

A PROPOSAL TO THE BOARD  
OF THE  
INTERNATIONAL MEDICAL INFORMATICS ASSOCIATION  
FOR A  
WORKING GROUP CONFERENCE  
(WG 11)

Submitted by:

John J. Salley, D.D.S., Ph.D.  
Professor of Oral Pathology  
Medical College of Virginia  
Box 566, MCV Station  
Richmond, VA 23298-0566

Telephone (804) 786-0779  
FAX (804) 786-4912

November 30, 1989

## INTRODUCTION

In the years since the close of World War II, biomedical knowledge has increased exponentially. Dentistry has experienced this phenomenon as fully as the other health professions, and continues to do so as the dawn of the 21st Century approaches. The ultimate beneficiaries of this ever expanding knowledge base are the patients served by health professionals, however, in recent years it has become clear that organizing and managing this vast and everchanging knowledge base has in itself become a problem. Each health practitioner at each patient encounter must call upon a base of information that is orders of magnitude larger than it was just a few years ago, seriously taxing the capacity of the human memory.

As the challenge of information management is addressed by health professionals, it is likewise clear that the most practical way to meet the challenge is through greater utilization of modern information technology applications.

Numerous factors contribute to the growing need for dentists to depend on electronic data bases than on memory. Patients are taking and dentists are prescribing more medications. Patients are ambulatory with more complex medical problems than ever before and they carry such problems as compromised immune systems and artificial or transplanted organs with them to the dental office. The need for consultation and referral is expanding as is the necessity to obtain complex laboratory tests. From the dental treatment perspective, periodontal diseases are being managed more individually as fundamental understanding of this disease expands. The use of new dental materials alone is requiring a vast new and frequently updated field of knowledge. For these and many other reasons, informatics will be playing an ever enlarging role in dental decision making at every level of the profession---practice, education and research.

## ORGANIZING DENTAL INFORMATICS

The following brief chronology describes some of the activities directed toward developing dental informatics as a discipline within the broad field of medical informatics.

- . In December 1987, The American Association of Dental Schools (AADS) established a special committee on information technology to examine the potential of information technologies for use in all areas of dental education, e.g. predoctoral, postdoctoral, continuing dental education, and education of dental auxiliaries.

- . In March 1988, at the AADS Annual Meeting in Montreal, Canada, several individuals met to discuss the feasibility of an international organization with dental informatics as its focus.
- . In November 1988, representatives of the profession were invited to make a presentation to the Board of Regents of the National Library of Medicine in Bethesda, Maryland to outline the past, present and future of dental informatics.
- . In April 1989, IMIA extended formal approval of Working Group 11 in response to a petition from several individual dentists and dental educators located in the U.S.
- . A special conference on dental informatics was held in August 1989 jointly sponsored by the AADS, the University of Maryland at Baltimore and Westinghouse Corporation. This conference was attended by representatives of the major dental organizations in the U.S. including the American Dental Association, AADS, Academy of General Dentistry, Federal Dental Service, National Library of Medicine and National Institute of Dental Research. This conference identified a number of strategic issues relevant to developing the field of dental informatics with the objective of obtaining participation by the organizations represented in formulating a national strategic plan for dental informatics in the U.S.
- . In conjunction with SCAMC in November 1989, an organizational meeting of IMIA Working Group 11 was held. Eighteen persons attended and discussed IMIA, its purposes, how dentistry can become involved, and the content of this proposal. At this meeting, an individual was selected to develop a Professional Specialty Program in dentistry under the auspices of AMIA with the expectation that the AMIA PSG would link to IMIA as appropriate.

From the above it is evident that the momentum of activities concerned with dental informatics is increasing and a critical mass of individuals has been identified. The purpose of this proposal is to put before the General Assembly of IMIA a plan for dental informatics, international in scope, to be developed by Working Group 11.

#### WORKING GROUP 11 ACTIVITIES

##### Objectives of Working Group 11:

1. Identify and define the elements which constitute the field of dental informatics and how they can impact on dental practice, education and research.



\*Two chairpersons are proposed for program planning. Drs. Wagner and Zimmerman are well known informaticians on both sides of the Atlantic. They can complement each other programmatically and geographically in building a strong series of programs.

#### Scheduled Activities:

Whenever possible Working Group 11 meetings will be scheduled in conjunction with other conferences and meetings. At the November 7, 1989 meeting, the following was suggested as a tentative schedule:

- .Organizational meetings
  - SCAMC, Washington 7 Nov. 89
  - MEDINFO-89, Singapore 11 Dec. 89
- .Program Committee
  - Uppsala May/June 90
- .Working Group 11
  - EMI, Glasgow Aug. 90
  - SCAMC, Washington Nov. 90
- .Working Conference
  - Stockholm 17-21 June 91

#### Projected Outcomes:

Clearly, there are numerous areas in dentistry which can benefit directly from application of currently available information technologies. Indeed, a number of individual dentists in North America, Europe and elsewhere are already involved with a variety of interesting initiatives in dental informatics. For example:

- .In Sweden and the German Democratic Republic an image-based clinical decision support system has been developed for oral diagnosis that utilizes high resolution digitized images, and accepts patient examination data by voice input.
- .A related decision support system is being developed in the U.S. which ultimately will link community dental practices with dental school databases to assist in diagnosis, treatment and evaluation of treatment outcomes.
- .Also in the U.S., an electronic patient record is under development designed to function with patient data entry standards. In the future the record system should be interfaced with clinical decision support systems.
- .In Canada, a hypertext version of a predoctoral dental curriculum is being developed to minimize rigid course

structure and promote a problem-oriented approach to learning by students.

.French dentists have developed and are marketing a computer-driven milling machine based in CAD-CAM technology which can fabricate a crown for a broken-down tooth, reducing the restorative procedure to as little as one patient sitting.

.Dental educators in conjunction with regional licensure agencies in the U.S. are studying case simulations using interactive video disk technology when examining dentists for licenses to practice.

While these initiatives show great promise, their value can be increased markedly if those developing them can form synergistic relationships. IMIA is an appropriate organization to promote needed cross-communication, information sharing, and collaboration. The overall long-range result should be improved oral health care.

It is respectfully requested that the General Assembly endorse/approve the appointment of Dr. Salley as Chairman of Working Group 11 and the objectives and scheduled activities as outlined above.