International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:06, Issue:10 "October 2021"

SMART GOVERNANCE AND HEALTH CARE – FOR THE POSSIBLE AND IMPOSSIBLE AND FOR THE DIFFICULTIES AND CHALLENGES OF TOMORROW

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DOI: 10.46609/IJSSER.2021.v06i10.007 URL: https://doi.org/10.46609/IJSSER.2021.v06i10.007

ABSTRACT

The pandemic living environment following the advent of Covid-19 has led the world to rethink a number of leadership concepts and models. In search of new solutions, governments and company management around the world are increasingly focusing on finding new and flexible solutions aimed at improving the lives of citizens in a new and constantly changing environment. The integration of information and communication technologies to optimize people's lifestyles is a process involved in the formation of the smart city, one of these key indicators of change. The end goal is to build an increasingly accessible infrastructure, designed through the introduction of electronic devices to provide easier access to data and provide a higher level of communication, which will provide a flawless environment.

One thing is certain - the world will never be the same and the search for innovative solutions aimed at human health will expand at any moment. The following study presents an attempt to indicate key ideas in the described challenges, as well as to identify some good practices.

Keywords: management; smart cities; Information Technology; security; changes; health care

Introduction

Each government plans for different measures to meet the needs of society from the construction of the so-called smart city, applying more and more innovative practices in public management[1]. To achieve this readiness for new solutions in various fields, countries in both developed and developing countries believe that this is a new task. All over the world, every city

ISSN: 2455-8834

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dreams of becoming and being perceived by its inhabitants as a smart city. The integration of information and communication technologies to optimize people's lifestyles is a process involved in the formation of a smart city.

Communication, on the other hand, cannot be effective due to its good appearance or the fact that the materials are well written, and it is also effective when it affects the audience and the impact can be shown.[2]

Establishing commitment to organizational goals, which leads to motivation, to organizational success, is an overall goal of any internal communication strategy.

By developing a communication strategy, the organization can achieve the following goals, which appear as added bonus:

- Will succeed in keeping the actual talent, in which it has invested;
- Creation of Employer Branding;
- Psychological benefits such as identity, recognition, affiliation;
- Creating effective social responsibility with the help of employees.

On the other hand, the end goal is to build an infrastructure designed through the introduction of electronic devices to facilitate easier access to data and provide a higher level of communication, which will provide a seamless environment that changes the overall motivational messages in organizations[3]. The various tasks, for example, include providing the necessary water supply, electricity coverage, school transport, safety, good sanitation and health. Also, caring for the elderly is a basic concern in all places. Traditional ways of dealing with files tracking patient's health are slowly entering the digitalization phase. In turn, so many electronic devices, sensors, etc. are used to make this process so efficient and effective. Smart healthcare is experiencing rapid growth with the invention of devices, along with technologies such as IoT, machine learning, big data, artificial intelligence, etc.[4]

Cities as catalysts for better healthcare

In general, recent research on the subject shows that if cities implement more applications related to different life episodes in the provision of services, with their full effect, there is potential to improve public health in several directions.

- **Improved treatment of chronic diseases.** Applications that help in prevention, treatment and monitoring of condition may be of the greatest importance in the developed

ISSN: 2455-8834

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world. Remote patient monitoring systems that use a proactive and preventive approach to treatment have the potential to reduce the health burden in high-income cities by more than 4 percent. These systems use digital devices to read vital readings and then transmit them securely to doctors elsewhere for evaluation. This data can alert both the patient and the physician when early intervention is needed, pointing to complications and hospitalizations.

- **The use of data to fight preventable diseases**. Cities can use data and analysis to identify demographic groups with increased risk profiles and to better target interventions. The so-called mHealth interventions can send life-saving messages about vaccinations, sanitation, safe sex and compliance with antiretroviral therapy and the like, also being able to become local public policies. Some studies show that in low-income cities with high infant mortality, interventions based on data focused solely on maternal and child health can reduce negative trends by more than 5 percent. Developing cities can also achieve a 5% reduction by using infectious disease tracking systems to stay one step ahead, for example, of rapidly developing epidemics.

- **New ways to interact with patients**. Technology can enable people to take control of their own health by preventing the disease instead of treating it after the fact. Louisville, Kentucky, for example, collects data from sensors attached to inhalers used by asthma patients. This information is synthesized on a digital platform with personalized instructions for precautions people can take. Telemedicine, which provides clinical counseling via videoconference, reduces barriers to securing treatment[5]. It can be life-saving in low-income cities with a shortage of doctors.

Effective time management in the organizations

Although city dwellers spend much more time commuting to work, they may still be disappointed when it comes to dealing with government agencies or the health care system. In either case, it is not uncommon to have to wait for hours for services that could be better organized. People around the world spend an average of 10-40 hours a year traveling to government and health facilities, collecting and filling out forms and waiting to be seen. According to a US study from 2015, the average visit to health care takes 121 minutes - only 20 of which were spent with doctors.

Digital services for citizens can help in reducing this unproductive time in public services. Cities can create easy-to-use online portals, allowing people to apply for driver's licenses, register their

ISSN: 2455-8834

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vehicles, and interact with agencies without personal inconvenience. This is especially useful in cities with very complex and difficult organizational structures.

Another thesis is that in healthcare, telemedicine can make it more convenient for people to perform routine check-ups and deal with minor illnesses, reducing the workload of emergency rooms and official doctors' cabinets. When barriers to preventive care and early treatment are reduced, more patients may seek treatment before their condition worsens.

Integrated patient flow management systems can help hospitals effectively connect patients to the appropriate facilities and available beds, while seeking and planning online care provides users with a convenient and transparent method for booking appointments that work for them.[6]

Health challenges are hardly limited to cities - after all, disease is disease, whether it happens to someone living in an urban or rural area. In the same way, technology has as many potential life changes for patients in rural areas as for the urban population. But we believe that health is an essential and promising area for innovation in the smart city of the future.

Cities increase certain health risks, such as air and noise pollution, general pollution and outbreaks of infectious diseases. They are also a microcosmos of larger issues of inequality. Most have first-class doctors and hospitals, but large differences in access to care. In addition, health problems related to malnutrition, drug and alcohol abuse, smoking and other risk factors are prevalent among the urban poor population. Each of these areas is an independent local public policy to a large extent.[7]

On the other side of these problems, overcrowding in some cities makes them vital if a platform for tackling health issues is currently insufficiently implemented and used[8]. When they are well planned and managed, cities can provide an environment that allows millions of people to live longer, healthier and more productive. They can experiment with new interventions, collect large amounts of data and implement new technologies on a large scale - and they have the opportunity to be more agile and innovative than national governments. For example, cities such as Singapore, Songdo and Yinchuan have built opportunities for remote patient monitoring and telemedicine, making easier healthcare part of the urban fabric.

Today, the boundaries of each country's health care system define the boundaries of the role that local authorities can play. But even in countries where city officials do not have an official role, it makes sense to look at health through local public policies.

Cities are and have always been laboratories for innovation in public healthcare. Any government can play a role in the transition to a more digital, wellness-oriented, healthcare approach - whether it provides funding, stimulates the adoption of new technologies, creates

ISSN: 2455-8834

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incentives or creates a supportive regulatory environment. Even if local authorities limit their role in convening key players and ensuring that the public receives important messages, they will help determine whether the promise of digital technologies in healthcare ultimately leads to better results.

A wave of digital innovation is transforming every aspect of healthcare, from medical research and clinical care to the way patients navigate the system[9]. The Medical Guild is only just beginning to use clinical support tools to help diagnose and prevent adverse drug interactions. The possibilities are even more exciting as medical researchers apply machine learning tools to massive patient databases to accelerate drug searches and move to personalized medicine. All of this may seem beyond the scope of what cities can influence, but they may play a role in areas such as collecting and sharing data.

Application of digital healthcare applications

Today, and much to our delight, most cities have environmental monitoring sensors that can warn authorities and the public of hazards such as poor air quality, although these tools are based on relatively low amount of sensors in less than a third of the cities. On the other hand, cities in North America are prone to leading the way in the implementation of smart healthcare applications. In contrast, Africa's major cities, which can benefit greatly from the application of technology to their public health challenges, lag behind significantly.

Many innovation oriented cities have introduced digital tools to connect patients to the right healthcare provider and help plan and manage the flow of patients, while others have full-scale infectious disease surveillance systems and others are in pilot stages. Fewer have switched to data-based public health interventions.[10]

Many cities have implemented real-time remote monitoring of patients and telemedicine into their management systems, but relatively few places have expanded these applications. Yinchuan, for example, has integrated digital health services into its purpose-built smart communities[11]. Residents can subscribe to a smart health service and receive wearable devices to check indicators such as blood pressure and blood sugar. Doctors call for follow-up if they see something wrong and patients can consult doctors online. Data for each patient is stored on a digital platform and records can be accessed during consultations. Singapore, with its aging population, uses technology to provide home health care for the elderly, including remote monitoring, telerehabilitation and video counseling. In New York, one of the city's largest hospitals has partnered with Walgreens[12] to introduce private telemedicine pavilions at its Duane Reade pharmacies across the city. Health is also an integral part of the smart city strategy in Vienna, where universities and pharmaceutical companies have teamed up in a public-private

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partnership with HealthHub Vienna to develop an ecosystem for launching eHealth/electronic healthcare.[13]

Innovative approaches and paradigm shift for the use of intelligent applications in healthcare

Applications such as infectious disease monitoring and data-based population health interventions aim to prevent disease before it occurs. Remote monitoring can help patients manage chronic conditions more actively, reducing the likelihood of complications and hospitalizations[14]. This type of intelligent application can play a role in shifting health systems from treating the disease to preventing it. This trend could have a huge impact on payers, reducing the need for very expensive treatments. In many countries, payers now offer incentives for consumers to perceive wearable smart healthcare units as a way of life. This is a kind of new perspective on established practices in communication processes.[15]

Smart applications can also make the wider healthcare system more efficient. They can minimize information asymmetries and reduce overcharging and over-treatment by hospitals. Applications such as integrated patient flow management systems can improve the use of hospitals and specialized equipment without compromising patient availability[16]. Convenient telemedicine options can accommodate many patients with minor or routine complaints, reducing traditional healthcare facilities and further reducing costs.

New technologies in healthcare lead to creating new players in the technology sector: Alphabet Verily[17], for example, develops disease treatment and health management technologies by partnering with academic institutions such as Stanford University and the University of California to analyze health data and forecast hospital visit results. Using AI technologies, technology companies could turn to payers, take risks from patient groups, and share the benefits if they can reduce the costs involved in healthcare.

Good practices

We point to your attention two systems that deserves recognition and which can be models according to which city governments can look for characteristics that develop and turn into their own public policies in the field of healthcare through the use of smart technologies, which are undoubtedly part of the increased efficiency of the communication processes.[18]

The Moscow system EMIAS

In Moscow, EMIAS maintains 660 health units, including 400 daily health centers, and has 9.8 million registered people[19]. The mobile app has been downloaded 800,000 times and over 2

ISSN: 2455-8834

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million medical appointments are processed each month. In addition, citizens of Moscow have access to the functionality of the application for public services, as well as online. EMIAS also offers an open application programming interface (API) that allows third-party development.

EMIAS helps to significantly improve efficiency. After its application, it has reduced the waiting time for patients. Reducing waiting times has been achieved by providing access to multiple clinics and hospitals, providing patients with transparency about available appointment slots in all medical organizations, and standardizing the process, including doctor's schedules and standardized duration and classification of visits and procedures.

The Paris system AP-HP

The AP-HP[20] Digital Care Assignment System covers 39 public hospitals and 23,000 healthcare professionals. Its user interface was developed by a private developer who also owns Doctorlib, a popular application for scheduling appointments with doctors in France. Working on a number of mobile applications (AP-HP Patient, AP-HP Pro, Doctorlib) and web platforms (the AP-HP website, the websites of various clinics, Doctorlib), the system maintains meetings with public health service providers. The Public Association of Paris Hospitals is the leading health organization with 39 state hospitals and 676 state clinics.

AP-HP allows users to make appointments with many types of physicians covering more than 120 specializations. In addition, the AP-HP website provides links to each hospital's website, as well as their building plans, addresses, and areas of specialization. Finally, the site includes video content on health topics, interviews with doctors and functionality that allows users to pay for services or donate funds.

While the AP-HP website scores high in terms of visits, the mobile app has not yet become widespread - the app has been installed by less than 5,000 users on Android devices. Nevertheless, the application is effective in providing functions outside of meeting scheduling. Patients can quickly find and go to one of 39 AP-HP hospitals and their emergency services; once they arrive, the app will help them navigate the building. Preferred hospitals can be saved on the home screen, and many administrative procedures, such as hospitalization forms, patient histories, and hospital bill payments, can be completed by the application. The applications also provides patient information, including patient rights, hospital check-in and payment procedures, disease prevention information, and news about AP-HP and its 39 hospitals.

Conclusion

Smart cities are already enabling the next wave of public investment around the world. They can also change city life in a more profound and personal way, some designed and some not. City

ISSN: 2455-8834

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authorities will need to find the right combination of technologies, investments, policies and partners to meet their own starting points and the priorities of their own residents by applying increasingly innovative tools to hold people's attention and empower them to decision-making processes[21]. They will also have to give way and leave enough room for private sector innovation to fill in some of the gaps.

Smart cities are hotbeds of innovation and there is still plenty of room for anyone to add to this spectacular experiment. Cities never stop rediscovering - and urban technology will only accelerate the pace of change. In this sense, turning a city into a smart one is simply a tool that helps cities better serve the people who live and work in them.

That is why it is important to understand how this tool can improve the efficiency of life.

We will end with a quote from the great John Steinbeck from the book "The Winter of Our Discontent": If you don't have it, you think about it. Man being alone thinks about things. You know most people live ninety per cent in the past, seven per cent in the present, and that only leaves them three per cent for the future. Old Satchel Paige said the wisest thing about that I ever heard. He said, 'Don't look behind. Something may be gaining on you'.

The future is here. It is here now.

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