which match your profile, and you can select and transfer those of interest to your own file without the additional effort of initiating a search.
- When preparing an article for publication, you call the references up from your own file, and have them verified for accuracy against the master database. These journal citations are formatted by the computer into whatever bibliographic style your chosen journal requires. Should an unfortunate rejection by that journal necessitate subsequently submitting that article to another journal with different requirements, the references can be automatically reformatted to another citation style.
- When you want a copy of the full text of an article, it is obtainable via your microcomputer, without going to the library.
- You can similarly search the library's online catalog and download relevant records into your own computer, an activity which could be considered analogous to the verboten practice of pulling cards out of the library's card catalog.

The library will also be brought directly to practice sites and offices by way of clinical information system which have decision-making functions that are linked to knowledge bases derived from the current literature. I will illustrate this with a brief description of what we are planning to develop at the Columbia-Presbyterian Medical Center as part of the IAIMS project. The Integrated Academic Information Management Systems project (IAIMS) is a program initiative of the National Library of Medicine. Funding under this grant program is available to encourage medical centers to take institution-wide approaches to managing their information resources, including the related computer technology. The intent is to develop strategies that will make information more effectively accessible for education, patient care, research, and administration and that will provide for a system of comprehensive information access.

The Presbyterian Hospital is installing a computerized clinical information system which will have a broad range of applications, including: admissions, discharges and transfers; laboratory orders; medical records; scheduling; outpatient clinics; pharmacy; and radiology. This system will not only enable ready entry and review of patient data from bedsides and nursing stations, but will have decision support capability through its linkages to a knowledge base which is continually updated. This knowledge base will, ultimately, encompass several components: knowledge frames, which are modular distillations of current expertise; citations to the current literature; and an electronic textbook. As information is entered in the patient record it may trigger alerts, suggestions, or lists of differential diagnoses which are displayed. The user would have the opportunity to invoke the journal citations underlying the knowledge displayed and could further invoke full text on points of interest.

While the primary library function, access to information, is being accomplished through new modes, the literature itself will also be available in an increasing variety of formats. These include:

- electronic journals;
- print articles with machine-readable appendices of the raw research data;
- databases and reference works on compact disk;
- online textbooks which are updated continuously, without the several years' delay inherent in print publishing;
- hypertext, which allows for nonsequential reading by means of links connecting parts of electronic documents to related information in other parts or in other documents.

Dozens of health sciences databases marketed by a variety of vendors are available today and are already heavily used, not only by librarians but by health practitioners, administrators, researchers, and students. However, to use them effectively requires training and familiarity with system protocols and thesauri. Use of these online databases will continue to become easier and less intimidating to novices. Instead of having to select, in advance, the most relevant database and employ specialized search protocols and vocabularies which vary from file to file, users will be able to phrase questions in their own terms. Expert systems will identify the most appropriate databases, translate the request into the requisite search formulations and run the request against the databases.

Much of what I describe is not only under development, but in use, though some of it just in prototype. While development of new formats of information and of computer access to them is progressing rapidly, implementing many of these changes will not come about easily. The stumbling blocks are not technological; the technology already far outstrips what we can apply. The impediments are organizational, behavioral, and social. I will note just a few of them here.

We have a lengthy and valued tradition of free library service. Libraries have never really been free; they are actually quite expensive enterprises. Libraries, however, are perceived as free by faculty, staff and students in academic institutions and hospitals because they are generally provided and funded as a central function by the institution. Library access and services are available by virtue of one's appointment or matriculation.

The health sciences library of the future cannot be so conveniently conceived. One major issue will be how to budget for the information sources themselves. Libraries are now able to fund print sources based on the predictability of their cost. We purchase them in advance of use and put the volumes on the shelf. They can then be used by the entire constituency as much as, and as long as, needed. No meters measure how much use any particular item gets or which articles are ever, or never, consulted. Vendors of online information charge on the basis of actual use—how much of the file is consulted, how many citations are retrieved, or which articles in an electronic journal are requested. At present, online files with their attendant use fees account for a relatively small percentage of the literature. In several years, though, computer-based literature will constitute a significant portion of our information resources. Funding the library becomes more complex with such incremental and unpredictable pricing.

This can be addressed, in part, by mounting some databases on institutional computers, thereby incurring fixed predictable costs. The files are then available for unmetered use in a manner comparable to buying books and putting them on the library's shelves. For example, we have recently mounted a portion of MEDLINE on CLIO, the Columbia Libraries online information system, and it is available for members of the Columbia-Presbytrian community to use on terminals in the library or from their own machines over the local network. However, only a limited number of information databases are used heavily enough to justify such treatment, and we will regularly need to consult many hundreds, and eventually thousands, of other computerized health sciences sources on an as-needed, or pay-as-you-use, basis. We confront here the issue of shifting the burden of cost from the institution to the individual user. There is a growing recognition of information as a commodity. Its marketability poses an inherent danger of the possible emergence of information "haves" and "have nots", even within the same institution.[1]

There is an array of other policy issues to be addressed with the proliferation of electronic forms of information. Among these are questions relating to its ownership and who may access it, in addition to concerns about security and privacy. We may need to consider the ramifications for the journal peer review process as widespread use of electronic media speeds it up

with rapid transmission and communication.

The issues that will profoundly affect what information libraries will be able to provide to the health sciences community in the future do not all emanate from new technological capabilities. The journal remains the primary mechanism of information transfer in all the health sciences. A task force, recently convened by the National Library of Medicine, recommended the use of permanent paper for printing biomedical literature as it concluded that "paper will remain the premier medium for the exchange of information for the foreseeable future"[2]. Journals constitute from 60–70% of health sciences libraries' collections. However, various trends in journal publishing and pricing are causing substantial reductions in our purchasing power and are hampering libraries' abilities to provide convenient access to the scholarly literature.

The continuing decline of the dollar has dramatically reduced the purchasing power of all research libraries. The major impact has been on the periodical literature in the sciences. A far larger proportion of health science journals is published by foreign publishers than is evident from the language of their contents. For example, a library such as ours subscribes only to a modest number of foreign language journals. Nevertheless, 48% of our subscriptions and 64% of our funds go to foreign publishers, primarily western European, and are, therefore, adversely affected by the dollar's fall.

Journal costs have also risen dramatically in the last few years because of discriminatory pricing practices of some foreign publishers. American libraries have been routinely charged prices which are 50% to 200% higher than those charged to subscribers outside North America.

The prices of domestic subscriptions also continue to rise at rates far in excess of general inflation. Last year's prices were 10.6% higher than those for 1986, and 1988 prices are another 11.4% higher than last year's. We may be experiencing a climate in which journals adjust their rates upward so as not to be underpriced vis a vis the rest of the market. Several months ago I received a market research call on behalf of a respected journal, published by a society. The questions, essentially, attempted to ascertain how much of an increase we would tolerate without it provoking cancellation of the subscription. The caller's response to my inquiry about the relationship of the proposed prices to the increase in journal production costs was that costs were not precipitating this pricing but, rather, comparisons with similar, higher priced journals were.

Another important factor which merits consideration is the continuing proliferation of new journal titles. Why are new journals started? I thought it would be interesting to look at the rationales given for starting new journals and reviewed the introductions to several dozen biomedical titles which began publishing during the last few years. There are, no doubt, many unarticulated reasons for starting a journal, but among those that were noted in introductions to the first issues, several recurrent themes became evident:

- there are those who identify the need to narrow a subject's focus, noting that there are more papers on a given highly specialized topic appearing in the literature and being presented at meetings;
- others identify the need to broaden the focus, to take a multi-disciplinary approach and to bring together work from several fields;
- some maintain that there is no single source for articles on the given topic;
- others say there are journals, but there is a need for alternative avenues as the journals in existence do not have enough space for all articles;
- in several instances a new discipline has evolved;
- or a new society of specialized interest is formed and a journal is a symbol of its maturity;
- some journals note a need to encourage people in that particular specialty to write.

Quite a few of the editors of new journals start by offering their apologies. Some illustrative opening lines of maiden editorials are: "Why a new journal?" "Do we need yet another journal in this field?" and "You're probably thinking that the last thing you need is another journal on your desk!"

The market for many of these new journals is not large. For many of the highly specialized health sciences titles it would not appear to go far beyond research libraries, and the price is then very steep because of the potential market's limited size. A new and additional subscription is an expensive commitment for a library to undertake, and it entails many costs in addition to the subscription price.

Are we getting our money's worth? Starting a new journal, however legitimate the need, does not result in a corresponding increase in the supply of quality articles available for publication. What is proliferating, the substantive content of the scientific literature or the packaging? Do the many new journals just create the slack and space which exacerbate the problems of repetitive publication and of what is referred to as "salami" articles[3]—when the data are sliced into ever thinner pieces to be served up in more articles, thereby inflating the author's list of publications?

The spiralling cost of the fundamental literature is a critical factor as we attempt to envision the future. Libraries have an all too finite bottom line of resources—staff and space as well as outright funds—to allocate among competing demands. The proliferation and rising price of the literature will profoundly affect the breadth and accessibility of the information the future library will be able to provide.

I hope I have not conveyed the impression that I am predicting the demise of the library as a place for study, contemplation, and research, or the imminent extinction of print journals and books; I am not. Libraries, books and journals will continue to be important means of information transfer primarily because they are more effective, more efficient, or more congenial for certain functions than computers and other media are.

New machines and formats enable us to take advantage of new capabilities. They do not necessarily displace the old. Some of you may recall that twenty five or thirty years ago there were rampant predictions that the availability of microfilm meant the end of books and the compression of enormous research libraries into a few rooms. That, clearly, has not happened. Microfilm is now being used for purposes for which it is most suitable. Likewise, though the *Index Medicus* has been available online for over twenty years, the print version has not disappeared. At this medical center you can use at least four or five different computer versions of MEDLINE, some of them entail fees for use and some do not. Nevertheless, judging from the way the volumes start to fall apart after only a few months, it is quite evident that the library's two copies of the printed version continue to get very heavy use.

Libraries are becoming aggregations of media. Each new format, after much initial hoopla, fills a functional niche for which it is well suited. The computer is opening up new possibilities and adding choices, but books and journals will continue to be published and used. While one will be able to take advantage of the services the future library will deliver to local workstations and desk tops, the library as a place to go for study and research will continue as a most viable option. Our challenge will be to integrate new and current technologies in ways which provide the most effective access to diverse sources of information. △

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Eighth Annual Dunning Memorial Symposium

Responses of the Health Professions to Information: Dilemmas and Contradictions

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Information and knowledge (I will not distinguish between these terms) are created, reviewed, disseminated (or transferred), received, and acted on in a social system. One critical part of that system is the *research scientist.* Another is the *clinician* or *clinical practitioner.*

The research scientist uses knowledge—to create more knowledge. We say he or she "pursues" knowledge for its own sake. The clinician, on the other hand, uses knowledge—we say he or she "applies" that knowledge—to help people with a problem, or to help them prevent a problem. We call these people "patients," or "clients."

This difference in how research scientists and clinicians view and use information is critical to understanding how the problems of information transfer differ between the two groups. I will focus on the *clinical practitioner.* The quantity and quality of information transfer, I believe, are more problematic for the clinical practitioner than for the research scientist.

What does it mean to be a "clinician"? I would like to discuss the idea of "clinical mentality," a term used by Eliot Freidson nearly two decades ago in an important book, *Profession of Medicine* (1970). (Freidson's use of the term "clinical mentality" should be distinguished from Foucault's (1973) use of the same term; Foucault uses it to refer to changes in medical perceptions of disease as a result of the rise of clinics.) More precisely, I would like to discuss the clinical mentality as a source of resistance to information.

The clinical mentality, it is argued, is created by the nature and demands of clinical practice. Actually, Freidson makes the case for medical practice. I have expanded the argument to apply to "clinical practice," which includes, of course, dental practice. Whether and to what extent the clinical mentality rings true for dental practice and for that matter to other types of clinical practice in the health field is a fascinating question, indeed.

The argument is complex, and it goes like this:

1. Clinical practice is typically concerned with the problems of *individuals* rather than of aggregates (1970:164). It contrasts with public health, which takes the community or society as its object of concern.
2. Given the wide range of *variability* among individual patients and the limitations of general scientific knowledge, clinical practice "requires not a set routine, but the exercise of complex judgment . . . [which is], at least in part, a matter of *opinion* (1970:162).
3. These characteristics of practice encourage in the clinician:

a. an emphasis on the "primacy of first-hand *clinical experience* rather than of scientific laws or general rules," since the latter, based on probability, may not apply in the individual case (1970:164, 166, 169); and
b. a "crude pragmatism" emphasizing "results" rather than "theory"—"doing what works" rather than "knowing why it works" (1970:169)

These elements in turn:

4.a. promote the acceptability of varying *opinions* among clinicians (1970:164), and
b. intensify the subjective sense of *uncertainty* (1970:163).

5. These consequences, in turn, produce feelings of *risk* and *vulnerability* to being wrong in the single case (1970:163).
6. The result of these concerns is to sustain and reinforce "well-intentioned resistance" both to *reviewing* and *being reviewed* by their colleagues.

Freidson also includes in his formulation of the clinical mentality two elements that seem to me problematic as consequences of these demands of clinical work:

1. *"therapeutic activism"* (my term), that is, a tendency to take action for its own sake

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("it's better to do do something than nothing," 1970: 168), and
2. a tendency to believe in the *efficacy* of what one is doing, (1970:168).

In my view, opposite tendencies could just as plausibly be deduced from the uncertainty and risk of mistakes in clinical practice, i.e., there might be a tendency to take *no action* rather than risk harm, and there might be a sense of the *limitations* of clinical intervention, leading to a profound skepticism about the efficacy of what one is doing.

What are some direct consequences for information transfer that flow from these components of the clinical mentality?

But first, I want to present some results from a national study of physicians in the mid-seventies in which we sought to check out empirically the idea of clinical mentality and see if it was indeed related to clinicians' resistance to peer reviews (Colombotos, Kirchner, and Millman, 1975; Colombotos and Kirchner, 1986). We asked questions about specific elements of the clinical mentality:

Nearly half of the respondents agreed that: "Physicians should rely more on their personal clinical experience in treating their patients than on the results of controlled clinical studies by others."

To a question on "clinical pragmatism", nearly two-thirds agreed that: "On the whole, it is more important for the doctor to choose the treatment that *helps* the patient rather than to know *why* the treatment works."

To a question on "therapeutic activism," one-fourth agreed that: "It is generally better for the practitioner to prescribe *something* for each patient such as medication or some other treatment-rather than to prescribe nothing at all."

More than half thought there was "a great deal" or "a fair amount," rather than "very little," "uncertainty" in "doctors' decisions about treatment."

Less than a fourth were more inclined to try out "new forms of treatment" rather than to rely on "accepted forms of treatment".

To summarize, half or more of American physicians in 1973 responded as follows: they relied more on their clinical experience than on the results of controlled clinical studies, they believed it was more important to choose the right treatment than to know why it works; and they saw a great deal or a fair amount of uncertainty in medical decisions.

A fourth or less thought it was better to do something than nothing and were more inclined to try out new forms of treatment than to rely on accepted forms of treatment.

I do not want to argue here for the precision of these frequency distributions. We know that responses to studies like this depend on how the questions are worded. The point to my introducing these questions here is that each question represents to the clinician a potential conflict. Should he or she rely on his or her personal clinical experience or on the results of controlled clinical studies? Is it more important to choose the treatment that helps the patient or to know why the treatment works? And so on. And clinicians resolve these conflicts in different ways. Note that none of these questions elicit total consensus.

In reflecting about these results, two questions arise:

1. Are *dental practitioners, because of the nature of their work,* any more or less likely than *medical practitioners* to emphasize personal clinical experience over clinical studies and clinical pragmatism over scientific curiosity, to believe that it is better to do something than nothing, to see a lot of uncertainty in clinical practice, to try out new forms of treatment?
2. Secondly, it is important to remember that these data were collected a decade and a half ago. How would the results differ if the study were done today?

There is a clue in our study. We found, for example, that older physicians were much more likely than younger physicians to rely on their

personal clinical experience. If we assume that these differences in clinicians' thinking according to their age reflect *generational differences* rather than *individual change* as they grow older, that is, if we assume that the young will continue to think the way they do rather than change as they grow older, then we would expect to find that physicians in the late '80's think quite differently about the clinical mentality than physicians in the early '70's.

Such an interpretation would be consistent with related historical events. Up to two or three decades ago, a major concern was the lag between the discovery of knowledge and technology and their *application.* The emphasis then was on dissemination—on closing the gap between the ivory tower of academic medicine and the world of clinical practice. There was little worry about the *quality* of the information transmitted or with the efficacy of the clinical interventions prescribed. In the classical study of the diffusion of an innovation (the drug tetracycline) by Coleman, Katz, and Menzel conducted in the '50's (1966), there was little discussion about whether the new drug was safe and effective.

Beginning in the '60's and accelerating into the '70's and 80's, however, concern grew for the efficacy and safety of medical interventions. Thalidomide and DES reinforced these concerns. "Technology assessment" became a new word in our vocabulary. "OTA" (Office of Technology Assessment) joined the list of familiar acronyms. Randomized clinical trials multiplied. New scientific societies and journals were established.

Within the past decade we have seen the establishment of the Society and the Journal for Medical Decision Making, the Society and the journal Controlled Clinical Trials, the Society and the International Journal of Technology Assessment in Health Care, the Journal of Health Care Technology: Assessment, Planning, and Value Analysis, and many others.

We have also seen the development of programs to counter the effects of drug advertising and to reduce the excessive use of drugs through "academically-based 'detailing' " and "unadvertisements." An example is a program at the Harvard Medical School supported in part by the National Center for Health Services Research and by the John A. Hartford Foundation (Soumerai and Avorn, 1987).

It would be reasonable to expect that in response to or parallel with these trends, practitioners' reliance on their "personal clinical experience" would retreat, albeit reluctantly, yielding to the "recommendations" of rigorously designed randomized clinical trials, computerized algorithms directing clinical decisions, and standards of care.

This apparently has not happened. A more recent study of clinicians in five countries (half of them in the U.S.) between 1981 and 1985 were asked the following question (Taylor and Kellner, 1987):

"When published data and my clinical judgment conflict, I am more likely to rely on: my personal clinical experience . . . or published data." Two thirds checked "personal clinical experience."

Clinicians' reliance on "personal clinical experience," at least according to this study, is alive and well. I would like to say a few more words about this. The exercise of "judgment" is a critical component of what it means to be a "professional." Problems—and solutions —are not "routine." "Each case is different." Equally competent and well-trained professionals may have genuine differences of opinion. The term "second opinion" (i.e., second *professional* opinion) explicitly recognizes this state of affairs.

But clinical judgment, based on clinical experience, also supports an *ideology.* It underlies the claim to clinical autonomy. Since there is a great deal of variation among patients ("each patient *is* after all different") and since *general* scientific knowledge is limited, the clinician must, in the end, rely on his or her judgment, based on his or her personal clinical experience, rather than on "scientific laws" or "general rules." Thus, prescriptive standards ("thou shalts"), norms, protocols, guidelines, even when they are delicately couched in the form of "recommendations," are resisted

as intrusions on clinical autonomy.

It is not surprising then when a recent study showed that the recommendations of NIH Consensus Development Conferences concerning the surgical management of breast cancer, the use of steroid receptors in breast cancer, caesarean childbirth and coronary artery bypass surgery had essentially no effects on medical practice (Kosecoff et al., 1987). (The difficulty and complexity of establishing such effects are rigorously examined by Tobin (1987)).

Emphasis on clinical judgment may even be used to argue against the need for keeping up:

> What distinguishes the good physician from the poor one is *sound judgment,* not knowledge as such, not the school attended, not his ability to pass tests, nor the number of hours spent in training or 'continuing education ("Continuing medical education," 1976).

But with all of this resistance to new knowledge, clinical practice does change. This means that some clinicians are hearing about new ways and changing what they do. Where do clinicians get their information? (Parenthetically, most of what we know about where clinicians get their information is based on studies of physicians (Osiobe, 1985). A current study by Sadowsky and Kunzel (in press) is one of the few on dentists.)

The most significant finding from this literature on diffusion, first examined in great detail by Coleman, Katz, and Menzel (1966), is the importance of contact with colleagues for learning about and adopting an innovation. Much of that interaction may be informal, casual and unplanned. The important thing is that it be a conduit for "shop-talk."

If a clinician's colleagues are conceived of as extra antennae for receiving messages, then it is intuitively apparent that the more antennae a clinician is hooked up to, the more likely he or she is to get those messages. This is the "information" function.

A second function served by colleague relations is "legitimation," an informal and nonrigorous form of assessment, before the days of randomized clinical trials. (But the importance of this function in this age of more technically sophisticated methods of assessment should not be minimized.) Coleman, Katz and Menzel (1966: 118–119) describe this function as follows:

> Confronted with the need to make a decision in an ambiguous situation . . . people turn to each other for cues as to the structure of the situation. When a new drug appears, doctors who are in close interaction with their colleagues will similarly interpret for one another the new stimulus . . . and will arrive at some shared way of looking at it.

Let me summarize. We have:

1. very busy clinicians, much of whose work requires quick, on-the-spot decisions,
2. trained and socialized, if we are to believe the widely publicized GPEP Report on "training physicians for the 21st century" (1984) by the Association of American Medical Colleges, to be passive recipients of information rather than active, independent learners,
3. bombarded, when they enter practice, by masses of information, often confusing and contradictory,
4. which, incidentally, is being increasingly disseminated in a medium to which clinicians may already be averse—*computers,* and
5. retreating and defensively clinging to their clinical mentality.

A few final comments—one, a recommendation, and a few observations:

First, the recommendation: do not put *more* in the pipelines to clinicians. Rather, collect, sift, analyze, synthesize, package—and then disseminate. If clinicians are indeed less interested in *why* a treatment works than in *whether* it simply works, then to flood them with the methodology and the detailed findings of rigorously de-

signed scientific studies may be not only *un*productive but *counter*productive. The desirability of putting more synoptic summaries of clinically relevant data into pipelines to physicians was emphasized independently again and again by several speakers at the recent symposium on "The Future of Information Systems for the Medical Sciences" at the New York Academy of Medicine.

Now a few observations:

First, an observation about the pipelines (or "channels" or "transmission belts") to clinicians, apart from the information that flows through these pipelines. Since contact with colleagues is important both for receiving information and legitimizing it, and since *contact* with colleagues varies with the *availability* of colleagues, then we may expect colleague interaction to increase as clinicians work more closely together, as in "group practice." Group practice has increased sharply among physicians in recent decades. If and as group practice also increases among *dentists,* we can expect concomitant changes both in the flow of information, its assessment, and in its implementation.

Secondly, increasing numbers of clinicians are working in and for institutions, such as hospitals. Increasingly, we can expect that information will be directed to—and decisions on this information will be made at—the *administrative* level rather than at the level of the individual clinician, especially when it involves costly technology.

And finally, on the *macrosocial* level (note that we are moving from social relationships between colleagues, to relationships between *clinicians* and *institutions,* to the national or societal level), with the increase of third-party payment, we can expect payor decisions to set limits on the information that can be implemented. For dentists, we can ask—are DDRG's (Dental DRG's) in the future? And we can ask, what will be the consequences of these trends for the quantity and quality of information transfer in dentistry? △

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Acknowledgments

I would like to thank Dr. Jonathan Tobin for long and stimulating conversations about this paper and for his helpful comments on an early draft and Dr. Donald Sadowsky for efficiently updating me on the literature on the dissemination of knowledge among health professionals.

The three Gies Award Winning Editorials on pages 55-56-57 have been selected by the Editorial Award Judging Committee of the William J. Gies Foundation as the outstanding editorials published in 1988. Presentation of Awards will be made at the Annual Meeting of the American Association of Dental Editors on November 2, 1989, in Honolulu, Hawaii.

Gies Award for Outstanding Editorial Published in 1988

TREATMENT OF PATIENTS WITH AIDS: A MATTER OF PROFESSIONAL ETHICS

Daniel M. Laskin*

The profound risks associated with the acquired immune deficiency syndrome (AIDS) have suddenly put previous moral and ethical standards regarding the obligation to treat patients to a new test. Although in the past such issues occasionally arose, they generally represented isolated instances and were related more to personal prejudices or economic factors than to the nature of the disease. In part, this was due to the fact that, with the possible exception of hepatitis B, relatively few serious infectious diseases were encountered in the population of patients that we treated. Now AIDS, with its great potential for producing a fatal outcome, has entirely changed this situation and brought us face to face with the question of our obligation to treat patients with such dangerous conditions.

I believe that the answer lies in the unique responsibility that a person assumes when he or she enters a healing profession. Despite the attitude of some members of the public who consider themselves to be consumers rather than patients, and government agencies that wish to subject us to the rules and regulations of a commercial enterprise, we are still a profession and not a trade, and this defines our role. As so aptly stated by Emanuel in a recent article in *The New England Journal of Medicine,* "When a person joins the profession, he or she professes a commitment to these ideals and accepts the obligation to serve the sick. It is the profession that is chosen. The obligation is neither chosen nor transferable; it is constitutive of the professional activity." Clearly, having accepted the mantle of a doctor, we are no longer absolutely free to choose which patients we will and will not treat. It is inappropriate to make such decisions based solely on the fact that personal risk is involved, provided that one has the professional competence to treat the primary condition.

The obligation to treat patients with infectious diseases is not absolute, however, and special considerations must be taken into account. The first question deals with whether there are any limits to the amount of risk that the doctor must take. Certainly, when one enters a healing profession, he or she is expected to accept some degree of personal risk; but does providing care for patients who have AIDS exceed that limit? Despite the fears associated with this disease because of the serious consequences, the overall risk to most dental professionals is not great, provided that appropriate precautions are taken during the management of all patients. The Centers for Disease Control have estimated that the risk of becoming HIV positive, even after being stuck with a contaminated needle, is 1% or less.

Another factor that must be considered in deciding whether to treat patients with AIDS is the benefit that will be derived from that treatment. Because a risk is involved, one can easily justify refusing to do elective procedures. When emergency care is required, however, there is no reasonable alternative; the patient must be provided the same care as any other patient. The only exception might be when there is more than one acceptable treatment. In such cases, it would be permissible to use the one with the least risk of exposure.

The final consideration relates to one's obligation to his family. A recent letter in the *ADA News* expresses deep concern over this issue. As the writer so poignantly states, "I accept my obligation to care for those in need regardless of color or creed, rich or poor, and so on. When I think about obligations, however, I look over to the photograph of my family and can't help but feel it really lies with them." Here again, one has to look at what are the accepted standards of social and professional obligation for an answer. In society, generally no distinction is made between the risks that should be taken by those who are married and those who are single, and our professional oath certainly does not contain a disclaimer giving us the option to pick and choose patients based on our marital status. As long as the risks of contracting AIDS are not excessive, we are professionally obligated to treat such patients, regardless of family responsibilities.

Although organizations can adopt ethical standards of care, they are difficult to enforce; and the ultimate decision still becomes a personal one. As health professionals, we have pledged ourselves to place the welfare of our patients above all else. On this basis, I believe that the answer to our current dilemma is obvious.

Daniel M. Laskin, DDS, Editor, Journal of Oral and Maxillofacial Surgery. This editorial appeared in the June 1988 issue.

Gies Award Honorable Mention Editorial Published in 1988

THE GOOD NEW DAYS

William W. Howard*

Recently a dentist submitted to me an article that he said would "really shake up the dental profession." In the article were numerous portrayals of ills being experienced by dentists, especially younger practitioners.

The article was not the first of its type I have received. The typical points made in such pieces include the following: "Insurance companies are controlling us because some clerk decides what we are allowed to do." "Since dental caries has virtually been eliminated, dentists don't have much to do." "Dentistry is a dying profession." "Most of the dental schools should be closed." "Dental schools should be merged with medical schools." "The public is lawsuit-happy." "I would never recommend dentistry as a career to anyone."

The list goes on and on. And the younger dentist usually adds, "I wish I could have practiced during the *golden age of dentistry.*" The older dentist says, "I'm glad I got to practice during the *golden age of dentistry.*"

Just what was the golden age, and when was it? It is a term that most of us think we understand intuitively, like the "good old days," when living was cheap and trouble-free. Specifically, those who subscribe to the existence of a golden age recall it as a time when they did not have to cope with a welter of agencies that established rules for them to follow. Dentists practiced ethically because they wanted to. Problems with dental hygienists didn't exist. Dental boards didn't bother anyone. Dentists could do as they wished, with no one looking over their shoulders. They were not required to take continuing education. Uncontrolled dental caries, periodontal disease, and the ravages wrought by a combination of the two gave dentists more than enough to do. Patients accepted the outcome of their treatment. Seldom was heard a litigious word, and the skies were not cloudy all day.

But it wasn't always so. Before World War II, most dentists struggled to establish practices and to make enough to live on. The end of the war launched an era of affluence, for dentists and for society at large. Things remained pretty good for several decades. Was this the golden age of dentistry? Not in the sense that many people were crippled orally by extensive loss of teeth or lived with pain, discomfort, and unsightly teeth.

I feel strongly that things will be much better in our future than they have been in the past. I believe that we are on the threshold of the *enlightened era* of dentistry.

It is easy to think first of our problems in life instead of our advantages. Dental students and young dentists of today will, without question, enjoy exciting, rewarding, and fulfilling careers if they will remain intelligently adaptable. Surely we will be able to deal with the problems that seem so relentless and overwhelming to some. Dentistry always has had to cope with difficulty.

I like the prospect of an enlightened era for several reasons. We do have a real advantage in that the public is becoming increasingly educated and knowledgeable. Increasing numbers of patients want care that is thorough and of the highest quality. Enlightened patients should not be perceived as prospective malpractice plaintiffs, but as persons able to understand what their real needs are.

Vast and continuing improvements in technology are exciting. They give today's dentist the opportunity to find fulfillment of a kind that practitioners of the past did not often know. It certainly is more rewarding to improve the lives of patients by helping them enjoy a high level of oral health than to serve as a repair person dealing with uncontrolled disease processes. There is much to learn, and for those who find the challenge of research exciting, there are plenty of unknowns to conquer.

So, please, my fellow dentists, stay proud of our profession. You are still highly esteemed in the eyes of your patients and the public. The future is bright despite the troublesome adjustments that recent trends have mandated. Yes, we are working in a litigious society, but if we do as we should and as we must, that and other difficulties will be overcome.

*William W. Howard, DMD, Editor, Journal of General Dentistry. This editorial appeared in the November–December 1988 issue.

Gies Award Honorable Mention Editorial Published in 1988

DENTAL HYGIENISTS DESERVE OUR HIGHEST RESPECT

Victor J. Barry*

Sharon, Mindy, Marla, Gaye, Tammy, LeaAnne, Starla, Lil, Ann, Paula and Mary Jean . . . Over the years I've practiced with many full and part-time hygienists in my office. I respected and liked them all. In fact, I almost married one of them. The hygienist has always been an integral member of my dental team, with whom I consult about prevention and perio. But *on* the team I think they should remain. And therein lies the rub.

I've forever been on record as opposing the unsupervised practice of dental hygiene, as have 99% of my professional colleagues. But being against a concept involving dental hygiene, does not mean having to be against dental hygienists, even though their lobbyist might like legislators to believe otherwise.

I've never known a hygienist who wasn't dedicated to her profession, who wasn't a perfectionist when it came to her didactic duties, who wasn't willing to give 110% to help her patients achieve optimum oral health. They are kind, considerate and caring people, and I will always defend their right to practice right up to the limits of their ability.

But practicing independently, without supervision, is beyond that limit. For the same reason that I as a general dentist don't do comprehensive orthodontics, IV sedation, or orthognathic surgery; hygienists should not be primary, solo healthcare providers. Simply put, their two-year dental curriculum is not adequate to train them for all the requisite responsibilities, especially diagnosis. Ask any experienced dentist who used to be a hygienist, and she will surely concur. (Obviously, I'm assuming here that most hygienists are women, but *not* that most dentists are men.)

Because I hold hygienists in such high regard, I have to admit that it hurts when I hear some of the vitriolic rhetoric disseminated in the state capital by their leadership; albeit a leadership that does not represent a majority. It's frustrating to have to respond to the forces for hygiene-lib by explaining to legislators the inadequacy of their training. We're caught in a catch-22 by having to downgrade a segment of the very delivery mode that we propose needs preservation as the best dental healthcare system in the world. Then hygienists denigrate dentists' education and ethics so lawmakers write it all off as another turf battle with both sides slinging mud and dentistry losing ground.

Complicating the debate is the coincidental crisis of a severe shortage, which has dentists singing the blues song, "Where Have All The Hygienists Gone?" First answer is to dental school: nearly 40% of the incoming class are women. Second answer is to home and part-time status. But some dentists themselves are responsible for the third answer: lost to burnout. Dental hygienists deserve the utmost in a working environment, which includes respect from the boss, support from the staff and equipment that is first rate. A happy hygienist dismisses happy patients.

There are many suggestions for handling the shortage such as licensing a second-tier "traditional" hygiene category, elevating chairside assistants to "prophy auxiliary" status, and reducing the education requirements for a dental hygiene degree. But dentists have the power now to reverse the shortage and neutralize the hygiene-lib lobby without changing any laws. Like many problems, it can be solved by just a little change in attitude:

- Look at the hygiene team position in a new light and elevate its status appropriately in the staff's collective mind.
- Expand the hygienist's treatment responsibilities to routinely include sealants, anesthesia and root planing/curretage.
- Always be available in the office to provide direction and consultation for the hygienist.
- Provide the best in instruments and infection controls.
- Offer perks and benefits which are often more highly valued than a salary increase.

Remember that a good dentist needs a good hygienist for a better team. Recruiting candidates to such an appreciated, needed, responsible and caring career should then be easy.

But first of all, remind your hygienist how much you respect her.

*Victor J. Barry, DDS, Editor, Washington State Dental Association *News*. This editorial appeared in the April 1988 issue.

NEWS OF FELLOWS

Dr. J. David Allen, on the right, is seen being congratulated by Dr. John N. Kent of New Orleans, Louisiana, Immediate Past President and Dr. Robert E. Huntington of Pomona, California, the President of the American Board of Oral and Maxillofacial Surgery, center.

J. David Allen of Decatur, Georgia, was recently elected as a Director of the American Board of Oral and Maxillofacial Surgery.

William R. Cinotti of Cedar Grove, New Jersey, has been named Associate Dean for Interdisciplinary and Extramural Affairs at the University of Medicine and Dentistry of New Jersey. Prior to this appointment, Dr. Cinotti served as Chairman of several departments, including Removable Prosthodontics and Restorative Dentistry.

William R. Cinotti

Thomas J. Ginley was the 1989 Percy T. Phillips Visiting Professor for the Dental Society of the State of New York and the Columbia University School of Dental and Oral Surgery. Dr. Ginley, who is the Executive Director of the American Dental Association, was awarded the visiting professorship in recognition of his outstanding contributions to dentistry.

T. J. Howard of Arvada, Colorado, was recently recognized by the University of Missouri-Kansas City with the presentation of the Rinehart Medallion for his service as a Past President of the Alumni Association and for his long-time support of the UM-KC School of Dentistry.

T. J. Howard

Thomas J. Ginley

James V. Burnett of Fort Worth, Texas was awarded the Dr. J. D. Larkin trophy at the meeting of the Southwest Prosthodontic Society. A past vice president of the Texas Dental Association, Dr. Burnett was the "Dentist of the Year" of the Texas Academy of General Dentistry in 1983.

James V. Burnett

James A. Harrell, Sr., ACD President, earlier this year arranged for a portrait to be made of 18th century Methodist Bishop Thomas Coke after Dr. Harrell found that no life-size portrait had previously been made. Working through the North Carolina United Methodist Conference, the project was successful and Dr. Harrell led a delegation of sixteen people to Jesus College at Oxford University in England to unveil the portrait which will hang in the dining room alongside portraits of other famous graduates.

At the unveiling of the portrait of Methodist Bishop Thomas Coke at Oxford University in England, which was arranged for by ACD President James A. Harrell, Sr., are, left, Dr. and Mrs. Harrell and Dr. and Mrs. John R. Orr, Jr. of Birmingham, Alabama, right, who also attended the unveiling.

Gardner P. H. Foley was recently the recipient of the honorary degree Doctor of Science from the University of Maryland at Baltimore. He was honored for his long years as keeper of the history of the Baltimore College of Dental Surgery and for his manifold contributions to the history of dentistry. His feature page on "A Treasury of Dentistry" appears regularly in the ACD JOURNAL.

Gardner P. H. Foley

Robert E. Huntington of Pomona, California is serving as the 1988-89 President of the American Board of Oral and Maxillofacial Surgery. Dr. Huntington is a past president of the Southern California Society of Oral and Maxillofacial Surgeons, the Southern California Academy of Oral Pathology and the Tri-County Dental Society.

Charles F. Rau was recently appointed Associate Dean at the University of Detroit School of Dentistry where he previously was Chairman of the Department of Oral Medicine and Periodontics.

Charles F. Rau

Robert E. Huntington

Richard G. Shaffer recently retired from the U.S. Navy Dental Corps after 28 years of service and is now the Secretary General of the International College of Dentists and Registrar of the U.S.A. Section. Dr. Shaffer was appointed Chief of the Navy Dental Corps in 1984 and held the rank of Rear Admiral at the time of his retirement.

Richard G. Shaffer

Rowland A. Hutchinson was recently named Dean of the University of Detroit School of Dentistry. Dr. Hutchinson retired as a Colonel from the U.S. Army Dental Corps in 1978 and, prior to being appointed Dean, served as Associate Dean of Academic Affairs and Executive Associate Dean at the University of Detroit School of Dentistry.

Rowland A. Hutchinson

William E. Ludwick was elected President of the Deep-Portage Conservation Foundation in Cass County, Minnesota. The Foundation supports conservation of a 6,000 acre public tract and its programs include conservation education, recreation and research.

William E. Ludwick

Donald D. Peters was recently elected to the Board of Directors of the American Association of Endodontists. Col. Peters is the Commander of Fort Gordon, Georgia Dental Activity and has been the recipient of many awards including the Order of Military Medical Merit.

Richard E. Bradley, President and Dean, Baylor College of Dentistry is retiring after 33 years in dental education, the last 10 years as dean of Baylor College of Dentistry. He was president of the

Richard E. Bradley

Manuel I. Weisman received a certificate of appreciation for his service as a member of the Board of Directors of the American Association of Endodontists. Dr. Weisman is Clinical Professor of Endodontics at the Medical College of Georgia School of Dentistry and in the private practice of Endodontics.

Manuel I. Weisman

Donald D. Peters

American Association of Dental Schools in 1977–78 and was president of the American Fund for Dental Health from 1986 to 1988. Earlier in his career he had a 12 year tenure as dean of the University of Nebraska College of Dentistry.

Herbert K. Yee of Sacramento, California, continues to serve his community, and his profession with great distinction. Dr. Yee came to the United States from Canton, China with his parents at the age of 5 and received his elementary, high school and college education in Sacramento and his dental degree from the University of Pacific School of Dentistry, where he continues to provide scholarship funds for 5 dental students.

Dr. Yee has served as the President of the California Board of Dental Examiners and was honored by the American Association of Dental Examiners in 1974 as "Dentist-Citizen of the Year". He is a past president of the International College of Dentists and was the 1981 recipient of the Pierre Fauchard Academy's Distinguished Service Award.

Dr. Yee's civic activities are equally impressive. He has returned to China several times and was responsible for the building of an elementary school in Toishan where he was born. Actively involved in the Chinese community in California, Dr. Yee has been the recipient of innumerable awards from civic, religious and professional organizations.

Herbert K. Yee

SECTION ACTIVITIES

Florida

The Florida Section held its annual breakfast meeting July 1, in conjunction with the Florida National Dental Congress. Chairman Curtis E. Gause, opened the meeting by greeting 102 Fellows and 16 senior dental students. The Student Professionalism Award was presented to a senior dental student and The Service Award for Outstanding Service to the Florida Section was presented to Dr. Charles W. Fain, Jr., past president of the American College of Dentists.

The Florida Section has implemented a Faculty Appreciation Award to be presented to a faculty member who has shown the highest degree of ethics and professionalism by his or her actions and example and has influenced students to strive to achieve this high level of professionalism and ethics. This award was presented to Dr. Jose E. Medina, as the first recipient of the Faculty Appreciation Award. Dr. Medina is a clinical professor of Operative Dentistry at the University of Florida School of Dentistry where he formerly served as Dean of the School.

The Florida Section has purchased the 25 year lapel pin attachments for the 65 Fellows of the Section who have completed 25 or more years of continuous service to the College. The following Fellows who were present at the meeting received the lapel pin attachment: Drs. C. W. Fain, Jr., Bernard C. Kehler, Jose E. Medina, Robert B. Hughlett, Gustave J. Perdigon and Fred W. Schroeder.

Dr. Gordon Rovelstad, Executive Director of the College, gave a brief report on the activities of the College and the Foundation and Dr. Malcolm R. Overbey, President-Elect of the American Dental Association, presented a talk on professionalism and the activities of the American Dental Association. The officers of the Florida Section are: Chairman, Dr. Curtis E. Gause, Chairman-Elect, Dr. James E. Waddell, Vice-Chairman, Robert W. Williams and Secretary/Treasurer, Dr. Chris C. Scures.

Jose E. Medina was the first recipient of the Faculty Appreciation Award presented by the Florida section. Dr. Medina served as the Dean of the University of Florida, College of Dentistry from 1969 to 1974 and as Assistant Vice President for Facilities, Planning and Operations from 1976 to 1986. He is presently Professor of Clinical Dentistry at the College of Dentistry.

Mississippi

The Mississippi Section held its annual meeting recently in Jackson and inducted its new slate of officers. Section Chairman, Dr. Rudolph A. Posey handed over the gavel to Dr. Heber S. Simmons, Jr., while Dr. Mark W. Blackburn and Dr. Robert T. Ragan were installed Vice Chairman and Secretary-Treasurer, respectively.

Dr. James A. Harrell, Sr., President of the College, addressed the meeting and an Outstanding Student Award was presented by the Section to a graduating senior student from the University of Mississippi School of Dentistry. In addition, a member of the faculty of the School of Dentistry, Dr. Travis Taylor, was presented the Faculty Ethics Award.

Photographed at the Mississippi Section's meeting are, from the left: Dr. Robert T. Ragan, Dr. Heber S. Simmons, Jr., Dr. James A. Harrell, Sr., Dr. Rudolph A. Posey and Dr. Mark W. Blackburn.

Northern California

The Northern California Section's meeting, held recently, was attended and addressed by Dr. James A. Harrell, Sr., President of the American College of Dentists. Dr. George M. Yamamoto is the Chairman, Dr. David S. Tittle the Vice Chairman and Dr. Arthur L. Lundblad, the Secretary of the Section.

Photographed at the Northern California Section meeting are, from the left: Dr. Arthur L. Lundblad, Dr. Albert Wasserman, Dr. James A. Harrell, Sr., Dr. George M. Yamamoto, and Dr. David S. Tittle.

Southern California

The Southern California Section *Achievement Award* for Senior dental students from Southern California dental schools is presented annually to students "who have shown great potential for future contribution and service to the dental profession and to the public the profession serves." 1989 Award winners are pictured, left to right, Alex J. Trigonis of UCLA, Karl D. Peach of Loma Linda and Paul E. Parminter of USC. At far right is Section Chairman John W. Berry. The Awards were presented at the ACD-ICD Meeting held in conjunction with the Annual Session of the California Dental Association at Anaheim.

Texas

Pictured at a recent meeting of the Texas Section are, left to right, Chairman-Elect David J. Henrich, Vice-Chairman Darrell V. Hawkins, Chairman William F. Wathen, Outgoing Chairman Thomas R. Williams, Secretary-Treasurer Ernest H. Besch, ACD Regent Robert E. Lamb, ACD President James A. Harrell, Sr., and Burton J. Kunik, President of the ICD Texas Section.

European Section

Several Fellows of the College attended the European Section's meeting in Deauville, France during the annual meeting of the American Society of European Dentists. Photographed from the left are: Franciscus Lankhof, Netherlands; Jean P. Roger, France; Hamish Thomson, England; Michael Varin, France; Robert Crawford of the Proctor and Gamble Company; Yves Jose Fissore 3, Monaco; George E. Kearns, Chicago, Illinois; Jan Pameijer, Netherlands; James A. Harrell, Jr., Elkin, North Carolina; E. Stutz, Switzerland; Pierre Marois, France; Donald D. Derrick, England; Helyn Luechauer, Hollywood, California and Gerald H. Leatherman, England.

Washington-British Columbia

The Washington-British Columbia Section held its annual meeting in Seattle recently. The Section once again gave $300 to the dental schools at the University of Washington and the University of British Columbia to be presented to a student for interest, skill and motivation in the field of Restorative Dentistry. The Section presents this award from funds provided by an endowment from the estate of the late Dr. W. I. Ferrier.

Photographed at the Washington-British Columbia Section meeting are, from the left: Dr. Frank B. Guthrie, Vice Chairman, Dr. James K. Muller, Secretary/Treasurer, Dr. James A. Harrell, Sr., President of the College, and Dr. Charles V. Farrell, Chairman of the Washington-British Columbia Section and Regent, Regency 8.

Photographed at the Washington-British Columbia meeting are, from the left: Dr. Charles and Mrs. Maryanna Farrell and Dr. James and Mrs. Isabel Harrell, Sr.

NOMINATION FORM REQUEST

Name _____ F.A.C.D.

Address _____

City _____ State _____ Zip _____

_____

Signature

A nomination portfolio to be used in nominating to Fellowship is obtained from the Executive Office upon the signed request of any Fellow in good standing.

February 1, — Closing Date for Nominations. Send the form to the American College of Dentists, Suite 352N, 7315 Wisconsin Ave., Bethesda, MD 20814-3202.

INSTRUCTIONS FOR AUTHORS

INTRODUCTION

The Journal of the American College of Dentists is published quarterly in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding, and extend the benefits of dental health to the greatest number. It is the official publication of the American College of Dentists which invites submission of essays, editorials, reports of original research, new ideas, advances and statements of opinion pertinent to dentistry. Papers do not necessarily represent the view of the Editors, Editorial Staff or the American College of Dentists.

EDITORIAL POLICY

The editorial staff reserves the right to edit all manuscripts to fit within the space available to edit for conciseness, clarity, and stylistic consistency. A copy of the edited manuscript will be sent to the author. All manuscripts are refereed anonymously. Only original articles that have not been published and are not being considered for publication elsewhere will be considered for publication in the Journal unless specifically requested otherwise by the Editor.

The primary author must ensure that the manuscript has been seen and approved by all co-authors. Initial receipt of all manuscripts submitted will be acknowledged and, at the conclusion of the review procedure, authors will be notified of (1) acceptance, (2) need for revision, or (3) rejection of their papers.

PREPARATION OF MANUSCRIPTS

Papers should be in English, typed double space on white 8-1/2 × 11 paper. Left hand margins should be at least 1-1/2 inches to allow for editing.

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