

# 1. Chronic Diseases

## How can we help people with chronic diseases diagnose and manage their condition?

### About the challenge

Like many Saudis, Abdullah suffered from diabetes without finding the correct diagnosis for his condition, which aggravated his symptoms. In Saudi Arabia, there are many people suffering from chronic diseases, with rates of patients with diabetes reaching 13.4%, and for patients with hypertension reaching 15.2%. Many others suffer from heart disease. These patients and people around them lack awareness about the chronic diseases they suffer from, which is a major contributing factor to the aggravation of their conditions. In addition, inefficiency of the health sector in dealing with these patients is another major contributing factor, due to:

- Inefficient processes of collecting patient medical data due to the absence of unified medical records.
- Scarcity of integrated medical treatment systems.
- Inefficient medical referral systems.
- Large pressure on hospitals due to a lack of primary care center services for patients with chronic diseases.

This leaves many patients suffering from chronic diseases without a treatment plan that helps control the risk of their condition, often leading to early death.

### The current status of chronic diseases in Saudi Arabia

In 1980, the average life expectancy in Saudi Arabia was 65 years. This average has increased to reach 74 years in 2015. Saudi Arabia aims to increase that number to 83 years by 2030. To achieve this goal, we must create new ways and systems to help people with chronic diseases get diagnosed early on and manage their illness. Many citizens are currently suffering from chronic diseases without any clear treatment plans and programs to manage their illnesses, which means that current efforts are in dire need of further development, especially in the digital aspect.

Are you the person who will pioneer the digital solution that can address this national challenge?

### Areas to focus on when creating your digital solution

- Improving and supporting communication and common grounds between the community (i.e. the patients) and health professionals.
- Improving technical aspects and creating smart systems that support the early detection of chronic diseases and integrated ways to treat them.
- Reducing the burden on hospitals by improving primary care centers to serve patients with chronic conditions.
- Improving the process of health data collection and facilitating the process of comparing this data.
- Improving the efficiency of the medical referral systems.

## 2. Emergency cases

### How can you help emergency patients receive the health care they need?

#### About the challenge

One day, Sarah suffered from a cough and slight shortness of breath. Like any concerned parent, her mother took her to the emergency room of a public hospital. This, however, naturally places great pressure on these departments, which are designed to serve those with serious and dangerous injuries. Such behavior results in lower quality of health care provided in emergency departments, which may increase the risk of those with critical injuries, sometimes leading to death.

Some of the causes of this challenge are:

- Excessive and improper use of emergency services due to:
  - ◆ Not benefitting from primary health care centers.
  - ◆ Dissatisfaction with the working hours of available clinics, which leads patients to go straight to emergency departments.
  - ◆ Lack of programs to raise awareness of patients.
- Lack of effective communication between health care providers.
- Lack of a system that prioritizes patients' cases and the need for immediate appointments.
- Lack of national quality standards and patient safety indicators.
- Lack of national operational standards.
- Duplication of services due to a lack of electronic records for patients.

#### The current status of emergency cases in Saudi Arabia

- Emergency departments received 21.2 million patients in 2015.
- 60% of patients who go to the emergency department do not actually require their immediate attention.
- There is considerable contrast between patients' inclination to visit emergency departments from region to region.
- 90% of visits to emergency departments in 2015 were due to diseases. Only 8% were due to injuries. The remaining 2% were maternity and newborns cases.
- 42% of those who requested ambulance services were not transferred to a medical facility.

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#### Areas to focus on when creating your digital solution

- Assessing the severity of the most common cases by educating people about the appropriate health facilities for their conditions.
- Developing a prioritization system.
- Improving the communication and cooperation between healthcare service providers.
- Developing an electronic record system and improving accessibility to it by treatment providers.

# 3. Lifestyle

## How can you motivate those leading an unhealthy lifestyle to change their behavior?

### About the challenge

35-year-old Ahmed suffers from asthma, which grew much worse over the years since he started smoking at the age of 17. In addition to asthma, Ahmed also suffers from joint pain due to his excessive weight. This resulted from his excessive consumption of fast foods that are available everywhere and at record time. He does not have enough time to prepare healthy meals due to the nature of his work as a project manager, which requires him to sit for long consecutive hours during the day.

Ahmed is not alone. There are more than 5 million people in Saudi suffering from health problems related to lifestyle choices in terms of nutrition, fitness or other unhealthy habits like smoking. There are also 10 million people who are on the verge of suffering from these problems if they do not change their lifestyles.

### The current status of lifestyle in Saudi

Statistics show that the number of lifestyle related health problems will triple by 2030 due to environments that encourage such lifestyle, including:

- Economic environment
- Physical environment
- Social environment
- Services environment

Are you the person who will pioneer the digital solution that can address this national challenge?

### Areas to focus on when creating your digital solution

- Providing appropriate healthy options and alternatives that are easily accessible to citizens to encourage them to make healthy options their primary choice.
- Providing the right environments for creating a healthy lifestyle.

# 4. Palliative Care

## How can you help people with chronic diseases through the development of palliative care?

### About the challenge

After two years of suffering from lung cancer, Saeed underwent chemotherapy. However, after a slight improvement in his condition, his health began to deteriorate and his pain worsened. The doctors told Saeed's children that the treatment was no longer effective and advised them to make sure their father is comfortable in his last days. His children started taking him to a palliative care clinic regularly in order to ease his pain. However, going back and forth to the hospital posed new stresses on Saeed and his pain worsened instead.

Palliative care is one of the areas of medical care provided to patients with incurable diseases to ease their suffering and bring them to terms with their terminal condition. Statistics indicate that the number of patients needing this type of care in Saudi Arabia is on the rise due to late diagnosis or progression in age. Some of the many causes of this challenge are:

- Lack of education and proper understanding of palliative care.
- Differences in access to palliative care outside oncology services in specialized hospitals.
- Poor understanding of palliative care among healthcare professionals.
- Lack of policies, processes and systems that help produce better quality of services.
- Limited infrastructure for the provision of palliative care, such as care homes and community teams.
- Lack of personnel.
- Lack of regular availability of medicines.
- Lack of communication between health care providers.
- Palliative care is not part of the services provided at Ministry of Health's hospitals.

### The current status of palliative care in Saudi Arabia

- It is estimated that by 2030, Saudi will have approximately 4.1 million people over the age of 60.
- The need for palliative care is likely to increase with increased cancer patients and their delayed diagnosis.
- Patients with chronic diseases, such as advanced Alzheimer's, late-stage heart disease, chronic lung infections, and kidney failure, also need palliative care.
- The ratio of in-hospital deaths to out-of-hospital deaths is high.
- The Citizens' Model of Care survey indicates that most people prefer to spend their last days at home.

Are you the person who will pioneer the digital solution that can address this national challenge?

### Areas to focus on when creating your digital solution

- Promoting palliative care education programs.
- Encouraging private investors to invest in palliative care, home care, and the care market.
- Educating patients and their families about palliative care.

# 5. Healthy reproduction

## How can you help mothers have healthy children?

### About the challenge

Pre-marital screening plays an important role in preventing the increase of genetic diseases in a society where many consequences have been faced as such screening are not available or taken for granted. As an example, 28-year-old Noura birthed a child suffering from sickle cell anemia due to marrying her cousin. In 2015 the increased prevalence of interfamily marriages led to genetic diseases in around 56% of newborns in Saudi Arabia.

Some of the causes to this challenge include:

- Lack of a strong public health education program.
- Contrast in the quality of health care services throughout Saudi Arabia.
- Difficulty getting care during pregnancy.
- Ineffective communication between health care providers.
- Inefficient screening programs that do not take into account the family history of both families (husband's family and wife's family).
- Lack of a qualified and trained healthcare workforce.
- Lack of electronic medical records.
- Lack of appropriate psychological and social services.
- Failure to collect national health data.
- Failure to take action based on the recommendations made during pre-marital screening.
- Lack of OBGYN specialists in primary care.

### The status of reproduction in Saudi Arabia

- Ministry of Health hospitals alone recorded 247,085 births in 2015.
- The prevalence of interfamily marriages that lead to genetic diseases in Saudi Arabia reached 56% in 2015.
- While the average rate of clinic visits during pregnancy in Saudi Arabia is actually four visits, the rate drops to less than one visit in some areas.

Are you the person who will pioneer the digital solution that can address this national challenge?

### Areas to focus on when creating your digital solution

- Improving public awareness about the risks associated with interfamily marriage.
- Improving public awareness about the importance of care during pregnancy.
- Improve integration and collaboration between primary health care centers and outpatient clinics.