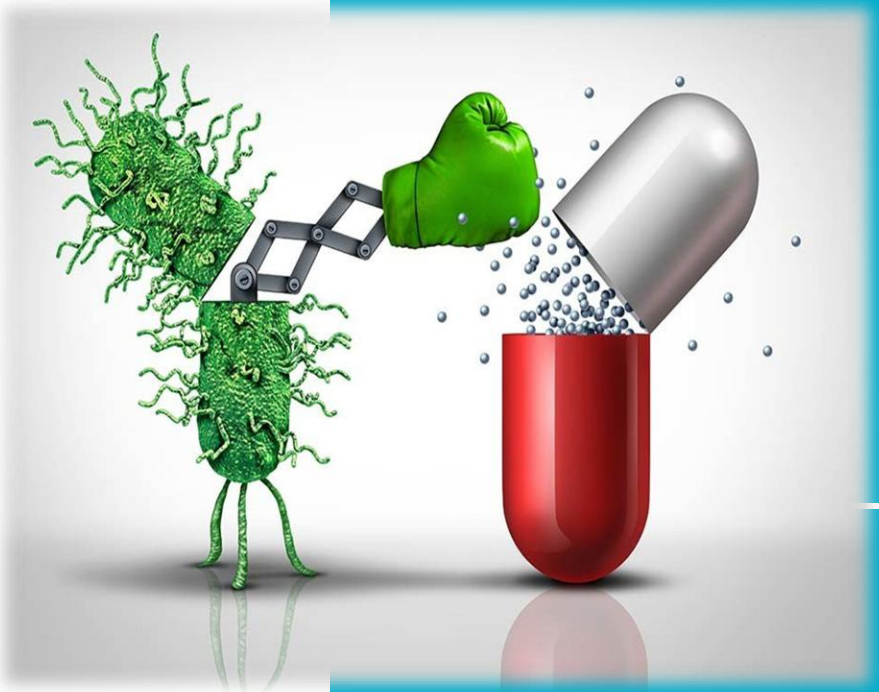
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فشار انتخاب آنتی بیوتیک

‘Antibiotic Selection Pressure’ (ASP)

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Department of Medical Microbiology, Afzalipour School of Medicine



The New York Times

FRIDAY, OCTOBER 26, 1945.

WINNERS OF THE NOBEL PRIZE FOR MEDICINE

Sir Alexander Fleming

Dr. Ernst B. Chain

Sir Howard W. Florey

Fleming and Two Co-Workers Get Nobel Award for Penicillin Boon

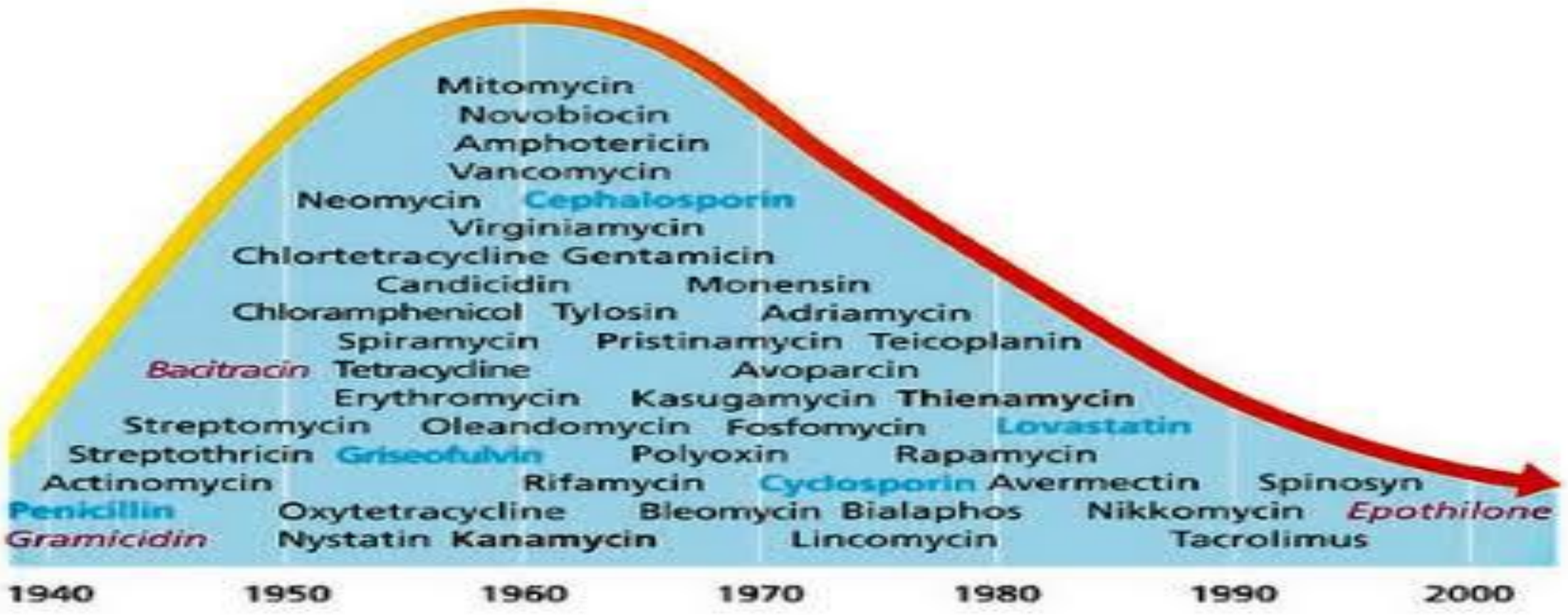
Dr. Chain, German Refugee, and Florey Share in Prize for Physiology and Medicine

—Former Tells How Discovery Grew

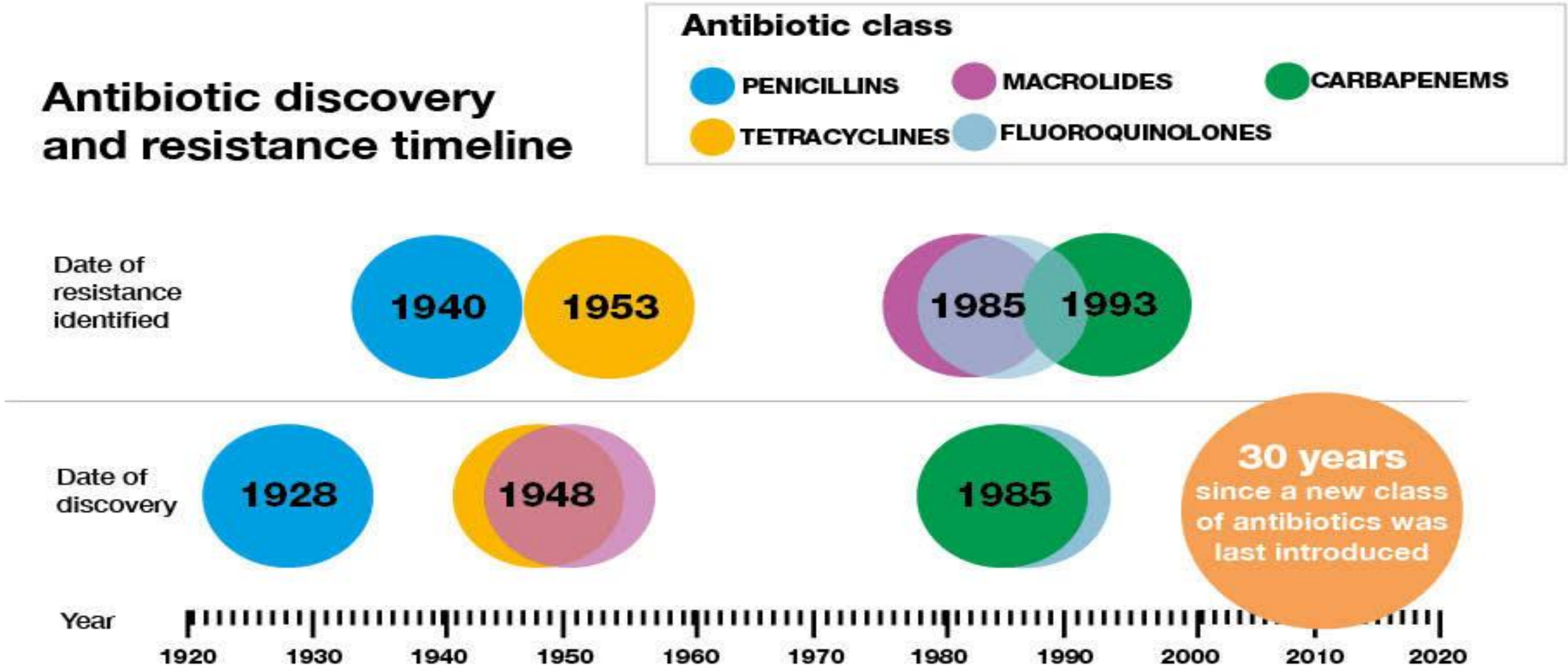
AUTO RACES CALLED TEST LABORATORY



عصر داروهای ضد میکروبی (آنتی بیوتیک ها)



Antibiotic discovery and resistance timeline



‘Antibiotic Selection Pressure’ (ASP)

- **ASP:** Defined as the extent to which the use of antibiotics enhances the selective process increasing the growth of resistant microorganisms.

- According to the One Health concept, all antibiotic prescriptions contribute to **ASP**.

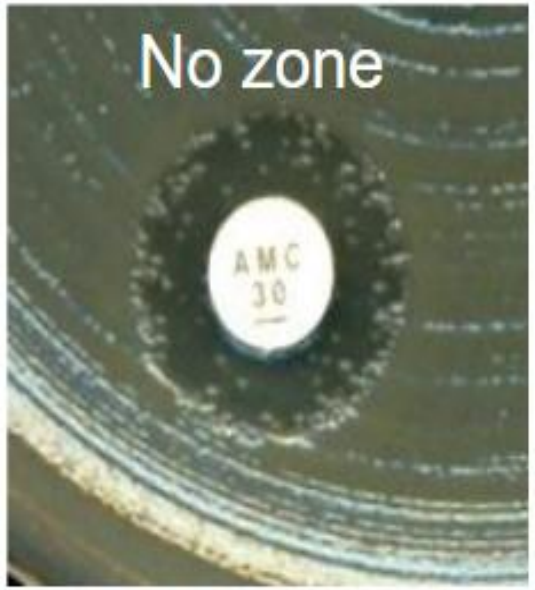
- The relative contribution to the **ASP** of an antibiotic most likely depends on the dosage, duration of use, and type and spectrum of an antibiotic.

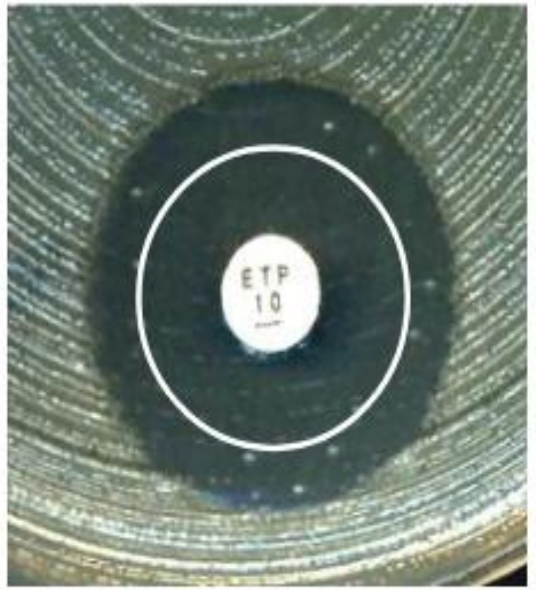
Natural selection of resistant bacteria






AMC
30


No zone
AMC
30

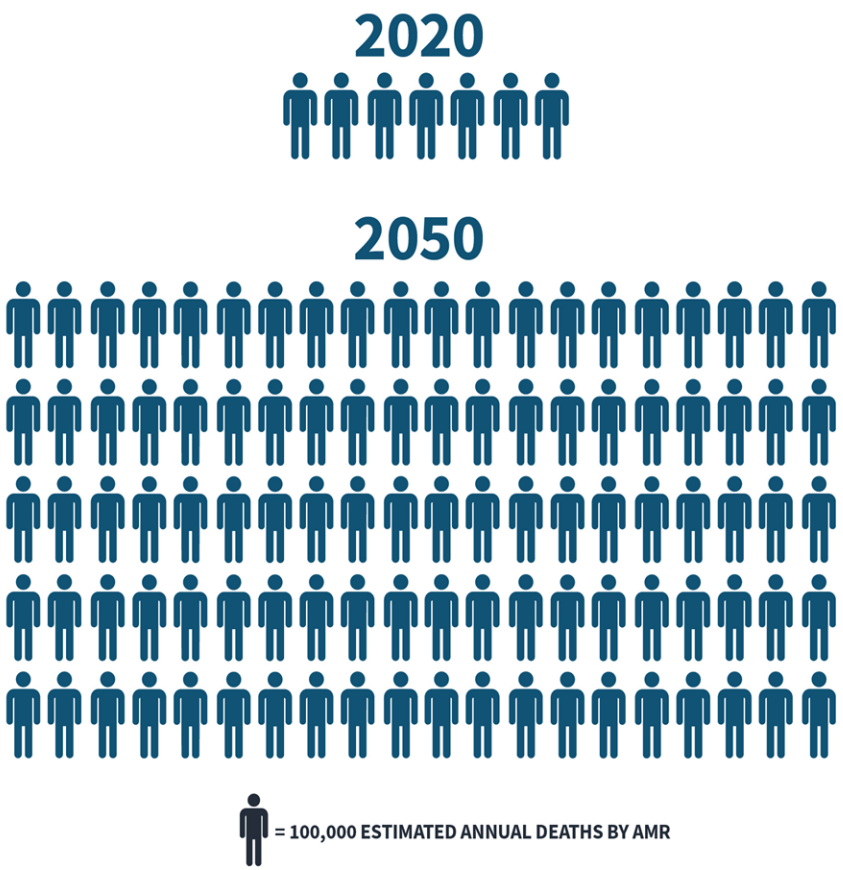

ETP
10


CXM
30

- **MIC:** The minimum inhibitory concentration (MIC) refers to the lowest concentration at which the susceptible strains are completely inhibited by the antibiotic

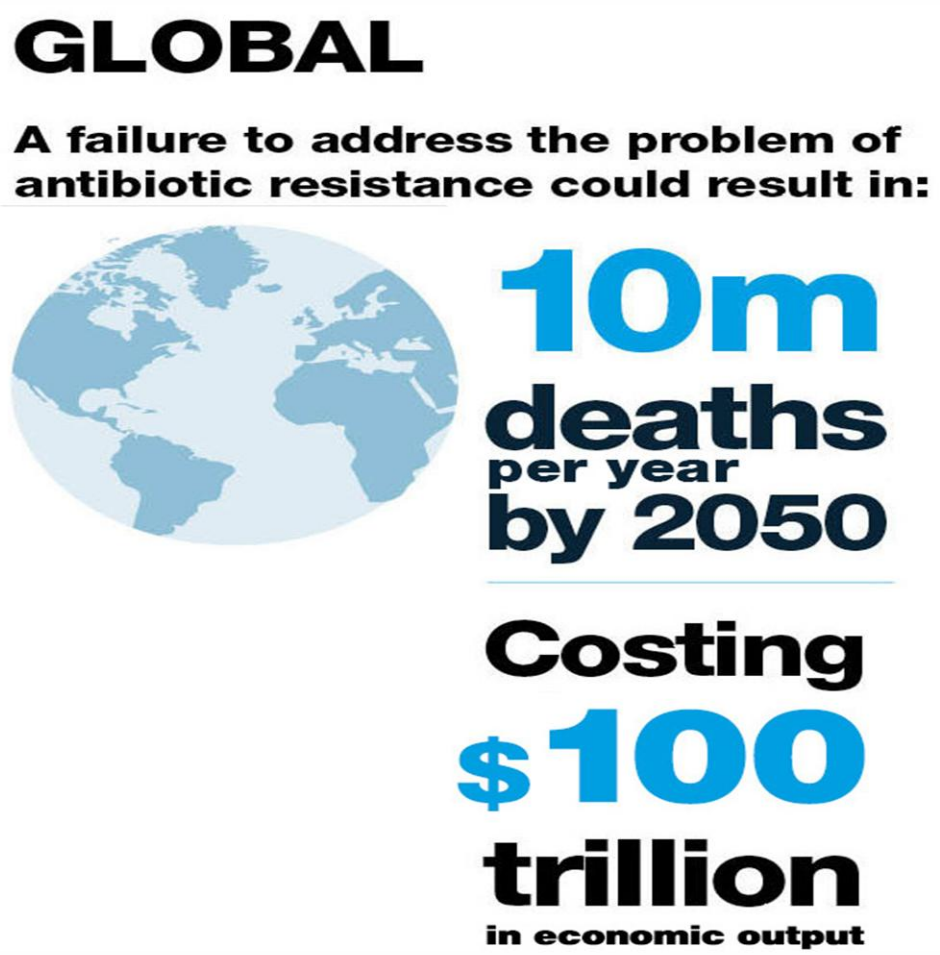
- **MSC:** The minimal selective concentration (MSC) is defined as the lowest concentration of a corresponding antibiotic at which resistant strains are selectively favored over susceptible strains

ESTIMATED DEATHS DUE TO AMR IN 2020 AND 2050



Source: Jim O'Neill, Tackling Drug-Resistant Infections Globally: Final Report and Recommendations (London: The Review on Antimicrobial Resistance, May 2016), 4, https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf.

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B
Y
A
C

نه من ز بی‌عَمَلی، در جهان، مَلولَم و بَس

مَلالَتِ عُلما هم ز عِلْمِ بی‌عَمَل است

