EDITORIAL

What is the Future of the Hospital of the Future? The Seven Pillars

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Editorial referring to the article: Effectiveness of Telemedicine in Reducing Hospitalizations in Patients Discharged from the Hospital Due to Heart Failure: A Randomized Clinical Trial Protocol

"Let the future tell the truth, and evaluate each one according to his work and accomplishments. The present is theirs; the future, for which I have really worked, is mine" – **Nikola Tesla**

In the current edition of the International Journal of Cardiovascular Sciences, Ribeiro et al. presented a controlled, multicenter, randomized, and blinded (regarding the outcome) study with a set of 340 patients. The authors proposed to assess whether a telemedicine strategy could be effective in reducing mortality and the number of hospitalizations in patients with heart failure.[1] Studies like this reiterate the leading role of telemedicine and bring a broader thought: what is the future of the "hospital of the future", and what experiences would be fundamental to make this a reality? Given the complexity of the issue, some elements seem to be indispensable; we listed them in the following paragraphs.

First pillar: the need for truly patient-centered care strategies, allowing patients to actively participate in decisions about their health. Salisbury et al.[2] highlighted that this type of care includes a comprehensive review of patients' problems, considering circumstances of each case, focusing on the quality of life and disease control. To this end, the authors point out the need to develop a personalized therapeutic strategy weighing the risks and benefits of the treatment, aiming to reduce their burdens, promote self-care and build an environment of shared decisions.[2] In addition to patients, we must empower families to participate actively in their health care through collaboration with health professionals and the health system.[3] Therefore, empathy and an effective doctor-patient relationship remain essential.

Second pillar: the future hospital is an environment of continuous innovation and data-driven. In this context, tools such as artificial intelligence, natural language processing, smartphone apps, blockchain, wearables, and virtual/augmented reality are part of a continuum of solutions that must be thought of in an integrated way to generate value.[4] This scenario brings a corollary – the need for interoperability and electronic health records linked to an intelligence infrastructure that couples information quality, security, and high-level processing. Command centers are promising. However, additional headwinds still need to be addressed before digital technologies fully integrate into the clinical workflow from a device and regulatory perspective.

Third pillar: the hospital of the future needs to be sustainable. Thus, it is crucial to be resolute and increase the probability of favorable outcomes. There is also a concern with the relationship between cost and effectiveness. Discussions about remuneration models are also essential here, such as controversies between the fee-for-service model and value-based care (or even a hybrid model). Fourth pillar: the undeniable connection between the hospital and primary care. It is necessary to speak of an enlarged and "without walls" hospital: the concern with health extends to those patients who are not in their traditional physical space. It is, therefore, a multi-professional environment based on a modus operandi of research and knowledge generation in a continuous and real-time manner. In this context, education and literacy are crucial for patients and health professionals.[5]

Keywords

Hospital; Future; Pillars.

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Fifth pillar: the hospital of the future must expand access. Technology and connectivity are essential to reduce the barriers of costs and improve accessibility to high-quality health system in any country, logically with a look at specific characteristics of each region. It is mandatory to do previous analysis of the entire local and expanded care network, at all levels of care, its physical and digital capacity, and specialties served. We also should assess the real possibility of patient access (whether private, by health insurance companies, or public/government) and the connection to hubs of excellence (when necessary, for highly complex cases). The regulation and management of the beneficiary access should be planned in this context of "Hospital of the Future" to establish means to facilitate access, considering issues such as cost-effectiveness and physical, digital, and service remuneration. Therefore, it is fundamental to use management tools that enable data analysis for proactive management of specialties, appointments, specific needs for clinical and imaging exams, procedures, hospitalizations, and referrals to providers of all types. In this sense, digital health care can benefit health management (promotion and prevention) and disease management (acute and chronic care). Some primary points that should guide patient access are:

(i) Design of services that ensure care in the right measure, whether physical or virtual;

(ii) Understanding the population, access queues (pent-up demand), service designs, and journeys that reflect their clinical condition;

(iii) Strengthening and improving internal controls and regulation rules already in practice (positive) and redesigning others that are not effective.

Sixth pillar: the hospital of the future must deliver value.[6] Finding the right platforms and building a digital journey for the clients is the way to generate value in a sustainable form for the system. Therefore, the technology must collaborate to reduce healthcare costs, real strengthen primary care, improve better care outcomes and services, impact wealth generation and productivity of the health ecosystem, and align with patient expectations.

Seventh pillar: we must replace the war environment with a collaborative one. Developing a comprehensive digital strategy is the key to maximizing efficiencies across organizations and must involve a multi-stakeholder group with no niceties and win/win business models. Integration is central to achieving this goal. Stakeholders, IT, business, the health team, and scientists must form consistent working groups with aligned interests. For this, clinical governance must work hard to build the health team loyalty through meritocracy and performance. We should create an ecosystem[7] focused on high-performing clinics, hospitals, and professionals, but collaboratively and dynamically. When assessing potential partners or targets, companies must ask themselves some critical strategic questions:

(i) "Does this exist, or is it still a concept?";

(ii) "What does this solve for, and what will the impact be?";

(iii) "How will this integrate into my systems and those of any partners?";

(iv) "How easy is this to use?";

(v) "How do we scale this?"

In light of what we have exposed, we cannot determine a single hospital model of the future, much less believe that it will be a static entity. On the contrary, it is a complex, dynamic environment with several challenges and at least seven well-defined pillars. Besides, in light of Nikola Tesla's arguments, it is possible to say that this new hospital is the result of hard work. In this way, the future of the hospital of the future seems to increasingly depend on the construction of an innovative, collaborative ecosystem focused on the sustainable promotion of collective health and well-being.

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