Mohl ND. Curriculum Overview and Philosophy. NY State Dent J 37:137-47,1971.

CURRICULUM OVERVIEW AND PHILOSOPHY*

Norman D. Mohl, D.D.S., M.A.†

This is a broad examination of all the many factors in a dental school's curriculum. Areas of past success and failure are reviewed and suggestions made for improvements.

In discussing Curriculum Overview and Philosophy, I shall attempt to generalize as to where we have been, where we are at the moment, and perhaps, gain some insight into the probable direction we are headed in the future. Presentations of this type often deal with short term goals and long term goals. In our case, because of our planning for a new physical facility, our long term goals have been telescoped back upon our short term goals to a large extent. This has compounded many of our problms but, on the other hand, it allows us to make some significant contributions to the future of dentistry and to dental education.

In the latter part of 1968, our Curriculum Committee, after long preparation, presented a report to the Executive Faculty on the status of our educational program. The most important statements in that report read as follows:

1. The existing curriculum is inadequate to meet the present demands, much less the immediate future demands of the profession.
2. Curriculum revision is necessary to improve the education of the dental student.
3. The problems listed are serious enough to warrant immediate action.
4. The curriculum cannot be improved without major revisions.

We may ask ourselves, how had this state of affairs come about? There certainly were many local factors involved but these were merely expressions of other more significant and general trends that have buffeted dentistry and dental education in the past decade or two.

The first of these trends can best be described as sociological and perhaps political. It has commonly been stated that an isolated and insulated health profession, elite if you will, which serves only those who can personally afford its services, does not fulfill its higher goal of health care to the public at large. More and more people view health care as an inherent right and not merely as a privilege. This question, if we can call it that, has been compounded by the very real and projected problem of the rapid expansion of the population which we are already experiencing.

These problems have opened up the entire question of the delivery of health care to the community. Although we in dental education are not directly responsible for such delivery, we are certainly responsible for preparing our students, if possible, to cope with these problems. This implies that the concept of a single mode of delivery of dental care that we have always adhered to, namely, the solo practitioner working by himself in an isolated environment, must be expanded to include other delivery systems, both in the private and public sectors. The upsurge of group practice, third party payment plans, closed panels, and so forth, must, to some degree, be considered in planning for the preparation of students for the practice of dentistry.

The use of auxiliaries of all types must

* Presented at the Fourth Annual Teaching Conference, State University of New York at Buffalo, School of Dentistry, May 26, 1970.

† Associate Professor, Chairman of Curriculum Committee.

be expanded and incorporated into our educational program. We have indeed made progress in the utilization of chair-side assistants. However, we have not correlated the dental hygienist and the concept of prevention with our own education of dental students in a lasting and meaningful way. We have made practically no progress in the training of dental technicians and their concomitant incorporation into our own educational program. The question of ancillaries performing more intra-oral procedures has only been alluded to but nothing beyond that has occurred in this area. In general terms, then, the team approach to the delivery of dental care has been suggested and it is incumbent upon us to consider it and, where appropriate, to incorporate it into the dental curriculum.

A second major trend and impact on the dental curriculum has been the rapid multiplication of knowledge relevant to the field of dentistry. When the Gies report on dental education was published in 1926,[1] the art and science of dentistry consisted mainly of the art and very little of the science. As we are well aware, this report had a profound effect on the curricula of dental institutions in this country. Basic science and basic medical courses were added to the dental curriculum in an effort to expand the concept of dentistry in the profession, in the academic community, and in the community at large. This most certainly was a great improvement. However, these courses remained isolated from the mainstream of dentistry and dental education because there were few dental educators who could use such a body of scientific knowledge in a meaningful way. In addition, there was no scientific body of knowledge pertaining specifically to the masticatory system and oral cavity since research in this area was non-existent. *Much of this has changed.* We now find ourselves with a significant body of knowledge pertaining to dentistry and with more and more dental educators who are able and willing to impart this knowledge to dental students.

We have also seen a great impact resulting from the increasing sophistication of clinical dental procedures which are directed at preserving the natural dentition and associated structures. The old "blood and vulcanite" dental schools are gone, none too soon, I might add, and the emergence of a wide variety of new dental disciplines, concepts and procedures has had a definite impact on the dental curriculum.

We are now experiencing a surge of activity in dental curriculum planning and revision throughout the country. The extent of this activity probably surpasses that which followed the publication of the Gies report over 40 years ago. It is not unusual then, that our own school finds itself caught up in this activity. This is not to say that what has and is being done at Buffalo is merely change for the sake of change. The dental community in New York State and in Buffalo, in particular, is experiencing the same general impetus from without and from within as other areas of the country are experiencing. Additionally, at Buffalo, we had developed some specific curriculum problems which can only be viewed in the light of our immediate past history. When we started, in the early 1960's, to develop a qualified full time dental faculty, time in the curriculum was assigned rather liberally to these new faculty members and to such new departments as were developed. Nothing was ever replaced, only added on. This was not unusual since these new faculty members were eminently qualified and our students deserved to receive the benefit of their expertise.

However, this ultimately led to a complete saturation of the curriculum. For example, the Annual Report on Dental Education of 1967/68, by the Council on Dental Education of the American Dental Association[2] listed Buffalo as having the second highest number of total clock hours in the curriculum in the continental

United States during that particular academic year. Assuming that we can believe these figures, Buffalo had 5,431 total clock hours that year against a national mean of 4,511. Only Creighton University and the University of Puerto Rico had more hours than Buffalo. Out of that total, we ranked fifth from the top in total number of clinic hours, again not counting Puerto Rico. If we bemoan the fact that our students do not produce enough clinical dentistry at our school, we should look to the efficiency of our clinics for the solution and not to the time assigned to those clinics. These figures also imply that the saturation occurred more completely in the teaching programs and courses other than our clinic.

This problem was faced by the Curriculum Committee with the recommendation that course cuts and adjustments be made at all levels of the curriculum. We were unwittingly assisted in this by the Dean of the Medical School when he issued an administrative edict that all basic science courses to medical students were to be cut by no less than 50 percent. However, unlike the Medical School, our Curriculum Committee decided to look at each basic science course on its individual merits based upon its objectives for dental students. Courses were more selectively shortened instead of the relatively arbitrary cuts that took place in the School of Medicine. That we achieved some dedree of success in unburdening the curriculum is demonstrated by the fact that there are 288 fewer total clock hours in this year's freshman curriculum and 177 fewer total clock hours in the second year schedule.

CORE COURSE

This phenomenon supposedly produced what has become known as the "core" course. A core course may be defined as the minimum basic information in any particular area needed for *all* members of a particular profession.

One may ask, is not the core the same for physicians and for dentists? As things now stand, we can only answer this by saying that in some cases, yes, and in other cases, no. Subsequent reinforcement and expansion of knowledge in various areas is different in medical shcool and dental school and this later education modifies the concept of what the intial distillation or core should entail. As one example, it was determined that the objectives of a core course in neuro-anatomy were different for dental students as compared to medical students and, therefore, a separate course was established for this purpose. In general, however, several core basic science courses tended to coincide in objectives and are, therefore, still given with medical students.

It would appear to be very desirable to follow the medical school in *all* respects in regard to basic science teaching and the emerging new concepts in medical school education. It is quite true that medical schools are doing some very exciting and meaningful things in terms of curriculum flexibility, core courses, electives, and so on. We, and many dental schools, believe that, in very general terms at least, this is also the direction we should go. *However, notes of caution are in order.*

DENTISTRY VS. MEDICINE

We often hear of comparisons being made between medicine and dentistry. These are often unfair and non-valid comparisons. To be completely honest, the profession of medicine, collectively, possesses much more information than does the profession of dentistry. However, no one practices medicine collectively any longer and we must, therefore, look at the specialities of medicine and not at just the large collection of disciplines we glibly call medicine. The old style physician and surgeon, who practiced medicine on an all inclusive basis, is no longer with us. He could practice collective medicine because at that time there was not much

knowledge to collect. All that has changed. The impact of new knowledge has forced medical schools to re-think their curriculum structures. A logical case can now be made for the proposition that a psychiatrist need not, nor should not have, the identical medical education as a proctologist, to use an extreme example. Should a dermatologist receive the exact same medical school education as an obstetrician? Probably not.

Dentistry must be compared with the specialty components of medicine and not with medicine itself. Please note that I have referred to dentistry in collective terms and not to the various specialties of dentistry. *This is an important distinction.* Unlike many physicians, all, and I repeat, all dental practitioners are dealing with the same organ system. The magnitude of the difference between a periodontist and a prosthodontist is not the same as the difference between an otologist and a cardiologist. The difference between an oral surgeon and an endodontist is not as great as that between an ophthalmologist and a gastroenterologist. Admittedly, when dealing with the human body and human disease, all fields overlap to a certain extent. But nowhere do they overlap as grossly as between the specialities and subspecialties of dentistry. The dental student has already decided what organ system he will deal with as a health professional. The medical student is being placed in a position where he too will have to make a similar choice early in his medical education.

If we accept the premise that all dentists are dealing with some or all aspects of the same organ system, it must follow that there is a common core of knowledge required of all dentists, regardless of specialty or subspecialty. This ever increasing body of knowledge, which we can call a *dental science core,* encompasses, in addition to some traditional material, information which has only recently been introduced into the curriculum. Some of these areas include oral pathology, oral biology, occlusion, cariology, periodontics, growth and development, pain control, etc. When this so-called dental science core is added to the basic science core, we have already used a considerable portion of the available curriculum time. This in itself precludes the possibility of a completely flexible curriculum in dentistry.

IMAGE

There is another reason why this dental science core should be emphasized. This has to do with a matter of real, if unwarranted, concern of dental students and especially of recent graduates, of the question of "image." Dentists are a paranoiac lot. They are always worrying about what others think of them as health professionals. Even dental educators may tend, at times, to fall into this trap. Some are apologists for dentistry, and are unconsciously ashamed of it. Maybe, in some instances, they are correct. In any case, there are several manifestations of this. One of the most obvious, at least in my opinion, is in changing the name of the degree. Whether we are called a D.D.S. or D.M.D. or Doctor or Mister, does not change the fact that to the general community we are still dentists. A more subtle manifestation of "image disease" is the attempt to prop up the supposedly non-intellectual dental curriculum with glamorous courses and experiences which, truthfully, are not really pertinent. For example, a dental student delivering babies, aside from the valuable hospital experience, is about as meaningful to dentistry as prostatic surgery is to otolaryngology. It is absolutely true that a wide range of knowledge and skill in many areas is desirable. But, when we have practical problems to be concerned with, we are forced to think in these terms.

A positive image and respect only comes about when there is general rec-

ognition that a significant body of knowledge exists in a particular area and that the members of that field are well grounded in this knowledge and in the application of it. I submit that dentistry has such a body of knowledge and that if we use it in our curriculum in a true academic and intellectual manner, the respect and image we seek will follow naturally.

That such a body of knowledge exists has not been generally recognized. Because of this, many dental curricula are organized to match that for medical students, course by course, content by content, sequence by sequence, without any further thought being given to it except that a dentist must have an identical basic science education as all medical students receive.

Dr. Israel Kleinberg of the Department of Oral Biology at the University of Manitoba made the following very interesting and significant remarks recently at a conference in Toronto:[3]

> When . . . the teaching of the dental student is done by the basic medical science departments essentially as a service function . . . the content of the courses provided in each discipline usually ranges from an abbreviated version of that given to the medical student to one that is identical in content. Where the courses are the same (such as Buffalo has had for years) and these are usually taken during the first two years of the dental curriculum, only two years remain thereafter in which to deal with the oral aspects of the basic science subjects and with the whole of the pre-clinical and clinical teaching. It is inevitable, with so little time, that the "dental" portion (both scientific and practical) of the dental student's training suffers. After approximately 30 years experience, the Harvard School of Dental Medicine has declared this approach a failure and is in the process of replacing it with a new curriculum. It is unfortunate in the light of these experiments that several of the new dental schools have or are copying this obsolete model.

What he is saying is that having today's dental student follow all of the same subject matter as all medical students in the presence of a traditional basic science curriculum, compromises an essential portion of the dental student's education. If medical schools could truly define a core necessary for *all* physicians, then, and only then, could dental students follow every aspect of that core as actual specialists of medicine.

CORRELATION WITH CLINICAL DENTISTRY

Even if we accept the premise that basic science courses should be altered, where indicated, to meet objectives necessary for dentistry, we are still faced with a fundamental problem that the Curriculum Committee has wrestled with at length. That is, once this basic science core has been defined, how do we correlate it with clinical dentistry? This is a very old question as far as dentistry is concerned. In addition, how do we introduce the dental science material into the curriculum that has heretofore been neglected? The first assumption in trying to solve this problem is that the school can attract and retain faculty who are equipped and prepared to teach in this so-called dental science area and thus enhance the correlation between basic science and clinical dentistry. Along with this, two pedagogic devices were recommended. The first concerned the creation and expansion of conjoint courses and the second, the establishment of a diagonal curriculum.

Conjoint or multi-disciplinary programs were suggested as teaching vehicles that would extend throughout the curriculum and would encompass areas that easily lend themselves to correlation between basic science and clinical disciplines. It was envisaged that by involving faculty from several departments in such common pools of information, this would greatly enhance the educational program. In addition, with the course cuts that have taken place in most basic science departments, this afforded an opportunity to bring some of the basic science information back into the curriculum in a more meaningful and relevant manner. Hope-

fully, in such courses, all examples and model systems would pertain to dentistry and the oral cavity and thus student motivation would be enhanced. The question was, what subject areas lend themselves to this basic science—clinical multi-disciplinary approach? The first to be recommended was occlusion. This area, which was broadly defined as the anatomy and physiology of the masticatory system, is already in existence. The second area which appeared to lend itself to this approach was cariology. A third area which also can be used as a vehicle to link basic science and clinical dentistry is anesthesia and pain control. The allocated time in this area was expanded and new courses have been put into effect. Periodontics is another area which is conducive to this type of cooperative effort. Some significant steps have been taken in this direction by the Departments of Periodontics and Oral Biology. The new sophomore course consists of much new information concerning the biology of periodontal disease.

Two new integrated courses are being instituted. The first involves a second year course to be called systemic disease. This will include some aspects of systemic pathology, laboratory diagnosis, physical diagnosis, first aid and medical emergencies and related material. This information will be applied in the third and fourth years at the Buffalo General Hospital where students will be involved in medical clerkships and come into contact with actual "sick" patients.

In addition, a new third year lecture-demonstration course in restorative dentistry has been started. This will incorporate material from operative dentistry, fixed prosthodontics, dental materials and the dental auxiliary utilization program.

These efforts at multi-disciplinary teaching have certain advantages as already pointed out. They also have certain disadvantages. This approach requires constant attention by a committee or by a coordinator in order to insure that the objectives are met and that appropriate continuity exists. Continuity can only be assured if participants attend each others lectures. The coordinator, at least, should attend all lectures in order to be prepared to offer positive direction to the program. One point should be made very clear. It is not the purpose of conjoint courses to obliterate departmental identity in the school. Departments have certain objectives and responsibilities in their own right. However, teaching programs also have objectives and these do not necessarily coincide. When it comes to dental education, institutional goals must be given as much, if not more, priority as departmental goals. With proper cooperation, these goals need not be mutually exclusive.

The second so-called device that has taken place for the purpose of enhancing basic science-clinical coordination is the diagonal curriculum. This means that clinical and dental science courses are taught earlier while some basic sciences are given later in the curriculum. Toward this end, oral histology and embroyology, which was completely redesigned, is now presented in the first year. Likewise, radiology, also completely reorganized, is given as a first year course. These courses, along with the conjoint programs in occlusion and cariology, mean that our freshman students now receive a considerable amount of dentally oriented material. Besides its obvious value to subsequent clinical courses, it has improved the morale of our first year students. In addition, this information reinforces the material given by basic science departments in the freshman year while it is still fresh in the student's mind. The material presented in the anatomical sciences; namely, gross anatomy, general histology and embryology and neuro-anatomy, as well as biochemistry and physiology, form the foundation upon which these other courses can immediately build.

The clinical program has also been expanded and reorganized in the sophomore year. A new composite course in restorative dentistry technique has been successfully completed. In addition to combining the traditional second year material from operative dentistry, dental materials, fixed prosthodontics and endodontics into a single course, partial denture technique, formerly a third year course, has also been included. Briefly stated, this reorganized program is concerned with those techniques used to restore the natural dentition. One of the most significant aspects of this program is the fact that more operative dentistry procedures are now taught much earlier than ever before. This allows for the earlier introduction of the student to the clinic in the sophomore year. We should recognize that the development of clinical skill requires time. The earlier initiation of this aspect of our educational program should, hopefully, allow our students a longer time to mature in the development of these skills.

The expanded course in periodontics, as already stated, the expanded course in anesthesia, and the cariology program, which includes nutrition and clinical rounds, are all examples of the definite and real increase in clinical and dental science material in the second year.

Alterations in the second year basic science courses have also taken place. The most notable is microbiology. Our students now take a core course in the principles of microbiology with the medical students. This is immediately followed by a course in oral microbiology which has been specifically designed for dental students.

In keeping within the context of a diagonal curriculum, pharmacology is now presented to our third year students. An entirely new course has been designed for this purpose. It is believed that such a course in the junior year will allow for greater recall and, therefore, correlation with the clinical application of drugs as presented in the new pain control course, in oral surgery and in other third year courses and clinics.

In regard to clinics, it is felt that in the third year, these should be entirely *departmentally* based. This is to insure that the student is well grounded in the various techniques and disciplines of dentistry. Minimal competence in these departmental procedures should be required before any student enters the fourth year.

SIMULATION OF GENERAL PRACTICE

The last year of dental school should be regarded as *a simulation of the actual practice of general dentisty.* This implies that, in addition to the development of clinical skills, *clinical judgment* must also be emphasized. Such judgment can only come about by the student being responsible for complete diagnosis and treatment planning, for the implementation of such treatment plans and for evaluation of the results of such implementation. We have taken a very positive step in this direction. Our first major attempt at a complete Comprehensive Care Clinic has been completed. It has been evaluated by the intial twenty-one participants and, if we can accept their opinions, it appears to have been an overwhelming success. The best way to define the goals of such a clinic and get a feel for the fulfillment of its objectives is to relate some of the comments made by the student participants. For example:

1. We were taught what to expect in private practice and how to use our time more efficiently.
2. Treatment planning and total patient evaluation were the greatest benefits offered.
3. Comprehensive Care is more efficient. Most of my cases would have become lifers on a regular clinic schedule.
4. Patients benefited because they could be completed in one school year. Students can see the finished product.
5. Comprehensive Care has enabled me to look at a patient's needs totally and also to adapt the treatment plan to the patient's best interests.

6. If a student is interested in furthering his dental education, he doesn't need procedure requirements to get a broad range of experience.
7. The ideal situation would be three Comprehensive Care Clinics, each with a different staff. Each senior would spend one third of the time in each. Lab. work should be done by technicians. If this happened, the school would be out of patients in two years.
8. The obvious advantages are of doing more work of a finer quality and actually providing a dental service to the patient rather than merely fulfilling a requirement.
9. The instructors allowed us a *clinical judgment* and this encouraged me to ask questions.
10. A most wonderfully interesting and educationally rewarding year thanks to Comprehensive Care.

This last statement seems to sum up the feeling of all the participants. You don't often hear such remarks from students in any area in this day and age.

ELECTIVES

Let us now turn to the question of electives and the concept of curriculum flexibility in dental education. I have already indicated that a basic science core and a dental science core precludes the possibility of a completely flexible curriculum. In addition, there are minimum clinical skills that every graduate must have in each discipline. This further compounds the problem of creating flexibility. Let me state unequivocally that the primary objective of our curriculum is, and should remain, to produce a qualified general practitioner. Specialty training should remain in the realm of postgraduate education. However, even within this context, *all general practitioners are not the same in all respects.* Graduating classes are not, nor should they be, a homogeneous group. The common denominator of all clinical dentistry, and especially of general practitioners, lies in understanding the dental science core and the realm of diagnosis and treatment planning. However, it is not necessary for all graduates to have the same skill or interest in *all* aspects of the treatment plan. In order to illustrate what I mean, let me pose some questions which are intended to be provocative. Assuming that all graduates thoroughly understand the indications, contraindications and sequence of treatment, is it necessary for *all* students to develop the skill to do gold foil restorations? Is it necessary for each and every student to do molar root canals? Or mucogingival surgery? Or impactions? Should each student have an identical experience in a community health clinic? Or in a hospital dental service? Or in children's dentistry? Numerous questions of this type may be asked. In a sense, we have already made such determinations in many areas. We already tend to define procedures that are undergraduate and postgraduate, such as impactions. Why should we be so rigid in these definitions? If a student is competent, has the interest and time permits, why shouldn't he be allowed to do procedures that have previously been called postgraduate? I believe he should, just as much as he should not have to develop skill in some other so-called undergraduate procedures where he is not particularly talented or interested. The main point here is that all students must have a core knowledge of diagnosis and treatment planning as well as "core" skills in the *most essential and common procedures.* Past this point the student should be allowed to determine his own direction to a certain extent and know when to refer a patient for a procedure that is beyond his interest and competence. These same observations can and should be applied to electives beyond the core basic science areas and beyond the core dental science areas if the student chooses. There are certainly indications for expansion of electives in these latter areas.

The question may be asked, is there time for this? We believe that there is, although obviously there is some disagreement as to how much. The fact that the

Curriculum Committee believes in some flexibility to the curriculum, at least to some extent, is indicated by the recommendation and implementation of the Senior Elective program. This was our first real experiment with a truly elective and flexible program for any significant period of time. The last semester of the senior year was chosen because of several factors. It is at this time that the student's interests and career goals can be most clearly determined by the student. It follows the "core" clinical curriculum, if we can define such an entity at the present time. An entire semester was used for the entire class because this greatly enhances the scheduling process. In addition, it coincides with the general University calendar and this allows students to leave the Dental School for courses if they so desire. It is senseless to create time in the curriculum at odd hours and at odd times to take electives if no courses exist at that exact period. It was decided to place an elective program at the end of the curriculum and not at the beginning since freshmen do not know enough about the field to adequately determine what to elect. Practically speaking, the early core curriculum in the first year, as presently defined, does not allow the luxury of any large elective program at this time. However, this does not imply that the question of early electives should not be explored further.

We should give a long hard look at electives in the future. We tend to think of a flexible curriculum only in terms of content. What about flexibility in terms of sequence of courses? Or flexibility in terms of time in residence? If courses were available, should a student be permitted to earn his degree in three calendar years instead of four academic years? Should some students, particularly from disadvantaged backgrounds, be allowed to spread out their dental education over five, six or even seven years? Should each student be required to take a minor of his own choice in addition to his major in general dentistry? These are all questions we should give some thought to. If there is any merit to an idea, why not try it in a manner that will allow evaluation of the results.

FUTURE

What about the future and where do we go from here? In the immediate future, I think that we must consolidate the changes that have already taken place. We should continue to evaluate these changes to determine whether the desired results are being obtained. It is necessary to "get the bugs out," so to speak, of new courses and programs in an attempt to increase the quality of our teaching program. In this sense, curriculum planning is a slow continuing process although spurts of activity are necessary at intervals when problems can be specifically identified. If possible, we should attempt to anticipate problems so they do not reach crisis proportions as has happened in some instances in the past.

It is, of course, redundant to state that there will remain an obvious need for expertise and motivation on the part of the teacher. There is another necessary ingredient to a workable and effective curriculum. This is the question of adequate resources. The Administration and the involved departments must do their utmost to support the various courses and programs in the curriculum with sufficient space, funding and personnel, both professional and supporting.

Another important ingredient, of course, is the student. As in the past, we must give constant attention to our admissions procedures in order to obtain students who are competent and motivated. This motivation must be stimulated after a student enters Dental School. This can only be enhanced by having a student feel that he has a definite stake in the quality of his own education. We, as faculty, should not react in a negative

manner when a student questions that quality.

Let me end this presentation by quoting from a paper entitled, "Improving the Effectiveness of Curriculum Committees" by Dr. Lawrence A. Fisher of the School of Associated Medical Sciences of the University of Illinois.[4] Dr. Fisher starts out by repeating a statement made by a "beleaguered Associate Dean and Curriculum Coordinator of a dental school who says from the heart:"

> After having attended numerous national, regional and local curriculum workshops, I am convinced that the theme of curriculum theory and curriculum development has been indeed very well covered at these meetings. As a result, our faculties have been thoroughly familiarized with such concepts as: core curriculum, behavioral objectives, learning versus teaching, flexibility and individualization of curriculum, comprehensive clinic, integration of basic and clinical subject matters and horizontal, vertical and diagonal curriculum. In fact, these concepts greatly reflect the current educational trends of most dental schools.

He goes on to say that the heart of the matter today is *curriculum implementation*, scheduling techniques, and operations research.

Dr. Fisher continues:

> One of the basic problems in discussing curriculum innovation is that we seldom have access to one rich source of operational principles—the failures in curricular revision. Few, if any, appear in the professional literature. Structural engineers gather over a fallen bridge to identify unexpected stresses, surgeons have death rounds to determine who did what and to whom, but deans never even hold a wake for a comrade fallen at the curricular front and shipped home to a crypt labelled, "He wished to return to full-time research and teaching." There is no Good Samaritan Law for curriculum coordinators; there are no good samaritans. Perhaps this only happens in medicine and I am overgeneralizing. In any event, I would ask you to search your own experience during the past twelve months, and determine if it has not been your failures that have taught you the most—not only about yourself but about your colleagues as well. To those of you who haven't had any failures in leadership of your school in the past twelve months, I strongly suggest that the reason you aren't rocking the boat is that you have either consciously or unconsciously beached it on the mud of general faculty consensus—as slippery a bottom as one can find. But I am beginning to preach.

And finally, Dr. Fisher states:

> Any answers we can provide will of necessity be based on one essential premise: Any curricular plan is put into effect only to the degree that it is accepted by the general faculty and student body, understood by them in operational terms, and within their capacity or range of abilities. If the faculty and students of a school do not support an idea—old or new—it can never be declared alive or even real in that environment. If we accept that premise, the essential tasks for the curriculum committee are (1) to keep communication channels to and from the faculty and students wide open; (2) to make certain that ideas of evident quality flow back and forth through those channels.

This, I think, sums up the purpose of this year's teaching conference. We must keep our channels of communication as wide as possible. In the past, the Curriculum Committee has attempted to solicit ideas and information from a variety of sources within our school. In the past, all minutes of Curriculum Committee meetings were circulated to all departments. My associates and I seek your ideas, whether they agree or not with the direction we have taken. I promise you that we will be very thick skinned today and will listen intently to all suggestions that are put forth. We look forward to today's activities, not only to explain some of our recent changes, but to learn from you what your concepts are regarding dental education. We must develop our educational objectives together. This is especially important at this particular time so that these objectives can be, hopefully, reflected in our planning for a new school.

These are exciting times for Buffalo. We have a new dean, a new curriculum and, perhaps even some day, a new physical facility. I know that we are all after the same thing. That is, to insure that all of our students receive a quality dental education in order to be certain that our graduates can properly and

efficiently serve the community both now and in the foreseeable future.

REFERENCES

1. Gies, W. J.: Dental Education in the United States and Canada, Carnegie Foundation for the Advancement of Teaching, New York, 1926.
2. Annual Report on Dental Education, 1967/68, Part 3, Council on Dental Education of the American Dental Association.
3. Kleinberg, I.: Role of Oral Biology in Graduate Dental Education. Presented at the Oral Biology Conference in Toronto, Ontario; February 16–17, 1970. Sponsored by the Canadian Dental Association.
4. Fisher, L. A.: Improving the Effectiveness of Curriculum Committees. Presented at the National Symposium on the Dental Curriculum in Chicago, Illinois; November 13, 1969. Sponsored by the American Association of Dental Schools and the Council on Dental Education of the American Dental Association.

212 E. Capen Hall
Buffalo, N.Y. 14214

Parenteral Medication for Amnesalgesia in Dentistry

A Review

Stephen S. Baer, D.D.S.*

This is a competent discussion of current methods of anesthesiology in dentistry, including a description of various techniques and drug categories.

THE NEED FOR ANXIETY-FREE DENTISTRY

In recent years, modern dentistry has provided us with more accurate diagnostic procedures, more efficient techniques and equipment, and better methods of pain control. Although we, as dentists, now have so much to offer our patients in helping them to attain and maintain good oral health, millions of people fail to avail themselves of our services because of the old bugaboos—fear and apprehension.

The first step a patient must take on the road to dental health is to walk into the office and seat himself in the dental chair. In the case of the fearful patient, unfortunately, this step is usually taken only when intolerable dental pain leaves him no other choice. Often he is not seen again until another "emergency" arises, even though he may have been treated "painlessly" with the aid of local anesthetics.

Without doubt, technical achievement alone is not enough. We must widen the scope of dental treatment for everyone by embracing in our total concept a multidisciplinary approach, which employs psychological and pharmacological aids in addition to thorough, efficient manipulation, in order to render treatment which is not only pain-free but also anxiety-free. Then, and only then, are we truly performing "complete dentistry."

METHODS OF SEDATION

In addition to "tender, loving care," many other relaxation, sedation, analgesic and anesthetic techniques have been employed. These include oral premedication, rectal premedication, intramuscular premedication, hypnosis, audio-analgesia, inhalation analgesia, electronarcosis, intravenous premedication, and various methods of general anesthesia. Oral and rectal premedication, hypnosis, audio-analgesia and electronarcosis have all been shown to be successful in some instances and unsuccessful in others. They are therefore too unpredictable to be used in rou-

* Attending Dental Staff, Deepdale Hospital, Little Neck, N.Y. President-elect, American Society of Analgesia and Anesthesia in Dentistry.