The regional health network offers health care services in a region through efficient administrative organization of health care providers in region and by means of regional innovation systems like information systems, eHealth tools and services (Spyrou, Bamidis, & Maglaveras, 2009). According to Oates & Jensen in (Oates & Jensen, 2000). “A health region is the geographical area where most health services are provided to the inhabitants in the area, and in which area the patient typically receives almost all of the health services they need.” Additionally, in Grinten and Jarvis (2007) “a Regional Health Information Organization is a multi-stakeholder organisation that enables the secure exchange and use of patient health information among clinicians and caregivers to improve the delivery, efficiency, quality, and safety of patient care.”

The literature is ambiguous on the nature and characteristics of the definition of regional innovation systems (Doloreux & Parto, 2005) and regional health networks as well. The term region has sometime the same meaning with the administrative regions or divisions of country, while there are regional health networks that are not the same with administrative regions.
The providers in a RHN can be public or private companies and their collaboration is diverse depending mainly on the scope of the collaboration.

The main healthcare providers in a RHN are the following (Oates & Jensen, 2000): (1) Primary care providers, (2) Secondary, Tertiary and specialised hospitals, (3) Pharmacies, (4) Laboratories and diagnostic centers, (5) Specialists, (6) Home care providers and midwife services, and (7) Other healthcare providers.

Generally, the new area for development of regional health networks focuses on the active involvement of patients in the decision making process regarding the available health services, and on the citizens to gain knowledge about health and quality of life. The eHealth tools and services, and other information system and communication tools facilitate these needs by sharing available health care information.

The aim of the regional health networks is sharing health care information among the healthcare providers in regional, national or cross-border level. The factors that define the degree of development of those networks are the organizational structure of health system, the need for information flows according to the organizational structure and the penetration of ICT in health.

ORGANIZATIONAL STRUCTURE OF RHN

The organizational models of RHN are several and defined by the health care policy makers in each country. The factors that define the models are mostly the provision of high quality health care services along with the financial investment the stakeholders (or the government) can achieve. The most common models—with reference to the financial investment - are the following (Spyrou, Bamidis, & Maglaveras, 2009):

- **Non-profit public model**: The public organizations are directly connected to the RHN authority which is under its director.

- **For-profit corporations’ model**: For-profit organizations may serve the region with medical services, IT services, or other. The for-profit-organizations may receive a return of their investment through payment for the health care services in region. Examples could be insurance companies or other companies that outsource services for the region for example home health care services etc. The stakeholders that participate to the non-profit corporation elect their directors.

- **Governmental district or authorities**: Local governmental agencies that are settled with the government district authorities and are mostly governed by public officers or local board of advisors. The organizations’ rules and services are described by state laws. The financial investments come from taxes or state’s general fund.

The organizational structure of a RHN is provided by the health care policy makers in each country. The structure defines the participation of (health) stakeholders and the implementation of an interoperable health information infrastructure. The RHN structure determines the need for information sharing and consequently the possible data owners. The ability to achieve interoperability among the stakeholders of a RHN determines the architecture of the information system that supports the RHN.

The architectural models of RHN can be an abstraction of those that support the Health Units. The ICT systems that support the health units can be categorized in three models: transactional, federated and centralized depending on their ability for health information
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