

### **Scenario 1**

Patients across the country are not responding to the most frequently-used antibiotics. What can be done to increase the effectiveness of antibiotics or reduce the number of antibiotic resistance of bacteria? Name at least seven careers that would be useful to help brainstorm solutions.

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### **Scenario 2**

Precision medicine is customizing patient care. Name seven careers that may be involved in customizing patient care for sufferers of diseases outside of the mainstream (i.e., cancers that have not responded to traditional chemotherapy).

### **Scenario 3**

A new startup has decided to scale up production of their new pharmaceutical. Name seven careers/companies that would help them design, build, outfit and work in their new space.

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### **Scenario 4**

Myopia is a chronic, progressive eye disease that starts early in life and is characterized by worsening distance vision and excessive eye elongation. Any degree of myopia increases the risk of sight-threatening complications, including cataracts, glaucoma, retinal detachment, and myopic macular degeneration, with certain complications leading to blindness in adulthood. Name seven careers that may come together to create a solution to this prevalent problem.

## Scenario 5

There are more than 30 types of muscular dystrophy with varying ages of onset. Duchenne Muscular Dystrophy (DMD) is a genetic disorder characterized by the progressive loss of muscle due to a genetic mutation of the dystrophin gene typically in those assigned as male at birth. Although this is a sex-linked trait, one in three cases of DMD occur due to a random mutation. Diagnosis of DMD is not initiated until symptoms occur between 2–3 years of age. The average life expectancy for someone with Duchenne type is mid- to late-20s. Gene therapy treatment is available if diagnosed earlier. Name seven careers that would be helpful to create a policy where a blood test is used at birth to diagnose DMD in newborns.

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## Scenario 6

Atrial fibrillation (AFib) is a condition where the heart beats irregularly and rapidly, also called arrhythmia. Atrial fibrillation can lead to serious complications if not managed, including blood clots and stroke, heart failure, and other symptoms like fatigue and shortness of breath that drastically reduce quality of life. There are several treatments for AFib. Some include drug therapy or shocking the heart. One treatment is called an ablation, which includes creating small scars on the heart to interrupt the electrical signal transmission. Name seven careers that may help to develop a new device or technique to scar the heart with less pain and reduce recovery time.