Gaoussou Camara, University Alioune Diop of Bambey, Senegal

Challenges and perspectives in the management of patient records in Senegal: experiences from the SIMENS project

Abstract

Information and Communication Technologies (ICT) has fostered a significant change in the management and capitalisation of data within organizations. However, the public health sector in Senegal is lagging behind in its digital transformation.. Indeed, large amounts of data are produced daily by medical activities such as consultations, hospitalization, laboratory test, surgical intervention,, etc. These data are recorded in essentially textual media (registers), images, audio and video files, which are mainly accessed and used manually. Faced with this problem, Hospital Information Systems (HIS) are today an key solution for the electronic management of patient records, the improvement of health care and the rationalization of human and financial resources. In this presentation, we will highlight the challenges of managing data in our healthcare system. We will discuss the experience of the National Medical Information System for Senegal (SIMENS) project and its perspectives for improving our health system and biomedical research. In addition, given the new issues raised by the collection and storage of massive data by our health platforms, we will present new research directions and results, including (1) the design of visualization approaches and tools to improve easy and rapid access by doctors to patients' medical histories and (2) the proposal of prediction models for the complications of certain chronic pathologies, such as in cardiology.

About SIMENS: The SIMENS project aims to develop an information system for the management of medical and administrative activities and data of health facilities in Senegal. The project started about 10 years ago and is now in its experimental phase in collaboration with the Regional Hospital of Saint-Louis in the north of Senegal. The system is designed with the support of physicians from the Faculty of Medicine of the Gaston Berger University of Saint-Louis (UGB) to better take into account the specificities of the Senegalese health system. The project is supported by the Numerical Analysis and Computer Science Laboratory of the UGB and the Interdisciplinary Research Team in Medical Informatics and Information and Communication Technologies for Education (IMTICE) of the Alioune Diop University of Bambey (UADB), with the scientific contribution of the Laboratory in Medical Informatics and Knowledge Engineering in e-Health (LIMICS).

Biography

Gaoussou CAMARA is a Teacher-Researcher in Computer Science at Alioune Diop University in Bambey (UADB), Senegal. He is leading the Interdisciplinary Research Team in Medical Informatics and ICT for Education (IMTICE). Gaoussou specializes in management of biomedical data and knowledge. His work focuses on the design of electronic health records, hospital information systems and health surveillance systems. His work in the field of domain and process ontologies engineering is applied to infectious diseases surveillance. The objective is to demonstrate that the use of these ontologies makes it possible to overcome the limitations related to the multidisciplinary nature of the actors involved in epidemiological surveillance, the integration of data from heterogeneous sources, the composition of numerical and qualitative simulation models with different formalisms and the difficulty of collecting numerical data in real time.

Gaoussou is co-founder of the SIMENS project. He is COO of the startup Pyramidal Health Information Systems (PyramidHIS) which emerged from SIMENS. Gaoussou is also the Coordinator of the Digital Science and Technology Network (DSTN) of the ACE-Partner project.