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**PROMOTING E-HEALTH APPLICATIONS TOWARDS
AN INFORMATION SOCIETY IN ESCWA
MEMBER COUNTRIES**

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Preface

In an attempt to promote e-health applications towards an Information Society in ESCWA Member Countries (EMC), this paper aims at proposing:

- (a) Framework for debate within a roundtable discussion;
- (b) Recommendations regarding priorities, preliminary plans and initiatives that address the key issues and tackle the identified problems in building the Information Society. The recommendations will contribute to the compilation of the final documents for WSIS regional preparatory conference.

This paper is organized into four parts. The first part highlights the role of ICTs in enabling the transition towards an Information Society. The second part introduces e-health along with a listing of its goals, classifications, and different delivery channels. A suggested list of potential projects is provided to enable readers to familiarize themselves with the breadth of e-health applications, and how the latter creates value for the Information Society. The third part proposes a draft for national and regional priorities, initiatives and suggested e-health pilot projects. At the end, a conclusion summarizes the main issues in this paper and an appendix elaborates on key actors of Information Society in selected ESCWA countries and enumerates few e-health initiatives.

CONTENTS

I. Introduction: ICTs contribution to the Information Society	1
II. E-health contribution to employment and poverty	2
A. Definition of e-health	2
B. Overview of e-health	3
C. E-health goals	3
D. Delivery channels for e-health	3
E. E-health Categories	4
F. Promoting e-health applications for an Information Society	5
III. Priorities for national and regional action plans	6
A. Introduction	6
A.1 National priorities	6
A.2. Regional priorities	6
B. Typical e-health model	7
C. E-health initiatives towards an Information Society	7
D. Suggested pilot projects	8
E. Main obstacles for e-health applications towards an Information Society in ESCWA member countries	11
IV. Conclusion	11
Appendix	12
Appendix A. Status of e-health in selected ESCWA member countries	12

I. INTRODUCTION: ICTS CONTRIBUTION TO THE INFORMATION SOCIETY

ICTs have emerged as a fundamental tool in developing the information society. It has served as a vital catalyst in accelerating and sustaining the transformation of all aspects of the society including business, health, politics, education, and culture. Indeed, many socio-economical opportunities stem from the ICTs industry as such, and in their applications towards an information society.

First, ICTs play an important role in a **country's economic development**. (a) ICTs expand the scope and scale of existing markets. Firms benefit from these new channels for conducting their business transactions, expanding their markets, and acquiring knowledge on new products/services. (b) Developing countries, based on their comparative advantages, could produce ICTs products/services that could be exported to developed countries; some examples of these comparative advantages could be lower labor wages, closer relations between both countries, time zone difference, taxes, and so on. (c) In addition, ICTs offer the ability to leapfrog into higher income industries, thus bypassing earlier development processes and saving in both investment and time.

Second, adequate applications of ICTs could accomplish the **transition to an Information Society economy and link up to a knowledge-based economy**. In fact, the latter is becoming a de facto requirement in integrating with the global economy. Unfortunately, most Arab countries still rely on the traditional commodity industries¹ and need to develop local intellectual capital asset as a competitive advantage that would increase foreign direct investment, export, employment, and reduction of brain drain.

Third, ICTs have a high impact on the **development of SMEs** that could now leverage from lower hurdles to enter new markets, and accordingly benefiting from new business opportunities. Some of these new opportunities, such as computer training centers and cyber cafes, could reach and serve the poor segment of the population, and provide an important source of employment in developing countries. In addition, the adoption of ICTs in SMEs bridges the gap between high-income and low-income group and reduces social inequalities. This linkage also disseminates activities and information vital to the supply of livelihoods to the poor.

Fourth, **ICTs industry by itself is a promising field** where jobs of diverse skills are created. This industry has created jobs in hardware, software, telecommunications, networking, training, and consulting sectors. It is estimated that the average share of ICTs employment is 3.9 per cent of the total employment in the European Union 15 countries² during 1999. The telecommunication industry through deregulation and liberalization has witnessed an unprecedented boom in the last ten years.

Fifth, **ICTs offer flexibility of work location**. Remote-development activities offer good opportunities for firms in ESCWA/Arab countries to participate in the international trade market. As a result, Arab government should encourage building ICTs infrastructures and human capacities to establish an enabling platform for developed countries to tap into. Another dimension that opens unprecedented opportunities for employment is the emergence of freelancers or personal entrepreneur who could now conduct their work in remote offices and even at home. Such flexibility of work location has increased the participation of both women and people with disabilities in the workforce.

¹ Oil, natural resources, etc

² ILO, World employment report 2001 "life at work in the information economy", page 33

Sixth, **ICTs contribute to gains in efficiency and productivity in the traditional manufacturing industries.** (a) It improves quality and allows more precise control on process design changes imposed by a dynamic competitive modern market structure. (b) It responds faster to orders and builds a better knowledge of the client. (c) It saves in inventory and operation costs by enabling Just-In-Time (JIT) management and extract the most value from the supply chain by facilitating e-supply chain management. (d) It empowers management with up-to-date information and Decision Support Systems (DSS)³ that lead to better decision-making processes. All this will positively enhance the employment rate of existing jobs in traditional manufacturing industries.

Seventh, **spill over to other areas of economic activity** is also possible. One example of spillover could include the construction industry, as contracting firms build new infrastructure for high bandwidth cables and seek to disseminate ICTs in rural areas. Another example is faster and efficient operations of the financial service sector as ICTs enables new business models such as E-trade, an online financials services.

Eighth, **ICTs are the best instruments to connect and deliver information** thus (a) raising public awareness, (b) developing social capital, (c) cultivating communities, (d) allowing excluded groups to provide content about themselves, (e) and overcoming barriers⁴ for communicating with friends, relatives and others.

Ninth, **ICTs provide the necessary tools for improving the quality of life** of the disadvantaged segments of the society by offering effective and transparent services from both public and private firms; typical services include health, education, and social.

II. E-HEALTH CONTRIBUTION TO EMPLOYMENT AND POVERTY

A. DEFINITION OF E-HEALTH

E-health, or electronic health, is *“an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology”*⁵. Healthcare solutions are divided into four market segmentations: citizens, patients, health professionals, and health employees.

³ Such as data mining and data warehouse applications.

⁴ Such as distance, physical disabilities, etc

⁵ <http://www.jmir.org/2001/2/e20/>

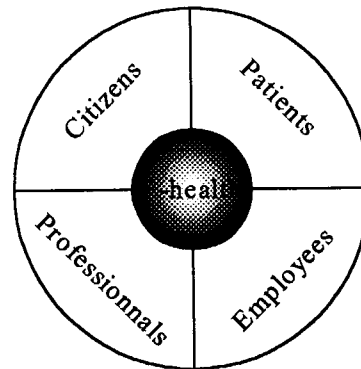
B. OVERVIEW OF E-HEALTH

The Internet is playing an increasingly important role in the healthcare system. Citizens have online access to health information, support communities, pharmacies, decision aids, and tools to handle administrative tasks⁶. E-health is making specialized clinical expertise available in rural settings in addition to providing second opinions in medical specialty areas. Thus, by empowering the citizen with desirable healthcare information, e-health is giving access to basic and vital data required to improve the living standards in Arab communities.

Moreover, the diversity and numerous e-health applications are both enriching the job market with new opportunities. Four major market segmentations⁷ are identified in this paper to assist governments in setting their strategies; the segments are the citizens, patients, health professionals, and health employees. Each segment has unique needs as described below:

Figure 1: E-health market segmentation

- a) Citizens need access to healthcare information;
- b) Patients need access to their personal records, official data about illness, and contact to their doctors, insurance firms, and hospitals for any administrative or consultative service;
- c) Health Professional need access to most recent healthcare information, to patient medical records, and to exchange health knowledge among each other;
- d) Health Employees need a comprehensive back office and front office system in order to better deliver health services.



C. E-HEALTH GOALS

- Promote health to the citizen;
- Deliver a high quality for living standards;
- Improve effectiveness and efficiency of the health system in both the private and public sectors;
- Empowerment through access to information;
- Ensure that citizens and healthcare professionals have access to up-to-date, appropriate, and high quality health information;
- Promote efficient communication within the health system.

D. DELIVERY CHANNELS FOR E-HEALTH

Even though e-health is heavily dependent on the Internet, there are other delivery channels that should be considered such as call centers, mobile devices, Kiosks, Intranet, Extranet, and new channels such as digital TV that provide promising potential for successful delivery.

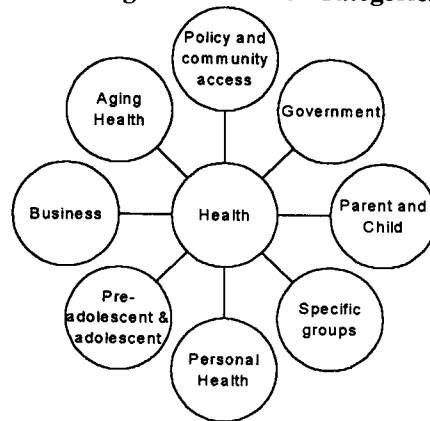
⁶ Such as scheduling appointments.

⁷ Adapted from UK department of health "e-business strategy- supporting implementation of the NHS" dated sep 2001 Annex 2.

E. E-HEALTH CATEGORIES

The e-health universe is vast; suggested categories of e-health applications could be used to better structure and manage e-health projects. In other words, this list of categories breaks down projects into self-sufficient application/modules that enables government to serve different niche markets and closely monitor the progression of project development life cycle. Figure 2 illustrates the eight categories identified for e-health projects⁸.

Figure 2: E-health Categories



Topics for each category are illustrated in table 1:

Table 1: Topic for e-health categories

Categories	Topics
Personal Health	Alcohol, tobacco and other drugs; alternative medicines/natural products; disease prevention; nutrition; mental and emotional health; physical activity and fitness; safety issues; violence prevention; etc.
Parent and Child	Breast feeding; child nutrition and fitness; childhood obesity; parenting; poison prevention; prenatal care; etc.
Health policy and community access	Health literacy and medication; health awareness; insurance issues and policies; rural services; etc.
Government	Information on ministry of health; public health and social care application; procurement; employment in governmental health institutions; etc.
Business	Insurance firms; pharmacies; pharmaceutical manufacturers; doctors; medical/biomedical supplier firms; etc.
Aging	Care giving; end of life issues; human relationships; nutrition and Fitness; etc.
Specific groups	-Agriculture: pesticides, farm safety, etc. -Environment: indoor, outdoor, water quality, etc.
Pre-Adolescent and Adolescent	Alcohol, tobacco and other drugs; eating disorders; foods and nutrition; healthy lifestyle education; mental and emotional; physical activity and fitness; pregnancy prevention; etc.

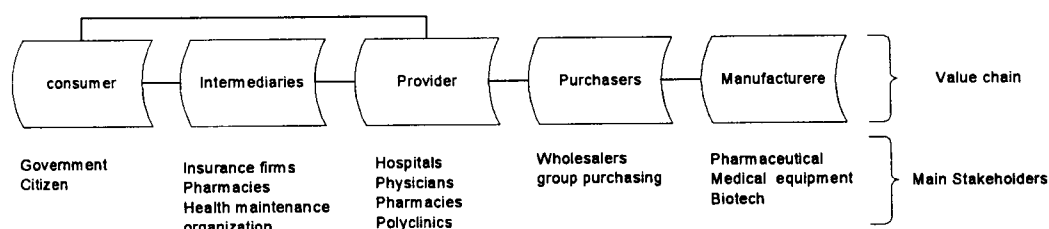
⁸ <http://www.nnh.org/NewNNH/resourcereview1.pdf>

F. PROMOTING E-HEALTH APPLICATIONS FOR AN INFORMATION SOCIETY

E-health brings ICTs' benefits to delivering healthcare to the society. It makes this sector more responsive to the needs of the citizen and enhances the quality of life. It improves delivery mechanism to remote locations⁹. It provides continuous up-to-date information to doctors so that they are informed about new cure and new drugs. It participates in developing new state-of-the-art healthcare tools that opens new frontiers¹⁰. In addition, e-health has a direct impact on poor segments of the population. It empowers poor communities with access to health related information that could mitigate the consequences of certain epidemic diseases. Furthermore, it reduces cost of basic healthcare services in rural areas through the use of ICT-based solutions such as telemedicine.

In order to gain an overview of the healthcare market scope and scale, figure 3 depicts the healthcare value chain and main stakeholders.

Figure 3: Healthcare value chain



Major E-health applications:

- **Logistic solutions for healthcare:** These solutions offer distinct value to each of the organizations along the healthcare value chain including Pharmaceutical manufacturing (branded or generic), biotech, insurance firms, pharmacies and consumer goods, distributors, medical device manufacturer, hospitals, polyclinics, etc.
- **Hospital management information's systems:** these systems offer a complete line of systems for patient management, financial management, procurement management, clinical, administrative, and practice management.
- **Research and Development (R and D):** R and D can be carried out in the fields of electronic medical files, medical diagnostic support tools, preventive strategies, knowledge base systems¹¹, and of networks linking healthcare institutions and universities.
- **Public health ICTs solutions:** These solutions deal with social welfare, medical compensation, telemedicine/telecare, government healthcare procurement, public health electronic library, healthcare services for the poor communities and people with special needs.

⁹ Such as Internet, portable ultra sound scanning devices, etc

¹⁰ Such as fully equipped ambulances with X-ray and wireless communication that enable to conduct immediate scan and send the x-ray to the concerned doctor in the hospital for an immediate diagnosis.

¹¹ Based on state of the art technologies such as neural network and OLAP systems

III. PRIORITIES FOR NATIONAL AND REGIONAL ACTION PLANS

A. INTRODUCTION

A.1 National priorities

National Health Strategy (NHS): National Health Strategy should take into consideration the following objectives:

- a) Deliver better and faster health services by instituting e-health ERP solutions in all healthcare firms;
- b) Increase widespread availability of low cost access to e-health services;
- c) Improve quality of life;
- d) Reduce social inequalities related to healthcare issues;
- e) Build up to a national knowledge-based healthcare repository system.

Legislative issues: Current laws should emphasize the confidentiality and protection of the patient data, while norms for e-health system security are adopted.

Infrastructure development: Government should deploy a national infrastructure with broadband backbone and wide covering area.

Develop Human skills: Users need to have required informatics skills to operate new e-health systems. Potential initiatives would be (a) conducting a survey to identify competency of NHS professional users; (b) inserting e-health skill development in curricula of healthcare professionals, (c) seeking certification such as "IT Driving Licenses".

E-health information standards: e-health systems should adopt national standard for entering data in order to avoid misinterpretation of information. This standard should be communicated and mandated for use by all healthcare institutions. Another dimension for standardization is to seek certification of e-health systems by private or public institutions in order to guarantee quality.

A.2. Regional priorities

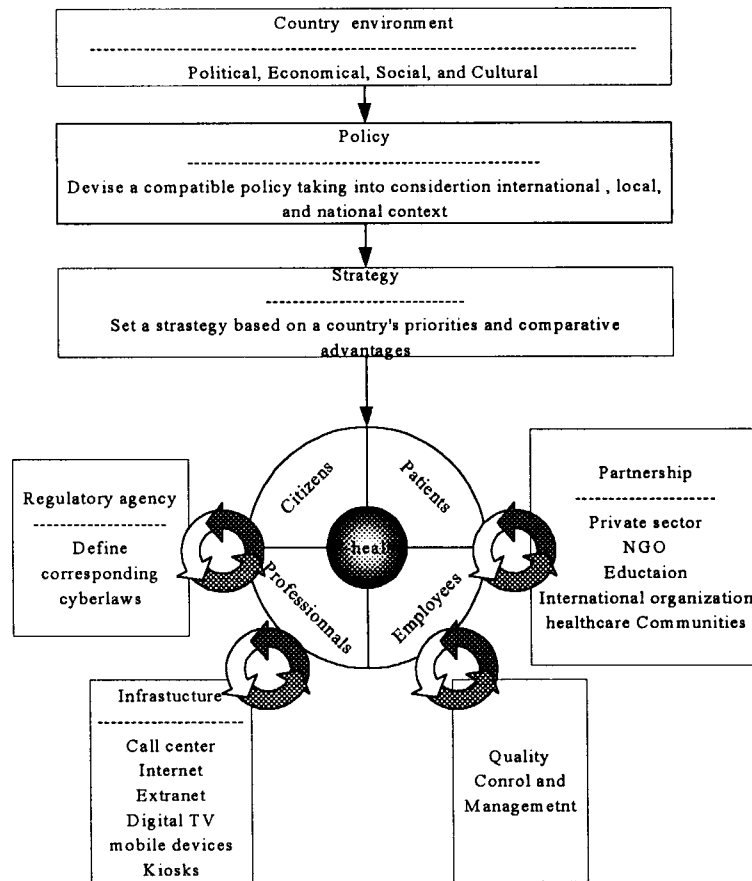
Other priorities with a broader scope of work are suggested below:

- Research and development partnership in selected area of ICTs that are capital intensive;
- Standardization of e-health Arabic terminologies and data convention used in the systems;
- Standardization of electronic medical record;
- Developing an e-health backbone network that connects several healthcare institutions and medical educational universities together from different ESCWA countries.

B. TYPICAL E-HEALTH MODEL

E-health projects should be defined based on each country set of priorities. The underlying theme is partnership and quality management in order to deliver effective and efficient health services to the citizen. Figure 4 below illustrates interactive feedback loops that depict the continuous, responsive, and dynamic interactions that should exist among the four major identified components; namely: regulatory, infrastructure, partnership, and quality control.

Figure 4: Typical e-health model



C. E-HEALTH INITIATIVES TOWARDS AN INFORMATION SOCIETY

E-health initiatives can be grouped in five main areas as listed below¹²:

1- Increase access: It is important to reduce the gaps in accessing basic electronic information, especially for e-health applications. Widespread, high-bandwidth, and low-cost access should be provided to all segments of the

¹² Refer to Appendix A for a listing of some e-health initiatives in selected ESCWA countries.

population. Public access such as touch screen Internet Kiosks, telecenters, and telemedicine are few examples for increasing access.

2- Improve content: The next issue to be addressed is content. (a) Different communities need access to relevant content-based information such as health issues related to common diseases, HIV/AIDS, and government vaccination plans. (b) Content should be displayed in a user friendly layout and in Arabic language. (c) Content should also be interactive in such a way to gather more information about the citizen and allow him to register complaints and feedback on relevant issues.

3- Encourage and promote utilization: Poor communities still have biases towards the use of ICTs. Promoting utilization and empowerment activities among poor is another important factor to induce optimism in e-health applications. Both private and public sectors should market their solutions to gain awareness and utilization. Typical approaches could be to:

- Allocate a civil servant or a private sector employee to operate Internet kiosk;
- Market available solutions on national level;
- Publicize success stories.

4- Seek Public-Private Partnership: Public-Private Partnership (PPP) involves the private sector to contribute more in developing e-health solutions, while at the same time increasing entrepreneurial initiatives. Such partnership is mandatory for building an Information Society.

5- Establish a National e-Health body to promote NHS: The new frontline for the Information Society is to service all citizens wherever they are and whenever they want. The first phase for this initiative aims at establishing a direct phone number/ e-mail to assist citizen on basic health care issues such as: making a routine appointment to one of the NHS contracted hospitals/doctors, calling a social service support, getting healthcare advice, etc. The next phase could be to link up with the electronic public Health library; the third phase could be to provide more interactive website to the citizen that would allow patient to view medical and social care records and seek specialist care, etc.

D. SUGGESTED PILOT PROJECTS

As part of promoting healthcare ICTs applications to enable the transition to an Information Society, this section proposes a sample list of applications to be used as a guide for the short, medium, and long term planning. Table 2 should be used as a checklist¹³. Long-term projects are not included in the table below, however one might consider long-term e-health applications based on third generation GSM and VSAT technologies, or e-prescription solutions that would provide consumers access to online prescriptions over the Internet.

¹³ This table should be used as checklist. Some of these projects depend on others and have prerequisites such as illiteracy and administrative reform, which should also be taken into consideration. Needless to mention that a phased approach should be adopted for implementing any of the above projects.

Table 2. Sample E-health applications

E-health application	Delivery channel	short term	medium term	Long term	Impact on	
		1-3 years	4-6 years	7-10 years	Employment	Poverty
Set an ehealth policy and strategy		<input checked="" type="checkbox"/>			low	-
Build Internet enabled Infrastructure		<input checked="" type="checkbox"/>			high	low
Develop static content for public information	Internet, Kiosks	<input checked="" type="checkbox"/>			medium	-
Build and train local skills in public institution		<input checked="" type="checkbox"/>			medium	-
Initiate legal framework for ehealth application		<input checked="" type="checkbox"/>			low	-
Build Ministry of Health portal site	Internet, Intranet, Extranet	<input checked="" type="checkbox"/>			low	-
Market and promote usage of health solution to build trust		<input checked="" type="checkbox"/>			-	-
Online doctors/ telemedicine for rural communities	Internet, Kiosk, call centers	<input checked="" type="checkbox"/>			medium	medium
E-health caravan	Internet, Mobile, call centers	<input checked="" type="checkbox"/>			medium	medium
E-health standards		<input checked="" type="checkbox"/>			-	-
Enterprise resource planning for health institutions	Intranet, Extranet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		high	low
Social Security system	Internet, call centers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		medium	medium
Health information network	Internet		<input checked="" type="checkbox"/>		medium	medium
Knowledge based healthcare systems	Internet, Intranet, Extranet		<input checked="" type="checkbox"/>		medium	high
Electronic Medical Records(EMR)	Internet, Intranet, Extranet		<input checked="" type="checkbox"/>		low	high
Smart cards			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	low	low

The following table elaborates on main functionalities of selected applications for the short and medium terms.

Table 3. Main functionalities of selected e-health components

E-health application	Main functionalities
Health information network	<p>The objectives of this project are (a) to assist the citizens to recognize and share low cost solutions to health and medical problems, and (b) to increase interaction among health workers, government, and citizen. This network will link together the ministry of health, hospitals, health research centers, polyclinics, doctors, medical insurance firms, and pharmaceuticals manufacturing, in order to:</p> <ul style="list-style-type: none"> ▪ Enable medical experts to gain on-line access to new medical literature; ▪ Give citizen access to information that supports decisions about health care benefits; ▪ Help patients manage their depression; ▪ Help patients understand what health care options and paths are available to them (given the diagnosis of a critical disease or condition); ▪ Help patients get a second opinion; ▪ Provide patients with an online clearance form from the insurance firms; ▪ Bridge the "digital divide" in health, ensuring that relevant information - and the technologies to deliver it - are widely available and effectively used by health personnel: professionals, researchers and scientists, and policy makers.

E-health application	Main functionalities
Online doctors / telemedicine for rural communities	This application will provide villages with Internet kiosks connected to webcams that are operated by a trained civil servant or by a private firm. The trained operator will carefully record the symptoms of the patient using templated questionnaires; in addition a voice-record of the patient and a picture can also be attached to the questionnaire in order to assist the doctor to better diagnose the disease ¹⁴ . Then the records are sent via Internet to either a contracted doctor or hospital. This project does not necessary have to be operated in real time, records can be sent via Internet and replies can come back later based on the severity of the patient's case. On-line doctors can call back the Internet kiosks or conduct an on-line chatting to gain more information from the patient. In case a physical checkup or a hospital admission is required, the doctor will give an appointment for the patient to get a treatment.
E-health caravan	A complementary solution is to equip a mini bus with the same resources as listed above ¹⁵ but using a wireless Internet connection to serve small villages. These buses, located in major villages or nearby cities, will serve nearby rural areas; a prescheduled timetable will be made available to these villages.
Knowledge based healthcare systems	<p>A more aggressive application is to develop a decision support tool that could assist healthcare experts to respond to a given scenario though the use of a series of electronic forms. These forms, whose attributes correspond to components of the identified scenario, prompt healthcare experts to provide information or suggest new values. Once a scenario is populated with sufficient knowledge, it can then be used for knowledge driven activities, or even for healthcare process modeling.</p> <p>The use of On-Line Analytical Processing (OLAP) systems and Neural Network technologies are two emerging technical platform for building a knowledge-based healthcare and physician support systems to reduce the gaps between knowledge and practice.</p>
Social Security system	<p>A medical and social security management system is needed for governmental institutions. Eventually, social security organizations need to better manage citizen's personal/family files, to cover different statuses or classes of social and medical compensations, and to better control financial aids related to hospitalization, medical treatments, and social/health benefits.</p> <p>Such a system will include module to manage hospitalization, medical, dental, and social benefits; it also handles all related financials transactions.</p>
Electronic Medical Records (EMR)	EMR is a main feature to boost e-health application. The electronic delivery of medical records from one institution to another is a milestone for a national e-health strategy.

¹⁴ In India, Aravind Eye Hospital in the city of Madurai, has implemented such a solution to provide telemedicine to patient with eye diseases. Doctors also give appointment at the hospital where patient get free treatment.

¹⁵ Online doctors / telemedicine for rural communities

E-health application	Main functionalities
E-health standards	It is the implementation of the same international standard for all adopted solution in ESCWA member countries in order to avoid future integration problem or interpretation of the data; an example will be universal Arabic data definition and common healthcare terminology.
Smart cards	"Smartcards" is another vital application to promote e-health applications. It can be used for both (a) off-line transactions where it will store personal and clinical data about the citizens and (b) on-line to provide access permissions for multiple applications.
Enterprise resource planning for Health institutions	Eventually all health institutions should automate both their back office and front office applications. Typical solutions will include a comprehensive hospital management system, polyclinic applications, etc. Health care organizations can improve performance and patient satisfaction by utilizing e-health ERP applications. ICTs can mitigate the risk of error in medicine, which is becoming an increasingly important public health issue. In the United States, there are at least 44,000 and perhaps as many as 98,000 Americans who die in hospital each year as a result of medical errors ¹⁶ .

E. MAIN OBSTACLES FOR E-HEALTH APPLICATIONS TOWARDS AN INFORMATION SOCIETY IN ESCWA MEMBER COUNTRIES

ESCWA countries face obstacles that could impede progress of e-health applications; some of these obstacles are listed below:

- Formal accreditation of health care providers for some e-health projects;
- Legal structure and current laws;
- Difficulties of sharing information while protecting confidentiality for patient and citizen;
- Resistance to change;
- There is still a segment of the population who have biases and lack of confidence in using ICTs especially when it comes to health issues;
- Literacy problems are a major obstacle for the widespread use of e-applications.

IV. CONCLUSION

As a conclusion, this paper stresses the impact of e-health applications in enabling an Information Society. It proposes a draft list of national and regional priorities, a suggested implementation model, and typical initiatives and pilot projects. The objective is to instigate further development and evolution of the ideas proposed in this paper. Corporation and coordination among all participants will set the basis for the debate within a roundtable discussion of the WSIS regional preparatory conference. The recommended results of this debate will contribute to the compilation of the WSIS regional preparatory conference final documents.

¹⁶ Source : <http://books.nap.edu/books/0309068371/html/26.html#pagetop> - study conducted for a 33.6 million admissions to US hospitals in 1997.

Appendix

Appendix A. Status of e-health in selected ESCWA member countries

Table A.1. Websites percentages per category

Country	Key Actors of Information Society	Websites percentages per category		
		National ministries	Regional and local authorities	Hospitals / clinics
Egypt	Ministry of Communication and Information Technology - Information and Decision Support Centre - Central Agency for Public Mobilisation and Statistics - Internet Society in Egypt	38%	n.a	n.a
Jordan	Economic Consultative Council - Ministry of Information and Communications Technology -Intaj	100%	0%	7%
Lebanon	Office of the Minister of the State for Administrative Reform (OMSAR) -Ministry of Posts and Telecommunications - Ministry of Transports -Ministry of Industry - Ministry of Economy and Trade -Council for Development and Reconstruction - Associations : ADIL, ALSI, ADIL, ITIA, & PCA.	73%	12%	8%
Palestine	Ministry of Posts and Telecommunications - Ministry of Economy and Trade - Economic Council for Development and Reconstruction - Palestinian Information Technology Association	29%	8%	4%
Syrian Arab Republic	Ministry of Communications - Ministry of Higher Education - Syrian Telecommunications Establishment - Syrian Computer Society - Ministry of State for Technology Transfer and Technological Development - E-commerce Consultative Committee (including Ministry of Transport, Ministry of Economy & External Commerce, Ministry of Finance, Ministry of Finance, Ministry of Justice, Director General of STE, a representative of SCS) -Consultative Councils in various ministries	35%	0%	0%
United Arab Emirates - Dubai	H.H. Sheikh Maktoum bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai, has fully supported the vision of making Dubai a regional hub for new technology	100%	n.a	n.a

Source : Adapted and compiled from www.europa.eu.int, the European Survey of Information Society web site . Information provided is related to the period 1999- 2001.

Table A.2. E-health initiatives

Country	Some e-health initiatives
Jordan	an important telemedicine project is carried out by Jordanian and American hospitals linked by a satellite link All centers are equipped with videoconferencing capabilities This link is the support of many applications : tele-diagnosis, diagnosis improvement, training sessions.
Palestine	The Ministry of Planning & International Cooperation and the Ministry of Health in Palestine are involved in an important project consisting in the implementation of an Information System dedicated to the health sector The objective is to provide an efficient health management information system Example of key applications : (a) Support epidemiological surveillance system, (b) Development of prevention measures and research strategies, (c) Measurement of evolution.

Source : Adapted and compiled from www.europa.eu.int, the European Survey of Information Society web site. Information provided is related to the period 1999- 2001.