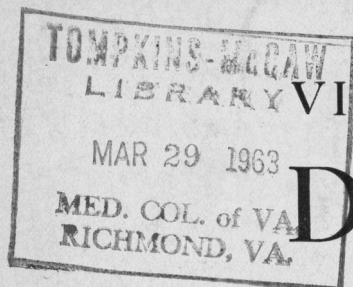


THE *Bulletin* OF THE



VIRGINIA STATE
DENTAL
ASSOCIATION

VOLUME XL

No. 1

Preliminary Program
Workshop Report



MARCH, 1963

THE
BULLETIN
OF THE
VIRGINIA STATE
DENTAL
ASSOCIATION

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THE BULLETIN

Virginia State Dental Association

VOLUME XL

MARCH, 1963

NUMBER I

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PRESIDENT'S MESSAGE

Another three months has passed and your president has enjoyed official visits to all Components and has traveled approximately 10,000 miles.

This has been a stimulating experience. The cordiality extended to me and Mary Lee by all Components has been one we shall never forget. The warm friendship and cooperation was beyond all expectations. This is the real gratification in trying to do a job. For these realities, I am most grateful and offer my sincere thanks.

A little less cheerful part of this report should deal with our laboratory work order prescription. There have been reports around the state, few in number, that dentists are not complying with the work order as prescribed by law. This is discouraging and disheartening to

me as well as to our highly proficient Committee on Dental Trade and Laboratory Relations. It is most disturbing to the laboratories themselves, as they want to uphold the law but cannot do so if members of our own profession refuse to respect it. The most common default is the dentist's refusal to send a work authorization form with each case. (One form is sufficient for each case). If he does send a form, sometimes he refuses to sign his name to it. Others fail to fill out the form sufficiently, such as: name or number of patient, dentist's license number and proper description of case to be constructed.

This work order legislation was designed by our profession in order to protect us and the laboratory. We simply must abide by this law, and I urge all members to comply rather than have our Board of Dental Examiners force the issue. I believe this should be sufficient warning at this time.

One area, I believe, in which our Association has fallen short is the liaison between the Association and the State Department of Health. This has rightly been called to our attention and has been discussed by our Executive Council. We believe that closer liaison can be obtained throughout the state by direct contact with the Ethics Committees of each Component. They certainly can and should be advisors and assistants to the Health Department in their geographic areas. Since our Council on Dental Health is in accord, I urge all Component Presidents to instruct their Ethics Committees accordingly.

So far, I am disappointed in our A.D.A. Relief Fund contributions. At the last notice, Virginia had a contribution of only 93.4%. We certainly can do better than that for we haven't missed 100% for years. If we do not reach 100%, it might make a difference in our own Association budget. So, **please kick into the kitty!** (If you do not know where to send a donation, send to Dr. M. E. Henderson, Roanoke, and he will forward it for you).

Now that I have bored you with disdainful criticism, there are many bright spots that deserve mentioning.

Your State Association membership has now reached an all time high of 1,223 members. This is an increase of about forty over last year!

Your Dental Education Committee is following up our highly successful workshop held last November. I shall not elaborate on this, as a full report is incorporated in this issue of the Bulletin. I only want to make a few comments. To me, the proceedings at the workshop went very smoothly, and I believe all members present will concur.

There were definite concrete resolutions formulated, which are being followed up by your most diligent and capable Committee on Dental Education.

As you will see from the workshop report, there was a resolution to have a survey of Virginia. Such a survey should include any information relevant to the establishment of a school or schools for dental auxiliaries in Virginia. After considerable consultation, I presented this desire for a survey to the Virginia Council on Health and Medical Care in Richmond, January 23. Their director, Mr. Edgar Fisher, reported on this matter to our committee in Richmond, January 27. They shall be happy to do the survey for us and cooperate in any way they can. The Virginia Council is willing to do this on a cost basis and gave us a maximum estimated amount of \$4,000.00. Since the Virginia Council cannot do this until June, a committee was appointed to study the scope of such a survey. This committee is composed of representatives of the Virginia Council, Council on Higher Education, M.C.V., and our Dental Education Committee.

It's almost spring and that means it isn't long before our Annual Meeting in Norfolk. So, please arrange for your reservations! The Golden Triangle Hotel is three fourths full now, and I promise you it will soon be filled to capacity. A tentative program should appear in this Bulletin, of which we are very proud. Plan on coming early as there will be planned functions every day and evening from Saturday afternoon to Wednesday noon.

I promise you it will be **fun, entertaining** and very **informative!** It's the new Golden Key Club for Sunday night, which promises to be a real **Ball**. There will be fellowship parties and fraternity dinners Monday evening, plus a post graduate projected clinic Monday night! (All local talent). Tuesday night is our big banquet **with entertainment (no speaker)**, followed by dancing from 9:00 P. M. 'till —? Wednesday morning will be devoted entirely to approximately **fifty-five** table clinics. The time is April 28, 29, 30, May 1. The place is the Golden Triangle Hotel (Brand new and fabulously luxurious). So, I say all. **ON TO NORFOLK!**

Respectfully,

JOHN G. WALL, President

EDITORIALS

FLUORIDATION

The American Dental Association is initiating a new and intensive campaign for the fluoridation of community water supplies. Likewise, this should be a goal for every community and every dentist of this Commonwealth. I hereby call upon each and every member to take this appeal to heart and become actively engaged in such a campaign.

"Two thousand communities in this country are presently enjoying its benefits. In terms of its potential usefulness in improving the dental health of the nation, however, public acceptance of fluoridation is lagging. Eighteen thousand communities have yet to institute the procedure and forty million children are being denied its benefits.

"The individual dentist and the dental society now have not only the obligation to support but also to initiate, when necessary, programs for the acceptance of the fluoridation of the community water supply. This leadership should be amplified whenever possible by the enlistment of aid from other professions and individuals and agencies interested in public health.

"Fluoridation is a safe, economical and effective means to prevent dental caries. Universal acceptance has been hampered by techniques which engender uncertainty and fear. The individual dentist and the dental society must exercise **aggressive** leadership in all phases of activity. Dentists have the obligation to initiate programs for the acceptance of fluoridation."

The above statements are quoted from the text of a resolution approved by the A.D.A. House of Delegates at its annual session in Miami Beach, October, 1962. (A.D.A. Information Bulletin, December, 1962).

From these facts, it is my solemn hope that every member of our Association will re-evaluate his participation in the past and take up this obligation and duty with a **new intensified enthusiasm**.

Topical Application

At times I think we need to be reminded of the beneficial effects of topical application of fluorides. This, of course, is accomplished with: (1) a 2% sodium fluoride and (2) an 8% solution of stannous fluoride.

According to Dr. Max Largent, Department of Pedodontics, M.C.V., the topical application of **stannous fluoride** is a single application pro-

cedure repeated annually. Studies appear to indicate that benefit is provided even for those in an age range approaching **25-28 years**.

The Department of Pedodontics at M.C.V. is now using **stannous fluoride** exclusively for the following reasons:

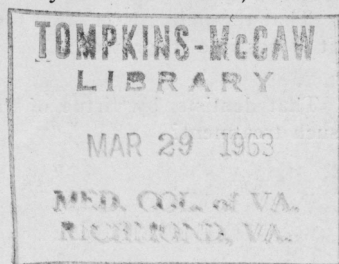
- (1) "The stannous fluoride solution is reported to be more effective than sodium fluoride solution in reducing the rate of dental caries activity.
- (2) "The stannous fluoride solution appears to benefit persons in the 17-26 years of age range, thus making this procedure an even more important preventive approach in the offices of general practitioners.
- (3) "The single application of the stannous fluoride solution repeated annually is more easily made a part of the office procedure than is the less practical four-appointment procedure required when using sodium fluoride solution; the annual application of the stannous fluoride solution may be incorporated into one of the two six-months recall visits of the patient in such a way as to be remunerative to the dentist and economical for the patient."

Dr. Largent further states: "It is felt that all children who have grown up in areas where the drinking water is **not** naturally or artificially fluoridated should receive the annual stannous fluoride application. In addition, I feel that, for those children in areas where the drinking water **is** fluoridated, there is a degree of added benefit provided by the topical application which allows the dentist to recommend this topical application to this group of children, also. The dentist perhaps would prefer to be selective with this latter group by recommending the topical application according to the caries activity presented by each individual."

This latter information on topical application is pertinent in our every day practice and is timely in our struggle to solve the manpower problem. It embraces the main theme of the solution, that of prevention!

Respectfully,

JOHN G. WALL, President



"I HAVE AN APPOINTMENT WITH MY DENTIST"

Why does a patient come to you for dental treatment? Primarily, it is because he has confidence in your professional training, ability and judgment. Morally and legally the dentist is responsible for every treatment and every appliance placed in the mouth of a patient. Professional services will be sought as long as professional responsibilities are met.

As dentists, we know that if we wish to prescribe a drug for a patient, we are required by law to furnish a written prescription to the pharmacist supplying the drug. Since July 1, 1962, legislation has been in effect in Virginia requiring a dentist to furnish a written prescription to the dental laboratory technician who is to carry out laboratory procedures relegated to him by the dentist. This writtenwork authorization legislation **was developed and sponsored by the Virginia State Dental Association**. A member of the dental profession is required to know the laws relating to the practice of dentistry and to obey these laws.

In an effort to familiarize dentists and dental laboratory technicians with this legislation, the Virginia State Dental Association has distributed copies of the law and suggested prescription forms to each dentist and dental laboratory technician in Virginia. Accompanying letters explained the legislation. Certain sessions at our last State Dental Meeting were devoted to explaining this legislation.

A current survey made by the Committee on Dental Trade and Laboratory Relations of the Virginia State Dental Association indicates that the dental laboratories are making every effort to comply with this dental legislation. The survey further revealed that most dentists are carrying out the requirements of the law. However, a few instances were noted in which a dentist objected to supplying the necessary prescription forms. Such objections can arise when the intent and purpose of the law is not understood.

As a dentist, do you believe:

1. That the public is entitled to the best professional dental treatment it is possible to provide?
2. That dentists, by virtue of their training, are best qualified to offer such treatment?

3. That dentists have a responsibility to prescribe and direct any procedures relegated to auxiliary personnel?

If you have answered affirmatively to these questions, then you have no valid objections to a law which upholds these beliefs. Complying with written work authorization legislation simply means that you are continuing to justify the confidence your patients have in you as a dentist to provide for them proper dental treatment.

ALEXANDER L. MARTONE, D.D.S., M.Sc.
Chairman, Committee on Dental Trade and
Laboratory Relations of the Virginia State
Dental Association

AN EDITORIAL FROM COMPONENT NO. 3

If we take a brief look at the history of this country we should learn a great lesson. Individual freedom and states rights have been pushed into the dark corner and forgotten and the big, strong, extravagant, all powerful central Government has taken over. This change has taken place because we the people have been asleep and as Rip Van Winkle, when we awaken don't understand how all this happened.

As dentists in the State of Virginia we should learn the lesson as portrayed by the history of the country.

Organized dentistry consists of three segments: the local component, the state society and the national organization. Membership in any of these associations begins at the local level. A man must become a member in good standing of his local component to become a member of the state society. He also must be a member of his component and state societies to become a member of the A.D.A. This points to a well balanced organization of self governing components and state societies which collectively control the A.D.A. The man is swinging the axe so to speak.

To search a bit deeper into this organization makes one wonder if the picture is quite as rosy as it would seem. Suppose a practitioner in Virginia had just finished school and opened his practice and decided that for financial reasons he would join his local and state societies but would not join the A.D.A. just yet. Now the water begins to muddy as he is told by the secretary of his component that if he joins one society he must join all three. Suppose a dentist in Virginia has been practicing for 10 or 20 or 30 years and doesn't want to join the A.D.A. His reason may be financial. He may have a grievance against the A.D.A. or he may have a reason that would be considered petty by most but he doesn't want to join the A.D.A. Doesn't he have the inherent right to not join the A.D.A. if it be his desire?

To say that he must join the A.D.A. if he joins a component is coercion.

I am not trying to censure the A.D.A. or influence any dentists in the State to withdraw from it. I do feel that the time has come for the component societies to take a good look at the A.D.A. and see if the "Big Brother" stage isn't upon us. This thought is provoked by such action by the A.D.A. as the "Crest" endorsement, the sellout of the profession to compulsory Social Security, the continued push by the Association for Federal Aid to dental education.

Of great concern also is the threatening tone of an editorial in the December, 1962 Journal. The House of Delegates now has new and more effective power to discipline its components. Where will the power stop? Will the components be told who their members are to be; what their by-laws must be, what their school must teach? Will this power stop here or will it tell the individual dentist to what societies he must belong, what tooth paste he must recommend, what alloy he must use, what his fees must be. I advocate that we must keep organized dentistry in its proper perspective. When one graduates from dental school he isn't guaranteed membership in any society, dental or otherwise, but must be elected into the membership by the members. He can engage in an ethical, effective practice of dentistry without belonging to any society, but will benefit from organized dentistry if he joins. A large portion of these benefits will be derived from the state and local level.

As members of our profession in the State of Virginia let us try to keep organized dentistry bound to its original intent. Let's keep the man swinging the axe and not the axe swinging the man.

DR. WILLIAM B. RUSSELL

EDITOR'S PAGE

In August, 1960, the Council on Dental Therapeutics authorized the commercial advertising of Crest toothpaste as an "effective anticaries dentifrice," and classified it in Group B. These two actions have caused considerable discussion in the past two and a half years. Let's look at the background.

The Procter & Gamble Company of Cincinnati had given large grants to the Indiana University Foundation for many years prior to 1960 for research into caries control. **This Foundation** accepts grants from industry, government, and other sources and supports dental research in the Dental School. **This Foundation** supported the research which developed a stannous fluoride formula that was patented. **This Foundation** granted Procter & Gamble the license to operate under this patent. This seems to have been a very healthy situation—scientific education and research were supported and industry benefited.

The Council on Dental Therapeutics studied the research done at the University of Indiana and, finding that it had followed the stringent rules for scientific research and that significant results were shown in this research, classified the product in Group B. In its very excellent 1963 publication, **Accepted Dental Remedies**, the Council states "Classification in this category is not ordinarily continued for more than three years." All evidence seems to point to a Group A rating by August, 1963. But what will the Council decide? Has pressure been too great to let our regular scientific procedure operate normally? Our Council is a wonderful safeguard. Following its evaluations would make it very difficult for the Dental Profession to have a "Thalidomide."

LON W. MORREY BECOMES EDITOR EMERITUS

The honor of Editor Emeritus of the A.D.A. has been accepted by Lon W. Morrey. He began his career with the A.D.A. as director of the Bureau of Public Relations thirty years ago. For the past fifteen years he has been Editor of the Journal of the A.D.A. These two jobs, it would seem, would have been all any man could do. But, during this time Dr. Morrey also expanded and began other journals and contributed many compositions of his own. His interest in the health and welfare of children was expressed in his hundreds of articles and talks on dental health education and his promotion of Childrens' Dental Health Week. Knowing that other contributions of his can be anticipated in his Emeritus capacity is a great consolation.

PRELIMINARY PROGRAM

94TH ANNUAL MEETING OF THE
VIRGINIA STATE DENTAL ASSOCIATION
The Golden Triangle Motor Hotel, Norfolk, Virginia
April 28, 29, 30 and May 1, 1963

SUNDAY, APRIL 28

A.M.

11:00 Council on Dental Health Meeting (Jefferson Room)

P.M.

1:00 Executive Council Meeting (Camellia Room)

2:00 Registration

4:00 Dental Assistants Table Clinics (Room 800-801)

6:00 Virginia Society of Dentistry for Children
(Dogwood and Azalea Rooms)

MONDAY, APRIL 29

A.M.

8:00 Registration

8:00 Men's Golf Tournament (Elizabeth-Manor Golf & Country Club)

9:00 Opening of Commercial Exhibits (Ground Floor)

9:00 Movie — "Techniques in Periodontal Surgery" (West Ballroom)

9:30 Opening Session (West Ballroom)

10:45 Lecture — (West Ballroom)

"The Importance of Treatment Planning and Diagnosis in Endodontic Practice."

Essayist — Dr. E. James Best, Associate Professor and Chairman of the Department of Endodontics at Loyola University, School of Dentistry, Chicago, Illinois

11:45 Lecture — (West Ballroom)

"The Response and Resistance of the Human Dental Pulp"

Essayist — Dr. Harold R. Stanley, Assistant Chief Clinical Investigations Branch, National Institute of Dental Research, Bethesda, Maryland

12:30 LUNCH

P.M.

2:00 Lecture — (West Ballroom)

"Medical-Legal Problems Affecting the Practice of Dentistry"

Essayist — Charles J. Frankel, B.S., M.S., M.D., LL.B., University of Virginia Hospital, Charlottesville, Virginia

3:00 Lecture — (West Ballroom)

"Technical Considerations to Improve Your Prosthetic Service"

Essayist — Markus Ring, C.D.T., President, National Association of Dental Laboratories, Washington, D. C.

COFFEE BREAK (Mezzanine)

3:45 Lecture — (West Ballroom)

"New and Simplified Methods of Filling the Root Canal"

Essayist — Dr. E. James Best

5:00 Fraternities Social Hour — Business Meeting

(Possibly in Dogwood and Azalea Rooms)

8:00 Special Clinics — 4 for 20 minutes each:

1. "A Conservative Approach to Restoring the Mutilated Dentition by Crown and Bridge Procedures"

Dr. C. R. Mirmelstein, Newport News, Virginia

2. "Answers to Some Questions Frequently Asked by Parents"

Dr. Charles J. Vincent, Richmond, Virginia

3. "Practical Application of a Layered Silicone Rubber Mold Technique for Denture Processing" — as presented by Marcroft, Tencate & Hurst of Chicago in The Journal of Prosthetic Dentistry, Vol. II, No. 4, July-August, 1961.

Dr. Myron E. Henderson, Roanoke, Virginia

4. "The Dentist's Responsibility in Preventing Viral Hepatitis Transmission"

Dr. Holmes T. Knighton, Richmond, Virginia

TUESDAY, APRIL 30

A.M.

8:00 Registration

8:00 Component Officers Breakfast (Room 600-601)

8:00 American College of Dentists Breakfast (Room 700-701)

9:30 Movie — "300,000 RPM In Oral Surgery" (West Ballroom)

10:00 Lecture — West Ballroom
"Psychiatric Aspects of Dentistry"**Essayist** — James Patrick Scanlon, M.D., Associate Clinical Professor of Psychiatry, Georgetown University School of Medicine, also, private practice of Psychiatry, Washington, D. C.

11:00 Lecture — (West Ballroom)

"Current Problems in Dental Manpower and Possible Solutions"

Essayist — Dr. John C. Brauer, Dean, University of North Carolina, School of Dentistry, Chapel Hill, N. C.

P.M.

12:30 LUNCHEON — M.C.V. Alumni (East Ballroom)

2:00 Lecture — (West Ballroom)

"The Transition from Natural to Artificial Teeth"

Essayist — Dr. M. M. DeVan, Professor and Chairman of Prosthetic Dentistry, University of Pennsylvania, Philadelphia, Pennsylvania

3:00 BUSINESS SESSION (West Ballroom)

6:00 Social Hour (Garden Rooms)

7:00 Banquet and Dance (Ballrooms)

WEDNESDAY, MAY 1

A.M.

8:00 Registration

- 8:00 Executive Council Breakfast (Room 600-601)
- 9:00 Movie — "A Procedure for Orthodontic Diagnosis"
(Nations Room)
- 9:30 TABLE CLINICS — (Ballrooms)
-

LADIES' ENTERTAINMENT

Schedule of Activities for Wives

Sunday, April 28

P.M.

- 9:00 **Golden Key Club.** This private club in the Motel will be open exclusively for the members of the Virginia State Dental Association and their wives for the evening's pleasure and entertainment.

Monday, April 29

P.M.

- 12:30 **Luncheon and Fashion Show.** The show will be presented by the Boutique D'or and will feature a special surprise. Admission for the afternoon will be \$2.00, and the place is the Garden Room.

Tuesday, April 30

A.M.

- 9:00 **Golf.** Transportation will be furnished to the Bow Creek Country Club, and dining room privileges will be available at the Club for lunch.
- 9:30 **Tour.** Buses will transport wives on a tour of the Redevelopment areas of downtown Norfolk, a visit to the historical Myers House, and a visit to the Norfolk Museum of Arts and Sciences where luncheon will be served in the Garden. The tour is free and luncheon will cost around \$1.50.

P.M.

- 2:00 **Tea and Business Meeting.** A short business meeting of the State Auxiliary will follow the tea in the Nations Room. All wives are invited to attend.

The Norfolk ladies are looking forward to hostessing these activities, and we encourage all the wives to attend. The weather will probably be warm, and spring clothes should serve well. A light coat may be needed. If there are any questions, please contact Mrs. Charles E. Barr, Convention Chairman, Woman's Auxiliary to the Virginia State Dental Association, 509-D Birmingham Avenue, Norfolk 5, Virginia.

VIRGINIA SOCIETY OF DENTISTRY FOR CHILDREN

The Virginia Society of Dentistry for Children will hold its annual meeting on Sunday, April 28 in the Azalea and Dogwood Rooms.

Social Hour	6:00 P. M.
Banquet	7:00 P. M.
Scientific Program	8:00 P. M.
Business Meeting	9:00 P. M.

Dr. E. James Best, Associate Professor and Chairman of the Department of Endodontics at Loyola University, School of Dentistry, Chicago, Illinois, will be guest essayist. His subject:

"Root Canal Therapy for Young Permanent Teeth."

(Social Hour and Banquet, \$6.00).

Va.S.D.C. members and their wives and guests are invited. Dentists who are not members of Va.S.D.C. and their wives are also cordially invited to attend all functions.

THE VIRGINIA DENTAL HYGIENISTS ASSOCIATION

The ninth annual meeting of the Virginia Dental Hygienists Association will convene in the Golden Triangle Motor Hotel, April 28, 29, 30 and May 1, 1963.

THE VIRGINIA STATE DENTAL ASSISTANTS ASSOCIATION

The Virginia State Dental Assistants Association will hold their 15th annual session in the Golden Triangle Motor Hotel, April 28, 29, 30 and May 1, 1963.

THE VA. STATE DENTAL LABORATORIES ASSOCIATION

The Virginia State Dental Laboratories Association will hold their annual meeting in the Golden Triangle Motor Hotel, April 28, 29, 30 and May 1, 1963.

PARTIAL DENTURE DESIGN AND RELATED MOUTH PREPARATION

by

JOHN F. JOHNSTON, D.D.S., M.S.D.

Professor and Chairman, Department of Fixed and Removable Partial Prosthodontics,
Indiana University School of Dentistry

ROBERT L. BOGAN, B.S., D.D.S.

Assistant Professor, Department of Fixed and Removable Partial Prosthodontics,
Indiana University School of Dentistry

A section of a paper read by Dr. Johnston at the November, 1962 meeting of the Piedmont District Dental Society.

Partially edentulous arches may be divided into four classifications, three of which can have modifications.¹ While this is not a perfect system, it is easily understood and can be applied readily by the practicing dentist in his instructions to the technician. It is of considerable help in standardizing concepts and rules for retention and stabilization.

A critical appraisal of the shapes, supporting structure, and articulation of the teeth available for abutments sometimes makes it seem imperative that others be extracted,² and even more frequently it discloses the necessity for elimination of one or more of the modification areas by the construction of fixed prostheses.^{3 4 5} In some situations, when restoring the space would add to the difficulty of construction without compensating benefits, or when function might not be increased by the supplied teeth, a modification area should be ignored in the classification of the arch and/or in the design of the replacement.

The Kennedy designations¹ are:

- Class I — bilateral edentulous spaces situated distally to the remaining teeth.
- Class II — a unilateral edentulous space situated distally to the remaining teeth.
- Class III — a unilateral edentulous space not crossing the median line, with teeth to the anterior and posterior.
- Class IV — a single edentulous area crossing the median line, with all remaining teeth situated distally to it.

Classes I, II, and III may have modification areas which are additional spaces so situated that they complicate but do not alter the original classification. The most distal space will denote the classification except that missing third molars are never replaced or considered in the determination of the classification. Missing second molars are disregarded, also, if they will not be included on the prosthesis.

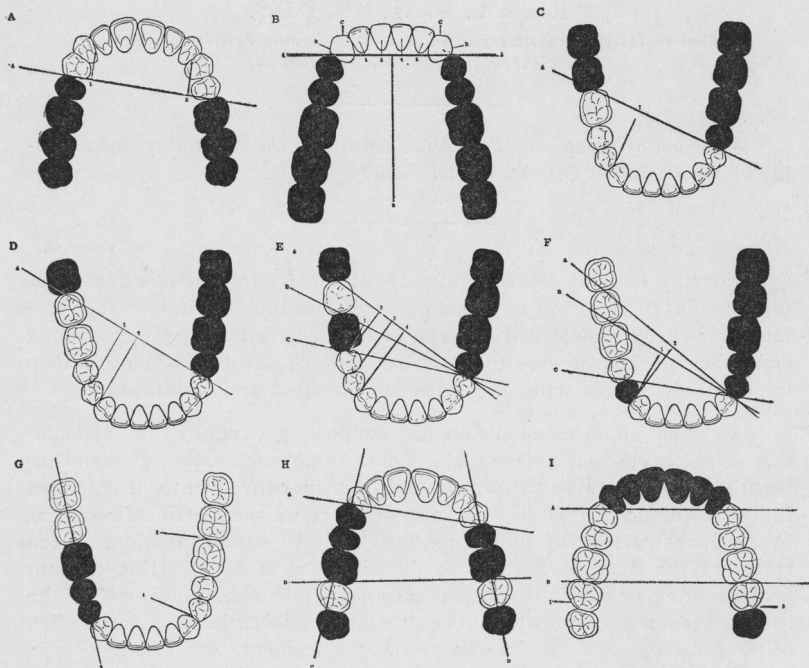


Figure 1

Fig. 1-A is an example of Class I. The left first and second molars and the right second bicuspid, first and second molars are missing. This arch must be prepared to provide both support and retention for a partial denture. It can be assumed that the left second and right first bicuspid would be used as abutments. Rest seats would be placed in the distal marginal ridges of these teeth, slightly to the lingual of the center of the contact areas. With a partial denture in the mouth, the fulcrum line, or axis of rotation, would pass through these rest seats so that, under masticating force, the prosthesis would rotate toward

the tissue around this line. Conversely the prosthesis would rotate away from the tissue when pressure was released. Additional rests must be built into the prosthesis to limit rotation away from the tissue. In this diagram they would be placed at the anterior terminations of lines 1 and 2; that is, on the mesial marginal ridges of the left first bicuspid and right cuspid.

Secondary retention is ideally placed at a point at right angles to the fulcrum line and at the greatest possible distance from it. Since it may not be advisable clinically to locate a rest at the spot which the tongue most often contacts, two points of indirect retention would be used, being situated laterally to the area of tongue contact and coming away from the partial denture framework where the minor connectors or struts can be placed unobtrusively in embrasures. Stabilization and support for the denture would be derived from the four occlusal rests.

The abutments must be surveyed⁶ to determine a path of insertion, to locate clasps, to measure depths of retentive undercuts, and to indicate contours which would prevent easy seating of the prosthesis. Clasps should be positioned cervically as close as possible to the center of rotation of the tooth without impinging on soft tissue or the cemento-enamel junction. When heights of contour are close to the occlusal surfaces, it is essential that abutment teeth be reshaped for proper clasping form and the elimination of interfering contours.

After many years of experience in partial denture construction and in observing the "longevity" of partial dentures placed in mouths where no thought had been given to mouth preparation or preservation of the remaining structures, the authors have concluded that teeth which are to be clasped should invariably be recontoured to some degree, and that rest seats should always be placed in gold restorations rather than in enamel. Therefore, when the treatment plan calls for a removable partial prosthesis, it is strongly recommended that abutment teeth be reshaped for clasping and support with either full or partial veneer crowns. Those which will support rests for stabilization may be prepared with inlays provided the minor connector is in contact with the cast restoration. All retentive undercuts should be placed on the buccal surfaces, if possible; otherwise all to the lingual.

Further, the authors have concluded that many partial dentures are over-retained, whether the frameworks are cast of gold or cobalt-chromium alloy. Regardless of which alloy is used, there is relatively little difference in the basic preparation of a tooth. However, cobalt-chromium alloy is more rigid and consequently retentive undercuts must be more shallow. For gold alloy clasps, retentive undercuts seldom need to be more than .010 inches deep; half of that depth suffices for cobalt-

chromium clasps. Occlusal rest seats may be slightly more shallow, also.

In Class I cases, clasps should be designed with retention at **one point only** and so that, under biting force, the clasp does not exert leverage on the abutment. When clasp arms are cast, the retentive undercut should be next to the edentulous area to enable the retentive tip to move away from the tooth under biting force. If a wrought wire retentive arm is used, the undercut may be toward the median line. Wire retentive arms flex in all directions, cast arms in one direction only.

The lingual surface of the tooth should be freed of its height of contour in the occlusal four-fifths and made parallel to the predetermined path of insertion. The clasp arm should engage the lingual surface before the retentive arm on the buccal strikes the height of contour, flexes over the bulge, and mixes into the undercut. The function of the lingual arm is exclusively reciprocation or support. It holds the tooth in position during insertion and removal of the prosthesis, thus minimizing destructive forces on the supporting structure, and it maintains the retentive clasp arm in position. Since it moves occluso-cervically over a surface which is parallel to the predetermined path of insertion, it helps to guide the prosthesis to its correct seat.

Fig. 1-B shows an exaggerated, although very common, Class I situation. The fulcrum line runs through the distal contact areas of the cuspids, and indirect retention, or stabilization, can be achieved here only by heroic means. The best results clinically seem to be attained by a lingual plate which covers the cingulum areas of the four incisors, or by a split bar, the upper half of which rests on the lingual surface of the incisors about midway between the incisal edge and the cingulum. When the lower cuspids must be used as abutments, it may seem impossible to design clasps with the retentive trips resting near the disto-labial line angles. Crown contour and long axis inclination can make it necessary to retain the clasps mesially with contoured wrought wire retentive arms.⁶

The lingual plate, or Kennedy web, is willingly accepted by patients, but excellent oral hygiene and routine prophylaxis, followed by applications of stannous fluoride, are needed to prevent a **breakdown of the lingual enamel** under this solid secondary retainer. The split bar is less often associated with enamel disintegration, but it is a food trap.

Fig. 1-C shows an unbalanced Class I situation, with the fulcrum line running through the distals of the first molar and first bicuspid. The rule for secondary retention can be applied here almost perfectly. A perpendicular, extending from the fulcrum line to the mesial of the

right first bicuspid, will locate a single rest seat which will afford ample resistance to rotation of the saddle away from the tissue. Clasping in this case can be varied. A cast Akers clasp may be used on the molar from the distal, with the retentive tip at the mesio-buccal, while on the bicuspid it should be at the disto-buccal. It may be placed at the mesio-buccal of the bicuspid, too, but only if the clasp has a wrought wire retentive arm.

Fig. 1-D is an example of a typical lower Class II situation. The fulcrum line, point of secondary retention, and clasping are almost identical with the Class I situation just described. In fact, in **Fig. 1-C** a Class II prosthesis would be used if it were unnecessary to restore occlusion in the second molar space.

In this lower Class II (or in a similar upper arch), the point of secondary retention may vary, depending on the possibility of existing restorations. It could be placed either on the distal of the right cuspid, the mesial or distal of the right first bicuspid, or the mesial of the second bicuspid. If any one of these locations had been restored previously and the others were sound, the restoration should be prepared with a rest seat to provide the point of stabilization. The mesial of the right cuspid or the right lateral incisor might be used, although this would move the rest into an area very often contacted by the tip of the tongue. Usually the left first bicuspid and cuspid would be splinted.

Fig. 1-E pictures a Class II, Mod. I arch. There is more than one way in which this may be treated. It would be helpful to eliminate the modification space by the construction of a fixed bridge, thus splinting the right abutments, simplifying the design, and securing a less restricted path of insertion.⁷

If the bridge were built, the logical point for the stabilizing occlusal rest would be on the mesial of the lower right second bicuspid. The mesio-lingual surface and mesial marginal ridge of this bridge retainer would have to be modified to make room for the strut and rest coming up from the major connector. If a bridge were not used, clasping would be on the left first bicuspid, the right second bicuspid, and the right second molar, with marginal ridge rests on the distals of the bicuspsids and the mesial of the molar. A secondary retainer should be placed on the mesial of the right first bicuspid because the rotation of the saddle away from the tissue along the fulcrum line, created by the rests on the distals of the bicuspsids, would require reciprocation.

Clasping here would entail the use of Akers or No. 1 clasps on the right side, with retention away from the edentulous area, while on the

left side retention should be to the disto-buccal, with a cast Roach-Akers clasp, or at the mesio-buccal, with a wrought wire retentive arm.

Fig. 1-F shows a Class II, Mod. I arch, with the modifying space so close to the median line that it should be eliminated. However, if this replacement is included on the partial, there still must be clasping distally to the second bicuspid.

The treatment plan most likely to be successful would suggest restoring the modification space with a fixed bridge and clasping the second molar from the distal. A less attractive alternative would be to cross the occlusion between the first and second molars and to clasp the tooth which was more suitable in form. Secondary retention would be located on the mesio-lingual marginal ridge of the first bicuspid pontic, with further retention and support being supplied by the left cuspid.

A Roach clasp, with retention at the disto-labial, or a wrought wire retentive arm, with retention at the mesio-labial, would be equally efficient. A ledge on the reshaped cingulum would support the cuspid clasp.

Fig. 1-G is a typical Class III arch which, whenever possible, should be restored with a fixed prosthesis. When this is not feasible, long-range success with a removable partial may require three areas of clasping and four of support. Dispensing with the clasp arm around the labial of the cuspid will enhance esthetics. Here a Scherer attachment will support the prosthesis. Retention may be gained on the right second molar, the left first bicuspid, and the left first or second molar, and often on the lingual of the cuspid. Occasionally the first bicuspid might be moved distally to the second. If the right cuspid can be clasped, then either the left first or second molar may be used, with a rest placed on the mesio-lingual of the first bicuspid.

Class III cases are entirely tooth-supported by heavy occlusal rests at the anterior and posterior ends of the supplied teeth.

Fig. 1-H shows a very common Class III, Mod. I pattern. Such a mouth normally would be receptive to two fixed restorations, but if any one of the four abutment teeth was deficient in supporting alveolar process, a removable prosthesis, stabilizing all abutment teeth and contributing bilateral bracing to the one or ones already weakened, would undoubtedly preserve the remaining oral tissue for a much longer period of time.

A prosthesis could be made by clasping the molars and the left bicuspid, with a semi-precision or precision attachment built into the

distal of the retainer on the cuspid. Esthetics would be pleasing and such a prosthesis would support the cuspid even though the alveolar process had receded as much as two-thirds.

Fig. 1-I. The Class IV edentulous arch presents major problems in stabilization and retention, especially when there is a long lever arm and when the posterior teeth are not strategically placed to resist displacing forces. The supplied teeth must be supported and retained to forestall movement against and away from the ridge. Posterior retention must prevent cervico-occlusal movement of the clasps and eliminate any rotation around the anterior fulcrum, regardless of the force applied to the end of the lever arm.

Theoretically the retentive tips must be placed at maximal distances from that fulcrum. Clinically this is not always possible or necessary. In the pattern illustrated there should be rests on the mesials of the first bicuspid but these teeth need not be clasped. The occlusion can be crossed between the first and second bicuspid on each side, with the retentive tops at the mesio-buccal line angles of the first bicuspid, or between the second bicuspid and first molars, again with retention at the mesio-buccal line angles of the bicuspid.

Posterior clasping can start at the distal of the second molars, with the retentive tips at the mesio-buccal line angles provided the lingual surface is long enough for a guiding plane which is longer than average. Many times, however, the clasp must cross the occlusion between the first and second molars, going distally if the second bicuspid were being clasped, mesially if the first bicuspid were providing the anterior retention, or in both directions if the third molars had been lost.

In any Class IV case, support and retention must be as widely distributed as possible. The farther the lever arm extends labially to the anterior fulcrum line, the more the retention must be increased and extended distally. In the arch illustrated, the retentive clasp tips should be placed at the disto-buccal line angles of the second molars and mesio-buccal line angles of the first bicuspid, but in clinical application this design might be altered.

Fig 2-A suggests the correct contour for an abutment tooth.⁴ The buccal surface has been given convex form and the survey line is approximately halfway between the gingival crest and the cusp tip. The lingual surface has been made flat and parallel to the predetermined path of insertion. The diagonal lines represent a guiding plane on the proximal surface, and occlusally to it there is a rest seat, spoon-shaped

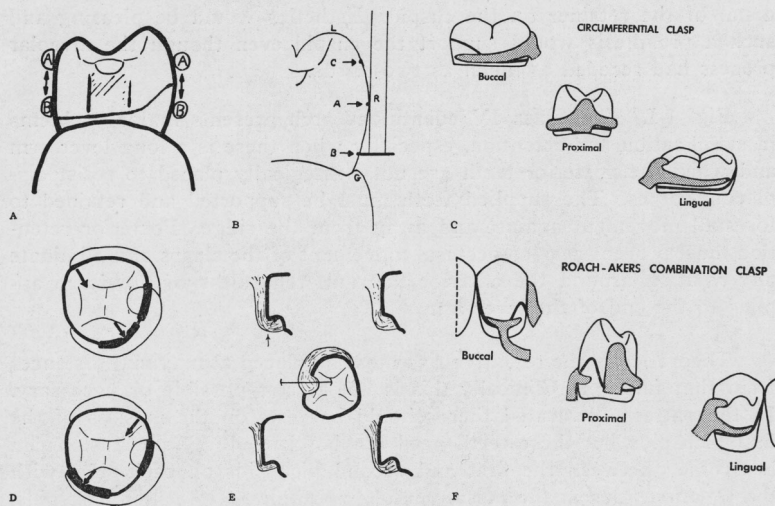


Figure 2

in cross section and in the center of the tooth. On the proximal and lingual, the survey line has been brought down very close but not to the gingival tissue.

A clasp made for this tooth would seat in the following manner:

The lingual reciprocating arm, represented by "A," would engage the flat surface or lingual guiding plane before the round retentive clasp "A" on the buccal started to flex over the height of contour, represented by the termination of the survey line. Reciprocating arm "A" would be constantly in contact with the lingual surface during the time that retentive arm "A" on the buccal was moving cervically, and would still be in contact with the prepared flat surface when retentive arm "A" moved into the position of "B" on the buccal. The location and length of the flat lingual surface should have been calculated when the study casts were surveyed and while carving the retainer pattern.

While the clasp was moving into or out of position, the tooth would be continuously supported on the lingual by an encircling clasp arm. This is a prime requisite in maintaining a healthy alveolus around any clasped tooth.

Fig. 2-B shows an undercut gauge in position, with the measuring disk at the point of retention. This illustrates the contour which should

be given to the clasped surface of a tooth, showing that the convexity from point of contact "C" to height of contour "A" is the same as that from height of contour "A" to point of retention "B."

Such contours can be built into almost any abutment tooth, removing the possibility of rapid changes in pressure or torque from the clasp arm and preventing a prosthesis from "snapping into place." The authors would like to emphasize that any partial denture which **jumps** into position either is over-retained or is supported by improperly contoured abutments.

Fig. 2-C pictures a circumferential clasp, ^{2 5 6} often referred to as the Akers or No. 1 clasp.

- (a) In the buccal view, the retentive arm goes around the tooth above the height of contour, crossing it to enter the retentive undercut. It should be noted that the portion of the clasp in the retentive undercut is no more than one-third of the over-all length of the retentive arm, and that the arm is tapered so that the tip is only one-fourth as large as the clasp arm at its point of attachment. This induces flexibility where it is needed.
- (b) A proximal view shows the correct position of the clasp arms occluso-cervically.
- (c) The lingual view illustrates that the reciprocating or non-retentive clasp arm is above the survey line for its entire length.

Fig. 2-D shows cross sections of two types of clasps. At the top is the Akers, or circumferential clasp; at the bottom a cross section of the Roach-Akers clasp.

The retentive arm of each clasp is at the top. Arrows point across the teeth from the retentive segments toward guiding planes on the opposite surfaces. In the preparation of abutment teeth for clasping, an effort should be made to develop guiding planes 180 degrees around the teeth from the retentive clasp tips.

Fig. 2-E contains diagrams of cross sections of occlusal rests.

- (a) The upper left drawing illustrates a correct rest seat and an adequate rest.
- (b) The upper right picture shows a rest seat which slopes cervically and thus would not provide stabilization.
- (c) The rest going into the rest seat in the lower left diagram is too thin and lacks strength.

- (d) The rest seat at the lower right has a margin which is too angular. When rest seats are prepared in this fashion, usually the metal which crosses the margin of the tooth is too thin and breaks in a relatively short time.
- (e) The diagram in the center illustrates the relationship of the rest to the center of the tooth. Positioned in this way forces on the tooth from the rest will almost always react along the long axis of and within the circumference of the tooth.

Fig. 2-F shows the Roach-Akers combination clasp ⁵ ⁶ which is very important in partial denture construction. If the tissue contour apically to the cervical line is not undercut, the tooth can be approached from the cervical, and this clasp making it possible to obtain retention at the disto-buccal line angle approximating the edentulous space.

The second and third views show the relationships of the retentive arm, the minor connector, and the reciprocating arm to the survey line.

In summary, when a removable partial prosthesis is indicated, teeth must be recontoured for clasping, guiding planes, and rest seats. For maximal performance, they should be crowned. By designing a prosthesis which furnishes adequate support and avoids over-retention, the life span of the remaining dentition can be lengthened. A removable partial denture should not be a premeditated interim replacement; it should be designed and maintained in a state of efficiency which will continue to improve the oral environment.

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A. D. A. NEWS

SUMMARY OF ACTIONS BY HOUSE OF DELEGATES

In Miami Beach the House of Delegates:

- affirmed support of federal aid to dental education.
- upheld the evaluation program of the Council on Dental Therapeutics.
- rejected prohibition of the use of ADA name in advertising but adopted a statement of policy on its use in advertising.
- agreed that a national program for accrediting dental laboratories be implemented.
- urged aggressive action on fluoridation.
- asked dentists cooperation with schools in mouth protector programs.
- urged dental societies to have emergency service available regardless of the hour or day.
- authorized ADA agencies to support legislation for program of dental care for dependents of service personnel.
- amended the Principles of Ethics to the effect that use of the term "specialist" is to be discouraged and that "practice limited to . . ." is to be preferred.

A.D.A. AND STATE OFFICIALS MEET

Officials of the American Dental Association and representatives of several of the constituent societies met in New Orleans on January 7 to discuss Association business.

The conference unanimously agreed that the right of the component society to determine the qualifications of its members shall be preserved and that the right of the component society to classify its active members as active members of the constituent society and of the American Dental Association be maintained.

Participants in the conference included Dr. Gerald D. Timmons, Philadelphia, ADA President; Dr. James P. Hollers, San Antonio, ADA President-elect; Dr. Harold Hillenbrand, Chicago, ADA Secretary; Dr. A. D. Farver, Miami Beach, ADA First Vice-President, and Dr. John S. Eilar, Albuquerque, Dr. E. Jeff Justis, Memphis, and Dr. William A. Garrett, Atlanta, all members of the ADA Board of Trustees, and representatives of various constituent dental societies.

Dr. Grover C. Starbuck attended as representative of the Virginia State Dental Association.

MEMBERSHIP RISE

An all-time high of 99,701 memberships in the ADA was reached in 1962. This total includes 86,551 active and life members; 260 affiliate members; 27 associate members; 56 honorary members, and 12,807 student members. Virginia's total rose from 1,182 in 1961 to 1,223 in 1962.

THE IMPACT OF SOCIAL, ECONOMIC AND POLITICAL FACTORS ON THE PROFESSION OF DENTISTRY A BACKGROUND

GEORGE W. BURKE, JR.

This is a condensation of the first of a series of programs dealing with this timely subject presented to and discussed by the Dental Clinic Staff of the Medical College of Virginia during the session 1962-1963.

In commenting on some of the features of the crisis facing the health professions today, Don Gullet stated, "traditionally, the health professions have concentrated upon education, research and practice; but today a social movement has cut across these three objectives and has established a fourth main factor which is disturbing to the professional man. It is disturbing because he is not educated to deal satisfactorily with the situation created by social pressures. On one side he is admonished to alter his ways, while on the other he is inclined strongly to adhere to tried and proved methods." To ignore these changes is the stance of the ostrich with buried head; to deny these problems vociferously without a pragmatic solution to offer is as twisting the tail of the tiger. The time has arrived, indeed, for constructive and positive action.

Civilization, as we are familiar with the term, consists of some 5,000-6,000 years of the recorded history of mankind. This is but a very small fleck of time, of such infinitesimal brevity that it would be impossible to show drawn to scale on any chart designed to illustrate the whole history of this planet to date which consists of some $4\frac{1}{2}$ billion years.

The last two hundred years comprise an even more brief interval of time in the history of mankind upon the globe. But in that time a

greater change has taken place in man's ways of living than in all the preceding centuries of recorded human existence. The inventions introduced by the scientific revolution of the past two centuries have transformed the patterns of civilization and of human society and in all the five continents people are being moulded by the standardizing influences of a technological civilization. Nor is it likely that the present movement of rapid social change will in any degree abate its speed. It is this fact which imparts a unique character to the social situation of the present moment.

Arnold Toynbee tells us that during the recorded history of man some twenty or so recognized civilizations are known to have existed and all except the civilization comprising that of Western man appear to be dead or moribund. The cause of death in each case can be connected to problems involving the social ravages of either War or Class or some combination of the two. Fortunately, for those that survive today, the destruction witnessed in the past has been confined to individual specimens of society, usually the top strata rather than society as a whole and from the ashes of one civilization will be seeded the crystals of another destined for growth. Thus we have witnessed, for example, the collapse of the Graeco-Roman world as it made way for the emergence of modern Western man of today.

Toynbee asks the question, "Why cannot civilization go on shambling along from failure to failure, in the painful, degrading, but not utterly suicidal way in which it has kept going for the first few thousand years of its existence?" His answer to this question involves the recent huge increase in Western man's technological command over non-human nature—his stupendous progress in "know-how" which has unified the entire world as the confines between neighboring societies or competing societies become narrower and narrower. No longer can the motion of one social mass be permitted to operate with a relative degree of freedom from the energy of a similar adjacent society just as invariably as the law of nature which states that a force in one direction invokes a similar and equal response in the opposite direction. Nor has modern man succeeded in abolishing the two congenital maladies of civilization, War and Class. In fact, Toynbee states that Western "know-how" has inflamed these two diseases into fatal maladies and Class has now become capable of irrevocably disintegrating society and war of annihilating the entire human race. Evils which hitherto have been merely disgraceful and grievous have now become intolerable and lethal. It is imperative, therefore, that modern man abolish War and Class and abolish them immediately, otherwise the cessation of human society will be final and the history of man's end on this planet may well be written

by some other living organism of the future provided the fickle but unalterable nature governing evolutionary changes equips him with enough intelligence to do so and ample evidence of man's past is available to invite his curiosity.

It is easy to understand how our heightened technology has established the necessity of abolishing War with the arrival of the nuclear age. We are aware that the nuclear bomb and many other lethal weapons are capable, in another war, of wiping out not merely belligerents but the whole of the human race, and a novel such as Nevil Shute's "On The Beach" ceases to be an incredulous product of science fiction but rather assumes the aspects of an entirely plausible and grim reality.

The abolishment of the evil of Class because of technologic advance is more difficult to understand, for the minimum standard of living, certainly for people of the Western world in large percentages, has been raised far beyond the wildest dreams of the imagination of man at the dawn of the industrial revolution. Even though the more underprivileged parts of the world have only tasted sparsely of these so called "fruits of the loom," the awareness of these changes in the Western world has already implanted the seeds of desire and waves of mimicry are sweeping through the more infertile lands feeding the brand of social injustice that is arising from these areas. Again, Arnold Toynbee asks the question, "Can we not look forward to seeing this rapidly rising minimum standard raised to so high a level and enjoyed by so large a percentage of the human race that even greater riches of a still more highly favored minority will cease to be a cause of heart burning?" He points out that the flaw in this line of reasoning is that it leaves out of account the vital truth that man does not live by bread alone. However high the minimum standard of his material living may be raised, that will not cure his soul of demanding social justice; and the unequal distribution of the world's goods between a privileged minority and an underprivileged majority has been transformed from an unavoidable evil into an intolerable injustice by the latest technological inventions of Western man.

The inequity of distribution of this world's goods witnessed in the history of mankind prior to the nineteenth and twentieth centuries was accompanied by a degree of resigned acceptance by mankind as a whole in view of the fact that man was limited by lack of sufficient energy or sufficient labor to produce more than minute quantities of the flowers of civilization. The master craftsmen who rose to such heights of elaborate production among the guilds of medieval Europe, though skilled to the highest degree could produce only in quantities for the privileged few because of the very limited technological command over

nature. The few favored beneficiaries of civilization had but one obvious common-sense plea to put forward in their own defense. Their indulgence at the expense of the rest of society at the same time permitted them to serve as a trustee for all future generations of the whole human race. The plausibility of this appeal could not be denied, but our unprecedented technological progress of the last one hundred and fifty years has made the same plea invalid today. Thus the always ugly inequality in the distribution of this world's goods, in ceasing to be a practical necessity, has become a moral enormity.

The answer to this problem is one of the major issues facing society today. It is reflected in the demands for mass educational opportunities, the demands imposed by the rising powers of labor unions, or even the demand that the illnesses and diseases of man be treated with all the skill and technical progress available. The dental profession is not immune to present day changes in our social order. We must move in harmony with the fluctuating tides of our cultural patterns if we wish to exercise a more satisfactory control over what the future has in store for the practice of dentistry in the United States of America. The dental health of the community has attracted the eye of both the social scientist and the legislator. If we are not sufficiently cognizant of the community dental health problem so as to assist these vital agencies with strong guidance and leadership from within the dental profession then the job will be done by them in the absence of what could have been offered from our viewpoint. The net result conceivably could be to our complete dislike.

We cannot shut our eyes to the significance of this steadily growing vision of reality, which is at once the condition and the result of the life-purpose of human society. A modern writer has said, "The mind of man seems to be of a nature to assimilate itself to the universe; we belong to the world; the whole is mirrored in us. Therefore, when we bend our thoughts on a limited object, we concentrate faculties which are naturally endowed with infinite correspondences."

The Jesuit priest, Father Teilhard, was once asked, "How can the success of a commercial enterprise bring with it moral progress?" He replied, "In this way, that since everything holds together in a world which is on its way to unification, the spiritual success of the universe is bound up with the correct functioning of every zone of that universe and particularly with the release of every possible energy in it. Because your undertaking is going well, a little more health is being spread in the human mass and in consequence a little more liberty to act, to think and to love."

COMPONENT OFFICERS AND NEWS

Component No. 1—Virginia Tidewater Dental Association

DR. THOMAS G. WARRICK, Norfolk	<i>President</i>
DR. T. ROY JARRETT, JR., Virginia Beach	<i>President-Elect</i>
DR. JOHN W. ATKINS, Chesapeake	<i>Secretary</i>
DR. ROBERT W. ADAMS, Portsmouth	<i>Treasurer</i>
DR. ROBERT B. WHITMORE, Norfolk	<i>Corresponding Secretary</i>
DR. ALEXANDER L. MARTONE, Norfolk	<i>Counselor</i>
DR. THOMAS G. WARRICK, Norfolk	<i>Council on Dental Health</i>
DR. W. B. COSTENBADER, Norfolk ...	<i>Dental Trade & Laboratory Relations</i>

Component No. 2—Peninsula Dental Society

DR. HENRY D. MCCOY, Newport News	<i>President</i>
DR. CLEMENT E. STALEY, Newport News	<i>President-Elect</i>
DR. W. A. BOATWRIGHT, Newport News	<i>Secretary-Treasurer</i>
DR. WILLIAM H. TRAYNHAM, JR., Hampton	<i>Counselor</i>
DR. JOHN H. QUINLEY, Newport News	<i>Council on Dental Health</i>
DR. JOHN TODD, Newport News	<i>Dental Trade & Laboratory Relations</i>

Meets first Monday each month except June, July, August.

The Peninsula Dental Society sorrowfully acknowledges the loss of Dr. John Mercereau Burbank on May 18, 1962.

Component No. 3—Southside Dental Society

DR. MARTIN SHEINTOCH, Petersburg	<i>President</i>
DR. R. M. COMSTOCK, Petersburg	<i>President-Elect</i>
DR. JAMES A. BOYD, Petersburg	<i>Secretary-Treasurer</i>
DR. T. C. BRADSHAW, Blackstone	<i>Counselor</i>
DR. DAVID H. REAMES, Petersburg	<i>Council on Dental Health</i>
DR. D. H. REAMES, JR.	<i>Council on Dental Health</i>
DR. W. J. SYDNOR, Farmville	<i>Dental Trade & Laboratory Relations</i>

Component No. 4—Richmond Dental Society

DR. W. C. FRENCH, Richmond	<i>President</i>
DR. HUGH O. WRENN, Richmond	<i>President-Elect</i>
DR. J. D. BEALL, Richmond	<i>Secretary-Treasurer</i>
DR. H. S. POWELL	<i>Counselor</i>
DR. MERTON STEARNS, JR.	<i>Council on Dental Health</i>
DR. W. D. CROCKETT	<i>Dental Trade & Laboratory Relations</i>

The Richmond Dental Society expresses its regretful loss of Dr. M. J. Connell, Sr., Dr. W. W. L. Smoot, and Dr. W. M. Tunstall.

Component No. 5—Piedmont Dental Society

DR. THOMAS T. UPSHUR, Lynchburg	<i>President</i>
DR. FRED B. CORNETT, Danville	<i>President-Elect</i>
DR. F. PAUL TURNER, JR., Martinsville	<i>Secretary-Treasurer</i>
DR. ELDON HOLSINGER, Martinsville	<i>Counselor</i>

The officers of the Piedmont Dental Society were elected at the 1962 Annual Meeting last November.

The 1963 Annual Meeting of the Piedmont Dental Society will be held at The Homestead, Hot Springs, Va., on Monday, November 4th and Tuesday, November 5th, 1963.

Component No. 6—Southwest Virginia Dental Society

DR. HENDERSON P. GRAHAM, Marion	<i>President</i>
DR. J. DAN REASOR, Chilhowie	<i>President-Elect</i>
DR. FRENCH H. MOORE, JR., Abingdon	<i>Secretary-Treasurer</i>
DR. W. E. CLINE, Abingdon	<i>Asst. Secretary-Treasurer</i>
DR. KEMPER MCCLOUD, Marion	<i>Counselor</i>

Component No. 7—Shenandoah Valley Dental Society

DR. FULTON GILBERT, Staunton	<i>President</i>
DR. O. L. BURKETT, JR., Woodstock	<i>Secretary-Treasurer</i>
DR. RALPH B. SNAPP, Berryville	<i>Counselor</i>
DR. RICHARD BRADSHAW, Harrisonburg ...	<i>Member Dental Health Comm.</i>

Component No. 8—Northern Virginia Dental Society

DR. E. E. TANNENBAUM, Alexandria	<i>President</i>
DR. RAY HAMILTON	<i>President-Elect</i>
DR. DOUGLAS C. WENDT, Arlington	<i>Secretary-Treasurer</i>
DR. KENNETH M. HAGGERTY, Arlington	<i>Counselor</i>

ANNOUNCEMENTS

UNIVERSITY OF ILLINOIS VETERINARIAN AND DENTIST DEVELOP 3-D X-RAY

For the first time in the history of medical technology X-ray moving pictures can be viewed with depth and perception on a screen as still pictures, according to two doctors at the University of Illinois Medical Center Campus in Chicago.

The doctors are Seymour I. Yale, professor and head of the Department of Dental Radiology in the College of Dentistry, and William C. Dolowy, veterinarian and administrator of the University's \$2,250,000 Medical Research Laboratory.

Their new technique not only provides greater detail and perspective but also permits careful prolonged viewing of a still picture with the added 3-D effect. It also permits the observation of important details which heretofore were not visible.

According to Dr. Yale, the technique is good for viewing the difficult areas of the jaw and face. These areas, he says, are very hard to see with ordinary X-ray because many of the details are obscured.

"With our 3-d X-ray," says Dr. Yale, "we now have the necessary depth to see such things as fractures of the jaw, diseases of the jaw (tumors and cysts), and the exact location of impacted teeth."

Dr. Dolowy indicates that the use of this X-ray will open up many new avenues of research, such as the study of diseases of the brain.

"It will be a valuable asset to the neurologist. It would make for easier discovery of foreign bodies in the face and the jaw."

The 3-D X-ray is also excellent for teaching, says Dr. Yale. "At the University's College of Dentistry, we are using this new X-ray technique to teach our students the proper diagnosis of bone and tooth diseases. For example, the arthritic changes in the jaw joint are easily seen by use of the 3-D X-ray."

"In our method," adds Dr. Dolowy, "a 35-mm motion picture of an adult human skull, for example, is taken at a speed of 6 frames per second. The skull is then mounted so that it can be easily turned to the position we desired. A fluoroscopic screen is then placed vertically adjacent to the edge of the turntable. The pictures are next taken through a 9-inch Phillips image intensifier."

Dr. Dolowy explains that a similar procedure has been invented for 3-D motion pictures. However, the disadvantage of a motion picture is that the subject is always in motion. Through our procedure it is motionless, for better viewing. "In essence, what we really have done," says Dr. Yale, "is to take movie pictures of a skull moving around and make still pictures out of them."

Projecting the film (according to Drs. Dolowy and Yale) as stereoscopic still pictures overcomes the disadvantages of the stereoscopic movies in that it obviates the necessity of viewing a constantly moving picture. Furthermore, indicates Dr. Yale, it permits magnification of the picture by increasing the distance from the projector to the screen.

This method of film projecting, giving a still stereoscopic effect, appears to be valuable for routine viewing of X-rays taken through 35-mm movies of a rotating subject, states the doctors. "What we hope will be the next step," said Dr. Yale, "is to put a human in a dental chair and rotate him as we do with the skull. In this way we can have 3-D X-rays of a person and be able to diagnose certain defects of the brain and jaw, that previously could not be seen with a regular still X-ray."

TWO RESEARCH FELLOWSHIPS

Tufts University School of Dental Medicine's Department of Periodontology announces that applications are now being accepted for September, 1963 for two fellowships intended for graduate dentists interested in research and teaching careers in periodontology. In addition to participation in an extensive research program, the fellowships offer training in Periodontal pathology and an opportunity for preparing for advanced degrees. There is an annual stipend of \$5,000, and the fellowships are renewable.

Address inquiries to Dr. Irving Glickman, Tufts University School of Dental Medicine, Department of Periodontology, 136 Harrison Ave., Boston 11, Massachusetts.

POST GRADUATE COURSES
MEDICAL COLLEGE OF VIRGINIA
Current Methods in Endodontics

RALPH F. SOMMER, D.D.S., M.S., F.A.C.D.

Dr. Ralph F. Sommer has been Professor of Operative Dentistry at the University of Michigan for the past thirty years. He is head of the Departments of Endodontics and Radiology at the University of Michigan Dental School, and also at the W. K. Kellogg Institute for graduate and postgraduate studies.

Dr. Sommer has lectured before many groups in the United States, Canada, Latin America and Europe. He is Past Director of the Detroit Dental Clinic Club in Endodontics, member of the Odontological Association for the Advancement of Science, the Academy of Oral Roentgenology, and the Academy of Oral Medicine.

Dr. Sommer is the Author of countless articles and co-author of 2nd edition of a very recent textbook on "Clinical Endodontics."

Tuition: \$25.00 for resident of Virginia; \$75.00 for out-of-state dentists.

Send check to MCV, School of Dentistry, Richmond, Va.

THE COURSE OUTLINE

Friday, April 5, 1963

First Session — 9 to 10:30 A. M.

Lecture: "Basic Principles of Endodontic Procedures"

Second Session — 10:30 A. M. to 12 Noon

Clinical Demonstration (Televised)

Third Session — 1:30 to 3 P. M.

Lecture: "Management of Traumatic Injuries"

Fourth Session — 3:00 to 5:00 P. M.

Clinical Demonstration (Televised)

Pulpectomy of multi-rooted teeth

Saturday, April 6, 1963

Fifth Session — 9 to 10:30 A. M.

Lecture: "The Management of Periapical Lesions"

Sixth Session — 10:30 A. M. to 12 Noon

Clinical Demonstration (Televised)

Seventh Session — 1:30 to 3:00 P. M.

Lecture: "The Indirect Method of Root Resection for Teeth with
Periapical Lesions, and Dowels"

Eighth Session — 3:00 to 4:30 P. M.

Clinical Endodontics Demonstration (Televised)

4:30 to 5:00 P. M. — Question and Answer Period.

RESIDENCY AND INTERNSHIP PROGRAM

The University of Rochester School of Medicine and Dentistry

Applications are now invited for the following positions:

Resident in Oral Surgery (Chief)

Stipend, \$3,400 per year.

Assistant Resident in Oral Surgery

Stipend, \$3,200 per year.

Rotating intern (two positions)

Stipend, \$3,000 per year.

Appointments of one year's duration will be effective July 1, 1963.

For detailed information and application forms, write to:

Dr. Erling Johansen

Chairman, Department of Dentistry & Dental Research

University of Rochester, School of Medicine & Dentistry

Rochester 20, New York

P. H. S. GRANTS AND FELLOWSHIPS

The P. H. S. announced the award of 1,815 research grants and 99 fellowships totaling \$44,416,670 during January, 1963.

Of the total, \$15,328,171 was allocated to support 538 new research grants, fellowships, and research career awards. The remaining \$29,088,499 was for continuation of previously approved grants and fellowships.

The National Institute of Dental Research received 11 new research grants totaling \$316,094 and 5 new full time fellowship awards totaling \$69,899.

VIRGINIA LIAISON DENTISTS
88TH CONGRESS — 1963

Senators		Liaison Dentists	
Byrd, Harry Flood		(D)	Ralph B. Snapp 114 S. Buckmarsh, Berryville
Robertson, A. Willis		(D)	Harry Lyons Medical College of Virginia Richmond
District Number and Congressmen		Liaison Dentists	
1. Downing, Thomas N.		(D)	John T. Jobe, III Masonic Temple Bldg. Newport News
2. Hardy, Porter, Jr.		(D)	William W. White Wainwright Bldg., Norfolk
3. Gary, J. Vaughan		(D)	John C. Tyree Professional Bldg., Richmond
4. Abbitt, Watkins M.		(D)	R. O. Reynolds Chatham
5. Tuck, William M.		(D)	John J. Stigall, Jr. Professional Bldg., Richmond
6. Poff, Richard H.		(R)	Eugene V. Crockett Box 426, Station A, Radford
7. Marsh, John O.		(D)	D. Blanton Allen Berryville
8. Smith, Howard W.		(D)	Samuel N. Gray 110 S. Columbus St. Alexandria
9. Jennings, W. Pat		(D)	Charles M. Quillen Reynolds Bldg., Bristol
10. Broyhill, Joel T.		(R)	Lucas H. Blevins 2509 N. Franklin Road Arlington

NOTE TO ALL MEMBERS

At the December 9, 1962 meeting of the Executive Council in Charlottesville, it was decided that the Virginia State Dental Association would discontinue providing its members with LABORATORY WORK ORDER PRESCRIPTION FORMS. This was done originally to familiarize the members with the law enacted by the General Assembly during its last biennial meeting. Any prescription form may be used that provides the necessary information required by law.

VIRGINIA STATE DENTAL LABORATORY ASSOCIATION COMPONENT REPRESENTATIVES

Component No.	Name and Address
I	Joe Kaufman Kaufman & Neilsen Dental Laboratory 1216 Northview Avenue, Norfolk 13
II	Burrell F. Corbett Hampton Dental Laboratory P. O. Box 372, Hampton
III	Russell L. Powell Franklin Dental Laboratory P. O. Box 245, Franklin
IV	Norman E. Harris Harris-Williams Dental Laboratory 1805 Monument Ave., Richmond
V	Seward J. Wilson, Jr. Danville Dental Laboratory, Inc. 747 Main St., Danville
VI	Robert M. Saunders R. M. Saunders Dental Laboratory Box 840, Roanoke 4
VII	S. C. Webb S. C. Webb Dental Laboratory Box 1002, Waynesboro
VIII	Jack Saylors Saylors' Dental Laboratory P. O. Box 410, Manassas

APPLICATIONS FOR A. D. A. PROGRAMS

Applications are now being accepted for the scientific program of the 104th annual session, Oct. 14-17, 1963 in Atlantic City. Individuals, associations, institutions, federal agencies, dental schools, study groups, and research departments of commercial and non-commercial agencies are invited to present clinical lectures, table clinics, scientific exhibits and motion pictures. Application forms may be obtained from the Secretary of the Council on Scientific Session, American Dental Association, 222 East Superior Street, Chicago 11, Illinois.

COMMITTEE MEETING ANNOUNCEMENTS

The Committee on Dental Trade and Laboratory Relations will hold a brief business session immediately following the Annual Business Session on Tuesday afternoon, April 30, 1963, at the Golden Triangle, Norfolk, Va.

The Committee on Dental Trade and Laboratory Relations will meet at a breakfast session at 8:00 A. M., Wednesday, May 1, 1963, at the Golden Triangle, Norfolk, Va.

The Liaison Committee of the Committee on Dental Trade and Laboratory Relations will meet at a breakfast session at 8:00 A. M., Tuesday, April 30, 1963, at the Golden Triangle, Norfolk, Va.

REGISTRATION REQUIREMENTS FOR DENTAL LABORATORY TECHNICIANS

The Virginia State Dental Association at its 1963 meeting will again present a scientific program of special interest to dental laboratory technicians of Virginia. To be eligible to register at this meeting, a technician must meet one of the following requirements:

1. Be employed by a dentist and present credentials to verify this;
- or
2. be a Certified Dental Laboratory Technician; or
3. be a member or owner personnel of an N.A.D.L. laboratory or an employee of such a laboratory; or
4. be a federally employed or state employed dental laboratory technician.

TAX CHANGES

Tax Break for Accident and Sickness Insurance Premiums

Charles F. Suter, C.L.U.

For many years the Internal Revenue Service has taken the position that the only health insurance premiums which may be deducted as medical expenses on an individual's Federal Income Tax return are those for insurance which reimburses for medical expenses. Recently, however, the Tax Court held that the Internal Revenue Service's interpretation of the law is unjustified and that a taxpayer can deduct as medical expenses premiums paid on disability income policies, accidental death and dismemberment policies, major medical, hospitalization, and any other type of health insurance contract.

Even though the Internal Revenue Service hasn't yet agreed with the courts, it may pay to claim all your health insurance from now on. Whether or not an individual will want to claim refunds for taxes on premiums paid in past years should be decided after considerable thought. The time and trouble involved may not be worth it.

When an individual purchases a health policy providing benefits for loss of earnings, neither the income benefits received nor any death benefits paid his estate or other beneficiary is taxable as income. However, the policyholder must report as income the benefits received for physicians fees, hospital charges, and other medical expenses which are reimbursed by insurance attributable to, but not in excess of, deductions taken for medical expenses in any prior year. If a policyholder receives reimbursement under health policies in the same year he paid the medical expenses for which he is reimbursed, he may deduct those medical expenses not compensated for by insurance or otherwise to the extent that such expenses exceed 3% of his adjusted gross income.

When in doubt about the deductability of premiums or the taxation of health insurance benefits, consult your tax advisor.

THE KEOGH-SMATHERS BILL

The "bill" was carried over for a touchdown. But wait, there are so many red flags on the field. Which side do they penalize? Will there be a score in our favor or will we have to return to the line of scrimmage and begin all over again?

The best advice seems to be to wait and see what the Internal "Referee" Service decides on this play.

JOHN E. HIGGINS

VIRGINIA STATE DENTAL ASSOCIATION'S WORKSHOP

Richmond, Virginia, November 17-18, 1962

ADDRESS BY DR. CLARENCE K. GARRARD

As your chairman for the workshop I want to express for the Committee on Dental Education how grateful we are for your willingness to come for two days and work for the good of dentistry in our state. Ours is no small task, but with the fine spirit of cooperation that all of you have shown I feel sure that much good can be accomplished. All of the people who have been assigned responsibilities have shown a real interest and concern for the success of this workshop. The numerous small jobs that have been done so well by so many have made this workshop possible. I told a friend of mine the other day that by the time the workshop was over I wouldn't have a friend left for they have all had to work so hard.

I believe we have in this room today a good cross section of men who represent a dedication to dentistry, yet are willing to recognize our shortcomings and realize that we must face up to them in order to meet our professional obligation. My one request from each of you is that you be tolerant of the views of others even though they may differ from yours. Billy Graham once said that if there were two people who thought identically then there would be no need for one of them. We want each of you to feel free to express your views openly without fear that anyone will try to put you in your place. We are not here to display any superior knowledge, to air any personal prejudices, create arguments or make anyone feel uncomfortable in any way. If there are wounds we want to heal them, if there are gaps we will bridge them, so we can reach a mutual understanding, in order that there can be a oneness in the recommendations that come out of our two days work. Some of us will express ideas far to the left and some far to the right, but only by expressing these ideas openly can we find a middle of the road solution that will be acceptable and satisfying for all concerned.

The dental health problems of the citizens of Virginia are the joint responsibility of the educators and the practitioners. Only as we are willing to listen to each other can we show progress. We must not try to work independently for we are very definitely dependent upon each other. After all, the practitioner is the end product of the educational institution.

I recently talked to the dean of one of our finest liberal arts colleges regarding our pre-dental requirements. His comment was that the main objective of a liberal arts college was not to prepare a student for his profession, but rather to protect him from it. The Survey had much to say on the narrowness of the education of professional men. We spend our lives dealing with people yet there is very little time in the pre-dental education for studies in the Humanities. Surveys have consistently shown that the success of individuals is due only 15% to superior skill or knowledge but 85% to one's ability to understand and get along with people. We would do well to study seriously our pre-dental requirements.

I have a great deal of admiration for the men who devote their lives to teaching, although they must have many rewarding experiences. It is a privilege to have the opportunity of guiding the life of a boy through four years of dentistry but it should never be taken lightly. While in college the student may idealize you as a professor but ten years later may bitterly condemn you for not properly preparing him to meet the demands and problems that come his way in general practice. I realize that it must be difficult for teachers who have never engaged in a general practice over a long period of time to have even the remotest conception of the problems involved in private practice. However, they can only be enlightened by their willingness to listen to the needs of the practitioners.

We desperately need well rounded practitioners who are adequately trained in all branches of dentistry. One of the saddest remarks I have heard lately was made by a very fine young dentist who said, "the kind of dentistry I was taught in school the public does not seem to want." I often have men say to me, "Clarence, what is text book dentistry, it is not practical and I have to make a living." Do we need to ask ourselves what is wrong with textbook dentistry or are we turning out students that are inadequate?

When it boils down to how we as a profession are going to meet the dental needs of the people of Virginia, there are only two solutions. We must either treat the end results of dental disease or make a serious attempt to prevent and control it. Personally I think we should attack

the problem by both methods, but not by one at the expense of the other. If we, in this country, were to attempt to treat the approximately 700 million unfilled cavities alone then we in Virginia would have to increase the number of dentists, auxiliary personnel and number of working hours at the chair. This is not only a terrifically expensive approach but one that takes a long time to carry out. I believe far more can be accomplished faster with more lasting results through educating the public in proper means of prevention and control of dental disease. It is absurd to spend tax payers money for expensive dental research then half heartedly see that the public benefits by it. The community fluoridation program is a shining example of what I am talking about. As Dr. Mann so effectively phrased it in his charge to the Michigan Workshop quote, "Increased productivity of dentists alone probably will not solve the problem. Therefore every effort should be made to reduce the need for dental care. This could be done by increasing the fluoridation of commercial water supplies, by encouraging the dentist to devote more time and attention to the practice of preventive dentistry and by supporting and increasing dental research in this country in the hope that more effective methods of controlling and preventing dental disease may be found."

I would like to see our college be one of the first to re-evaluate its curriculum as suggested in the Survey report and have as its main philosophy of teaching the development of skills in restorative procedures combined with advanced knowledge of the causes and treatment of periodontal disease. This will offer the finest type of oral health service possible to the public. If this were done there would be far less worry about the denturest for the field would be far less remunerative than it is today. This approach would no doubt de-emphasize prosthetics, but it would likewise reduce the need for it. After age 40 more teeth are lost from periodontal causes than all other causes put together. Since periodontal disease is so destructive to oral health then it should occupy a position of importance in the curriculum second to none. I believe this is the type of dental health program that you would want for your family.

In closing my remarks to you, I would like to quote Dr. John T. Hundley, Director of the Department of Public Health and Welfare for the city of Lynchburg, in his annual report to the city — he states, "A second generation of families demanding welfare as their right has been caused in part by Lynchburg's failure to take corrective measures against the causes and results of poverty. Even with the expansion of services, we are making little corrective effort to prevent the problem of need, both medical and welfare, from growing. Today we are treating and giving relief to second generation welfare recipients, and in so

doing are contributing to the attitude of demanding services as their right, with little or no feeling of an obligation to earn and pay for the services demanded. Unless there is more thought given to prevention, corrective services and rehabilitation the problem of welfare and medical services will continue to grow." If this is true in medicine it is also true in dentistry. If it is true in Lynchburg it is also true in Richmond and Norfolk. Unless we want a totally socialistic government then we had better get busy on an adequate educational program beamed at prevention and control of dental disease. My feelings are best expressed in the words of a simple poem entitled —

A FENCE OR AN AMBULANCE

By Joseph Malins

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
So the people said something would have to be done,
But their projects did not at all tally;
Some said, "Put a fence around the edge of the cliff,"
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread thru the neighboring city;
A fence may be useful or not, it is true,
But each heart became brimful of pity
For those who slipped over the dangerous cliff;
And the dwellers in highway and alley
Gave pounds or gave pence, not to put up a fence,
But an ambulance down in the valley.

"For the cliff is all right, if you're careful," they said,
"And, if folks ever slipped and are dropping,
It isn't the slipping that hurts them so much,
As the shock down below when they're stopping."
So day after day, as these mishaps occurred,
Quick forth would these rescuers sally
To pick up the victims who fell off the cliff,
With their ambulance down in the valley.

Then an old sage remarked; "It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd much better aim at prevention.

Let us stop at its source all this mischief," cried he,
"Come, neighbors and friends, let us rally;
If the cliff we will fence we might almost dispense
With the ambulance down in the valley.

"Oh, he's a fanatic," the others rejoined,
"Dispense with the ambulance? Never!
He'd dispense with all charities, too, if he could;
No! No! We'll support them forever.
Aren't we picking up folks just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence,
While the ambulance works in the valley?"

But a sensible few, who are practical too,
Will not bear with such nonsense much longer;
They believe that prevention is better than cure,
And their pity will soon be the stronger.
Encourage them then, with your purse, voice, and pen,
And while other philanthropists dally,
They will scorn all pretense and put up a stout fence
On the cliff that hangs over the valley.

Better guide well the young than reclaim them when old,
For the voice of true wisdom is calling,
"To rescue the fallen is good, but 'tis best
To prevent other people from falling,"
Better close up the source of temptation and crime
Than deliver from dungeon and galley;
Better put up a strong fence around the top of the cliff
Than an ambulance down in the valley.

VIRGINIA'S DENTAL NEEDS AND DEMANDS

WALTER J. PELTON, D.D.S., M.S.P.H.*

Presented at a workshop sponsored by the Virginia State Dental Association, Richmond, Virginia, November 17 and 18, 1962.

I am pleased to be here in Richmond to participate in your workshop which is considering some of the important issues confronting the profession. I am happy to be called on to discuss the dental needs and demands and being the first speaker on the panel I am going to take the liberty of setting the stage for myself and the following speakers.

In spite of what some of the grumblers are saying about the "Survey of Dentistry" or any other document that suggests that times are changing and that the dental profession had better "get with it" — the fact remains that our code of ethics states our responsibilities in very definite and precise language. It says, and I quote from the ADA's "Principles of Ethics," that "the dentist (or dental society) has the obligation of providing fully of his skills, knowledge, and experience to society in those fields in which his qualifications entitle him to speak with professional competence. The dentist should be a leader in the community, especially in all efforts leading to the improvement of the dental health of the public."

I fail to see how the detractors and carpers are providing any leadership "to the improvement of the dental health of the public." In my opinion, most of them sound like men who were offended because they were not invited to be members of the commission or to participate on one of the study groups. They sound like disappointed status seekers who have now become fervent "status-quo" seekers.

You in Virginia and we in the United States are not the only ones confronted with the worrisome problem of providing more dental care to more people. Dr. Leatherman, Secretary General of the Federation Dentaire Internationale, writing on the future of dentistry had this to say, "In relation to social progress I think it behooves those responsible for the education and organization of the dental profession to realize that dentistry in most parts of the world has a franchise from the people, granting it the right and privilege of dental practice which means setting standards of education and practice, disciplining its mem-

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bers and particularly offenders under the law. This monopoly will only be accepted by the people so long as it can be shown that it is for the good of the majority."

He went on by saying, "There is a tendency among members of the dental profession today to look upon their privileges as the right to protect a vested interest, and there is the danger that the profession is becoming suspect in the eyes of the public and could lose some of the preferential position it now holds."

I think Dr. Leatherman was speaking directly to the dentists in this country when he said, "Over the years standards of practice, conduct, and education have risen to a marked degree with the generally improved standards in a country. In the so-called advanced countries the system of dental education, while it has admittedly increased in length and presents a more balanced syllabus in relation to the basic sciences and the technical subjects, has not really changed its concept of producing a graduate equipped to conduct the highest type of private practice, seeing few patients at high fees. This concept applied, as it is, to the dental profession throughout the world, could hardly be more disastrous in its effect on the public who see its end result as a shortage of available dental services at reasonable expense. Dentistry must adapt itself to a changing world just as other professions have done, or are doing, or must perish."

Those are strong words, politely put. What are some of the factors in our changing world to which we must adjust — or perish? The first group of factors is the normal or evolutionary movement toward higher levels of education, to larger personal incomes and toward higher standards of living which have been their natural accompaniment. Along with this upward movement of our society is the unprecedented population increase and the ever growing proportion of the people who reside in urban communities.

The second factor is the result of organized effort to accelerate this process of social change. Groups within our society want to make it possible for more people to share more quickly in the higher living standards which the first set of changes are placing within their view, if not within their immediate reach.

Are these social factors at work in Virginia? Indeed they are. Among Virginia adults 25 years old and over only 10.0 per cent were high school graduates in 1930. By 1960, 36 (35.9) per cent had finished high school and by 1975 more than 45 (45.2) per cent will have done so.² Remember that in dealing with percentage figures the real increase

is much greater because the population base has increased in each one of these periods.

Total personal income in Virginia will nearly double between 1960 and 1975. In fact, in 1930 the per capita income in the 16 southern states was only 57 per cent of the U. S. figure; by 1940 it was 64 per cent; and by 1955, 76 per cent. Projections of this trend indicate that by 1964 income in the South will be only 13 per cent below the national average, and by 1975, but 4 per cent below.³ Another measure of economic growth is the total personal income. In Virginia, it will rise from \$5.5 billion in 1955 to \$14.0 billion in 1975 and thus, will exceed the rate of increase in the United States during the same period.⁴

Urbanization, the phenomenon of the industrial revolution, is one of the factors which has made our country great. The transformation from an economy dependent on agriculture to one dependent on industry, and now the physical sciences, has affected the dental profession in a favorable way. Not only has the rural problem, that is, providing dental service to rural populations, been eased but urban populations seek dental care more frequently and are more conveniently treated. In the United States 7 out of 10 people will live in cities by 1975. In Virginia, 6 out of 10 will be city dwellers by that time and that number represents approximately a 100 per cent increase since 1930.⁵ Upwards of three-quarters of the net increase in the population of the South will be registered by big metropolitan areas, thus facilitating access to specialist's as well as generalist's services.⁶

A generation ago about 25 per cent of the population received dental care. Today we claim that 40 per cent of the nation visit the dentist regularly in a given year. In other words nearly three-fifths of our national population — 110 million people — get no care at all in the course of a year. If these ratios prevail in Virginia you are treating about 1.5 million people but you haven't found a way to manage the other 2.5 million. With all our preventive procedures and our technical know-how our standards are so low that 3 in every 10 people past the age of 35, 4 in 10 past 45, and more than 5 in 10 of those past 55 are completely edentulous.⁷ I must acknowledge in passing that Virginia does employ more dental clinicians in the direct operations carried out by the State Health Department than any other state.⁸ Even the largest and most effective state and local dental care programs are woefully inadequate by any standard. In short, as professional men and leaders, we cannot be satisfied with our progress. The "Survey of Dentistry" has indicated the many steps that will be necessary to improve our position and to insure your preferred status. Perhaps the point of this workshop is — which way do you step and how soon?

With this much background what can we expect in the future? There are many indications that the demands for dental care are increasing very rapidly. The amount of money private patients spend for dental care today is almost double what was being spent just 10 years ago. At that time, consumer expenditures for dental care in the United States was hovering around the \$1 billion mark. By 1960, they had risen, by conservative estimate, to \$2 billion. And higher fees accounted for only a fraction of this increase. Adjusting for the increase in dentist's fees, private spending was up by more than 60 per cent from the 1950 level.

Some of this increase resulted from nothing more than population growth. The really significant fact is that well over half of the total gain was due to rising per capita demands for care.

One look at current patterns of dental service utilization tells us why this should have been true in a decade marked by steadily advancing education and income. Had we known as much in 1960 about the impact of education and income on utilization as we do today, we could, in fact, have predicted it.

We know what we had long suspected — that although dental caries is no respecter of income levels, demand for service most certainly is, for demand varies with income at every age level. Of all persons in families with incomes below \$2,000, only 19 per cent get dental care in the course of a year, compared with 54 per cent of those making \$7,000 or more. The line drawn between need and demand is nowhere more readily identifiable than in the case of children; for, of those children who get care today, it is the child in the upper income family who gets the lion's share. Seventy-five per cent of children from upper income families receive some service. Only 21 per cent of those from the lower income groups get it.

Interestingly enough, the range in utilization rates based on education is roughly the same as that based on income. Seventeen per cent of the most poorly educated, compared with 57 per cent of those with at least a year of college, receive some dental service. However, education is by no means the sole factor. For, at every educational level, there continue to be very great differences in utilization associated with income. This can be seen by examining utilization by persons from families headed by someone with at least a year or more of high school training. When such families have an income below \$4,000, only a third of the members receive dental care. If the income is \$4,000 or more, almost half of the members get care.

Among families headed by someone with no high school training, utilization hits its lowest level; but, even here, those at the higher

income level are the greatest purchasers of care. They are, in fact, about twice as likely to seek care as the members of the low income families are.

Now, knowing as we do that low income and low education act to limit the demand for dental services, we cannot ignore the fact that rising education and rising incomes will act to increase that demand — and they will do so whether or not dentistry is included with the other health professions under health insurance coverages. They will do so, in other words, even if we continue to operate on a private practice basis, selling our services at a fee to those who want and can afford to buy them — a system nobody wants to change.

It is, in fact, sheer folly for the dental profession to think in terms of today's dental market when preparing to meet the needs of tomorrow. For there can be no question but that the **automatic market** for dental services — the market consisting of those who recognize the value of dental services and are also fortunate enough to be able to pay for them — is going to expand, and expand substantially.

If present rates of increase continue, the income of the average family will reach a figure in only 20 years which today we classify as being at the upper income level. In that same 20 years, the number of people with less than a high school education will drop by more than a third, while the number with high school or college training will nearly double. And the largest increase among the well-educated will occur in the age groups which include the parents of the majority of our children.

I doubt that there is one among us who would contend that the educated person of 1980 will be less likely to demand service or will demand less service for himself and his children than the educated person of today. But, unless he does, we must prepare to meet a higher average level of demand in the future, for better educated people will be considerably more numerous, relatively speaking, in our future population.

Providing just enough service to meet the rising demands which this upgrading of the population will automatically create, represents, in actuality, a mere preservation of the status quo. I repeat that, unless we increase the average amount of service available, individual groups within the population will have to be satisfied with less service than comparable groups get today.

This is a difficult idea to grasp, I know from the experience I had last January at the Michigan Workshop when these same words were

used.⁷ Let's for the moment assume that all children under 14 years in our population live in families in which the father is between the ages of 25 and 54. This assumption may strike you as rather far-fetched in this day when the teen-age father is so much in evidence. However, the data for this age group is readily available and the important thing is that we understand the principle of what is happening to the market for dental care today.

When the head of the family has had less than 5 years of formal schooling, the percentage of children under 14 years in such families who see a dentist in the course of a year, is now a low 16 per cent. When the family head has finished elementary school, 34 per cent of the children receive care; if he had some high school training, it is 54 per cent; and it is 73 per cent if he had some college training. The over-all average of children under 14 seeing a dentist given today's pattern of educational attainment, is 48 per cent.

Using these same percentages for the children of the better educated fathers of 1980 (i.e., the 1960 rates of 16, 34, 54, and 73 for each of the four educational attainment groups) the over-all average of children under 14 seeing a dentist becomes 56 per cent. And so, instead of 48 per cent of 35 million youngsters as in 1960, the dentists of 1980 would see 56 per cent of 57 million, even at today's rates of utilization (16.8 million as opposed to 31.9 million — a 15 million automatic increase in patients under 14). The same type of thing would be repeated for the parents — and, in fact, for all groups within the population.

This is why we speak of the **automatic** market. Because the 40 per cent of our population who make up today's market for care will surely grow to 50 per cent, and before we know it, to 60 per cent or higher.

To give you some idea of what this can mean to the suppliers of services, we have made some projections of private spending for care. These are based on post-war trends in expenditures as a percentage of disposable income. Admittedly, they are conservative figures, since the big shift in educational status of the population is yet to come. However, since they indicate what the minimum dimensions of demand might be by 1980, they do remind us rather forcefully of the seriousness of the problem facing us. They show that by 1980, private expenditures for dental care will be well in excess of \$5 billion.

If schools graduate no more dentists than they do today, the average dentist in practice in 1980 will have to provide services valued at more than \$50,000 annually. Remember these are the same kind of patients willing to pay the going rates that dentists treat today.

Even if we do graduate enough dentists to allow us to maintain today's ratio of dentists to population, the average dentist will be required to supply services through his office equal to a gross of nearly \$45,000. This, I would point out in passing, exceeds by \$10,000 the gross of the average 3-chair operator today. (Only 18.3% of the dentists currently have 3 or more chairs.)

Again, I repeat, this increase in demand is going to happen almost **automatically** — happen just because we are the kind of people we are — because our children will be better educated and will enjoy a higher standard of living than their parents before them. Yet, difficult as it will be to keep up with these demands, this is likely to be just the beginning.

For many groups within our society, this evolutionary movement toward a better life is far too slow. They would speed up the process of change, bringing adequate health care within the immediate reach of all. The result is that there are moving pressures, on the one hand, to facilitate the private purchase of care and, on the other, to enlarge the scope and number of public programs which call for the purchase of care.

Up to this point I have stressed the increase in the ordinary fee-for-service dental demand that will be created by sheer affluence of our predominately city populations of the future. There are two other factors which will create pressures for more dental service regularly dispensed. The first of these is the slow but nevertheless significant growth of various kinds of organized programs which may be lumped under the heading of prepayment. The second factor is the disposition in a number of states to include dental care as a feature of total health care for special population groups — the crippled, the indigent, the oldsters, and certain welfare recipients.

Actually, who can doubt that, when the opportunity arises, a great many of the less well paid but better educated families will gladly authorize another payroll deduction to accommodate some "blue" plan for dental care within their budgets? Who can doubt that even greater numbers will welcome coverage which requires no cash contribution, — which comes as a fringe benefit under a collective bargaining contract? Further, will not such coverage mean less procrastination about seeking needed services and less reluctance about accepting the costlier but better dentistry which many of us today hesitate to recommend?

If it will — and, having studied the utilization patterns which prevail in existing programs, I can see no other possible answer — then

we must be prepared to supply enough additional service to meet the new demands which prepayment will create.

The same things may be said about the current discussion over meeting the health needs of our older citizens, for legislators, regardless of party lines, seem more and more inclined to adopt an "elder care" proposal of some variety. Unless we would agree that a true health program can properly omit dental care, then we must be prepared to supply the services to which our older citizens become entitled.

Meanwhile, there will be other expanding public programs. State health and welfare agencies will undoubtedly be called upon to become larger purchasers of dental care as they undertake to supply needed health services to the disadvantaged among our population — the chronically ill and handicapped, dependent children, and the dentally indigent.

Perhaps, too, some states will attempt to carry out the recommendation of the "Survey of Dentistry" that a practical start on the dental health problem be made by preventing the accrual of dental needs where it first begins — in childhood.

An incremental program such as the Survey recommends would start with 6-year olds, then add the new 6-year olds as they come along each year, until ultimately all school-age children will be receiving care. Assuming that a nation-wide program of this kind could get underway within the next few years, nearly 60 million school-age children would be eligible for care by the time it was fully operating, as compared with the 22 million children who get care today.

Although the possibility of instituting a program of this scope may seem remote, I would remind you that if we were to undertake this and also meet all other emerging demands for care, we would still be left with an over-whelming volume of unmet need.

Surely, as a profession whose sole purpose is to help all people achieve the highest possible standards of dental health, we should be exercising all our powers of persuasion, all of our talents and energies to make these possibilities of today the realities of tomorrow. Remember, if we do not lead, we may forfeit our right to lead. We may have to accept compromises, as they have in other countries, which are neither to our own interest nor in the general good.

I close with a quote from the "Survey of Dentistry," "Should the prediction of the level of future demand be overstated by half, the problem of assuring adequate dental manpower in 1975 still would represent a Herculean task."¹⁰

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STATEMENT OF THE PROBLEM AND CHARGE TO THE WORKSHOP

WILLIAM R. MANN, D.D.S., M.S.

We are delighted indeed to welcome so many of you to this Workshop on Future Dental Manpower Requirements and the Training and Utilization of Auxiliary Personnel. We appreciate deeply the fact that you are so willing to give of your time and yourselves in order to participate in this endeavor.

This morning I would like to recount briefly the events which have led to the need for this meeting. In so doing, I hope that we all can obtain a somewhat common viewpoint with which to approach the activities of the week.

It is with a measure of confidence, mixed with no small amount of concern, that many close observers of dentistry's progress predict that the profession is entering upon one of its most critical periods. The problem is, of course, that of providing adequate dental health service to the people of this country during the next ten to fifteen years. The complicating factors in the providing of this service are the rapidly expanding population and the constantly increasing social consciousness of the people of the United States.

Historically, a new era in the life of the dental profession began in the year 1935. A severe economic depression had started in 1929, causing many to become unemployed and forcing them and their families to depend upon welfare or work projects for their bare existence. By 1935, criticism of the cost and distribution of all types of health services led to the introduction of bills in both houses of Congress to provide a federally administered, compulsory system of health insurance. None of these bills was passed, but Congress did enact a Federal Social Security Act in August, 1935, in order to provide a variety of benefits, including economic assistance to children, widowed mothers, handicapped persons, and the aged. Thus, 1935 marks the first time that the dental profession, along with the other health professions, began to feel seriously the disturbing impact of social change upon private practice.

The period since 1935 has witnessed many pressures being brought to bear upon the dental profession by social changes and an increasingly security-minded public. The profession has made serious efforts to

orient its practice to the interests and demands of the public; it has improved its status as a health service; and it has sought to provide methods of extending scientific dental health service to a greater percentage of the people. In some of these efforts dentistry has been much more successful than in others. Most certainly, dentistry has not achieved as much as it might have, and today it finds itself in a period of evaluation of the past and of planning for the future. The recent report of the Commission on the Survey of Dentistry in the United States has been a major influence in causing dentistry to assume this attitude, and coincidentally, the happenings of the past few years in Canada have crystallized recently, constituting an additional influence.

The Commission on the Survey of Dentistry has expressed its concern over the dental health of our population, and emphasized the great disparity between the present demand for dental services and the actual needs of the people. It singled out as reasons: (1) lack of appreciation of dental care by the public; (2) a poor distribution of dentists; (3) the inability of many people to pay for services, and (4) the failure of many dentists to become as productive as they might be. This analysis properly places a share of the responsibility for the gap between need and demand upon the apathy of our citizenry, but it also indicates that the dental profession must provide vigorous leadership in seeking to extend adequate dental services to more people. Perhaps the most effective method of doing this will be wide use of prepayment programs of providing dental care.

The Commission made several recommendations related to the narrowing of the differences between need and demand for dental services. Among them are the recommendations that:

1. States and local communities design and initiate incremental care programs for children, covering six-year-olds the first year and adding new groups of six-year-olds each year until all children through high school are covered.

- a) The cost of such care be met by the family if family income is sufficient.

- b) All children from indigent families receive care at community or state expense, with assistance by financial grants from the Federal Government.

- c) Programs be developed under which communities or states would provide partial payment for dental care, also with federal assistance, for children of low-income families who are not indigent.

2. All parents provide dental care for their children or utilize the services of public programs until the children are able to assume the responsibility for their own care.

3. Official health agencies assert their proper leadership in the initiation, planning, and administration of dental care programs, giving first priority to school-age children.

4. Existing crippled children's service programs be expanded as rapidly as possible to include comprehensive care for children with oral clefts and other severe dentofacial deformities requiring orthodontic treatment.

5. Experimentation in methods of providing and paying for dental care through organized group action be increased; that foundations, labor unions, corporations, and governmental agencies provide funds to support such experimentation.

6. Dental service corporations be organized by all state dental societies to facilitate the development of plans for the group purchase of care.

7. Dentists recognize increasingly the pre-eminent importance of preventive dentistry by utilizing all available preventive measures in their practices and by educating their patients in the value of prevention.

Many practitioners who have not been thinking extensively about these matters must find these recommendations difficult to accept readily. Perhaps many dentists, particularly those who lack an understanding of the population growth that this country will experience by 1975 and who have recently undergone the effects of an economic recession, will feel that these are steps which are overly liberal and which will have considerable effects upon private practice. In actuality, a vigorous program of action by the dental profession based upon these recommendations would be the greatest deterrent available to reduce the possibility of outside interference with the profession. Dentists throughout the nation must begin to understand that governmental intervention into the affairs of the profession will be most apt to be forthcoming if dentistry fails to provide enough dental health services, properly distributed.

Viewed from this perspective, the problem of dental manpower then becomes the most crucial one facing the profession today, and the foundation is established for a rather detailed discussion of its various facets. By 1975, the country's population is expected to increase from 180 million to a possible 235 million. If the 1960 ratio of dentists to

population is to be maintained, a total of 134,000 dentists will be needed in 1975. To permit the education of enough dentists to reach this total, every existing school desiring to expand would have to do so, and 23 new schools, each accepting 100 freshmen per year, would have to be built by 1971. The demand for dental care during the next fifteen years will not arise solely from the increased population, however. If the trend in per capita consumption of dental care during the period of 1946-58 is projected on to 1975, the number of dentists needed would be 190,000, rather than 134,000.

Because of the increasing demand and the efforts of the dental profession, largely through state dental service corporations, to extend its services to persons not receiving them, the dentist-population ratio should be improved by 1975, but the simple task of maintaining it appears overwhelming. Two new schools are being organized at the moment, and there are a few others under discussion. In order to obtain a reasonable number of new schools during the next ten years, however, the dental profession will have to exert every possible effort in that direction. Further, if such efforts are to be helpful in meeting the dental manpower needs of 1975, they must be forthcoming quickly. A new school requires careful planning, faculty development, and the construction of buildings. It is unlikely that a new school can be conceived and developed to the point of accepting students in less than four or five years. When it is realized that another four years are needed in order for the school to begin graduating dentists, it can be seen that efforts initiated today could not result in additions to our manpower pool before 1971 or 1972.

Since new schools perhaps cannot provide all of the additional dental manpower which will be needed in 1975, all other possible solutions must be investigated. Probably the most obvious method, and certainly one that has served the profession in the past, is to increase the productivity of the individual dentist so that he will be able to serve more patients. Efforts should be made to ensure that every dentist uses auxiliary personnel and that he makes the most effective possible utilization of them. Every dental office should be organized so that the dentist can provide dental service of the best quality to the maximum number of patients. Every dentist should understand the desirability of more than one operating room; he should be informed about the most recent types of equipment and the best treatment procedures; and he should utilize the most effective office and working arrangements. Further, more and better trained auxiliary personnel should be available to the entire profession.

Obviously, if all of this can be accomplished, each individual dentist in 1975 will be able to treat more patients and to contribute to a greater

degree in providing adequate dental health service to the nation. However, there are many dentists who resist organization and who prefer to work alone. Also, at some point in their forties or fifties, many dentists feel that the income tax takes too great a percentage of their income after it has reached a certain level, and they appear to lose the incentive to reach their maximum productivity. In addition, people in all segments of our society are placing an ever-increasing premium upon free time for recreation and leisure. This fact is certain to have some influence upon the productivity of dentists.

If the dental profession is made as productive as possible, there will certainly be a reduction in the number of dentists needed to care for our population. Probably, however, increased productivity alone will not solve the problem. Therefore, every effort should be made to reduce the need for dental care. This could be done by increasing the fluoridation of commercial water supplies, by encouraging dentists to devote more time and attention to the practice of preventive dentistry, and by supporting and increasing dental research in this country in the hope that more effective methods of controlling and preventing dental diseases may be found.

But it may be that the need for dental manpower in 1975 which will be caused by our increasing population and by the potential increase in demand for dental service will be greater than the combined factors of new and expanded schools, increased productivity of dentists, research, and fluoridation can meet. Therefore, both the American Dental Association and the Commission on the Survey of Dentistry in the United States have asked that the functions of the dental hygienist and the dental assistant be re-examined by the dental profession for the purpose of bringing about a more effective utilization of auxiliary personnel, thus assisting in the solution of the manpower problem.

At its 1960 Annual Session, the House of Delegates of the American Dental Association passed the following resolutions:

Resolved, that the Council on Dental Education be requested to urge accredited dental schools, including the training activities of the federal dental services, to undertake carefully designed programs of experimentation and research in the training of dental hygienists and dental assistants so that the profession may determine more precisely their individual roles as members of the dental health team and thus enlarge the dental profession's capacity for service to the people of this country.²

Resolved, that in any research and experimental programs in

the training of dental hygienists and dental assistants authorized by Resolution 10-1960-H, the Council on Dental Education be directed to review the programs with a view to their ultimate evaluation and to urge accredited dental schools, in developing these programs, to consult with the constituent dental society and the state board of dental examiners in order to insure that the research and experimental programs are consistent with the policies of the profession in the area.³

The same thought was included in the following recommendations of the Commission on the Survey of Dentistry:¹

1. Dentists utilize a greater number of well-trained dental assistants.
2. The number of schools for assistants be increased.
3. The dental profession conduct studies designed to develop and expand the duties of auxiliary personnel. The broadening of services should begin with the dental hygienists because there is already an approved program of education and licensure for this group. The legal and educational restrictions against male hygienists should be removed.

More recently, the Council on Dental Education has reacted to these resolutions and recommendations by preparing a statement of policy. The Council's actions were reported to the American Association of Dental Schools in March, 1961:⁴

At the Council's February, 1961 meeting, further consideration was given to the matter of developing policy which might serve as a guideline to institutions and agencies planning to pursue experimental programs in the effective utilization of auxiliary dental personnel. The Council agreed that these studies by dental schools and federal training agencies should involve both dental hygienists and dental assistants. The following resolution was adopted by the Council as a general policy for all such experiments:

Resolved, that in advising and counseling dental schools and federal training agencies in the design of experimental studies to expand the functions of the dental hygienists and dental assistant, the auxiliaries be permitted to perform those procedures and operations which assist the dentist in fulfilling his professional responsibilities as long as he retains direct supervision of the operations and while the auxiliary does not perform duties which require the full and complete knowledge of dentistry.

The following resolution was adopted by the Council to serve as a guide for the types of operations that might be considered for experimentation:

Resolved, that in the design and conduct of experimental studies to expand the functions of dental hygienists and dental assistants, the dental schools and federal training agencies be advised that some or all of the following types of operations might be included in these experimental studies, for the Council believes that the following do not necessarily require the professional knowledge and competence of the dentist: (1) the placement of the matrix; (2) the application of the rubber dam; (3) the taking of impressions of study models; (4) the placement of dressings and temporary cements; (5) the application of topical fluorides; (6) the application of medications to the gingivae; (7) the provision of advice on oral hygiene and nutrition; (8) the taking of roentgenograms; (9) the repairs of dentures not involving intra-oral impressions; (10) the taking of the shade for prosthetic restorations; (11) the routine scaling and polishing of teeth; (12) the polishing of restorations; (13) the superficial preliminary inspection of the mouth and teeth with a mouth mirror and explorer.

In June, 1961, the Conference on Criteria for Evaluating Functions of Auxiliary Personnel was held in Chicago. The report of the conference is included in the material which you were given at the time you registered. This report was included in the report of the Council on Dental Education to the 1961 House of Delegates of the American Dental Association, and, with some modification, formed the basis of the statement of policy adopted by the House regarding this subject. You have also been given a copy of the statement of policy, and I suggest that each Committee review the statement carefully.

Needless to say, the reactions of dentists to the fuller utilization of auxiliary personnel and, particularly, to the extension of their duties are mixed. Many are wary of the future activities of auxiliaries if any extension of their duties is permitted. Others, especially in the specialties, express little concern over delegation of duties they themselves do not perform, but they are highly jealous of those which they do perform. Many are unable or unwilling to take an objective view of the matter. It does appear true, however, that almost all dentists can identify some additional functions that hygienists and assistants could perform, although, as would be expected, the limits that different dentists would establish vary considerably. Most importantly, a large number of dentists do not understand the manpower problem of 1975

as many visualize it. It is understandable that, lacking information and sometimes feeling the effects of the present or recent recession, many dentists take a dim view of increasing the number of dentists being graduated annually and can see no reason for the furor about studying the duties of auxiliaries.

As the various events that I have described were taking place, the idea of this Workshop was born. It developed out of the belief that the entire profession — practicing dentist, state board of dentistry, specialty groups, dental teachers, auxiliary groups, and others — should review these actions and help to plan the course of future action. In this way, the participants in the Workshop are representative of the dental profession. All types of groups have representatives; so does every geographic area. For this one week you will be the legislative body of dentistry in this country.

We will expect you, in your committees, to review the manpower problem, to examine the ways of improving the utilization of auxiliary personnel and the ways of increasing the productivity of dentists, and to estimate the impact of methods of payment upon the demand for dental services. Further, we want you to determine those services which only a dentist may perform in his office and those which may be performed by auxiliaries. Last, we shall expect you to review and perhaps to strengthen the principles which will guide the dental schools in experimentation in training and utilizing hygienists and dental assistants.

Most of all, we want you to accept that a serious problem confronts dentistry. To deny the problem is probably to gamble with the profession's integrity. Unemotionally, and with objectivity, set about to develop a program that will permit dentistry to meet its obligations to the public in the ten or fifteen years immediately ahead. Make decisions and make them wisely — I can assure you that these decisions will be felt in the profession and, I hope, will serve it well.

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ENLARGING THE SCOPE OF DENTAL SERVICE THROUGH INCREASED AND MORE EFFECTIVE USE OF DENTAL AUXILIARY PERSONNEL

Factors Related to Demand for Dental Service

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A continuing increase in demand for dental services in this country on a per capita basis, without any additional federal health program, is inevitable. There are many recognizable signs which warrant this conclusion.

The recent Survey of Dentistry, a document of major significance, should be studied and evaluated by all in our profession, since it is destined to influence the thinking of many people. It indicates, for example, that about 40 per cent of this nation's population now receive routine dental service.¹ In other words, today there still is a great span between the need and the demand for dental service. The all important question now is, how fast and under what set of circumstances will the demand increase?

Will voluntary health insurance plans for dentistry follow the same general pattern as for medicine? An appreciable number in dentistry believe this to be true. What is the potential? In 1940 the number of persons with voluntary health insurance in the United States totaled 12,312,000, by 1950 this number had increased to 76.6 million, and in 1960 nearly 132 million or 73.4 per cent of the population were insured.² Blue Shield plans alone paid the physicians of this country \$731,131,187 in 1960, while in 1950 this total was only \$116 million.³

Another major requirement for dental service will be the various proposals for additional fringe benefits for the constituents of the unions. Some areas of the country already have recognized the significance of this purchasing power.

In addition to the factors already listed, the increasing level of education and national economy will influence the practice of dentistry appreciably. However, the three million increase in population each year presents the greatest immediate concern and professional responsibility, even without the demands for dental service which will be placed upon us by voluntary health insurance, union fringe benefits, and non-federal

programs. It will not be necessary at this time to present the dental manpower needs, if one or more federal health programs with wide coverage should be imposed on the profession.

On November 30, 1961, the U. S. population reached a figure of 185 million people, and 60 per cent or some 111 million individuals can anticipate little dental service in the present professional and socio-economic structure. There are an increasing number in our profession, with this latter figure in mind, who believe that it is much later than most of us think, and that the **demand for dental service will increase far out of proportion to the future anticipated available dental manpower.** It is obvious, even to the casual observers, what steps Congress and state legislative assemblies will pursue, when the available dental manpower no longer can provide the service demanded by the public. Is this "inevitable time" five, ten, twenty or more years away, and should we, who are interested in retaining the present high standards of service and professional integrity for the best interests of people of this country, wait to see how it will happen and then fight a defensive, delaying action? The answer to this latter question must be one which permits continuous study, experimentation, evaluation, and planning.

Medicine, in addition to its more favorable physician population ratio, many years ago recognized the need for delegating additional duties to auxiliary personnel, and it has continued to expand the areas of auxiliary service without loss of professional stature or quality of service. Dentistry, too, has no other alternative now and in the immediate years ahead.

Study, Experimentation, Planning, and Possible Programs with Reference to Dental Manpower

Much concern and constructive study and planning has been expressed in the conferences, workshops, and special committees sponsored or co-sponsored during the past two years by the A.D.A. Council on Dental Education, the American Association of Dental Schools, the U. S. Public Health Service, the W. K. Kellogg Foundation, and others. Further, the A.D.A. House of Delegates action in 1960 is positive, and relates to resolutions urging accredited schools of dentistry and the federal services to undertake carefully designed programs of experimentation and research in the training of dental hygienists and dental assistants, so that the profession may determine more precisely their individual roles as members of the dental health team and thus enlarge the dental profession's capacity for service to the people of this country.⁴ To permit further definite planning, the Council on Dental

Education also presented to the 1961 House of Delegates a "Statement of Policy Regarding Experimentation in Training and Utilization of Dental Hygienists and Dental Assistants," which was amended and adopted.⁵ (Statement appended). The debate and action by the House of Delegates in the 1960 and 1961 sessions reflects deep concern regarding the dental manpower needs and sources, and, likewise some sharp differences of opinion as to the urgency and the solution of the problem.

The House of Delegates of the American Association of Dental Schools also has given primary attention to the dental manpower requirements, since the schools of dentistry represent the source of dentists and in part the auxiliary personnel. Accordingly, a special committee on Manpower and Auxiliary Personnel was appointed in March, 1961, to (1) review and evaluate the recommendations of the Survey of Dentistry which relate to the present and future requirements for professional and auxiliary personnel; (2) evaluate the dimensions and nature of the need for additional professional and auxiliary personnel, and (3) recommend policies and programs for the education of the personnel needed to meet the dental health service demands of the future. This committee will submit its initial report at the coming meeting of the American Association of Dental Schools in March, 1963. Some areas of this report, as they pertain to the utilization of auxiliary personnel, are presented here.

Teach Dental Students How to Select and Train Assistants. The teaching of dental students how to select and train a dental assistant on-the-job, by the activation of a new course of instruction in the dental school, provides an immediate opportunity for greater office efficiency and more dental service on the part of the graduate. The number of dental assistants which can be trained in the immediate future in approved formal training programs will be small compared to the demand and need for this auxiliary person. Furthermore, a greater emphasis on teaching the dental student how to effectively utilize a dental assistant is essential. These suggestions can be implemented immediately in many schools.

Auxiliary Dental Manpower: Requirements and Potentials for Increasing the Number of Dental Hygienists and Dental Assistants.

a. Dental Hygienists.

- (1) It is necessary that the total educational program of the dental hygienist be reevaluated to identify the knowledge and skills which the dental profession now deems essen-

tial for this auxiliary person. Such a study and evaluation would determine also the length of the curriculum. For example, if a one-year educational and training program was deemed adequate, then the present facilities would permit the admission of about 3,000 students of dental hygiene rather than 1,500.

- (2) The schools also should give consideration to the admission of male dental hygienists, and thereby, reduce the large loss and turn over factor now evident to the dental profession.

b. Dental Assistants.

- (1) There is substantial data to indicate that the effective utilization of dental assistants by the dental profession can increase significantly the amount of dental service of high quality, and thereby, translate such service into "equivalent" number of dentists. Accordingly, a further definitive evaluation of the need for professional dental personnel in the immediate and long-ranged future will depend heavily upon the question relating to auxiliary utilization. (See appended statement "Availability and Need of Auxiliary Personnel and Dentists" and Figs. 1-3.
- (2) The following items with reference to the dental assistants pertain to their training, availability, and utilization:
 - (a) The post-high school vocational training centers through the Federal Vocational Education Act (84th Congress, Public Law 911, Chapter 871) provides an excellent opportunity for the training of large numbers of dental assistants at a level recognized favorably by the Council on Dental Education. The Federal Vocational Education Act provides funds for facilities and current operations (faculty, supplies, etc.)
 - (b) The immediate activation of formal training programs for teachers for dental assistant courses is essential. There now is an acute and critical shortage of dental assistants who are qualified teachers, and this shortage must be resolved before the formal training programs for dental assistants can be expanded significantly.

- (c) It is imperative that objective evaluation tests be developed at the earliest possible time, wherein such tests identify the knowledge and skills approved by the Council on Dental Education. These tests, then, can be used as criteria for determining the time required for the training of dental assistants. Since large numbers of formally trained dental assistants will be needed and demanded in the solution of the total dental manpower requirement, it is important professionally, socially, and economically to determine via objective evaluation techniques whether the training programs should be of two-year, one-year or six-months (more or less) duration.
- (d) Consideration should be given to the use of male dental assistants for the following reasons: (1) the loss factor would be far less than for females, and (2) the Armed Forces could provide a significant source for such auxiliary personnel.
- (e) It is necessary that dental schools consider the activation of continuation or refresher courses for practicing dentists to instruct them in the effective utilization of dental assistants.
- (f) State Board of Dental Examiners should be encouraged to evaluate the dental student's knowledge of the effective use of all types of auxiliary personnel.

Experimentation in Training and Utilization of Auxiliary Personnel. Consistent with the comments and recommendations already made regarding the auxiliary personnel, the committee also recommends the approval of the **Statement of Policy Regarding Experimentation in Training and Utilization of Dental Hygienists and Dental Assistants** as adopted by the House of Delegates of the American Dental Association in October, 1961. (See appended statement).

Potentials and Immediate Problems in the Effective Utilization of the Dental Assistant and Dental Hygienist

Potentials for Additional (Equivalent) Number of Dentists. It is important and meaningful to translate the potential equivalent additional number of dentists which may be realized, (1) if all non-salaried dentists in practice utilized one full-time assistant, and (2) if all non-salaried dentists utilized two full-time assistants, with the present method of on-the-job training of assistants and the dentists. For example in

1960, if each of the 85,000 non-salaried dentists had utilized a full-time assistant, the additional **equivalent** number of dentists could have been 8,500. Then, if every non-salaried dentist had utilized two assistants and two operatories, an equivalent additional number of dentists totaling 31,450 could have been realized. See Fig. 3. These figures are considered very conservative, since they reflect the extremely wasteful procedure of on-the-job training of the assistant and the dentist.

Scope of Problem in the Training of Dental Assistants. Beginning in 1962 the dental school graduates will have had some formal training in the utilization of dental assistants. However, such training still will be far below the intended level of training needed or desired in the dental schools for the dental students. Assuming that at least 3,000 dentists graduate from the schools each year, and that each graduate will request a minimum of one trained dental assistant beginning July 1, 1962, this would require at least 60 schools or programs for dental assistants graduating 50 per class (requires about 60 per class to allow for loss factor while in school) to be active during 1961-1962. Considering the potential loss factor of dental assistants from employment during 1962, 1963, 1964, and the potential request for employment of only one formally trained assistant by each of these dental graduates during this period, a total of 90 schools or programs for the training of assistants with 50 graduates per class would have to be active in the 1964-1965 academic year.

The estimated number of non-salaried dentists practicing by 1965 is 86,241. Assuming that **only 10 per cent** of the total number of non-salaried practicing dentists (less the estimated 12,000 graduates from 1962-65) four years hence would request dental assistants who were trained formally, another 7,400 must be added to the 4,500, thereby reflecting a total number of about 12,000 dental assistants needed July 1, 1965. Therefore, using a target date of July 1, 1965, it is estimated that 240 schools for dental assistants would be required with 60 per class (would provide about 50 graduates) to produce 12,000 dental assistant graduates each year. See fig. 4.

Should the objective of two trained dental assistants be the goal by July, 1965 for the 1962-65 dental graduates and **ten per cent** of the remaining non-salaried practicing dentists (less 12,000 dental graduates 1962-65), the number of dental assistants required would be about 24,000 each year. Accordingly, this would require 240 schools with 120 students in each class, or 480 schools with 60 dental assistant students per class.

It is evident from the figures just cited, that the task of providing adequate numbers of formally trained assistants even for the current

dental graduates presents a sizeable problem. Presently, there are only 23 approved dental assistant programs offering one and two year courses, and these schools do not average 50 graduates per class.

The current wasteful procedure of on-the-job training of dental assistants, therefore, will remain common practice in the foreseeable future.

Scope of Problem in the Training of Dental Hygienists. Comments regarding the need for a reevaluation of the knowledge and skills deemed essential for the dental hygienist have been made previously. There now are 37 schools providing training in dental hygiene, and five additional programs are anticipated by 1963. A total of 992 graduates were available in 1960, with a first year enrollment of 1,440 in the fall of 1960. The present number of graduates, and the large loss factor from practice, cannot be considered an effective source in the profession's dental manpower needs. Furthermore, at this time, there is no common agreement in the profession and in the dental schools as to the future role of the dental hygienist in private practice. Likewise, the total real demand for dental hygienists on the part of the profession is unknown.

Legislative Considerations. State laws regulating the practice of dentistry now vary considerably, wherein some contain restrictive clauses relating to the possible functions or duties of auxiliary personnel not found in others. The application of a topical fluoride is an example relating to the hygienist, whereby a given patient may receive such treatment in one community but not in another across a state line. Another example relates to the exposing of radiograms by a dental assistant, which is not legally permissive in some states. However, the House of Delegates of the A.D.A. at its Los Angeles 1960 meeting approved the knowledge and skills which a dental assistant should receive in a formal training program. Accordingly, the assistant is being taught the procedures for exposing radiograms in patient examination.

Some state laws also permit the practice of male hygienists, and there appears to be no legal restriction in the employment of male assistants.

Considering the total dental manpower problem, it seems logical, practical, and timely that all state laws be studied with a view of re-assessing the status of auxiliary personnel, consistent with the best interests and standards of the profession.

SUMMARY AND CONCLUSIONS

1. To date, some 60 per cent of the population in this country or about 111 million people can anticipate little dental service in the present

professional and socio-economic structure. The all important question is, how soon and under what circumstances will an increasing percentage of the 111 million people demand more adequate dental service?

2. Such factors as: voluntary health insurance, additional fringe benefits through union contracts, increased educational and economic level of individuals and families in general, and the three million rise in population annually, will create a further demand for dental service far out of proportion to the future anticipated available dental manpower. This latter demand for dental service does not include the potentials for any additional federal health programs.

3. There is substantial data to indicate that the effective utilization of dental assistants by the dental profession can increase significantly the amount of dental service of high quality, and thereby, translate such service into "equivalent" number of dentists. Accordingly, a further definitive evaluation of the need for additional dentists in the immediate and long-range future will depend heavily upon the availability, utilization, and other questions relating to auxiliary personnel.

4. It is necessary that the total educational program of the dental hygienist be reevaluated to identify the knowledge and skills which the dental profession now deems essential for this auxiliary person. The present and anticipated number of dental hygiene graduates, and the large loss factor from practice, cannot be considered an effective source in the profession's dental manpower needs. Furthermore, at this time, there is no common agreement in the profession and the dental schools as to the future role of the hygienist in private practice.

5. In July, 1965, assuming that every dental graduate from 1962 to 1965 elected to employ one full-time dental assistant, who had received a year's formal training, and if only **10 per cent** of the non-salaried practicing dentists requested such trainees, it would require 240 schools or programs with 60 per class to produce 12,000 assistants annually. This latter figure includes the loss replacement factor only from the practices of dental graduates for the interim 1962 through 1964. To date, there are only 23 approved dental assistant programs offering one and two year curriculums.

6. Recognizing in part the scope of the problem, and the unquestioned need for training qualified dental assistants in large numbers, at least three considerations seem vital for the immediate future: (1) that local and state dental societies extend every effort to assist in the activation of formal one-year as well as shorter extension type training programs; (2) that dental schools provide instruction for dental students in how to select and train assistants on-the-job, and (3) that suitable

objective evaluation tests be developed to determine the time, facilities, personnel, and costs required to train dental assistants in accordance with the knowledge and skills now identified and acceptable to the American Dental Association and the Council on Dental Education.

7. It is essential that the profession continue to urge the schools of dentistry and the federal services to conduct experimental programs, consistent with the "Statement of Policy Regarding Experimentation in Training and Utilization of Dental Hygienists and Dental Assistants," as adopted by the ADA House of Delegates in October, 1961.

8. Consideration should be given to the further use of male dental hygienists and assistants to provide a greater and more stable source of auxiliary dental manpower.

9. Considering the total dental manpower problem, it seems logical, practical, and timely that all state laws be studied with a view of reassessing the status of auxiliary personnel, consistent with the best interests and standards of the profession.

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STATEMENT OF POLICY REGARDING EXPERIMENTATION IN TRAINING AND UTILIZATION OF DENTAL HYGIENISTS AND DENTAL ASSISTANTS

(Adopted by the House of Delegates in October, 1961)

Professional Duties and Responsibilities of Dentist. The dentist is responsible for the health and welfare of his patient and must retain sole responsibility for certain operations, decisions and judgments. Those

dental operations which require a comprehensive knowledge of the basic sciences and related clinical applications cannot be delegated to personnel who have been exposed to a less comprehensive program of education and experience.

General Principles of Experimentation. Experimentation with the duties of dental hygienists and dental assistants should be conducted within the context of the following general principles:

1. Experimentation with the expansion of the functions of both the dental hygienist and the dental assistant is considered desirable and appropriate.

2. All research objectives should lead toward the improvement of the efficiency and productivity of the dentist for the ultimate extension of dental health services for the benefit of the public.

3. Experimentation should not be designed to produce any type of auxiliary who might be considered a "second level dentist."

4. Projects designed for experimentation with the functions of dental hygienists and dental assistants should be considered as research programs separate from the regular teaching program for dental students and auxiliaries.

5. Research projects should be realistic in terms of the potential application of findings to the private practice of dentistry.

6. The major responsibility for the design and the substance of the projects should rest with the individual educational institutions, which in turn should seek guidance and consultation from the Council on Dental Education and other interested agencies. The Council should not be expected to give official approval or disapproval to the specific details of an experimental program or to comment on the desirability or practicality of the kinds of operations included, but the Council should be kept informed about the experimentation being planned.

Major Areas of Investigation. The following areas of investigation are considered important to the logical and effective expansion of use of auxiliary personnel:

1. Systematic evaluation of the potential of the dental hygienist and dental assistant to perform all routine procedures not requiring the knowledge and skill of the dentist.

2. Determination of the time required to train the dental hygienist and dental assistant to perform the new duties under investigation.

3. Determination of the best pedagogical methods and technics for presenting the new material.

4. Assessment of the relative cost of training the dental hygienist and dental assistant to perform expanded duties as compared to the cost of training present dental personnel.

5. Evaluation of the effect on the dentist's productivity and quality of service through expansion of duties of the dental hygienist and dental assistant.

6. Determination of methods for controlling the use of dental hygienists and dental assistants to prevent practices not in the public interest.

QUALITY AND SCOPE OF DENTAL EDUCATION CURRICULUM AND FACILITIES NOW AND IN THE FUTURE IN VIRGINIA

R. H. SULLENS, *Secretary American Association of Dental Schools*

For a numbers of years I have been involved in the planning and conduct of workshop and conference programs and must confess that a part of the pleasure which I have derived from these activities has come from the opportunity to assign difficult discussion topics to some of my "friends." It is probably only fair, therefore, that I have received the assignment to discuss the "Quality and Scope of Dental Education Curriculum and Facilities **Now** and in the **Future** in Virginia." As I see it, this is a double-double barrelled assignment — which represents quite a weapon indeed. I hope you will forgive me, therefore, if I do not attempt all facets of this assignment in this opening statement, with the thought that we will be able to consider this broad topic in more detail during the Workshop sessions.

Let me begin by making a statement which I believe is unequivocal: The primary mission of a school of dentistry is undergraduate dental education — that is, the education of Doctors of Dental Surgery. Increasingly during the past two or three decades we have witnessed a marked expansion of the activities of the dental schools and, in some cases, there is real cause for concern that this expansion has diluted the effectiveness of the undergraduate dental education programs. I believe it is important, therefore, to approach our discussion of dental education in the proper context and, for the sake of simplicity, would suggest a division into three major missions: namely, undergraduate education, advanced education, and auxiliary education.

In my judgment, the undergraduate educational program of the School of Dentistry at the Medical College of Virginia is an excellent one. There are several criteria on which I base this judgment, but perhaps the most important is one which you gentlemen are in the best position to judge. In the final analysis, the quality of the program of your dental school must be judged in terms of the quality of service which its graduates render to the public. The dental profession and the citizens of Virginia must, and I am sure do, make this judgment.

There are, however, other tangible criteria which can be used. First, there is accreditation by the Council on Dental Education of the American Dental Association. Your dental school is and has always been

accredited by the Council on Dental Education since the beginning of the Council's accreditation program. Second, I believe the quality of a dental education program can be related, at least in part, to the participation of the faculty in educational meetings. The faculty of the Medical College of Virginia School of Dentistry is well represented at the annual meetings of the American Association of Dental Schools, the International Association for Dental Research, the American Dental Association and other dental meetings. Third, and I will comment on this item in more detail a bit later, the quality of the undergraduate educational program can be related to the research interests and activity of the faculty and students. Again, your dental school ranks high on the list in terms of research productivity. Fourth, it is obvious that the quality of any educational program is directly related to the quality of the students enrolled. Although every dental school in the country could use a larger number of highly qualified applicants, it is my impression that the caliber of students enrolled at MCV is comparable to any other school in the country. Fifth, and finally, the educational program is influenced by the physical plant and equipment. Those of you who have had an opportunity to visit other dental schools know that the School of Dentistry at MCV is a very modern and efficient facility.

In connection with this last point, I would like to encourage all of you to visit other dental schools throughout the country when you have an opportunity. It is enlightening and educational to see first hand the variety of buildings and arrangements within which our dental education programs are conducted. Such visits will also help you to appreciate the excellent institution you have here in Richmond.

With regard to the undergraduate dental education program, I would like to make a few comments on what I interpret as the "scope" or, if you will, the "philosophy" of the institution. Too frequently, it seems to me, we tend to overlook the fact that educational programs are really living, dynamic creatures and not just a stack of bricks and stones. The nature of the personality of this living creature — in the case of our discussion, the dental school — is determined by the factors which I have already mentioned plus a lot of other intangible influences, the chief of which is the philosophy of the administration and the faculty. What is the philosophy which influences the scope of the educational program at the Medical College of Virginia? With representatives of the dental faculty present, it is probably presumptuous of me to comment on this question but I will do so with the full expectation of being corrected if I am too far off base.

The contacts which I have had with the faculty and dean of your dental school have given me the firm impression that your dental program is rooted in the belief in dentistry as a **biological** health service.

This belief is no mere facade designed to assist in the justification of dental education as a university discipline but rather is based on a fundamental conviction of the inseparability of an understanding of the biological sciences and the provision of proper dental care. As many of you here know better than I, it is this concept which has elevated and maintained dental education as a legitimate university discipline — and which has established dentistry as a true health profession.

One of the essential ingredients of any university discipline is research. Here again, I have the impression that many of us fail to recognize the full contribution which research makes to dental education — or to any educational activity. The obvious result of dental research is the discovery of improved methods to prevent or treat dental disease. Important as this is, however, I submit that a research program is necessary for at least two additional reasons. First, properly oriented research activity is an essential teaching aid. When one views university education in its proper perspective, he must conclude that its major objective is to inculcate in the student the ability to think for himself. He must learn to analyze facts and figures, propose hypotheses and apply creative thinking in the search for solutions. This process is the embodiment of research. I would suggest, therefore, that a university discipline which does not expose both students and faculty to research methodology overlooks one of the most effective means of teaching. Second, I would submit that the hallmark of any university discipline is the extension of the frontiers of knowledge — for the sake of knowledge itself. It is only through research that this objective can be achieved. Any university, or any division of a university, which agrees to settle for the “status quo” is not worthy of its name.

As a final aspect of our discussion of the “scope” of your dental school, I would like to refer briefly to its position within the Medical College of Virginia. It is my impression that the School of Dentistry enjoys stature and support comparable to any other division of the College. Relations with the biological science divisions are reported to be excellent and, of significant importance, the dental program is recognized as an essential part of the University Hospital. There are many factors which contribute to good and bad relations among university divisions and clearly one of the most important essentials for good relations is the existence of a high quality educational program.

The second mission of a dental school is, in my view, the conduct of advanced educational programs for dentists. These programs fall into three major categories; namely, those intended primarily for the preparation of teachers and research scientists (graduate programs),

those intended primarily for the preparation of dental specialists (post-graduate), and those offered for the purpose of helping dental practitioners to keep up-to-date with new developments and discoveries (continuation.) The differences in these three types of advanced programs are important and I hope we will have an opportunity to discuss them in more detail during the Workshop sessions. For the moment, there are only three or four points which I would like to make.

First, I doubt that there is a dental school in the country which would not like to offer a comprehensive program of advanced education. Unfortunately, there are many which have been restricted in this desire because of a lack of space, the lack of sufficient funds, or a shortage of qualified faculty. Those who are not acquainted intimately with the operation of a dental school tend, quite naturally, I believe, to assume that the dental school should be able, almost on a moment's notice, to offer a graduate or postgraduate program in virtually any area of study. Those of you who have had the benefit of an advanced education program know that it is not this simple. The graduate or postgraduate student needs his own area in which to work and study, he frequently needs considerable research space, and he invariably needs — if the program is any good — a substantial part of the time of one or more faculty members. Unless the school is in a position to augment its teaching staff, the faculty required for advanced educational programs must be obtained at the expense of the undergraduate teaching program, thereby diluting the primary mission of the institution.

Second, I believe we should understand that historically universities have given their first attention to formal graduate programs. At least one of the reasons for this has been the recognition that graduate programs constitute the very life-blood of the university in that it is from these programs that the future teachers come. Because of this historical development, the biological and physical science departments of universities have been built and staffed with graduate programs in mind. It is, therefore, usually less difficult to inaugurate graduate (master of science or doctor of philosophy) programs in the biological sciences than it is to begin advanced educational activities in the clinically oriented areas. As you probably know, the School of Dentistry, in cooperation with the graduate division of the Medical College of Virginia, offers graduate programs in eight fields of study. According to my information, postgraduate programs are presently offered in oral surgery and pedodontics.

As the science of dentistry has progressed, there has developed a concomitant interest in continuation programs. Such interest is, in my opinion, highly commendable and should be nurtured in every way possible. I would caution, however, against the attitude that the school

of dentistry should be expected to assume full responsibility for the planning and offering of continuation study courses. Certainly the dental school can and should, if properly supported financially, carry a considerable responsibility in this area but it is my personal feeling that the constituent and component societies might be expected to assume a large share of responsibility. Here again, I hope we will have an opportunity to discuss more specific possibilities during the Workshop sessions.

The second part of the assignment given me was to discuss how educational requirements of the future are going to be financed. I would like to begin this discussion with a review of some current figures. There are two distinct aspects of the financial problem and, to avoid confusion, I would like to try to keep them separated. First, there are considerations related to the cost of dental education to the school; second, we need to discuss the cost of dental education to the student.

According to a survey made by the American Association of Dental Schools, the Council on Dental Education, and the Division of Dental Public Health and Resources in 1961 (based on data from the 1959-60 school year), the total amount spent in support of all programs in the dental schools has risen to an estimated \$44½ million dollars from \$16 4/10 million dollars in 1949-50. Out of the \$44½ million dollars spent by the dental schools in 1959-60, about \$38½ million represented regular expenses for educational programs and slightly over \$6 million dollars went into "sponsored programs," chiefly research. A decade before the last survey, the dental schools spent an estimated 15.6 million dollars on their regular educational programs thus in only 10 years the operating costs of the dental schools increased by 146 per cent. In 1959-60, only 73 per cent of the operating costs of the schools were met by dental schools out of their own budgeted funds, whereas 10 years earlier the schools met 88 per cent of their own expenses. Even though dental school income has doubled over this period, each income component — tuition and fees, clinic income, gifts, grants (not restricted for sponsored programs), endowments, etc. — covers a smaller share of the costs than it has in the past.

Schools today, of course, are educating considerably more students than they were 10 years ago, but the increase in enrollment accounts for only a part of the rise in operating expenditures. Over this 10 year period, the amount spent per student has actually doubled. Today the student pays substantially more in tuition and fees than in 1949-50, but the share of the school's expense borne by the student has continued to decline. In 1959-60, the student met only 29 per cent of the school's

cost in educating him. Ten years earlier, the student met about a third of the cost and a generation ago, almost one-half. (Page 2 of the tables).

What do all of these figures mean? They mean simply that the deficits of the dental schools are increasing each year, that ways must be found to meet these deficits or the quality of education offered to our dental students will be diminished, or — perhaps in some cases — the parent universities of some of our dental schools will be compelled to discontinue dental education.

Let's take a quick look at some projections of future operating costs. In 1949-50, the average cost per student to the dental school was about \$1,400. Ten years later, this cost had increased to more than \$2,800 per student (this estimate presently is about \$3,000 per year per student). This represents an increase of slightly over 100 per cent. On the basis of this experience, it would seem logical to project an annual operating cost per student of at least \$5,000 by 1970 which, even at the level of today's enrollments, would require \$65 million for the operating expenses of our dental schools. To this very simple projection should be added other considerations, such as the necessity for improving faculty salaries at a more rapid rate than is provided in the straight linear projection. In addition, if the dental schools are to accomplish their secondary mission (advanced education) in the manner desired and needed by the profession, it will be necessary to add many new faculty members. There is no question but that there will be additional dental schools established during the next several years which, of course, will also increase the total national investment in dental education. In an article titled "Financing Dental Education" (published in the January, 1961 Journal of the American Dental Association) Mann, Peterson, and Miller projected an annual expenditure for dental education in 1961 of \$145 million. Seventy-five million dollars of this projection was assigned to the operational budgets of the 47 dental schools in existence in 1959.

Let us look now at some of the figures on the cost of dental education to the student. From the 1961 financial survey, it is shown that the average cost of four years of dental education to the student was about \$15,000. Of this amount, \$5,800 went for school expenses and the balance, \$9,200 represented living expenses during the four-year period. A recent report of the United States Office of Education indicated that the average cost of college education to the student is \$2,000 a year, this those students who complete the minimum of pre-dental education have an additional investment of \$4,000. We must add to this total expenditure an average cost of nearly \$9,000 for establishing an office which means that the dental graduate today has invested approximately \$28,000 by the time he accepts his first patient.

From the last survey made on the cost of education to the student, we know that about one-third of all dental students come from families whose annual income is less than \$6,000. To pay the annual expenses of their son or daughter enrolled in dental school would require nearly two-thirds of such a family's income which is, of course, an impossibility. It is obvious, therefore, that the students from these families must find other means of paying their dental education expenses. I think the following figures from the 1958-59 survey of dental students are of interest and raise some real questions.

Work during the summer	76%
Wife is working	37%
Working part-time during school year	40%
Have a scholarship	9%
Using student loan funds	12%
Borrowing money (other than student loan)	27%

I believe most dental educators will agree that it is impossible for today's dental student to devote any appreciable amount of time to working and still receive the full benefit of his dental education. There are, in fact, many institutions which have regulations forbidding such part-time employment. Unfortunately, it has not been possible to enforce these regulations rigidly for, if this were done, many students simply could not remain in dental school.

It is disturbing also to note the large number of students who are incurring substantial debt during their dental education. Perhaps more disturbing is the average amount of this debt, which was estimated in 1959 to be \$4,500 for senior dental students — with one-third of those who were in debt owing more than \$6,500 at the time of graduation. Figures are not available to indicate what happens to this debt between graduation and the establishment of a practice but it must be presumed that it is increased appreciably.

As mentioned earlier, only 9 per cent of the dental students receive scholarship assistance. These 9 per cent received an average of \$480, which is less than one-eighth of the annual expenses of a dental student.

In 1959, the average tuition for a dental student was slightly over \$800 per year. Since that time, many of the dental schools have been forced to raise tuition, thus I would estimate the present average in the vicinity of \$950 per year per student. There are those who suggest that one of the solutions to the increasing cost of dental education is to expect the student to pay a higher share of the school's expenses. I submit that this is impractical — perhaps even impossible. For ex-

ample, if we accept the projection of an average cost of educating a single dental student in 1970 as \$5,000 per year and if the student merely continues to pay the present level of the school's expenses (29 per cent), the average student will be paying a tuition of \$1,450 in 1970. Surely we cannot expect the student to pay an even greater proportion of the institution's operating costs — unless we are willing to restrict dental education to the children of wealthy families.

Just a few words regarding the cost of advanced education and then I will make some concluding comments regarding the future financing. Average data on the cost of graduate and postgraduate education are unavailable but I would like to mention some figures from a dental school which has recently completed a comprehensive cost analysis of its educational activities. In this institution, which I believe is not too typical, the average cost for educating a full-time graduate student was nearly \$9,000 a year. Of this amount, the student contributed about 20 per cent, leaving 80 per cent (over \$7,000) to be paid from other sources. The average cost for educating a postgraduate student was about \$3,500 per year, two-thirds of which had to be met by funds other than tuition and clinic income. I mention these figures primarily to re-emphasize that a dental school cannot — or at least should not — undertake advanced education programs unless it can be assured of additional financial support.

In closing, I would like to comment on several aspects of the future financing of our dental schools. As already indicated, it is the judgment of dental educators and administrators that the cost of dental education will continue to increase — perhaps to the point where the cost of educating a single student in the year 1970 will be \$5,000. In the case of the Medical College of Virginia School of Dentistry, this would represent an annual operating budget of \$1,600,000 at the present enrollment level and without consideration of any other educational programs. There are only seven places from which the necessary funds can come: students foundations, business corporations, benefactors, university funds, alumni, and public sources.

I have already referred to the plight of the dental student and expressed my personal belief that we cannot expect the student to bear a higher per cent of the cost of his education.

*“With a few important exceptions, foundations have not contributed significantly to dental education, and few of the grants that have been obtained have been intended for the support of undergraduate dental education. In general, it is evident that the problems of dentistry

* “Financing Dental Education,” JADA, Jan, 1961. Mann, Peterson & Miller.

have not been well known or well understood by the foundations, and many of the proposals that have been submitted in the name of dentistry have not been well designed or presented. Every possible effort must be made to overcome obstacles such as these because the foundations of this country should contribute more generously to dental education during the next decade. The search for added financial support for the dental schools cannot end with the foundations, however, they do not have enough funds at their disposal to meet the pressing needs of dental education.

"Benefactors other than alumni form a rather unknown and relatively unexplored source of support for dental education. Gifts and bequests from such individuals should be sought by each dental school and by the members of local dental societies. Efforts must be made to bring the story of dental education and its needs to the attention of potential donors, and it is hoped that this type of support will become important in future years. The business corporations of the nation form another source of potential financial support for dental education. Although they have been the most generous new source of funds for higher education, they have tended to aid those branches of education that are rather obviously related to their own manpower needs, such as engineering, chemistry, and physics. Any assistance received from this source will be largely from the dental industry, which unquestionably will support dental education to the maximum of its ability. However, it is not a large industry and its contributions cannot be as large in dollars as those of some other types of business even though they may be as high or higher in terms of percentages.

"University funds already form a large portion of the support of dental education and, of course, the appropriated funds of publicly-supported universities should be so classified. However, dental schools in 1958-59 received only 27.7 per cent of their income from state general appropriations and 12.3 per cent from university transfers of private funds. In 1957-58 institutions of higher education in general received 48 per cent of their income from government and 16 per cent from endowment income and gifts. Thus most dental schools do not now receive a proportionate share of the funds available to their parent universities. If dental schools in private universities received a proportionate share of endowment income and those in public institutions received a proportionate share of university funds, dental schools would be relieved from depending so greatly on clinic income and tuition fees for their operational expenses."

So far in our list there seems little cause for optimism in meeting the future financial problems of the dental schools — and we are down to the last two sources; namely, alumni and public sources (including

federal aid). For the past two years in the reference committees and House of Delegates of the American Dental Association, many of us have listened to the arguments in favor of and in opposition to federal aid. There certainly is not time to review all of the pros and cons so I will refer to just two major allegations:

1. Alumni support could make federal aid unnecessary.
2. Federal aid equals federal control.

Even though the American Association of Dental Schools and the American Dental Association have been on record favoring federal aid to dental education for a number of years, I am confident that there are many dental educators and dental practitioners who would give up their efforts to secure federal support if we could believe that alumni support in sufficient amounts is forthcoming. Unfortunately, there is no evidence with which I am familiar to support this premise. Many of you know, for example, of the fund raising campaign conducted last year in the state of Tennessee through cooperative efforts of the Tennessee Dental Schools, the State Dental Association, the L. G. Noell Foundation, and the Fund for Dental Education. In spite of the vigorous and dedicated efforts of many individuals, the campaign was successful in raising only \$22,000 from the dentists in Tennessee for the support of dental education. This amount of money is insignificant when compared to the annual operating budget of a dental school of one-half to three-quarters of a million dollars. Even so, it was three times greater than had ever been achieved previously in the State of Tennessee. I would like to note also that the Tennessee State Dental Association is recognized as one of the outstanding state dental organizations, with full-time staff, hard-working committees, and so forth. It is difficult to imagine what result might be obtained in a state where the constituent association is less well organized.

Let's play with some figures for a minute or two. Suppose we take the present average cost of education of a dental student to the institution and multiply it by four. We find that the institution has invested about \$12,000 in the student over a four-year period. During that time, the student has contributed about 30 per cent of this cost through tuition and fees and about another 20 per cent from clinic income. This still means that someone has invested approximately \$6,000 toward the student's education. If every graduate of the Medical College of Virginia were to agree to repay this investment at the rate of \$100 a year — a considerably higher rate, I suspect than presently exists among the alumni of any dental school — it would require 60 years to pay off the debt.

Let's look at alumni support from another angle. Suppose the Medical College of Virginia alumni who live in the state (approximately

600, I believe), were to contribute \$100 a year to their dental school. This would represent an annual contribution of \$60,000 — a sizeable sum — but still only equivalent to the cost of educating 20 of the 300-plus dental students enrolled at the Medical College of Virginia. Many people more eloquent than I, have spoken and written on the responsibility which the alumnus has to his Alma Mater, thus I will not inflict this discussion on you again. I would simply point out that in my judgment the financial problems confronting our dental schools today — and even more in the future — cannot be lessened materially by alumni support unless every alumnus is prepared to contribute \$500 to \$1,000 a year to his dental school.

I cannot conclude this part of my discussion without referring to the program recently started by the graduates of the Medical College of Virginia School of Dentistry. As I am sure you know, the last two graduating classes of your dental school pledged nearly \$50,000 to the school and, I understand, that many of these pledges have already been paid. This is certainly a most commendable act on the part of these young men and, hopefully, will help to establish a precedent which many others will wish to follow.

A final comment regarding the second allegation mentioned previously, namely, federal aid equals federal control. During the past couple of years, I have reviewed carefully the history of federal participation in the support of educational activities, including such well-known programs as the National Science Foundation and the National Defense Education Act of 1958. All of you are familiar, I am sure, with the history of federal support of the fellowship and training grant programs of the National Institute of Health, including our own National Institute of Dental Research. In none of these programs has there been a single instance of federal interference — much less federal control. I would like to go on record here and now by saying that I do not expect there will be so long as at least two fundamental conditions persist. First, we must continue to see that all federal granting programs are administered under the supervision of a lay advisory board. Second, and of extreme importance, we must continue to make every possible effort to see that a **majority** of the support of our dental education programs comes from individual alumni support, private funds, and state resources. If we abdicate either of these responsibilities, we will not have done our job and someone — perhaps even the federal government — will have to do it for us.

I am looking forward to the opportunity of discussing many of these questions with some of you in more detail during the remainder of the Workshop. In closing, I would like to express my personal commendations to the Virginia State Dental Association for its sponsorship of this Workshop.

REPORT OF GROUP I

DR. RAY SHIELDS, *Chairman*

Dental Needs and Dental Demands of 3.9 Million Virginians.

How well are these needs and demands being met?

What are the dental demands of Virginia going to be for 1970-1975?

Committee One is of the opinion that the felt demand for routine dental care in Virginia is being met fairly well at the present time, except in some rural and perhaps some urban areas of rapid growth. Specialist's services are probably lacking in many areas of the State.

The Committee recognizes, however, that the demand nowhere approaches the need for dental care and that if a substantial portion of need should be quickly translated into demand, the profession could be overwhelmed. The Committee also recognizes that if current economic and social trends continue, there will be a rather orderly but large increase in demands for dental care. Thus, it appears that the expected numerical growth of the dental profession in Virginia is not likely to keep pace with the anticipated future demands.

In view of the possible future manpower shortage it is unlikely that the present number of dentists can increase their care loads significantly, it was the consensus of the Committee that:

- (1) A strong recruitment program be developed for dentistry in Virginia.
- (2) Student loan funds be augmented to permit the education of qualified students who have marginal financial resources.
- (3) Funds for scholarships for able students should be vastly expanded.
- (4) Continuing educational post graduate problems emphasizing the use of auxiliaries and other office efficiency measures be developed and the profession be encouraged to participate in them.
- (5) An Academy of general practice or similar organization, be fostered in Virginia as one form of a continuing education program.

- (6) Undergraduate dental students should be taught to properly use dental auxiliaries.
- (7) As the use of auxiliaries increases there be attention given to organized training programs for such auxiliaries.
- (8) Research programs dealing with the functions of auxiliaries be fostered in the dental school in order to provide the dental profession with a scientific approach to the problems encountered by this method of expanding dental services to the public.
- (9) The Legislative Committee of the State Dental Association and the State Board of Dental Examiners study and make recommendations to the proper organizations as to changes that may be necessary in the State Dental Practice Act.

The Committee was also of the opinion that the best interests of the public and profession would be well served by:

- (1) Establishing a dental service corporation and by making every effort to enroll groups in the program.
- (2) Vigorously promoting fluoridation of public water supplies throughout the State.
- (3) Encouraging the search for effective prevention measures and the application.

REPORT OF GROUP II

DR. CYRIL MIRMELSTEIN, *Chairman*

Group II was assigned the topic "How are the Dental Demands and Needs of the Present and Future Going to be Met by Dentistry?"

The following comments and recommendations were individually discussed and unanimously adopted.

I. Public Relations — Dental Health Education

Group II recognizes the importance of dental health education and its relation to the problem of meeting the demands and needs of present and future dental care.

The Group recommends that organized dentistry in the State of Virginia utilize all possible media available to implement a concerted public dental health education program, stressing the importance of (1) caries prevention thru fluoridation; (2) diet; (3) good oral hygiene; (4) early and continuous dental care, and (5) periodontal therapy.

II. Economics

The Group recommends the prompt implementation by the Executive Council of the Virginia State Dental Association for the establishment of a Dental Service Corporation and that suitable enabling legislation be introduced at the earliest possible time. The Group also feels that a concerted effort should be made to inform the entire dental profession in the State about the service corporation and how it would function.

We recognize that there are many prepayment and postpayment plans which will make possible the provision of dental services to a large percentage of the population. The Committee recommends that the dental profession of Virginia (1) be kept informed about methods of payment; (2) assist in the development of such plans, and (3) participate actively in these plans as they are implemented. These activities will serve to improve the health of the people by making dental care more readily available.

III. Dental Education

The Committee recognizes the crisis posed by the falling rate of recruitment in the dental profession and the fact that available surveys

indicate that individual contact with practicing dentists appears to be the most effective recruitment measure available. We encourage all members of the dental profession to promote and assist in high school and college level activities devoted to future careers and professions as an aid in the recruitment of qualified dental students.

The Committee recognizes that the adequate preparation of students for the practice of dentistry should be the primary aim of a dental school. It further recognizes that every dental school, as a part of a university, should recognize its responsibilities to add to existing knowledge through research. The environment created by an active research program is most stimulating to both faculty and students and that the teaching will benefit from this type of atmosphere.

The Committee approves the continued provision for educational opportunity for practitioner at the School of Dentistry, Medical College of Virginia, and recommends an even closer liaison between the college and the Virginia State Dental Association through its committee on Dental Education with positive recommendations as to types of courses needed and most effective means of scheduling and presenting such courses.

IV. Dental Practice

The Committee believes that the practice of dentistry may be changed and improved in the future through more extensive use of group practice, better design of both offices and equipment, modernization of instruments, more effective utilization of trained auxiliary personnel and other yet identified trends in the future. It is of utmost importance that dentists keep informed about these developments and that they be prepared to adopt them to their practices as they become established and accepted. All of these factors appear to have a potential for increasing the productivity of the individual dentist and will probably be important in making dental services more readily available in the future.

As a means of increasing the availability of dental services, the committee recommends that dental care for indigents be studied by each community and handled as a local problem.

V. Poll of Virginia State Dental Association

The Group recognizes the necessity for an executive secretary for the State Association and recommended action by the Executive Council at the earliest possible time.

As dental services are increased in availability, particularly through the increased productivity of the individual practitioner, it will be of utmost importance that the profession do everything within its power to maintain the quality of its services. The profession should encourage its members to participate regularly in various forms of continuing education (postgraduate courses, study clubs, meetings, independent study, etc.) as one method of maintaining quality. Each local dental society should provide positive means for policing its membership through active, effective committees on professional ethics and on patient grievances. By use of such committees the local societies will accept the major responsibility for upholding the quality of dental care offered to the public.

It is recommended that the Virginia State Dental Association have a survey made by an unbiased professional organization of its membership to determine the demands for a school of dental hygiene. If this survey reveals a realistic desire for hygienists it is further recommended that these findings be submitted to the Council on Higher Education and further that the general assembly be advised of this action and requests made for appropriation for a school of hygiene at the Medical College of Virginia.

Realizing that years may be required before a school of dental hygiene could become a reality it is recommended that a plan be arranged with the Southern Regional Board of Education for having qualified applicants from the State of Virginia subsidized by state funds for study in designated schools.

REPORT OF GROUP III

DR. G. M. HILL, *Chairman*

Objectives of this conference as related to our section were as follows:

1. To determine the needs and demands and progress relative to dental auxiliary personnel.
2. To make recommendations for a workshop general assembly. It is understood that the workshop general committee will present the workshop recommendations to the Virginia State Dental Association.

Then the Virginia State Dental Association would approve, modify and implement the programs as approved by this conference and this would represent the long range plans of the Virginia State Dental Association.

The Dental Assistant

The group agreed to initiate the discussion regarding the need and demand for Dental Assistants, and to determine the types of programs. The consultant discussed the approved one academic year program approved by the American Dental Association House of Delegates and its Council on Dental Education, and indicated that such program could be activated in (1) a school of dentistry; (2) a post high school vocational training center, and (3) junior or senior colleges. The consultant indicated that a formal training program had been activated in the Burlington Industrial Educational Center in North Carolina, which received funds from Federal and State sources for facilities, equipment and supplies, as well as teaching personnel. He further made available to the Committee a detailed outline including a total curriculum with cost for all the equipment, supplies and personnel. It is understood that this total plan can be presented to an industrial educational center (1) in post high school training centers or a junior or senior college, which would provide a complete guide for the activation of such a plan for the training of Dental Assistants. Furthermore, he indicated the availability of architect plans to be used by the vocational training center or junior college for the activation of this teaching program.

The consultant and others discussed the great need for formally trained dental assistants, and agreed that the conference should recom-

mend favorable immediate action to proceed with plans to determine the feasibility and practicability of establishing formal one academic year training program for dental assistants.

However, it was generally agreed that in addition to such formal training programs, on-the-job training would be necessary in the foreseeable future. Such on-the-job training could be augmented by (1) American Dental Assistant Association 104-hr. extension course now active in several areas of the State as well as (2) the correspondence extension type course which has been formally approved by the Certification Board of the American Dental Assistant Association. It was understood that the University of North Carolina correspondence course is the only approved course at this time, and that between 800 and 900 girls in the United States have or are pursuing this course.

Consistent with the above discussion, the following motions were made and approved:

1. In reference to Question 18, which reads as follows: "What should be done regarding the Dental Practice Act relative to the hygienist and assistant taking X-rays?" Should the hygienist be prevented from taking X-rays? Define the phrase 'Aiding and Assisting' in Chapter 8, Article 1, Paragraph 54-147 #1.' " We moved and passed that we are not capable or in a position to define the phrase, "Aiding and Assisting," as it appears in Chapter 8, Article 1, Paragraph 54-147 #1.

2. It was moved by Dr. McCoy that this Committee recommend to the Group Conference that we go on record as favoring the establishment of facilities for the training of dental assistants in accordance with the requirements recommended by the Council on Dental Education of the American Dental Association. These facilities should be activated at vocational post high school training centers, junior colleges, senior colleges, or at the dental school.

Seconded by Dr. Slavin. Motion carried.

On question 21, if the State could not properly finance the training of auxiliary personnel, are the dentists of Virginia ready to accept federal funds?

Moved by Dr. Slavin, seconded by Dr. Kanter — yes. Carried.

The House of Delegates of the American Dental Association and the American Association of Dental Schools have set forth the stand-

ards, provisions, and safe-guards in its support of Federal Legislation which would permit the utilization of Federal funds for educational programs. It is on this basis that the profession officially has supported the appropriate bill in Congress.

Dental Hygienist

The needs, demands and programs for dental hygienists was considered in the evening and morning sessions, wherein the Consultant and members of the group discussed the certification program as approved by the ADA and its Council on Dental Education and that such programs could be activated in:

(1) The School of Dentistry or (2) a junior or senior college not identified with a School of Dentistry. Examples of Dental Hygienist program that were activated in junior colleges were cited such as the 3 new schools in Florida. It is understood that the 3 new schools in Florida received \$10,000 each from the Florida State Dental Society and a sum approximating \$70,000 to \$80,000 from the W. K. Kellogg Foundation.

The cost of producing a dental hygienist was discussed in part, wherein the Consultant indicated that in at least one university, U. N. C., the cost per year approximated \$1,750 and additional cost not identifiable in 4 courses — 1. English; 2. Philosophy; 3. Psychology; 4. Phys. Ed., given on the University campus. It is estimated with the latter courses, the figure would approximate \$2,000 annually. The Consultant stated that one of the great and continuing problems related to the high loss factor from the time the girls were admitted to the Dental Hygiene program until the 3 years subsequent to graduation, wherein a loss factor of 70-75% could be anticipated, and wherein a small percent of such hygienists would return to practice. However, the Consultant indicated that in spite of such losses the U. N. C. was scheduling, after formal approval, from 15 to 60 per class, as soon as the new facilities are completed, scheduled for 1967-68.

It was generally agreed by all present that the Dental Hygienist was an effective auxiliary personnel permitting substantial increases in patient load and that it was economically favorable to the dentist.

The consultant indicated that presently the dentists of this country would not support the utilization of male hygienists but that he was certain that some time in the future, perhaps in the near future, depending upon the increasing demand for dental service, that the profession

would insist upon the utilization of male hygienist to prevent the great loss factor, however, he indicated that this was not a consideration but a reality for the future.

RESOLUTION ON DENTAL HYGIENISTS

It is moved that we recommend to the General Conference Workshop the establishment of a training program for dental hygienists at the 2-year certification level, consistent with the requirements established by the ADA and its Council on Dental Education, wherein such programs may be developed in our Schools of Dentistry.

RESOLUTION — LABORATORY TECHNICIAN

Dr. Slavin: I move that we go on record as favoring the establishment of training facilities and programs for the training of dental technicians in accordance with the recommendations of the Council on Education of the American Dental Association.

Seconded and carried.

REPORT OF GROUP IV

DR. M. H. BOWMAN, *Chairman*

After reviewing the large number and variety of questions assigned to Group IV, it was agreed that the questions would be discussed in several broad categories, such as finance, research, administration, and so forth, rather than trying to reach a specific answer on each question. **General** (Question 1)

In the broadest interpretation of the question on "the most pressing problem facing dental education today" it was suggested that this problem is the necessity of recognizing the implications of the expanding population and adjusting the services of the dental schools to meet the future needs for dental care. More specifically, however, the discussion of this question centered around the financial problems of the dental schools, such as, increasing faculty salaries and employing more teachers, improving and expanding physical facilities and offering additional kinds of educational programs which are needed by the profession and the public. It was agreed that money may not solve all of the problems of dental education but that there are many which cannot be solved without it. This discussion led, naturally, into a discussion of several financial matters.

Finance (Questions 6, 11, 22)

A major part of the afternoon session was devoted to a discussion of financing dental education, covering three general sources: (1) increased support from the State; (2) increased alumni support, and (3) the place of federal aid in supporting dental research and dental education.

In connection with the need to obtain increased state support, it was pointed out that the Virginia State Dental Association can and should be of assistance in explaining the problems and needs of dental education to the State Legislators. After discussing several ways in which this might be done, Group IV approved the following resolution for consideration by the entire Workshop:

RESOLVED, That the President of the Virginia State Dental Association be requested to appoint a new committee or assign an existing committee (e.g. Common Education) to cooperate with the Medical College of Virginia in securing more adequate financial support.

If the action suggested in this resolution is taken, there appeared to be two ways in which the committee could be of specific assistance. First, it could help to encourage members of the association to establish effective contacts with their legislators. To do this job right, the committee will need to have information from the dental school on present and future problems and plans of the School of Dentistry. Second, the committee could help to convince every dentist in the State of the need for increased support of the dental school on the part of the Alumni.

After extensive discussion of federal aid and the impact which increased state and alumni support might have on the need for additional federal assistance, Group IV agreed to withhold any specific recommendation on Federal aid.

Research (Questions 3, 7, 17)

The Group discussed at length the relation between research and education and agreed that an active research program is essential. Many members of the group expressed the wish to have reports on research which has a direct relation to dental practice reported more promptly to the association members. The representatives of the dental school agreed to make additional efforts in this direction.

Group IV agreed that it would not be desirable to restrict research funds primarily to the program which is carried on at the National Institute of Dental Research. Nor did Group IV agree that there should be any special effort made to eliminate duplication in research. It was pointed out that meetings such as the annual session of the International Association for Dental Research help a great deal in avoiding excessive duplication, but some duplication is important and necessary.

There was discussion on the failure to apply research findings more effectively, but no specific suggestions were made.

Administration (Questions 12, 13, 24)

The Dean explained the procedure for preparing and submitting the budget of the School of Dentistry and distributed summary budget figures for 1961 and 1962. The process for consideration of the MCV budget was outlined and, again, it was emphasized that dentists in the State can be very helpful in explaining the financial needs of the dental school to the Council on Higher Education, and to Legislators.

Among other considerations, it was suggested that the State Association conduct a study on the need for dental hygienists in the State of Virginia.

When the necessary authority is obtained from the General Assembly, the Group was assured that planning for a dental hygiene program would be started promptly.

Postgraduate (Questions 2, 5, 21)

A report was presented on the postgraduate (continuation) programs which have been offered by the dental school. It was pointed out that many of the courses which have been planned have been cancelled because of a lack of participation. Group IV was assured that the School of Dentistry is ready and willing to offer any kind of continuation course wanted by six or more dentists in the state, with expenses to be paid almost entirely by the school.

It was apparent that there is a need for better communication in this area and Group IV approved the following resolution for consideration by the Workshop:

RESOLVED, That the Council on Education be requested to make a survey of the interests of the dentists in Virginia in continuation of education programs.

Curriculum (Questions 4, 9, 10, 14, 15, 16, 20, 23)

The Group discussed at length the problems related to helping the new graduate get started properly in dental practice. Even though the dental schools do seem to be giving increased attention to explaining some of these problems to dental students, the group felt that this matter should be presented in a specific action and therefore approved the following resolution for consideration by the Workshop:

RESOLVED, That the School of Dentistry be requested to take under advisement an expanded program for teaching the concepts of practice management.

Group IV discussed the desirability of accelerated programs as one means of helping to solve future dental manpower problems and agreed to take no action on this matter.

It was pointed out that all of the dental schools now have Curriculum Committees which are giving continuous study to the dental curriculum. Such a committee has existed at the MCV for at least 40 years.

After extensive discussion of all of the questions related to curriculum, the Group arrived at a consensus on the following points:

1. The School of Dentistry very properly has the basic responsibility for curriculum planning and development and Group IV expressed the belief that the faculty will continue to discharge this responsibility effectively.
2. There does seem to be a need to re-evaluate the time devoted to the teaching of prosthetics. In this regard, the Group expressed the thought that additional efforts should be made to relate the teaching of all the clinical sciences more closely.
3. Continued efforts need to be made to integrate the biological sciences to clinical practice. In this connection, the Group expressed the opinion that greater emphasis needs to be given to the teaching of diagnosis.

Miscellaneous Recommendation:

Several times during the discussion, Group IV arrived at the conclusion that many of the things which need to be done will require a full time staff for the Virginia State Dental Association. It was realized that this matter is again being considered, but the Group felt the Workshop should go on record supporting a Central Office. The following resolution was approved by Group IV:

RESOLVED, That the Workshop on Dental Education strongly supports the need for a full time staff for the Virginia State Dental Association.

It was recognized that two or three questions were not discussed specifically, but the Group felt that it had covered all of the major areas of its assignment.

THE HISTORY OF THE UNITED STATES

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There have been many different periods in the history of the United States. Each period has its own characteristics, and its own challenges. But through it all, the people of the United States have shown a remarkable ability to adapt and overcome.

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