



Department
of Health

Systems Thinking for Sustainability: The Antibiotic Resistance Crisis

Science Centre World Summit 2017
Wednesday November 15th

Professor Dame Sally Davies, FRS
Chief Medical Officer for England
Chief Medical Adviser to the UK Government

Sustain modern medicine

MEDICAL NEED	CONDITION	OUTCOME WITHOUT EFFECTIVE ANTIBIOTICS
General surgery	Appendectomy and other surgical procedures	Ordinary operations and biopsies more hazardous as infections rise
Heart problems	Heart by-pass surgery	Requires access to the heart through the chest wall. Danger of resulting infection very high
	Infected heart valves and endocarditis	Not treatable
Infections	Urinary tract, blood and skin	Infections will become untreatable in many cases leading to high risk of death
Lung infections	Pneumonia	virtually impossible from AMR
Cancer	Bowel cancer	virtually impossible as no antibiotics to pre- and post-surgery
	Breast cancer	virtually impossible as antibiotics given pre- and post-surgery increase the risk of infection
	Leukaemia	virtually impossible as body's immune system no longer kills resistant bacteria. Chemotherapy also suppresses immune system. Increased risk of dying without effective antibiotics
	Chemotherapy	Many chemotherapy drugs suppress the immune system making the patient more likely to acquire an antibiotic resistant infection
Childbirth	Bacterial infection of mother and/or baby	Mortality rates at live births and C-sections increased around the world
Dentistry	Abscess, gum infection, facial tissue and bone surgery	Infection of tissues can result in cellulitis, septicaemia with risk of life threatening implications
Diabetes (Types 1 and 2)	Diabetic foot ulcers	Foot ulcers can become gangrenous and in extremis require toe or foot amputation

Keep Antibiotics Working



What is Antimicrobial Resistance?

Act soon on antibiotics

DAILY Mirror



Chief doc's fear of resistant diseases



Daily Mail
Quarter of prescriptions for antibiotics 'not necessary'



Our time with ANTIBIOTICS is running out.

Antibiotics are in danger of losing their effectiveness due to misuse and overuse, and in many cases they aren't even needed.

Always seek the advice of a healthcare professional before taking antibiotics.



Prof Sally Davies
@CMO_England

Following

Essential we bring the global community together to #StopSuperbugs #ctaAMR2017



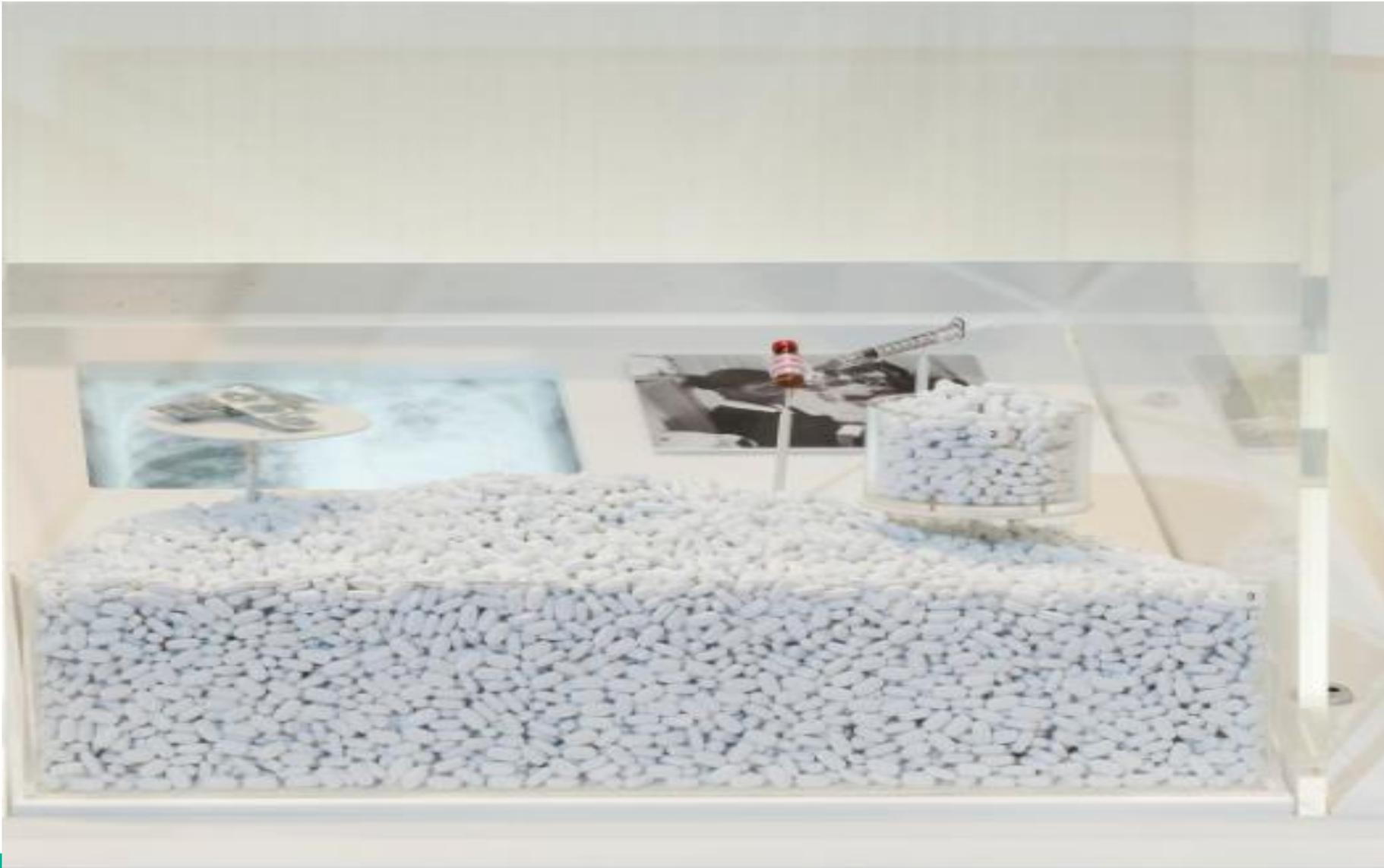
THE TIMES

Health chief fears antibiotic apocalypse

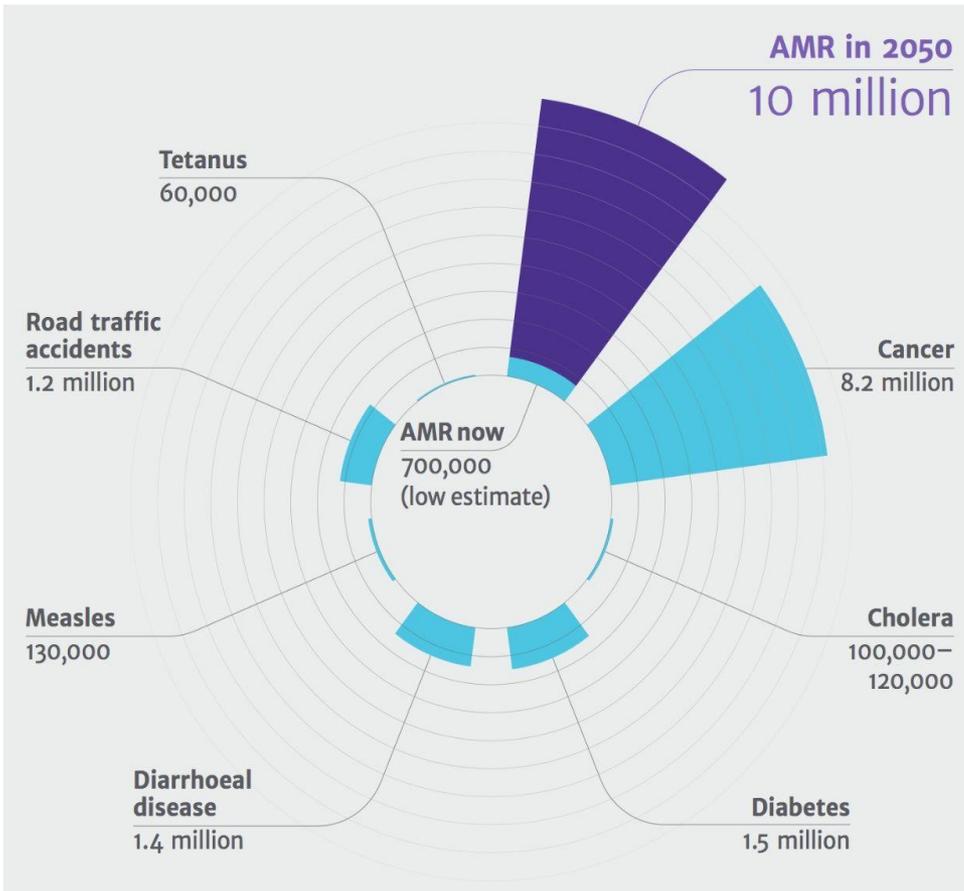
**chief: antibiotics
apocalypse could spell the
end of modern medicine**



Deaths attributable to AMR every year worldwide Compared to other major causes of death



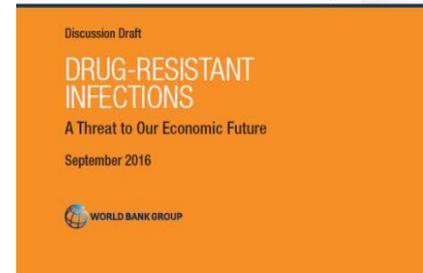
Impact of AMR by 2050



Cost the economy \$60-100 trillion

GDP will decrease by up to 3.8%, 5% in LIC

28.3 million extra people pushed into extreme poverty by 2050



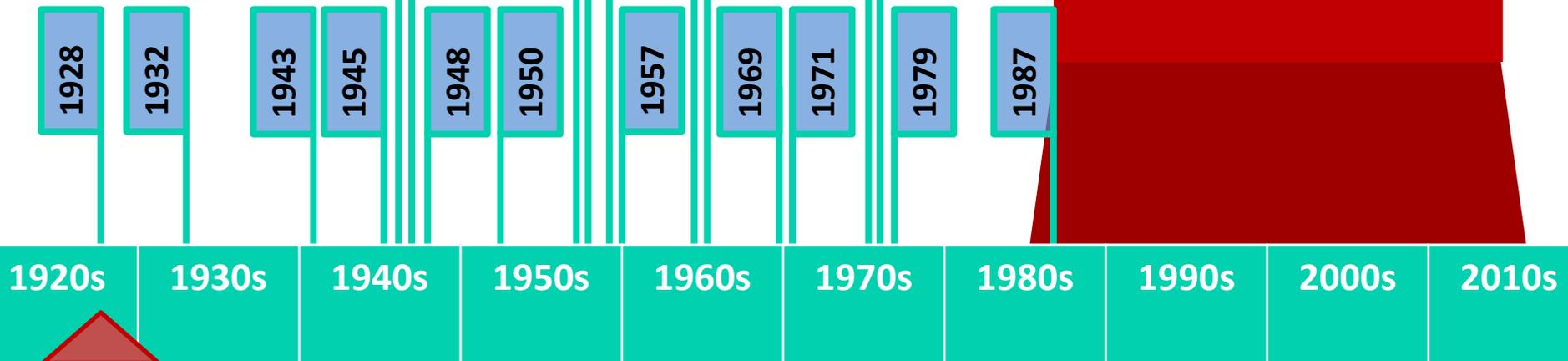
Years of Discovery of New Classes of Antibiotics



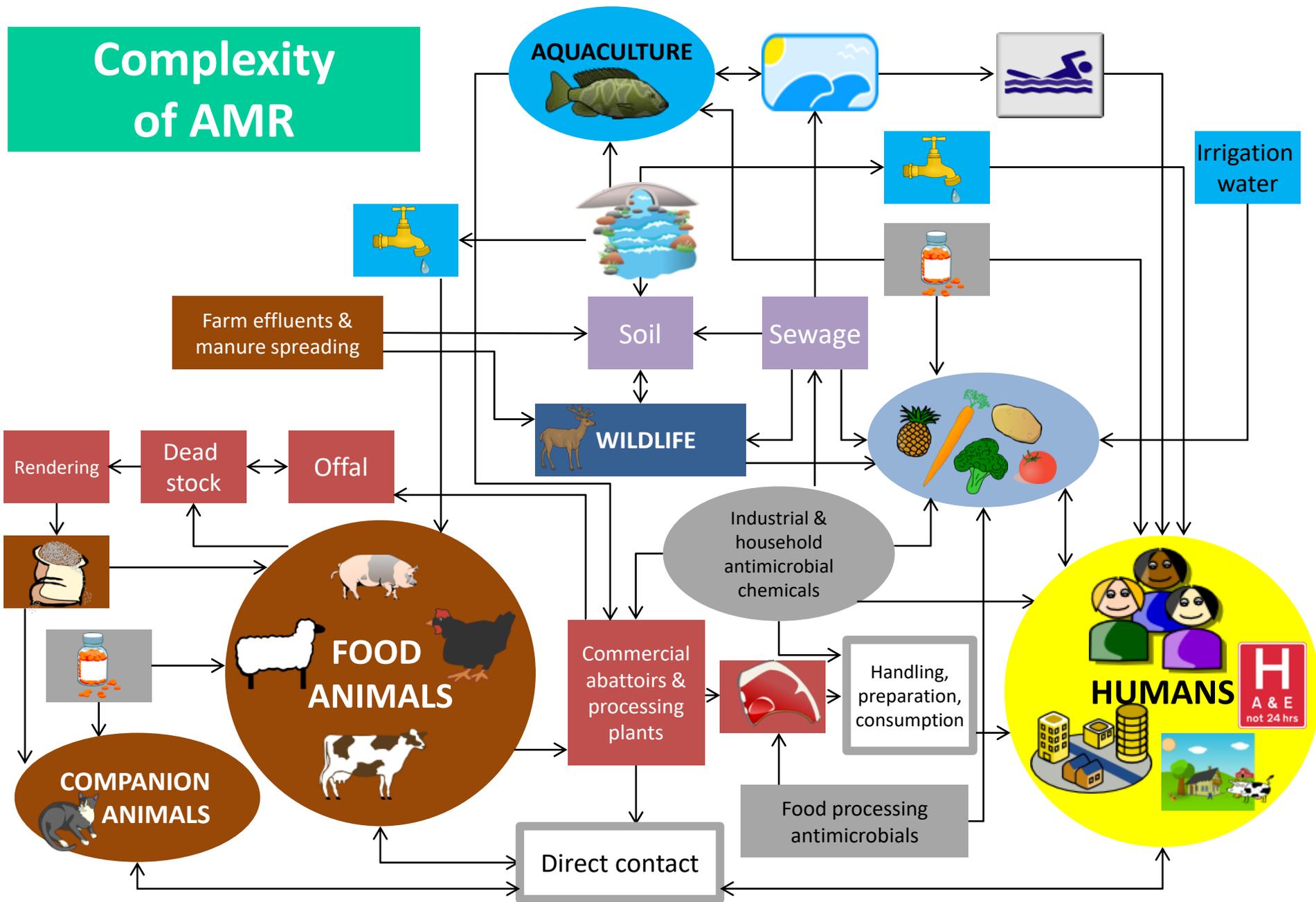
MARKET FAILURE

Discovery Void

No new class of antibiotics has come into clinical practice since the late 80s



Complexity of AMR



Bacteria don't respect borders

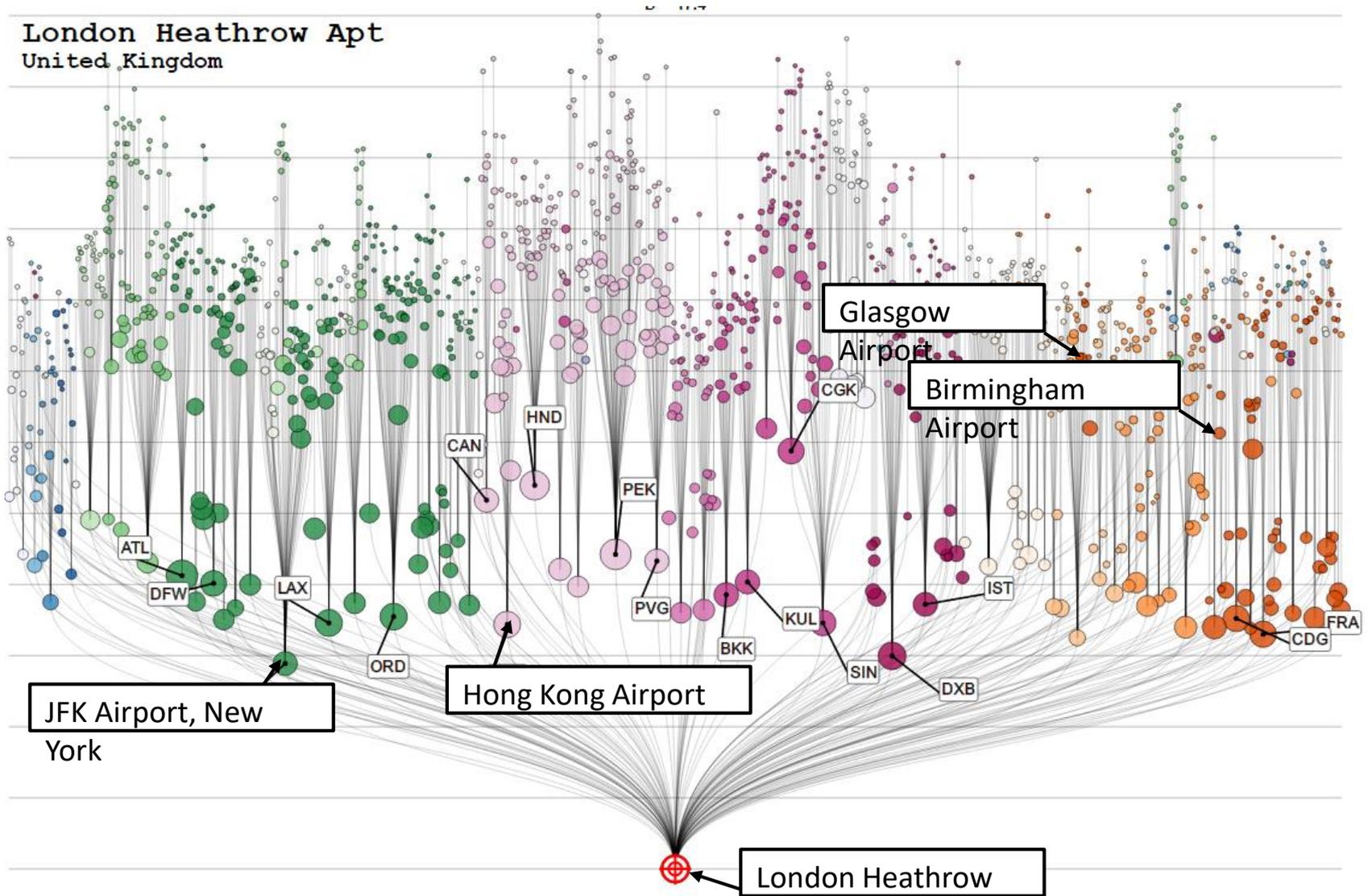


Image: Dirk Brockmann, Robert Koch Institute, Germany

Think Creatively



Chain Reaction III Scorecard

A	 
B+	
B	
B-	 
C+	
C	
D+	 
D	 
	 
	  
	  
F	 
	 
	

Increasing awareness is critical



World Antibiotics Awareness Week 13th-19th November 2017

