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A Glimpse into the Future Hospital

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What will the Future Hospital look like? Will it reduce or increase its influence in society and the community? Dr. Eyal Zimlichman, Deputy Director General and Chief Quality Officer of the Center for Medicine and Innovation at the Sheba Medical Center, tries to answer.

At the end of October 2018, the Sheba Medical Center – one of the largest and most advanced medical centers in Israel – held a conference of leading hospital managers in the world. Under the heading “Future Hospital”, senior physicians and medical directors from Israel, the United States and Europe, discussed future hospitals models, in Israel and abroad, in 20–30 years from now. Dozens of senior medical professionals, including researchers from Stanford University and physicians from Johns Hopkins Hospital, discussed how the expected changes in the coming decade, as technology advancements will shape the future hospital.

The hospital will undergo a revolution

“There was no consensus among the participants about what the future hospital would look like, but there was agreement that the entity called ‘hospital’ was about to undergo a revolution,” says Dr. Eyal Zimlichman, Deputy Director General and Chief Quality Officer at Sheba Medical Center, who heads the new center of innovation in the medical center. “The current concept of a hospital was born a hundred years ago in Boston, and it is clear that it needs an update. Among the issues discussed were structural changes in the organization and functioning of the hospital, in light of the need to reduce hospital days and divert as many patients as possible to home-based hospitalization. The focus of the discussion was on whether academic health centers will remain relevant as the best care centers that manage hospitalization and treatment services, and how to turn the hospital into a leading center for medical innovation and the development and integration of advanced medical technologies.

“In terms of the Israeli health care system, all these questions are not hypothetical questions, but rather concrete issues that need practical answers. In the future, two new hospitals are supposed to be established – in the north and south – and they need to be planned in a future perspective”, stresses Zimlichman.

Beyond Homecare

Dr. Zimlichman’s remarks indicate that there is a whole series of questions to consider: for instance, whether hospitals will increase or decrease regarding their impact on society and the community.

“One of the common assumptions is that the hospital will be physically reduced in terms of the number of beds in it, with the goal of switching to home care, with remote supervision combined with advanced technological means for monitoring.” He says. “The idea of setting up a miniature hospital at the patient’s residence, with all the necessary equipment (‘Hospital at Home’), while transmitting data about the patient’s condition to the hospital, is becoming more and more evident. Of course, in emergency cases, a medical team will be dispatched to treat the patient at his home. Already several experiments are held in the world, and the results are good. It is safer, creates fewer infections and reduces complications.

“Needless to say, that it all depends on the initial diagnosis of the patient, and there are certainly cases where hospitalization is required – whether due to the nature of the treatment or because of medical equipment that exists only at the hospital – but certainly patients who are currently defined as ‘borderline’ will be able to enjoy treatment at home. Treatment of patients with pneumonia, for example, can be done at home, including injecting antibiotics into the vein if necessary. The nurse arrives and performs the treatment”, he adds.

Dr. Zimlichman emphasizes that the transition to home care raises two big questions that need to be answered by hospitals: one, how will they provide medical care to patients that are not hospitalized; second, how hospitals will provide integrated treatment with community health services.

The transition to a virtual hospital

Technological advancements, it seems, will also alter the existing model of the physical hospital and will fast-forward the transition towards a virtual hospital. One of the options currently being raised in discussions and conferences, is that the physical hospital will focus only on intensive care and surgical operations, while other functions will be replaced by advanced home care or remote medicine. This will turn the hospital into a virtual one. “In the next decade, we will witness a revolution in the medical world, following the digital transformation of the world’s health systems,” concludes Dr. Zimlichman, adding that “Big Data and analytics will increase the chances of early detection of diseases, as part of the preventive and personalized medicine trends. If cancer is not eliminated, we can predict which patients are most likely to develop the disease and offer preventive treatment tailored to the patient’s genetic profile. Artificial Intelligence applications will enable better and more accurate medical decision-making processes with fewer errors, for example, in interpreting medical findings.

“All these,” summarizes Dr. Zimlichman, “will make the medical system more efficient. This is necessary in a view of the high hospitalization costs and the need to reduce infections and complications to patients. The current system is costly and unsustainable and requires a transition to a new system, in which hospitals are only dealing with the core medical care, such as intensive care and surgery, with all the rest transferred to the home and the community.

Digital transformation – towards more human medicine

Adoption and implementation of advanced technological means, raises the question of what will be the role of the physician’s in the new era? “It is already an interesting conclusion that the future the physician’s will be more like the community doctor in the past,” says Dr. Eyal Zimlichman. “The use of technological tools will enable better communication with patients. This will enable him to create more human contact with patients and more human medicine”.

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