

# Health Care and Informatics: On IMIA's Opportunities and Responsibilities in its 5<sup>th</sup> Decade

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## Summary

**Objective:** To report about major past and future activities of IMIA, the International Medical Informatics Association.

**Method:** Summarizing discussions and planning activities within IMIA, in particular with respect to its Board and General Assembly meetings in 2007; looking at recent informatics evolution by commenting on IMIA Yearbook surveys and best paper selections.

**Results:** Major recent IMIA activities include Medinfo 2007, finalizing its long-term strategic plan 'Towards IMIA 2015', and the reinforcement of IMIA's collaboration with the World Health Organization (WHO). The IMIA Yearbook of Medical Informatics, published annually since 1992, can be regarded as an important observatory for progress in health and biomedical informatics. Future activities comprise implementing IMIA's strategic plan, reshaping its portfolio of conferences, preparing Medinfo 2010, in addition to continuing to support and enable collaborative international exchange of research and education and bridging to the practice of health and biomedical informatics.

**Conclusions:** Informatics has emerged as an increasingly important field for health care and for the health and biomedical sciences. Within the last 40 years IMIA has evolved to a truly global organization, in a world, where medical informatics has gained significant importance for high-quality, efficient health care and for research in biomedicine and in the health sciences. Now in its 5<sup>th</sup> decade, IMIA's responsibilities as well as opportunities as a global, independent organization have both increased.

## Keywords

Medical informatics, health informatics, biomedical informatics, IMIA

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## 1 Introduction

It has become a tradition that the President of the International Medical Informatics Association (IMIA) annually reports on some of IMIA's major past and future activities in the IMIA Yearbooks of Medical Informatics. For the first time it is my pleasure to present this report to the worldwide IMIA community. My first publication as IMIA President with my inaugural speech during Medinfo 2007 at Brisbane has been published in [1]. In order to avoid too much redundancy I will sometimes reference this paper.

## 2 About IMIA

### 2.1 IMIA's Goals and Objectives

As indicated on IMIA's web site, the Association's goals and objectives include:

- the promotion of informatics in health care and biomedical research,
- the advancement of international cooperation,
- the stimulation of research, development and education, and
- the dissemination and exchange of information.

([2] see also [3], [4], [1]). IMIA traditionally is a bridging organization ([5], [6] p. 198), as medical informatics is an integrative discipline. Inherent in IMIA's mission is to bring together, from a global perspective, scientists, researchers, vendors, consultants and

suppliers in an environment of cooperation and sharing. The international membership network of National Member Societies, IMIA Regions, Corporate and Academic Institutional Members, and our Working and Special Interest Groups that constitute the 'IMIA family' is uniquely positioned to achieve these goals.

IMIA is the only organization in health and biomedical informatics which is truly international and multi-disciplinary in scope, bridging the academic, health practice, education, and health industry worlds through conferences, working group activities and publications.

### 2.2 IMIA Members

From an initial founding twelve nations, IMIA has grown to a worldwide network of National Member Societies, Academic Institutions, Corporate Members, Working and Special Interest Groups, affiliated organizations as well as corresponding members from non-member countries.

At the end of 2007, 85 nations (52 full members and 33 corresponding members), 48 academic institutions, and 12 corporations were directly represented as members of IMIA's growing family (Table 1). In addition there are 3 affiliated organizations including the World Health Organization (WHO, [7]). When one includes the members of IMIA's working groups, representative member organizations exceed 150. IMIA's national member societies, in

turn, represent over 50,000 individuals. Table 1 presents the growth of IMIA membership over the past 4 years. It is noteworthy that in the last few years there has been an increasing membership in Africa, South America and the Middle East. IMIA is evolving into a truly global organization free of the constraints of political and cultural barriers. IMIA Regions (oriented at [8]), consisting of IMIA member nations and others, actively participate in IMIA by sending a Vice President to represent their interests at the IMIA Board and General Assembly. Currently IMIA regions are APAMI, the Asia Pacific Association for Medical Informatics ([9]), EFMI, the European Federation for Medical Informatics ([10]), HELINA, the African Region ([11]), and IMIA-LAC, the Latin American and Caribbean Federation for Health Informatics ([12]). A Middle East Region is in the process of formation. There is also an ongoing exchange in forming a North American Region. AMIA, as IMIA's US National Member, and COACH, as its Canadian National Member, have agreed to share this board and executive committee role (with AMIA serving the first term of an alternating three year term), while these discussions move forward. Reports on these regional medical informatics organizations can be found in this IMIA Yearbook.

### 3 Past Activities

I will only mention some of IMIA's major activities during the last year. Many other activities are documented separately in this Yearbook.

#### 3.1 Medinfo 2007

Those of us who attended Medinfo 2007 in Brisbane, Australia, will remember the

**Table 1** IMIA members. The numbers are calculated at the end of the calendar year.

Members	2007	2006	2005	2004
Nations	52	46	45	45
Academic Institutions	48	43	46	41
Corporations	12	10	10	10
Corresponding Nations	33	31	29	19
Total	145	130	130	115

excellent atmosphere of congeniality that led to many discussions on recent research, education and applications in our field. Let me express my thanks to all of those who contributed so much to make our 12<sup>th</sup> World Congress on Medical Informatics a success, and in particular to Evelyn Hovenga and Joan Edgumbe from the Organizing Committee, to Alexa McCray and Heimar Marin from the Scientific Program Committee, to Klaus Kuhn from the Editorial Committee, and also to the many people who worked hard and diligently behind the scenes.

One of the major tangible outcomes of Medinfo conferences are its proceedings, for this Medinfo they are published in [13]. There will also be a special issue of the International Journal of Medical Informatics (one of IMIA's two official journals) devoted to Medinfo 2007.

On August 18, IMIA also held its annual General Assembly at Brisbane, immediately before Medinfo 2007.

#### 3.2 IMIA's Strategic Plan 'Towards IMIA 2015'

Under the outstanding presidency and personal leadership of Nancy Lorenzi, IMIA President from 2004 – 2007, the strategic planning committee with the help of many colleagues presented the IMIA Strategic Plan 'Towards IMIA

2015' ([14]) and was unanimously endorsed by IMIA's General Assembly in Brisbane. The IMIA Strategic Plan can be downloaded from [15].

#### 3.3 Collaboration with WHO

Collaboration with the World Health Organization has been significantly strengthened ([16]). IMIA is working intensively in order to jointly and collaboratively set the foundations for meeting the future needs and demands in our growing field as articulated supporting WHO's eHealth resolution ([17], [18]). To that end, IMIA has appointed a special liaison officer to WHO.

#### 3.4 IMIA became 40 Years Old

Last but not least let me mention that IMIA celebrated its 40th birthday in 2007. IMIA started in 1967 as Technical Committee 4, Medicine, of the International Federation of Information Processing (IFIP, [19]). I recommend having a look at the history section of the IMIA Yearbook of Medical Informatics 2007, which was devoted to this milestone celebratory event ([3], [20], [21], [6], and [22]). To me the "IMIA Presidential Retrospectives on Medical Informatics", written by IMIA Past Presidents Marion Ball, Shigekoto Kaihara and Jan van Bommel partially read like a thriller.

## 4 Looking at the Development of our Field Through the IMIA Yearbook

The traditional best paper selection together with invited survey and review papers may be regarded as 'THE' global observatory for progress in health and biomedical informatics. Starting in 1992 under the leadership of Jan H. van Bommel and Alexa McCray and now edited by Antoine Geissbuhler and Casimir Kulikowski, IMIA is proud to have such a comprehensive yearly periodical, not only documenting but also stimulating progress in our field. The Yearbook is one of IMIA's most visible and valuable 'products' not only to its members, but also to the health and biomedical community at large. Since 2006 the Yearbook is published as special issue of *Methods of Information in Medicine*, the other one of the two official IMIA journals, and is also available online to a very broad audience of readers ([23]). As done last year for 2006 ([1]) let me have a look in this report at the annual survey papers and selected best paper summaries of the recent IMIA Yearbook of *Medical Informatics 2007*. Again, from my point of view, we can observe progress in the various parts of our field, which in the Yearbook are published in seven 'regular' sections:

- Health and clinical management ([24], [25]): In outcome-oriented studies the impact of informatics tools combined with organizational changes on quality and efficiency of health care are discussed. CPOE ([26] – [28]), now denoted as care provider order entry ([29]), is controversially discussed.
- Patient records ([30], [31]): Patient centered (not health care institution centered) recording and usage of patient data is now becoming a focal issue. Progress in standards and open source products ([32]) for representing and ex-

changing these data is now visible.

- Health information systems ([33], [34]): Besides shifting from research mainly within hospital settings to inter-organizational approaches ('eHealth', [18], [35] – [37]) the exploration of new technologies is continuing.
- Sensor, signal and imaging informatics ([38], [39]): Besides traditional research in diagnosis and therapy with biomedical signal processing and imaging methodologies, ambient technologies ([40], [41]) are investigated for being used in health care.
- Decision support, knowledge acquisition and management ([42], [43]): The practical impact of knowledge-based decision support is remaining a challenge, in particular when complex representation or reasoning strategies are regarded as necessary.
- Education and consumer informatics ([44], [45]): Research, still in an early stage, is focusing on consumer health features and services.
- Bioinformatics ([46], [47]): The transition from basic biology-centered research in bioinformatics "towards clinical bioinformatics" ([48]) is continuing. The intersection between medical informatics and bioinformatics ([49]) is continuously becoming larger.

## 5 Future Activities of IMIA in its 5<sup>th</sup> Decade

### 5.1 Introduction

In observing the growth of IMIA, in particular when looking at the development of its national members it is transparently clear that IMIA is developing to a truly global organization. This also correlates with the growing importance of informatics for all countries in the world. This has to be considered for the determination of IMIA's future activities.

At the last IMIA General Assembly and at the Closing Ceremony of Medinfo in August 2007 at Brisbane, I mentioned that during my term as IMIA President from 2007 until 2010, I would like to help IMIA to continue to pursue and enhance its endeavors to achieve the following aims ([1], p. 193, [50]):

- 1 That IMIA be the leading international organization in health and biomedical informatics by stimulating and communicating high quality research, education and applications in a new and unified world, with medical informatics becoming one of the central disciplines for achieving health for the people of all of our societies, through our field's contributions to high-quality, efficient health care and to high-quality research in biomedicine and in the health and computer sciences.
- 2 That this be done jointly with IMIA's constituent national, regional and institutional members through conferences and meetings, through publications and awards, through its working groups, special interest groups and other committees, and through supporting excellent students and excellent young researchers in our field, regardless of where in the world they come from, by striving to achieve the aims defined in IMIA's Strategic Plan, confirmed by IMIA's General Assembly in Brisbane at Medinfo 2007.
- 3 That IMIA with its members become an advisor and partner of national and international bodies devoted to health, health care, and health and biomedical informatics research, such as WHO.
- 4 That IMIA's secretariat and organization be prepared to contribute intensely and successfully to manage these new sets of opportunities and responsibilities.
- 5 Finally, that IMIA provides an example for the successful, tolerant and peaceful collaboration among individuals, across and beyond our nations and cultures, for the sake of

good health and quality of life achievable for the people of our world.

In the following let me mention some few major activities of IMIA for the near future.

## 5.2 Implementing IMIA's Strategic Plan

IMIA has turned its efforts to the transition of the IMIA Strategic Plan, with the motto 'let a thousand flowers bloom', signifying the wide range of activities and interactions we wish to encourage. Details have been described in [51]. The IMIA Board has appointed Peter Murray, currently IMIA Vice President for Working Groups and Special Interest Groups, to the post of Interim Vice President for Strategic Planning Implementation, to co-ordinate this work between now and the 2008 General Assembly meeting.

## 5.3 IMIA Meetings 2008

In 2008 IMIA's General Assembly meeting will be held in Gothenburg, Sweden, immediately preceding MIE2008 ([52]). During MIE2008 a number of IMIA-related meetings will take place. In October, in parallel to two conferences of IMIA-LAC and the Argentine Association of Medical Informatics as well as of IMIA's Working Group on Health and Biomedical Informatics Education, the IMIA Board will meet in Buenos Aires, Argentina ([53]). Information on the many other IMIA related events can be found in [2], at the IMIA News in each issue of *Methods of information in Medicine*, and in this Yearbook.

## 5.4 Medinfo 2010 ...

The planning for Medinfo 2010 has started. The 13<sup>th</sup> World Congress on

Medical Informatics will be held in September 13 to 16, 2010 in Cape Town, South Africa ([54], [55]). For the first time a Medinfo congress will take place in Africa. This work is being led by Lyn Hanmer, Chair of the Organizing Committee and Roy Alger, President of the hosting society, the South African Health Informatics Association (SAHIA). Their progress in this daunting task will be reported regularly in IMIA news.

## 5.5 ... and Beyond

As our field is becoming more important, there is a need to re-evaluate the frequency of IMIA's international conferences. The need to be informed about and to discuss recent progress in our field has obviously increased within the last years. Together with our regional medical informatics organizations this will be discussed in order to work out a joint portfolio of international conferences where high-level, peer-reviewed results of health and biomedical informatics research and practice can be presented and discussed, independent of financial or political interests.

## 5.6 On IMIA as Global Organization

As mentioned, IMIA is the only organization in biomedical informatics which is fully international in scope, bridging the academic, health practice, education, and health industry worlds through conferences, working groups and publications.

IMIA is clearly on the way to really be inclusive of the whole world. Our unreserved support of the activities of our African colleagues for the conferences in Bamako, Mali, and Yaoundé, Cameroon, both in 2007, and the rapidly growing Middle East Region are

special highlights. IMIA has expanded that by focusing also on Latin America with IMIA sponsoring a 'first' pan-Latin American conference in Buenos Aires, Argentina in 2008 ([53]).

## 5.7 On Education and Research

As the international organization devoted to health and biomedical informatics we have to continue and to intensify our efforts on high-level informatics education (e.g. [56]). Here the collaboration of our academic members will become even more important, in order to ensure and safeguard high-quality informatics education for all parts of our world and to support international collaboration and promote the exchange of teachers and students. Under the leadership of John Mantas, co-chair of IMIA's working group on education; the IMIA recommendations on education ([57], [2]) are currently being updated.

The importance of IMIA working and special interest groups for communicating and stimulating research can hardly be over-emphasized. As in the past, we have to identify new fields of research early in order to include these new fields in IMIA's portfolio of working groups. Stimulating translational activities from research to the practice of health care ('translational medicine', [58]) is an additional aspect with growing importance, not only for our academic/research colleagues but also for our corporate institutional members. These activities will have to reach beyond our field, in the integrative and bridging tradition of IMIA.

## 5.8 On International Collaboration and Communication

IMIA is traditionally a bridging organization between researchers, educa-

tors and practitioners. IMIA can look back to a long publication record with high-quality publications ([22]). This tradition will be continued and extended, e.g. in providing more and better online access to the IMIA Yearbook.

In this context we can recognize that there are now a sufficient number of high-level international journals for research in health and biomedical informatics. An international journal or magazine creation as peer-reviewed journal designed to cultivate broad readership across health care, in order to communicate on informatics topics of translational interest and on the application of informatics principals is from my point of view missing. It has been suggested in [57] that such an applied informatics journal may appeal to practicing physicians, healthcare administrators and CIOs as well as medical informaticians and that in a globalizing world with eHealth initiatives spanning across borders, such a journal should be an international effort. IMIA may be an appropriate organization to support or initiate such an applied journal.

## 5.9 WHO and IMIA

The importance of collaborating with WHO has already been mentioned. The role of an IMIA Liaison Officer to WHO had been elevated to a board position, giving it more visibility and a better access to high-level discussions within IMIA. The IMIA Board has appointed Antoine Geissbuhler for this position. As announced in [16] and [50] there will be a sequence of actions and meetings until Medinfo 2010 to make this collaboration a success. IMIA will try to support projects like [60] to stimulate more work of this kind.

## 6 Invitation to Join in IMIA's Global Efforts

The title of this report was inspired by [61]. As already mentioned, we can look back to a rich past of our field. Please let me mention in this context an outstanding paper, which was initially presented in 1984, more than two decades ago, and which appeared only recently in one of IMIA's two official journals ([62]). We can look forward to a promising future, still being a young and growing discipline, and still needing a "young person's guide in biomedical informatics" ([63]), despite that IMIA is now in its 5<sup>th</sup> decade as an international organization. Many new opportunities are available to us now. Some of them have been mentioned here in this report. These opportunities also lead to new responsibilities and obligations for IMIA as a global and independent organization. We can be proud to have the good fortune of living today, in a world where the quality of health care and life expectancy is higher than ever before in the history of humankind. I'm certain that you also agree that there is an urgent need to reshape health care for our rapidly changing societies. We should be aware that we all, as members of IMIA, play an important role for successfully contributing to the development of good health in our societies that can help build a world that is even more worth living in for all people. It is with humility yet with great hope that I invite you to join with all of us in IMIA's efforts to reach the aims I have mentioned here.

Again I would like to remind you that IMIA, an umbrella association of associations, societies, institutions and corporations, in reality consists of individuals that represent those members. We all play an important role in successfully contributing to the development of good health in our societies that can

help to build a world that is even more worth living in for all people. Let us think globally – and act locally ([64]), in order to help to achieve these aims.

### Acknowledgements

I feel privileged to have the chance to work for IMIA and to promote the growth of our unique worldwide organization in health and biomedical informatics. However, such a report is given on behalf of many persons, who contributed a lot to IMIA and so to health and health care in our societies. In particular I would like to highlight the excellent work of the members of IMIA's Board and the major contributions of the members of IMIA's General Assembly. Besides his many outstanding contributions for IMIA, Steven Huesing as Executive Director also helped me in preparing this President's Statement. Let me finally acknowledge the work of my predecessor, Nancy Lorenzi, who has earned her place in IMIA's journey for her dedication, her wisdom and guidance. She has been successful in leading IMIA towards a most promising future.

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