Chapter 3
Health and Health Care
Grid Services and Delivery
Integrating eHealth and Telemedicine

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ABSTRACT

Health Grids offer new solutions and alternatives to existing models for the delivery of Healthcare Services to diverse Populations across dissimilar Geographical and Political Regions. Incorporating new medical science, legal systems, systems and networks, financing, technologies, processes, procedures, business and government participation, competitive, cost-effective integration with existing, experimental and competing delivery models is a basic requirement. Integration is likely to be performed locally and may be required to avoid the disruption of existing models, e.g., Patient, Practitioner and Payer choice. This chapter addresses a selection of issues that have been encountered in other high-technology integrations. Less-complex and more limited-in-scope than Health Grids they indicate a need for adaptability and multiple solutions. Choice and options will be important. The ability for Users to personalize, and re-structure as needed or desired, a Health Grid will be paramount.

OVERVIEW

Many historical Health-related writings have failed to resolve the Mind-Body dualism in Western Cultures (The Mind and the Body are the Same Thing, 2010); Eastern Cultures have not adopted this Dualism and hence consider the Mind and Body as one. Immediately there is conflict since there is a strong, provable interaction between Mental and Medical Health.

This Chapter addresses Personal Health and the application of Grids to deliver Services. eHealth and Telemedicine Services are emphasized. To begin it must be stated that the networking of Healthcare Services has existed for many years, long before the Internet, and retains traditional forms at this time, e.g., rural areas in many Countries.
Modern Western evolutions have resulted in centralized and specialized Services, e.g., the City Hospitals. Future evolutions are expected to come in the form of additional and increased specializations within the established Healthcare Services Infrastructure.

The Internet is available in most modern Cities and their complement of modern City Hospitals. The underlying Infrastructures having been developed and deployed over many years. Access available to all and to Healthcare-related Services remains major issues.

Whether existing Infrastructures constitute ‘good candidates’ for Grid applications must at least be determined locally since local Infrastructures have development and deployment histories. For example, local infrastructures are mostly developed and deployed in response to local demands and resources; hence current state, capacity, performance and scalability may even be unique; a locality servicing an economy based upon agriculture is likely to be radically different than one based upon finance.

Rural areas generally are not ‘good candidates’ since infrastructure are missing or incapable of sufficient and sustained capacity, performance and scalability.

If a Health-related Grid is to be successful the Market must be shrunk to modern Cities and their complement of modern City Hospitals. Starting from this point one must estimate the actual Market for Health-related Grid Services.

Many modern City Hospitals currently support Internet access to internal Organizations, Services and Personal Records. There must be advantages and additional Services that would cause the typical Patient to consider Grid Services. Immediately the concern arises as to Grid Services becoming a replacement for, an extension of, a source of additional, beneficial Health Services, or some combination thereof.

An underlying, pervasive requirement is the satisfaction of significant, healthcare-oriented, personal goals and objective for all Patients. A proposed Healthcare Grid must be both cost-effective relative to Services provided and competitive relative to currently-available Services.

The current organization of Healthcare Services is based upon Community-resident General Practitioners and Primary Care adjuncts, with specialized equipment, facilities and Specialists located in the modern City Hospitals and Clinics. In short, Primary Care in the Neighborhoods; Specialist Care in the Hospitals and Clinics.

The concern for years has been funding increased specialization in the modern City Hospitals and Clinics. Primary Care in the City Neighborhoods and Rural Health Care have advanced little in some developed Countries; others have and enviable record of achievements; under-developed Countries remain mostly lacking.

The obvious questions that jump to the foreground are:

*Even if one Engineers a Health-related Grid, What will it cost? Who will buy it ? and to What applications can it be applied?*

Before proceeding one must briefly consider competitive and complementary technologies. As mentioned earlier, cost-effective, competitive Healthcare Grid-based Services would be requirements. Consider the modern Patient in a modern City. Why and How would they choose to associate with a Healthcare Grid?

The modern Resident of a modern City is mobile and connected and expected to evolve further in the future. Major opportunities for associated Healthcare Services exist. At the same time modern Residents expect greater access to advanced medical devices that are mobile, non-invasive, and present in the environment, e.g., Patient Monitoring.

Portable Medical Devices have been available for many years. Size has been reduced and functionality increased. They are now Personal, Portable Medical Devices and the resultant data is available to the Patient and the Practitioner. Em-
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