

Jan H. van Bommel<sup>1</sup>

Alexa T. McCray<sup>2</sup>

Editors

<sup>1</sup> Department of Medical Informatics,  
Erasmus University Rotterdam, The  
Netherlands

<sup>2</sup> National Library of Medicine,  
Bethesda MD, USA

## Editorial

# *Integration of Information for Patient Care*

The 1996 IMIA Yearbook of Medical Informatics is the fifth in the series. Approximately 10,000 copies of the Yearbook are distributed worldwide each year through IMIA's 45 Member Societies. The 1996 Yearbook bears the title: *Integration of Information for Patient Care*.

This year the editors were assisted by 14 colleagues who prepared invited Review Papers, by seven guest editors who wrote synopses of papers included in the Yearbook, and by 29 referees who assisted in the selection of these papers. As usual, the papers were selected from the refereed literature published during the previous year, i.e., 1995. In addition, overviews are given of a selection of Education and Training programs in medical/health informatics. Each year different centers are requested to describe their educational activities. Over time, the educational activities in medical and health informatics worldwide will be covered. This year's preface to the Yearbook has been prepared by IMIA's current President, Dr. Otto Rienhoff, Georg-August University, Göttingen, Germany.

### Integrated Workstations

Information technology has been introduced in virtually all hospitals. The use of systems is no longer

restricted to special areas of care only, such as radiology or the laboratory. In principle, the technology is now available that allows central and monolithic hospital information systems to be transformed into hospital-wide networks with 'intelligent' workstations or PCs all over the hospital, from the consultation room to the bedside. This transformation is just beginning.

At present, graphical workstations and network technology are leading developments in the computer industry. Client-server protocols ease the integration of systems and distribution of processing tasks. Workstations offer an environment that makes all applications, running either locally or through a network, act as one single integrated system from the user's perspective. In several institutions, promising developments in health-care workstations, enabling integration of patient data that are distributed over a range of different systems, are now underway. In principle, such systems offer the clinician on one computer screen images, biosignals, and patient data, without regard to the computers that store and process those data.

The editors requested the support of a number of colleagues to write original articles about this most interesting subject area. We are grateful that they all responded positively. The 1996

Yearbook, therefore, includes a number of excellent contributions on this subject: Soumitra Sengupta and Paul Clayton (Columbia-Presbyterian Medical Center, New York) contribute on the architectural perspective of clinical workstations; Patrice Degoulet, Francois-Christophe Jean (Broussais University Hospital, Paris, France) and Charles Safran (Harvard Medical School, Boston, USA) on multimedia workstations as electronic assistants for health-care professionals; Bob Greenes and Stephan Deibel (Brigham and Women's Hospital, Boston, USA) on component-integration strategies to construct workstation applications for a changing health-care system; Hans-Peter Meinzer and Uwe Engelmann (German Cancer Research Center, Heidelberg, Germany) on medical images in integrated health-care workstations; Erik van Mulligen and Teun Timmers (Erasmus University Rotterdam, The Netherlands) on trends in integrated clinical workstations; and Ramesh Patil, Weixiong Zhang and Wei-Min Shen (USC/Information Sciences Institute, Marina del Rey, USA) on an information mediator network for tasks in dynamic environments. Together, these papers offer an up-to-date overview on modern developments in client-server and object-oriented approaches to the development of physicians' integrated workstations.

## Education in Medical Informatics

The papers on education and training in medical and health informatics comprise an interesting cross-section of activities in different countries: Stig Andersen, Steen Andreassen et al. (University of Aalborg, Denmark); David Ingram (University College London Medical School, UK); Perry Miller (Yale University, New Haven, USA); Randy Miller (Vanderbilt University, Nashville, USA); Dennis Protti (University of Victoria, Canada).

## Guest Editors

After the selection of papers to be included in the Yearbook was made, guest editors were requested to write a Synopsis and review of the papers in the different sections. They include: G. Pangalos (University of Thessaloniki, Greece) on Health and Clinical Management; Alan Rector (University of Manchester, UK) on Computer-based Patient Records; Henry Lowe (University of Pittsburgh, USA) on Biomedical Information Systems; Arie Hasman (University of Limburg, The Netherlands) on Image and Signal Processing; Jaap Suermondt (Hewlett-Packard Laboratories, Palo Alto, USA) on Decision-support Systems; Beatriz de Faria Leão (Federal University of Sao Paulo, Brazil) on Knowledge Processing; and Vimla Patel (McGill University, Montreal, Canada) on Recent Advances in Computer Technologies and Medical Education.

## IMIA

The Yearbook contains extensive information on IMIA, its Member Societies and its Working Groups. The Section on Working Groups was - again - carefully prepared by Dr. Jean-

Raoul Scherrer of Geneva, who is IMIA's Vice President for Special Interest Groups and Working Groups. IMIA's Secretary, Dr. Bjarte Solheim from Oslo, gave much assistance in the preparation of the general IMIA pages. IMIA representatives from most countries offered material on their respective Societies. A full list of presidents and/or secretaries of Member Societies and addresses is included in the Yearbook.

## The 1997 Yearbook

The 1997 IMIA Yearbook of Medical Informatics will be on a highly interesting theme: *Computing and Collaborative Care*. The 1997 IMIA Yearbook hopes to offer once again a representative overview of the state of the art in medical and health informatics. Companies that are active in this area are invited to contribute as well.

## Acknowledgments

The editors acknowledge the contributions of the Referees and Guest Editors. The editors would also like to thank the high-level contributions by the colleagues who wrote the Review Papers and the contributions in the Education and Training Section. They are grateful for the time and effort given by the managing editors, Martine de Bruyne, Manon Kuilboer, Peter Moorman, Frank Pierik, Jifke Veenland, and Anke Wybenga. A good deal of organizational work was done by the secretaries of the Department of Medical Informatics of the Erasmus University Rotterdam (Désirée de Jong in collecting papers and all other material for the Yearbook, correspondence with authors, referees, reviewers, synopsis writers and journal publishers, together with Rosa Scholte and

Henriette van Waaij, in preparing the Yearbook for the Publisher). The contributions of Schattauer Verlag in Stuttgart (Dieter Bergemann and Hannelore Hensen) are also gratefully acknowledged. We would like to thank all authors and publishers for their willingness to contribute papers to the 1996 Yearbook, all IMIA Member Societies, and especially Jean-Raoul Scherrer and Bjarte Solheim for their contributions to the IMIA sections.

List of Referees who contributed to the selection of articles in the 1996 IMIA Yearbook of Medical Informatics:

H. Ahlfeldt, Sweden  
J.R. Beck, USA  
P. Le Beux, France  
M. Bolens, Switzerland  
W. Ceusters, Belgium  
G.F. Cooper, USA  
J.S. Duisterhout, The Netherlands  
U. Engelmann, Germany  
N.B. Giuse, USA  
R. Haux, Germany  
G.H. Hayes, UK  
G. Hripcsak, USA  
M.G. Kahn, USA  
J.A. Kors, The Netherlands  
N.M. Lorenzi, USA  
K.C. Lun, Republic of Singapore  
P. McNair, Denmark  
G.I. Mihalas, Romania  
K.D. Nielsen, Denmark  
J.M. Overhage, USA  
C. Quantin, France  
B. Richards, UK  
N.K. Roderer, USA  
Y. Shahar, USA  
T. Takahashi, Japan  
H. Takeda, Japan  
J.L. Talmon, The Netherlands  
J.D. Tresling, Rep. of South Africa  
P.F. de Vries Robbé, The Netherlands

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