



**Dr. Gitali Bhagawati**

**MBBS, MD(MICROBIOLOGY), PGDHM, CIC**

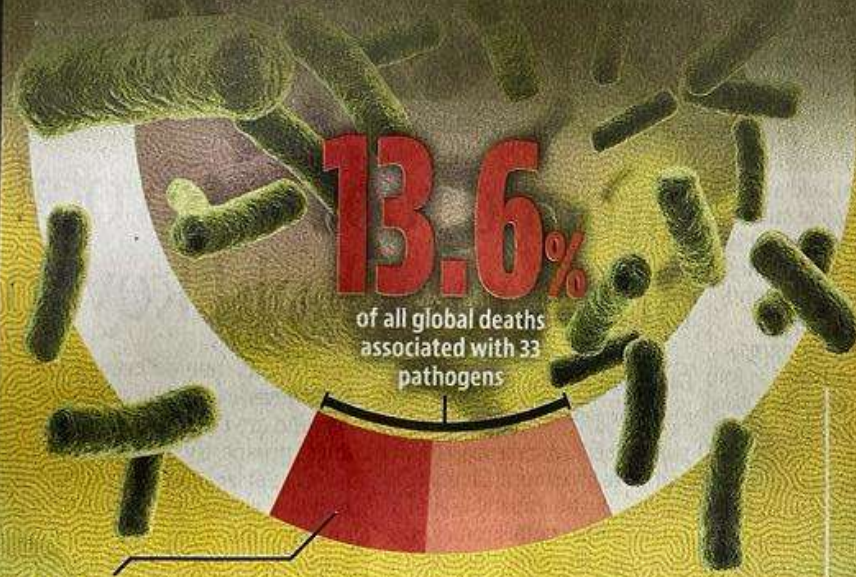
**Consultant and Head-Microbiology & Infection Control, DNSH**

# Bacteria: Second leading cause of death

Bacterial infections were linked to 1 in 8 deaths in 2019, the most after ischaemic heart diseases — by Rhythmia Kaul

**7.7 million** deaths in 2019 were linked to 33 bacterial pathogens and 11 types of infection of 13.7 mn infection-related deaths the study published in The Lancet said

**75%** of the 7.7 mn deaths occurred because of three syndromes: lower respiratory infections (LRI), bloodstream infections (BSI), and peritoneal and intra-abdominal infections (IAA)







<b>S. aureus</b> countries	1.1 million deaths
<b>E. coli</b>	950,000
<b>S. pneumoniae</b>	829,000
<b>K. pneumoniae</b>	790,000
<b>P. aeruginosa</b>	559,000

## Mortality rates vary by country/region

**230** deaths per 100,000 population in Sub-Saharan Africa

**52** deaths per 100,000 population in Western Europe, North America and Australasia

## Age a varying factor for deaths

-  Adults over 15: *S. aureus* associated with 940,000 deaths
-  Children aged 5-14: *Salmonella enterica* serovar Typhi associated with 49,000 deaths
-  Children under 5: *S. pneumoniae* associated with 225,000 deaths
-  Newborns: *K. pneumoniae* associated with 124,000 deaths

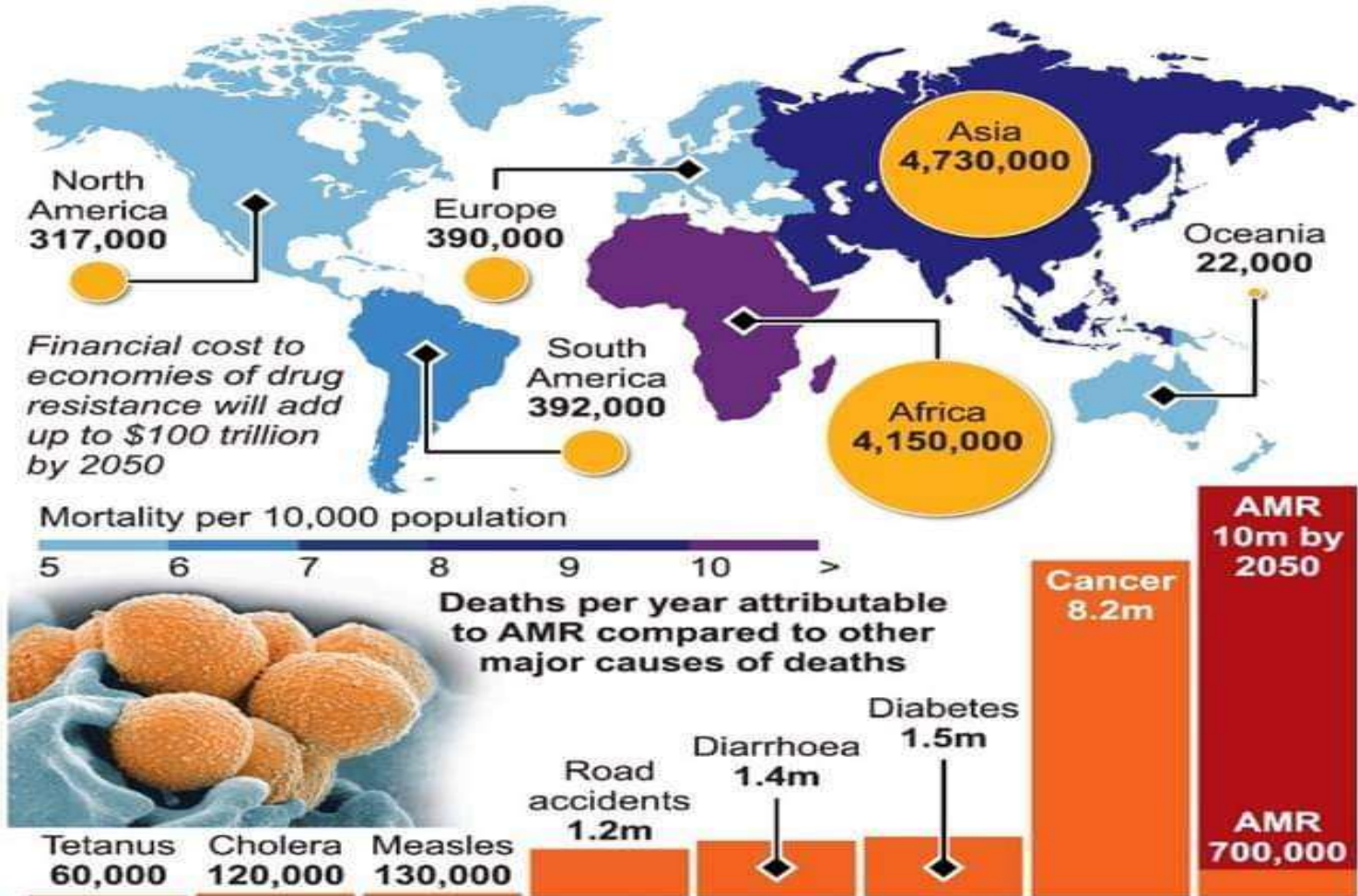
## Global health concerns

“These new data could act as a guide to help address the disproportionately high burden of bacterial infections in low- and middle-income countries.” — Authia Gray, study co-author

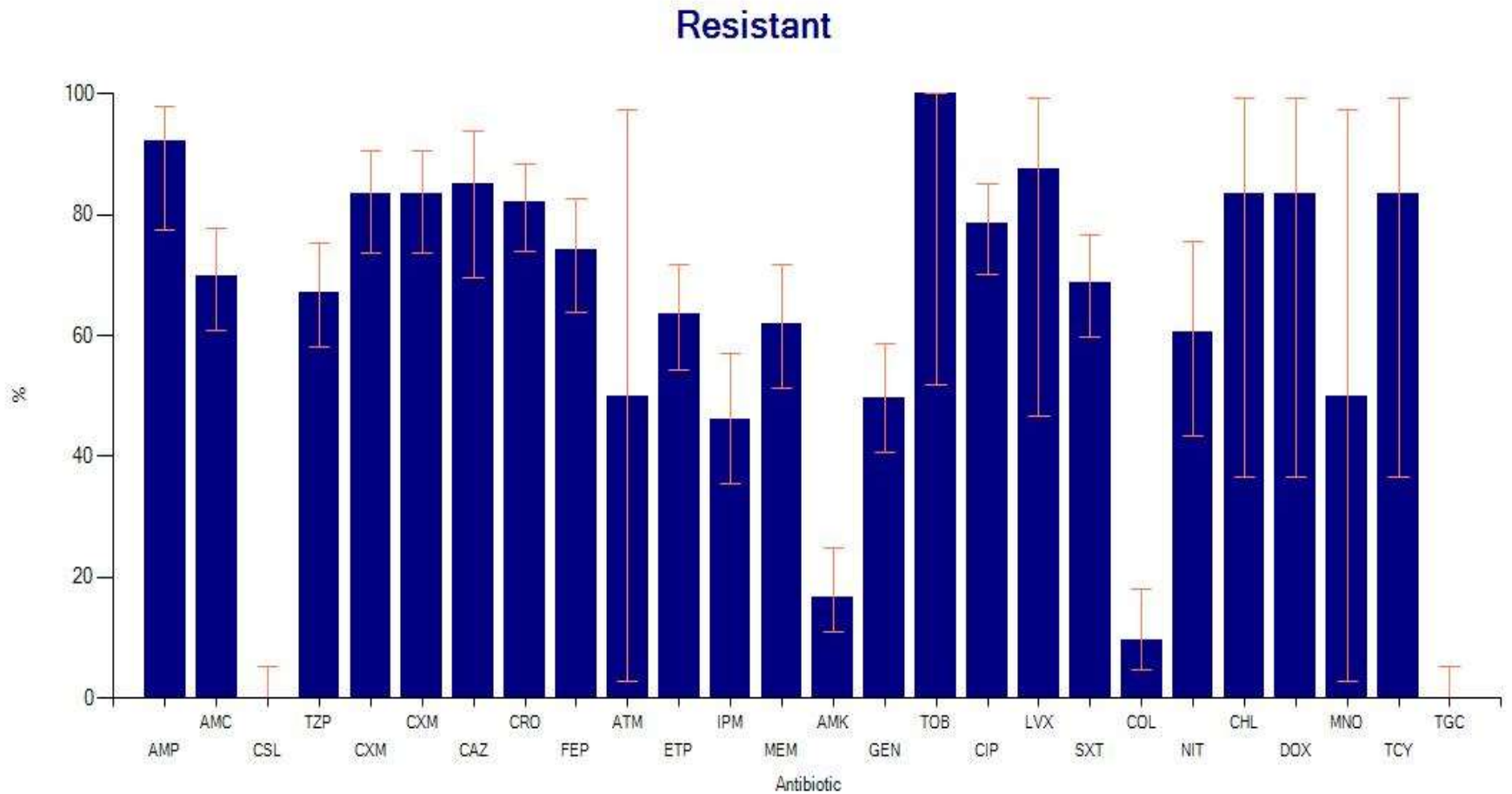
# Superbugs “bigger risk than cancer”

An extra 10 million people could die every year by 2050 unless sweeping global changes are agreed to tackle increasing resistance to antibiotics

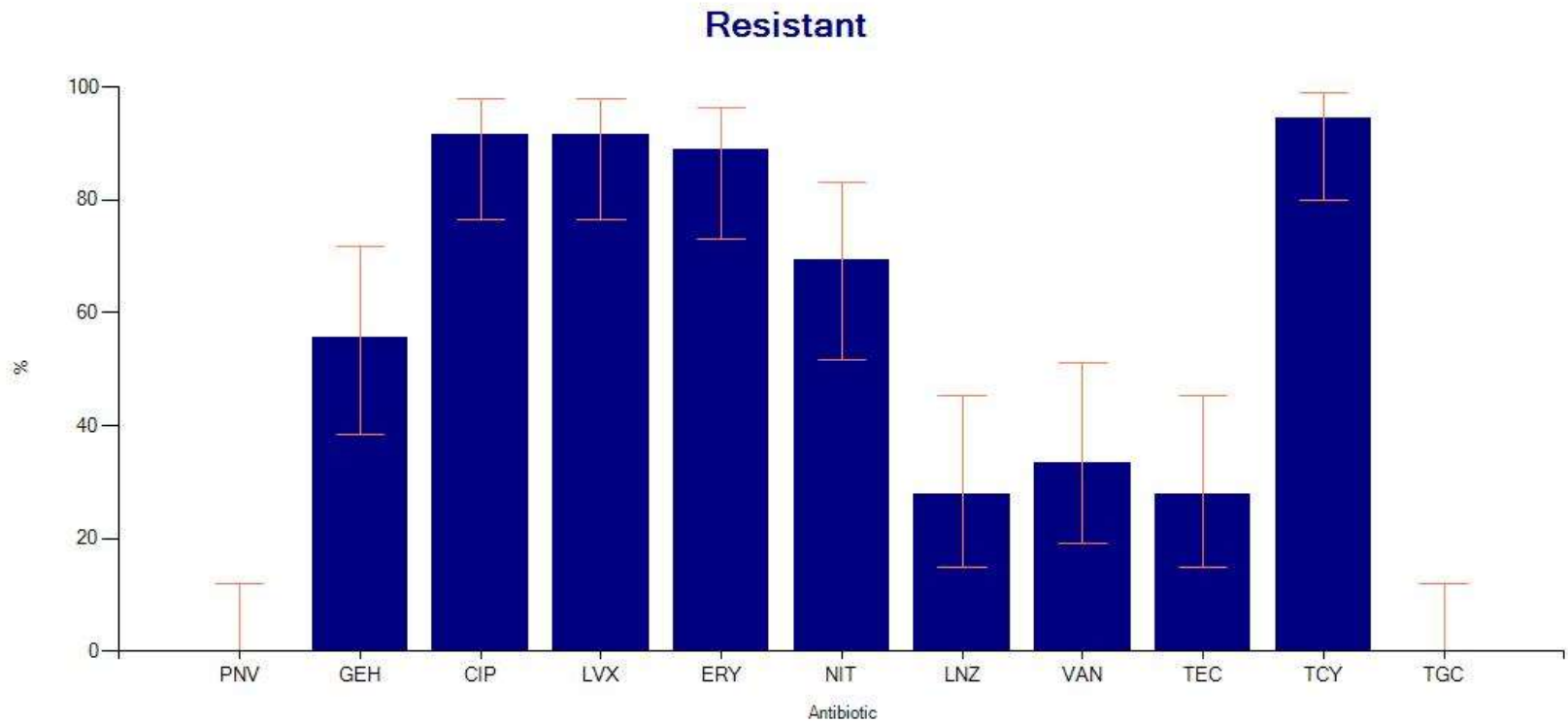
## Deaths per year attributable to Antimicrobial Resistance (AMR) by 2050



# *Klebsiella pneumoniae*(n=131)[May –July, 2022]



# *Enterococcus faecium* (n=36) [May –July, 2022]



# CAUSES OF ANTIBIOTIC RESISTANCE



Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.



Over-prescribing  
of antibiotics



Patients not finishing  
their treatment



Over-use of antibiotics in  
livestock and fish farming



Poor infection control  
in hospitals and clinics



Lack of hygiene and poor  
sanitation



Lack of new antibiotics  
being developed

[www.who.int/drugresistance](http://www.who.int/drugresistance)

**#AntibioticResistance**



World Health  
Organization

# Other causes of Antibiotic Resistance..

- No awareness about antibiotic resistance
- No proper infra-structure for culture & sensitivity
- Over the counter sale of antibiotics without prescription
- No surveillance of Antimicrobial resistance
- Expired antibiotics directly go with municipal waste
- Molecular tests for resistance markers not available in all set up
- Delay in FDA approval for any drug
- No stringent regulation from higher authority

It's the  
little things  
that make a  
**BIG**  
difference.





# What are those small things...

As Dr-Pledge for Judicious use of antibiotics; Follow restricted antibiotic policy of the hospital

As Microbiologist-QC of lab, Selective reporting for best diagnosis and regular surveillance of AMR

As HCW-Follow Hand Hygiene & Other Infection Control Practices like Isolation policy etc.

As Patient- No self treatment; Complete the course of antibiotics

As Citizen- Proper disposal of Expired antibiotics

The image features a dynamic and colorful background of paint splatters. The colors transition from purple and blue on the left, through green and yellow in the center, to red and orange on the right. The splatters are of various sizes and densities, creating a textured, energetic feel. Overlaid on this background is the text "Thank You!" in a large, white, 3D-style sans-serif font. The text is centered horizontally and has a slight shadow, giving it a sense of depth as if it's floating above the paint. The entire composition is framed by a thin red border.

**Thank You!**