

# Health Information Compliance Alert

## Toolkit: Bolster Data Exchange With This Health Informatics Primer

### Links between common application standards may boost interoperability.

If your organization stockpiles patient data but doesn't know what to do with it, you're not alone. That stored data and how it is shared between providers can improve care coordination and patient outcomes - and health informatics is key to those exchanges.

**Background:** Health informatics is a complex and detailed science that aims to improve the quality and safety of patient care, and patients can be more informed of their conditions and care options due to the advancement of consumer informatics. However, health information interoperability shortcomings are causing health data to accumulate with nowhere to go.

Read on to know how health and consumer informatics need interoperability to satisfy both the patients' and healthcare professionals' hunger for information.



### Understand the Science Behind Health Informatics

Combining healthcare sciences, information science, computer science, and cognitive science, informatics has become a vital component of healthcare. Science merges expanding technology and innovations with immense amounts of data to help improve society's health, economic functioning, and well-being.

**Definition:** "In a nutshell, health informatics is the science of combining healthcare data into information to derive knowledge and create wisdom. A major theme in the current healthcare environment is the use of information systems and technologies to enhance the quality and safety of patient care," says **Gabriela Mustata Wilson, PhD, MSc, FHIMSS, SNAI**, co-director at the Multi-Interprofessional Center for Health Informatics, professor of kinesiology at the College of Nursing and Health Innovation, The University of Texas at Arlington in Arlington, Texas.

One area that is vital to the success of health informatics is interoperability.

### Realize the Challenges to Fully Integrated Interoperability

Interoperability is the capability for multiple health information systems to communicate and exchange data inside and between healthcare organizations. This information exchange will help healthcare professionals gain access to necessary data to deliver effective healthcare to communities and individuals. For interoperability to be successful, different IT systems and software applications need to be able to accomplish three tasks:

- Communicate
- Exchange data
- Use the exchanged information

While the aim of health informatics interoperability is attainable, challenges remain before the program reaches its full potential. One hurdle is what to do with the surplus of information that's amassed from electronic health records (EHRs). Healthcare data continues to pile up with every research project, evaluation and management (E/M) visit, and procedure, and that data will sit without examination if healthcare professionals and researchers are unable to easily exchange the data.

"The data collected within the EHR system has contributed to a silo effect within organizations, health systems, and private practices," Dr. Mustata Wilson observes. The data integration deficiency has been shown to impede communication, healthcare delivery workflows, and the care and collaboration of efficient and low-cost healthcare delivery.

What's contributing to the barrier? A large contributor to the delay of data integration is the number of healthcare applications on the market. The applications are built with outdated standards or have adopted data-sharing standards that are incompatible with existing applications. While there will never be a perfect solution, improving the communication abilities of the applications will be a significant step forward to achieving optimal interoperability.

"Integration of health IT applications is necessary to compare the effectiveness of new approaches to traditional ones, increase patient safety, and prevent complications/hospital readmissions," Dr. Mustata Wilson explains.

So how is health informatics interoperability affecting the relationship between patients and healthcare professionals?



### **Cater to the Patient's Need for More Information**

In a subdomain of health informatics, known as consumer informatics, information structures and processes aim to empower consumers (or patients) to manage their health. Through health information literacy, personal health records, consumer-friendly language, and internet-based strategies and resources, patients can make informed decisions about their care and conditions.

"Through the consumerization of healthcare, we are focused on analyzing consumers' needs for information, studying and implementing methods of making information accessible to consumers, and models and integrating consumers' preferences into medical information systems," Dr. Mustata Wilson says.

Patients can assume more responsibility for managing their health information through several categories of consumer informatics applications.

Ideally, through consumer health informatics, patients would gain a better understanding of their conditions and health status. However, with the incompatible applications on the market, patients can experience the same interoperability hurdles that providers encounter. While the Trusted Exchange Framework and Common Agreement (TEFCA) aims to help solve interoperability issues, some current state laws and regulations make it difficult to share health information between organizations (see Health Information Compliance Alert, Vol. 22, No. 3).

**Example:** According to a 2007 study, an average Medicare beneficiary visits seven different healthcare providers annually ([www.nejm.org/doi/full/10.1056/NEJMsa063979](http://www.nejm.org/doi/full/10.1056/NEJMsa063979)).

Until healthcare achieves functional interoperability, that average Medicare beneficiary would need to create seven different user accounts to access their health data, rather than logging into one patient portal that draws in the data from each of the patient's providers' networks.

"We need to make it easier for applications to communicate, recognizing that there will never be the 'perfect' standard. Collectively, we must improve interoperability from both a technical and business standpoint to improve healthcare," Dr. Mustata Wilson says.