Digital health and its interface with patient safety and perioperative care

A saúde digital e sua interface com a segurança do paciente e o cuidado perioperatório

La salud digital y su interfaz con la seguridad del paciente y el cuidado perioperatorio

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Digital health is a new method of care and in 2018 it was recognized by the World Health Organization as one of the attributes required to achieve the goals of sustainable development, especially with regard to universal health care[1]. Its use grows exponentially, accelerated by the COVID-19 pandemic, which imposed new modalities in patient care. The use of computerized systems, mobile applications and the internet of things allows for an improvement in care flow of and patient safety, team integration, clinical decision support, surveillance, health promotion and management[2,3].

Patient safety, a product of the interaction between many parties involved in health care, has been more and more allied with and dependent on digital health[4]. In settings of complex care profiles such as a Surgical Center, technologies can contribute to the prevention of care-related errors and benefit both patients and health professionals.

Technology progressively incorporated into health care encompasses several initiatives: from computerized systems such as electronic medical records that facilitate access to clinical information and greater security during communication between professionals; medication management through bar codes and QR codes; prevention of unintentional retention of surgical items through chips connected to radiofrequency systems; smart operating rooms with interconnected intraoperative data systems, progressing further to facial reading systems for patient identification and robotic surgery, which allows minimally invasive procedures with clinical advantages such as shorter hospital stay and patient recovery.

In addition to these, mobile applications stand out, as they allow simple and quick access to information about surgical procedures and patient safety. There are applications available in mHealth stores with several functionalities that address clinical aspects, patient and professional education, aimed at the implementation of safety measures and hospital and post-discharge surveillance, enabling early identification of signs of clinical deterioration through artificial intelligence[5].

These new technologies combined with care and healthcare management have been evaluated in different studies on the impact of use of applications in the development of better self-care strategies, both in preoperative preparation and in surgical recovery[6,7].

In order for us to continue reaping the benefits of digital health, which tend to be strengthened with the arrival of 5G technology in our country and favor safe care, it is important to bring up discussions on the development and assessment of technologies, the influence of human factors, digital security, accessibility, and humanization of assistance.

Having health professionals and patients included in the development of technologies can contribute to the improvement of systems. In addition, its integration into daily care implies continuous training of teams that will use such technologies, with constant updates and quantitative and qualitative assessments of usage indicators[8].

As far as applications are concerned, the absence of a regulatory mechanism for their construction is an important matter. A scope review identified that in Brazil there is

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no legislation for it. Thus, there is no guarantee that the information offered, especially to the patient, is true and/or based on the best scientific evidence available, which can cause this technology to even act as a barrier to safe care[5].

Digital security is also a crucial point, and its implementation was strengthened with the enactment of the General Law for the Protection of Personal Data[9]. Sensitive data are constantly collected. Therefore, the possibility that systems are invaded, information is erased, stolen and used for a different purpose, harming units that provide care and, above all, patients, must be mitigated. The use of passwords, data encryption and firewalls in networks is an example of actions that can strengthen systems' security.

One cannot ignore the existence of digital exclusion, a phenomenon unveiled by the pandemic, showing that certain groups have unequal access to technologies, either because of financial impossibility of accessing resources, or because of difficulties in managing systems[4]. In addition to this phenomenon, developers need to think about accessibility considering physical, visual and hearing impairments and health literacy, especially with regard to patients.

Finally, we must remember that technology assists in care, but does not replace the need to seek knowledge, interaction with patient, or the individuality of each subject. Providing safe and quality care goes beyond the barriers of so-called hard technologies, and it is necessary to strike a balance between innovation and humane care.

"It is humans, not machines, that create meaning."
(Miguel Benasayag)

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