The Use of ICT in the Delivery of Healthcare Services to the Chronic Patient

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Abstract. Chronic diseases cause a major problem to the modern health care services world wide. Our work describes a new approach to tackle the problem of the chronically ill patients, by using information and communication technology (ICT) for patient’s empowerment and managed their care. Our research, which is conducted with close cooperation with the health maintenance organizations and is still continuing, is based on a “bottom-up” approach and is also aimed at changing paradigms, well established in the western healthcare services.

Keywords. patients empowerment, managed care, telemedicine, chronic disease

The current major problem of healthcare services is the abundance of chronic diseases which are accountable for 80 percent of the global burden of diseases. Coupled with increasing longevity, we are facing a burden on the delivery of health services and growing difficulties in delivering the appropriate health services.

On the average, physicians are devoting less than ten minutes to their patients; 25 percent of patients complain that they did not express their problems, and 50 percent say they did not understand their doctors. One has to recall also that the compliance of patients to the doctors is 50 percent. These problems are typical to the Western world in the encounters between physicians and patients.

To cope with this problem as well as with the soaring health expenses, one has to change paradigms and to find new solutions.

Strong emphasis was given in the last years to electronic health records. President Obama has allocated 19 billion dollars of the American Recovery and Reinvestment Act for the introduction of information technology (IT) to the health system. It is astonishing to see the neglect of medical computerization in many western countries. Yet, the hope of saving and increasing productivity and safety due to computerization is ill-based. The use of IT in the European healthcare services is much better in several countries, yet one has to recall the pitfalls of the current medical data, even if it is computerized. As an example of it, it was found that:

- In several countries, like Sweden, Scotland, and Israel, it was found that around 20 percent of patients discharged from hospitals with the diagnosis of congestive heart failure (CHF), do not have CHF.

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• Diseases such as CHF or chronic obstructive pulmonary disease (COPD) have a severity grouping between I and IV. Physicians do not write this staging. Many times, physicians rely on previous diagnoses, but do not reassess after years of follow-up whether the diagnosis is still valid.

Furthermore, there is still no accepted computerized engine to convert medical data of various diseases to practical information. I believe that we have three basic approaches in handling chronic patients, provided we have strong information and communication technology (ICT), and that we improve our health information systems:

• Disease management
• Sometimes use of tele-transfer of medical data.
• Active promotion of patients’ empowerment and self-care.

During the last two years we have established a comprehensive concept, of which some parts are already functional, as follows:

• There is vast literature regarding disease management, indicating various failures from various countries.
• Based on our experience in the last three years, in introducing disease management in CHF, it is clear that this approach has to be implemented from the bottom up.
• Dictation from health authorities on disease management does not work. One has to encounter many difficulties in changing the approach to clinical work in the field.
• Physicians are not used to talk with patients over the internet, are often antagonistic towards delegation of authority to nurses or other paramedical workers, and even issues like payment procedures might hinder the process.
• The question of what is the value of tele-transfer of medical data is a major issue. Many electronic companies are trying to promote the sale of devices which transfer electronically glucose level, blood pressure, weight, pulse, etc. In most cases, beside transfer of electrocardiogram in acute cases, there is no value in real time transfer, which is also costly. However, we have no evidence of whether off-line transfer of data has additional value.

In Israel, we are involved in two large research projects – each of 1,200 patients, to investigate the value of disease management with electronic transfer of data such as weight (relevant with CHF), oxygen saturation (relevant with COPD), etc. There is vast literature about self-care. However, there are only a few studies about the practical approach to self-care and its value. In July 2009 we will launch an internet site for patients suffering from eleven different chronic diseases. The idea is to promote exchange of data between patients (like a medical “Facebook” or “My Space”) while providing medical data. The site will be called in Hebrew “Like Me” (Can also be translated as “Me Too”) and will relate to cardiac diseases, diabetes, severe obesity, cerebral vascular accident, pain, hypertension, etc. For each disease, there is a medical leader with an assistant. Later, we plan to study the psychological and social features of the responding patients and their families.

There is still a need to conduct studies and researches to find the practical cost-efficient approach of how to deal with chronic diseases. However, one has to constantly think about changing paradigms and learning from the experience of others. I believe that the European Union is the best environment and the right organization to tackle these problems.