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Antibiotic Resistance

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Antibiotic Resistance

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Overview of the Issue

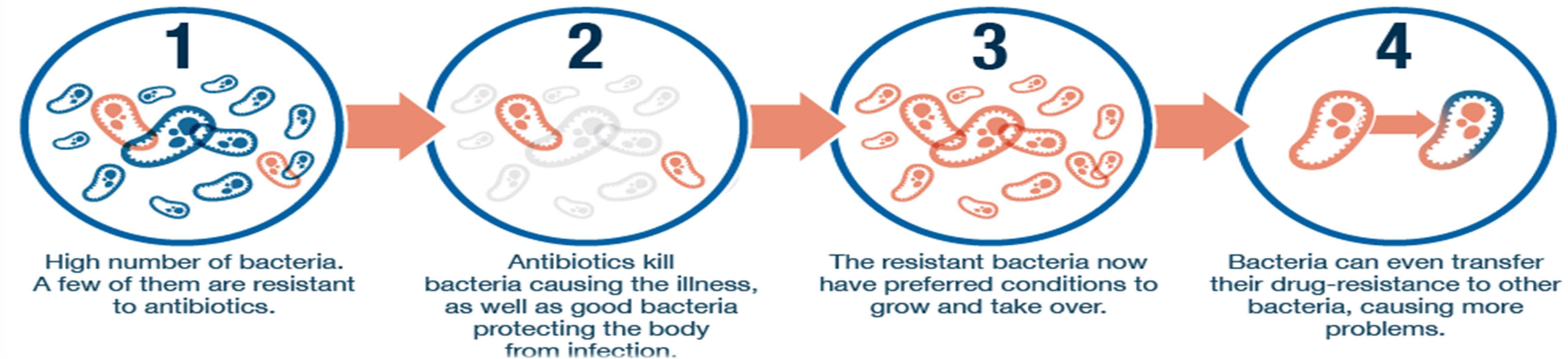
What are Antibiotics?

- Medicines that are used to treat infections or diseases caused by bacteria such as pneumonia and whooping cough

What is Antibiotic Resistance?

- Antibiotics have been so widely used across the world that organisms have evolved and adapted to them causing the drug to be less effective
- Professionals do not know how to adapt because the bacteria keeps evolving to become resistant against the antibiotics

How does antibiotic resistance occur?



Solutions

Healthcare Professionals

- Know your role in reducing its impact
- Inform the public about antibiotic resistance
- Counsel patients according to FRAIS
- Prescribe antibiotics more appropriately, such as not prescribing for a viral infection
- Treat just the symptoms for minor issues
- Encourage healthy lifestyles for patients

Patients

- Take antibiotics the way that the prescription suggests, especially finishing the course
- Maintain a healthy lifestyle
- Only take them when they're really needed
- Consider vaccinations to prevent infection

Health Indicators

Educational opportunities

- Those in healthcare professions have more knowledge on antibiotic resistance
- Fewer educational opportunities = fewer people going into research

Mortality Rates

- Two million people are sickened every year with antibiotic-resistant infections with 23,000 dying as a result (Centers for Disease Control and Prevention, 2013)
- Antibiotics are responsible for almost 1 out of every 5 emergency department visits for adverse drug effects (Centers for Disease Control and Prevention, 2013)

Preventative care

- Programs to improve antibiotic prescribing are not widely used in the United States
- Healthcare professionals are required to take on new roles within their job

Determinants of Antibiotic Resistance

Policies

- Frequency of antibiotic prescriptions
- Amount of antibiotic resistance research

Social Factors

- Education levels on antibiotics

Health Services

- Access to health care
- Quality of physicians and education

Individual Behavior Choices

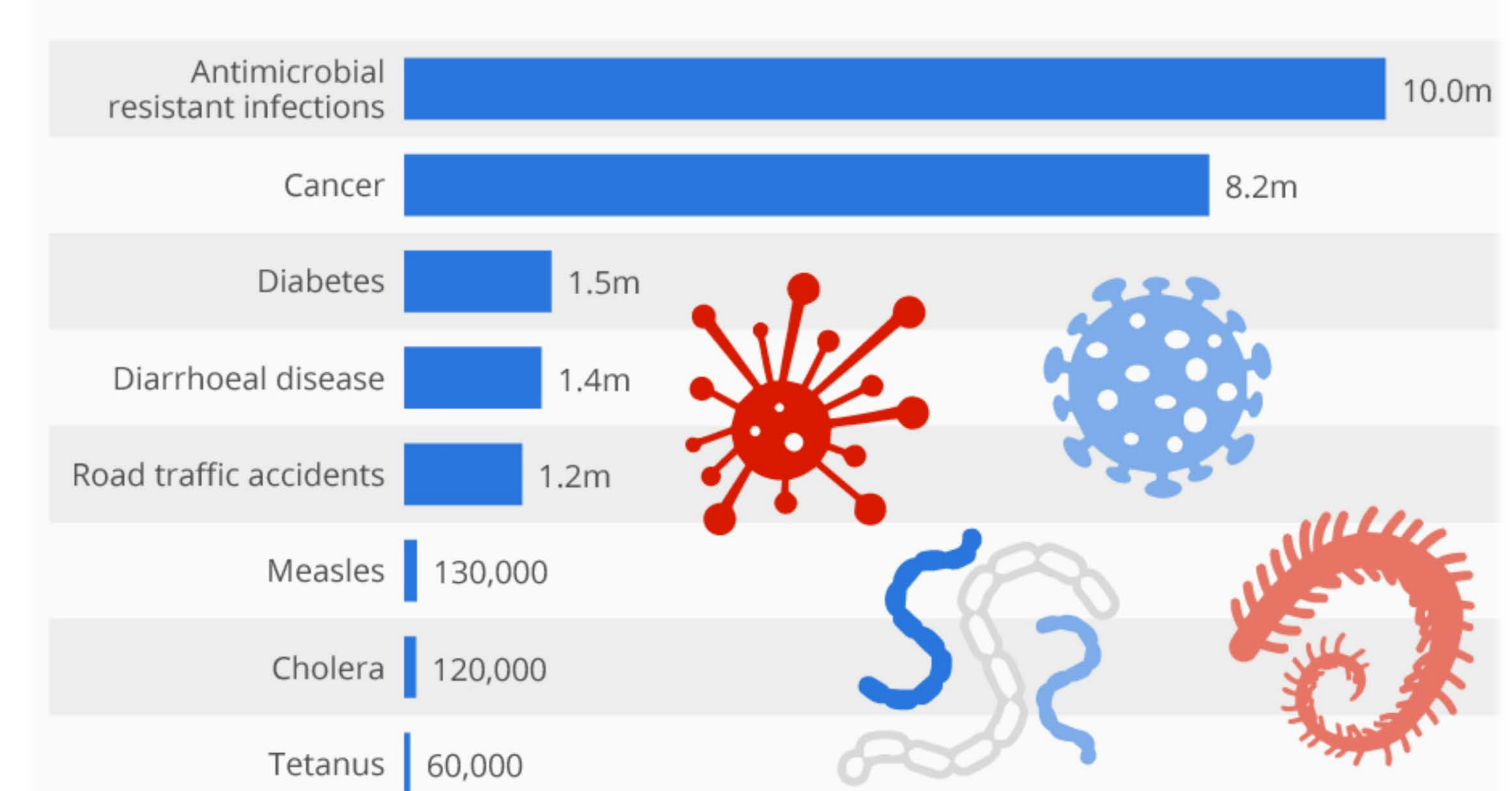
- Taking antibiotics too often
- Taking antibiotics incorrectly

Biology and Genetics

- Allergies/conditions regarding antibiotics
- Side effects to antibiotics

Deaths From Drug-Resistant Infections Set To Skyrocket

Deaths from antimicrobial resistant infections and other causes in 2050



@StatistaCharts Source: Review on Antimicrobial Resistance

statista

Overview of the Impact

People with infections that are resistant to antibiotics

- May require increased recovery time
- May die from the resistant infection

How does Antibiotic Resistance spread?

- Resistance spreads when new generations of bacteria inherit antibiotic resistance genes, and when bacteria share or exchange sections of their genetic material with other bacteria

How does Antibiotic Resistance impact the U.S.?

- At least 2,049,442 illnesses caused by antibiotic resistance (Centers for Disease Control and Prevention, 2013)
- At least 23,000 deaths caused by antibiotic resistance (Centers for Disease Control and Prevention, 2013)

What are future implications and impacts of Antibiotic Resistance?

- Bacteria with resistance genes could transfer genes in the same environment, creating "superbugs" that are resistant to antibiotics
- Antibiotics will not work effectively against serious infectious diseases

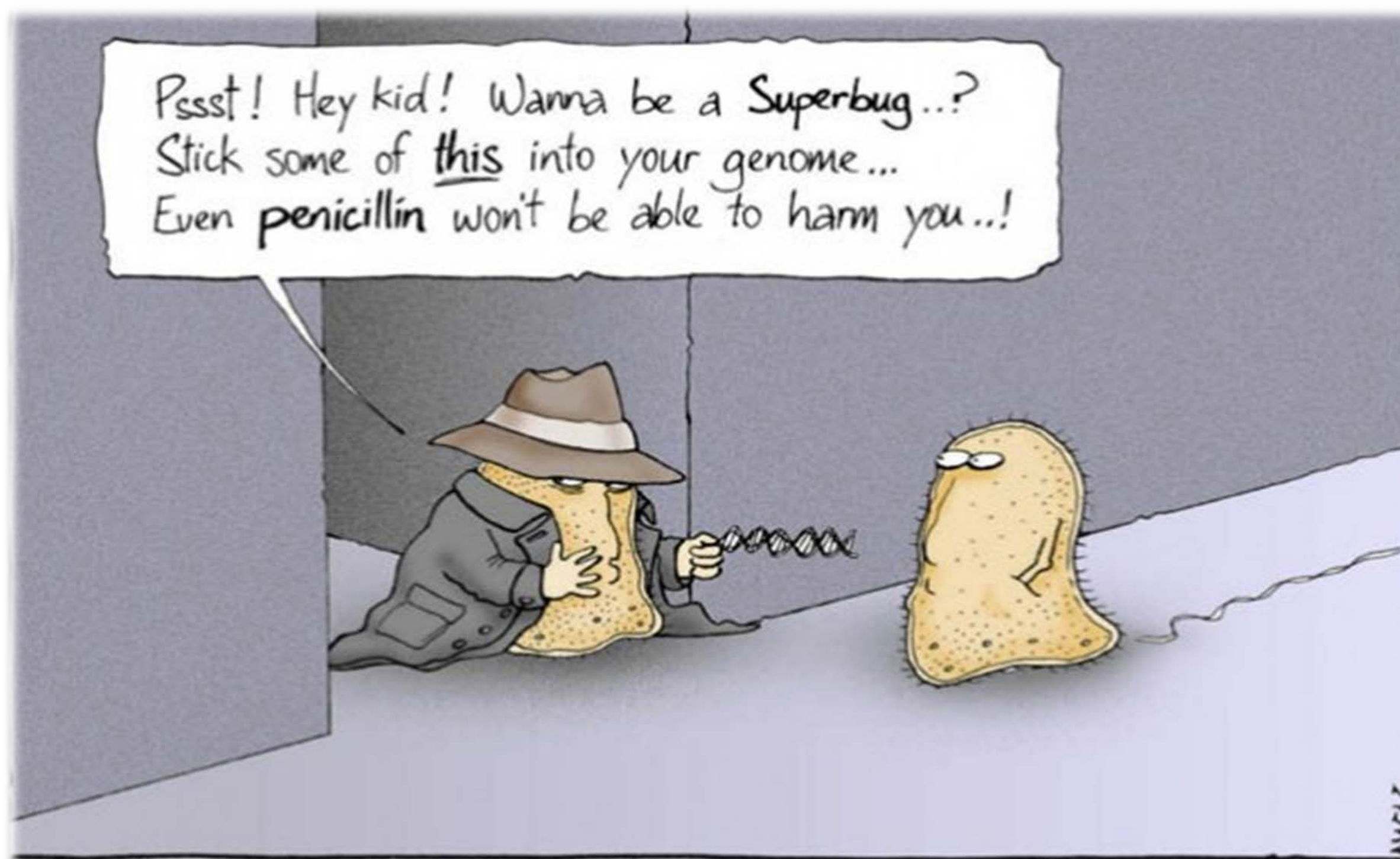
Impact On Pharmacy

Pharmacists look at antibiotics as a "quick and easy prescription"

- Antibiotics should be looked at as similar to the prescription of steroids or any other potentially harmful medication

Pharmacists take on new roles

- *Counselors for antibiotics*
- FRAIS (Finish the course, regular Intervals, after, with or before food, interactions, side effects)
- *Gateway practitioners*
- Address patient and clinician concerns
- Intervene to prevent infections and unnecessary antibiotic use
- *Educators*
- Adverse effects are unknown by the public
- 50 percent of antibiotic prescriptions in outpatient settings are unnecessary (Collins, 2012)
- Pharmacist-directed antibiotic stewardship programs (ASPs)



It was on a short-cut through the hospital kitchens that Albert was first approached by a member of the Antibiotic Resistance.

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