

On behalf of the e-Health Technical Committee (TC) of the IEEE Communication Society (ComSoc), we wish the readers a very happy and productive year ahead! In its new avatar in its second cycle, the bi-monthly newsletter is aimed at showcasing interesting news items from across the globe, and announcements relevant to the e-Health TC of the IEEE ComSoc. In the first edition this year, we have an article that highlights the importance of understanding the generational needs while implementing an effective e-health system. This article is based on a study across households with three generations living under one roof, the setting being Singapore. This newsletter concludes with highlights from the recently concluded Healthcom 2012.

- Aravind Kailas (UNC Charlotte, USA) and Nazim Agoulmine (University of Evry, France)

## Understanding Three-generation families' Needs and Attitudes towards e-health

Odelia Tan, Jamie Ng, Alvin Wong, Wei Kiat Koh (ytan, jamie, hyawong @i2r.a-star.edu.sg)

Institute for Infocomm Research (I<sup>2</sup>R), Agency for Science, Technology and Research (A\*STAR), Singapore



Successful adoption of e-health technology depends on understanding users' needs and attitudes toward technology use in their daily lives. In Asian societies such as Singapore, it is not uncommon for three-generations to live together in one household. Considerable research efforts have investigated the feasibility of e-Health technology for the elderly, however few studies report on the needs of working adults and youth living in the same household. With time, these working adults and youth (i.e., the teens) will be older, thereby changing their e-health technological demands. Therefore, it is important to not only understand elderly needs but also the needs of

	Elderly	Working Adult	Youth
<b>Types of exercise</b>	<ul style="list-style-type: none"> <li>Walking / Jogging / Taiqi</li> <li>Doing household chores</li> </ul>	<ul style="list-style-type: none"> <li>Brisk walking / Gym / Yoga / Swimming</li> <li>Walking to take public transport/ the grocery store</li> </ul>	<ul style="list-style-type: none"> <li>Jogging on a treadmill</li> </ul>
<b>Freq. of exercise</b>	<ul style="list-style-type: none"> <li>Regularly</li> <li>Every morning</li> </ul>	<ul style="list-style-type: none"> <li>No time</li> <li>Twice or thrice a week</li> </ul>	<ul style="list-style-type: none"> <li>Depends</li> </ul>
<b>Medication</b>	<ul style="list-style-type: none"> <li>High blood pressure</li> <li>Diabetes</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
<b>Concerns</b>	<ul style="list-style-type: none"> <li>Precaution is better than cure</li> <li>Must take care what we eat</li> <li>I want to know more about my health</li> </ul>	<ul style="list-style-type: none"> <li>Cholesterol level, BMI level</li> <li>Diabetes</li> <li>Blood pressure, and heart problem</li> </ul>	<ul style="list-style-type: none"> <li>Not really concern unless                             <ul style="list-style-type: none"> <li>- Family history or</li> <li>- Facing some health problems now</li> </ul> </li> </ul>

Table 1. The exercise regime and health concerns of the members of the household.

working adults and youths. To do this, our team conducted contextual interview studies with 10 such households in which the three generations live together. During the home visits, the youth, adults, and elderly from each family were interviewed individually to allow each respondent to express their views independently. In addition, we observed their environment and their interactions with other members of the household. Each interview lasted between one to two hours. Interviews were conducted to understand their current technology use, current health status and their views on home healthcare monitoring. The demographics of the respondents are shown in Fig. 1.

From the interviews, it was found that the most common technologies used by these households were television, mobile phones, and the washing machine. Out of the 10 households interviewed, only two fitting the elderly profile knew how to use computing devices and only one of them used the Internet daily. Most of the working adults owned at least one computing device and most youths owned a

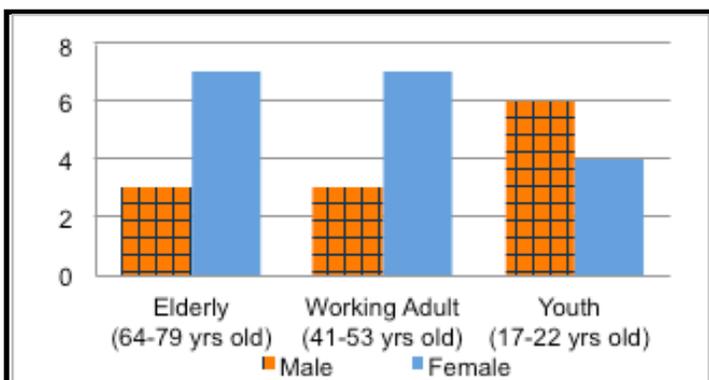


Figure 1. Age and gender profile of the respondents.

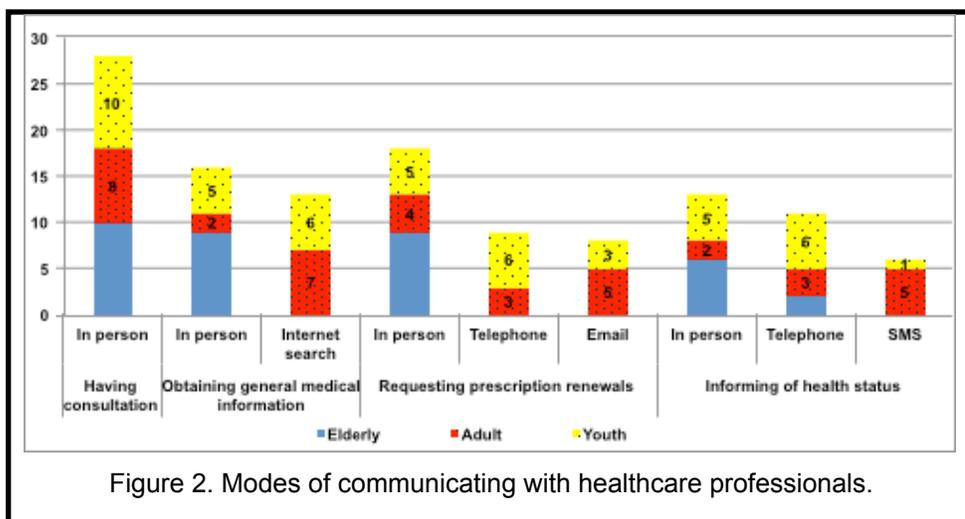


Figure 2. Modes of communicating with healthcare professionals.

laptop; both the working adults and youths used the Internet daily. After identifying their current technology usage, we continued to understand their current exercise regime and concerns about their health, which are summarized in Table 1.

The participants were then asked about their preferred way of communication with their doctors in different scenarios; their responses are shown in Fig. 2. Across the three-generation families, majority of them were comfortable communicating in person with the doctors when having consultation. In the case of the adults and youth, most of them preferred to use internet search to obtain general medical information. If the participants had to store their personal health records (PHR) at home, the most preferred device turned out to be their personal computers. The majority commented that they felt comfortable to have their medical records sent automatically to the doctor. Most of the elderly preferred them being sent on a monthly basis, while the working adults and youth preferred correspondence only when problems arose. This dropped to monthly or quarterly basis during *normal* days. Majority of the respondents were comfortable to have their families access their own PHR. On a concluding note, the findings of this study identified certain generation-influenced preferences and concerns regarding the adoption of an e-health system across households in Singapore. By understanding their needs and attitudes, we have gained insights into how e-health could be applied to suit their daily routine. Future works include inviting these respondents to evaluate some of the e-health technology developed by our researchers and to examine the factors influencing the adoption of these e-health technologies.

was held between October 10 and 13, 2012, in Beijing, the capital city of China. Beijing is an old city with the history of being capital for more than 800 years and a modernized international metropolis as well, hosting 2008 Olympic Games.

IEEE Healthcom conferences have been successfully held yearly since its inaugural conference in Sydney, Australia in 1999, and this year's conference is hosted by Tsinghua University, one of the most renowned comprehensive universities in China with the history of over 100 years. The conference spanned three and half days and comprised two workshops on traditional Chinese medication and industrial applications and services on

eHealth, respectively on the first day. The second day and third day events featured keynote speeches and technical paper presentations (run as parallel tracks) featuring regular and short papers. The key note speakers were Dr. Tsong-Wu Ho from the Industrial Technology Research Institute (ITRI), Taiwan (topic: eHealth Development: Challenges and Opportunities), Joel Rodrigues, Instituto de Telecomunicações, University of Beira Interior, Portugal (topic: Mobile Health Trends and Challenges), and Dr. Cheng Jing, School of Medicine, Tsinghua University, China (topic: Biochip enabled translation from central laboratory to portable laboratory). More than 100 papers were presented during the conference, and the authors were from more than 30 countries across the globe.



Figure 3. The opening ceremony of Healthcom 2012

On behalf of the Healthcom 2012 Organizing Committee, we once again thank the numerous volunteers, and the Steering Committee members for making the 14th edition a grand success. Wishing the readers a very happy 2013 ahead, and looking forward to seeing you all in Lisbon, Portugal for Healthcom 2013!

Dr. Jian Song  
Tsinghua University, Beijing, China  
General Chair, Healthcom 2012



The 14th IEEE International Conference on e-Health Networking, Application and Services (Healthcom2012)



## 15th IEEE International Conference on e-Health Networking, Application & Services (HEALTHCOM 2013)

Lisbon, Portugal – October 09-12, 2013

<http://www.ieee-healthcom.org>

### CALL FOR PAPERS

IEEE Healthcom 2013 is fully sponsored by the IEEE Communications Society. It aims at bringing together interested parties from around the world working in the health care field to exchange ideas, to discuss innovative and emerging solutions, and to develop collaborations. eHealth is defined as the cost-effective and secure use of information and communications technologies in support of health and the related fields, including health-care related services, surveillance, literature, education, knowledge, and research, both at the local site and at a distance. It will make personalized medicine possible and affordable in the near future. The adoption of eHealth technologies in medical fields creates huge opportunities yet lots of challenges still need to be resolved to build reliable, secure, and efficient networks or platforms with great flexibility.

Prospective authors are cordially invited to submit their original contributions covering completed or ongoing work related to the eHealth area. The topics include but are not limited to

- Biomedical and biosensors engineering
- Body sensor networks and wearable sensor systems
- Clinical biofeedback, decision support systems, and tools
- eHealth information and network Infrastructure
- eHealth for public health (including disease prevention, emergency preparedness, epidemiologic interventions)
- eHealth for aging (to support quality of life for older adults, aging in place and independence)
- Emerging eHealth applications
- Health grid and health cloud
- Health monitoring, traffic characterization, & management
- ICT-enabled personal health system
- Image and video processing on eHealth
- Network/Communications Infrastructures and Architectures for Healthcare
- New IT-enhanced Models for Healthcare delivery
- Pervasive and ubiquitous computing on eHealth
- Practical Applications of e-Health
- Security and privacy on eHealth
- Storage and Display Devices for eHealth
- Telemedicine and mobile telemedicine

#### Conference Venue

Instituto Superior de Ciências Sociais e Políticas – UTL (<http://www.iscsp.utl.pt>)  
Rua Almerindo Lessa - 1300-663, Lisboa, Portugal

### PAPER SUBMISSION

Perspective authors are invited to submit their papers using EDAS System at <http://edas.info/newPaper.php?c=13601&track=26533>. A full paper should not have more than five (5) IEEE style pages including results, figures and references. Papers will be reviewed with the standard reviewing procedure (with at least 3 independent anonymous reviews). Accepted papers will be published on IEEEExplore (<http://ieeexplore.ieee.org/>). The best accepted paper will receive the Best Paper Award. Extended version of best papers will be considered for publication on the International Journal on E-Health and Medical Communications (<http://www.igi-global.com/IJEHMC>) and in the Elsevier IRBM (<http://www.elsevier.com/journals/irbm/1959-0318>).

Note: To be published in the IEEE Healthcom 2013 Conference Proceedings and IEEEExplore, an author of an accepted paper is required to register for the conference at the full (member or non-member) rate and present the paper at the conference.

#### Important dates

- **Paper Submission:** April 30, 2013
- **Notification of acceptance:** June 30, 2013
- **Submission of camera-ready papers:** August 31, 2013

#### General Chair

*Joel Rodrigues*  
Institute for Telecommunications/  
University of Beira Interior, Portugal

#### TPC Chairs

*Ricardo Correia*  
Fac. Medicine, Univ. Porto, Portugal

*Christos Verikoukis*  
CTTC, Barcelona, Spain

#### Operations Chairs

*Maria Helena Monteiro*  
ISCSP, Tech. Univ. Lisbon, Portugal

*Rita Amorim*  
ISCSP, Tech. Univ. Lisbon, Portugal

#### IEEE Healthcom Steering Com.

*Joel Rodrigues (Chair)*  
IT/Univ. of Beira Interior, Portugal

*Tsong-Ho Wu*  
Industrial Tech. Research Inst.,  
Taiwan

*Pradeep Ray*  
Univ. of New South Wales, Australia

*Norbert Noury*  
University of Lyon, France

*Chi-Ren Shyu*  
Univ. Missouri, Columbia, MO, USA

#### Portuguese Govern. Liaison

*Henrique Martins*  
Clinical Information Coord., Portugal

#### Industry and Exhibition Chair

*Rui Gomes*  
Fernando Fonseca Hospital, Portugal

#### Industry Forum Chair

*Miguel Sales Dias*, Microsoft

#### Workshop Chairs

*José Neuman de Souza*  
Federal University of Ceará, Brazil

*Rui Rijo*  
Polytechnic Inst. of Leiria, Portugal

#### Tutorial Chairs

*Jorge Sá Silva*  
University of Coimbra, Portugal

*José Carlos Nascimento*  
University of Minho, Portugal

#### Panel Chair

*Eric Addeo*, DeVry University,  
USA

#### Publicity chairs

*Jaime Lloret*  
Univ. Politècnica de Valencia, Spain

*Lei Shu*  
Guangdong Univ. Petroc. Tech.,  
China

*Aravind Kailas*  
UNC Charlotte, USA

#### Communication Chair

*Francisco Roxo*  
Catholic Univ. of Lisbon, Portugal

#### Web Chair

*Vasco Soares*  
Inst. for Telecom./ IPCB, Portugal