KAMPALA, UGANDA March 4-7, 2019

The Second Global NAMRIP conference

Innovations Towards Combating AMR: A Whole Society Engagement

Whole of Society Engagement in Responding to AMR

Timothy Leighton FRS FREng FMedSci ScD

@Prof_Leighton

SLOAN®

University Hospital Southampton NHS Foundation Trust

Royal United Hospitals Bath NHS Foundation Trust

University of Southampton

E·S·R·C Economic & Social Research Council

NERC Science of the Environment

HSP Horizon Strategic Partners Working Together

MRC Medical Research Council

Public Health England

VITACRESS

gsk GlaxoSmithKline

The Racehorse Sanctuary & Rehoming Centre

The Royal Society

NHS Lanarkshire

Pinkham Equine Veterinary Services

Food Standards Agency

EPSRC Engineering and Physical Sciences Research Council

Ultrawave Precision ultrasonic cleaning equipment

a healthcare issue

Unless a solution is found, by 2050, AntiMicrobial resistance (AMR) will cost the global economy more than the current size of the global economy, and be killing more people than cancer.

Optimism:

- researchers will find something (correctly identifying problem rather than selling solutions);
- drug companies will translate it cost-effectively to 7 billion people, in a manner that will allow ready take-up despite culture, infrastructure, training, behaviour, religion, migration, war, black market, and £100 million racehorses;
- 'someone' will keep discovering new drugs and successfully rolling them out to 7 billion people, faster than bugs become resistant to them.

Pessimism: we must live in a world without antibiotics

Practical: we must assume that whilst antimicrobials will be available for the very ill, much of the routine practices that use antimicrobials today need to be replaced by other measures, such as vaccination and infection prevention.

a healthcare issue

The science world is freaking out over this year-old's answer to antibiotic resistance

Could this be the end of superbugs?

FIONA MACDONALD 26 SEP 2016

A 25-year-old student has just come up with a way to fight drug-resistant superbugs *without* antibiotics.

The new approach has so far only been tested in the lab and on mice, but it could offer a potential solution to antibiotic resistance, which is now getting so bad that the United Nations recently declared it a "fundamental threat" to global health.

Science AAAS

Home | News | Journals | Topics | Careers

Latest News | ScienceInsider | ScienceShots | Sifter | From the Magazine | About News | Quizzes

SHARE

15K

90

573

A new antibiotic offers a potent weapon against antibiotic-resistant infections. U.S. Centers for Disease Control and Prevention - Medical Illustrator

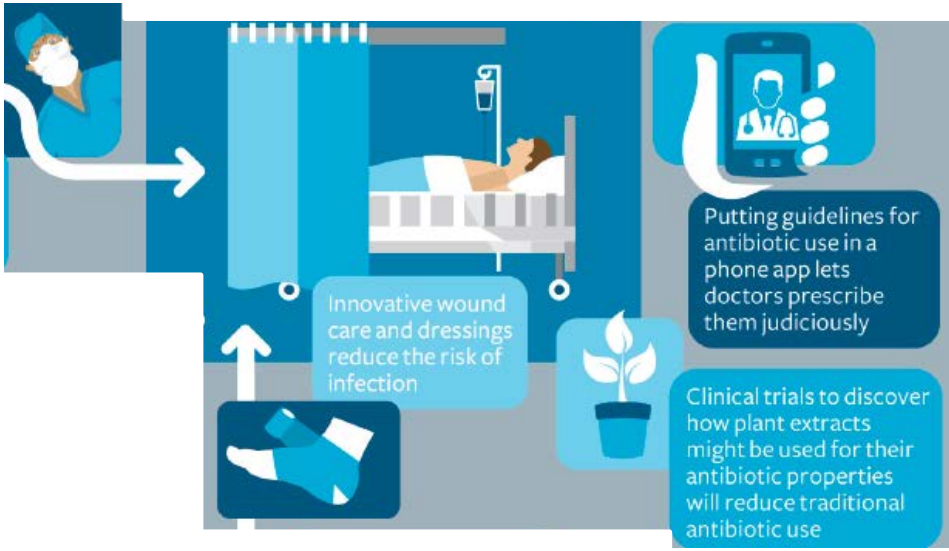
Superantibiotic is 25,000 times more potent than its predecessor

By Robert Service | May. 30, 2017 , 3:45 PM

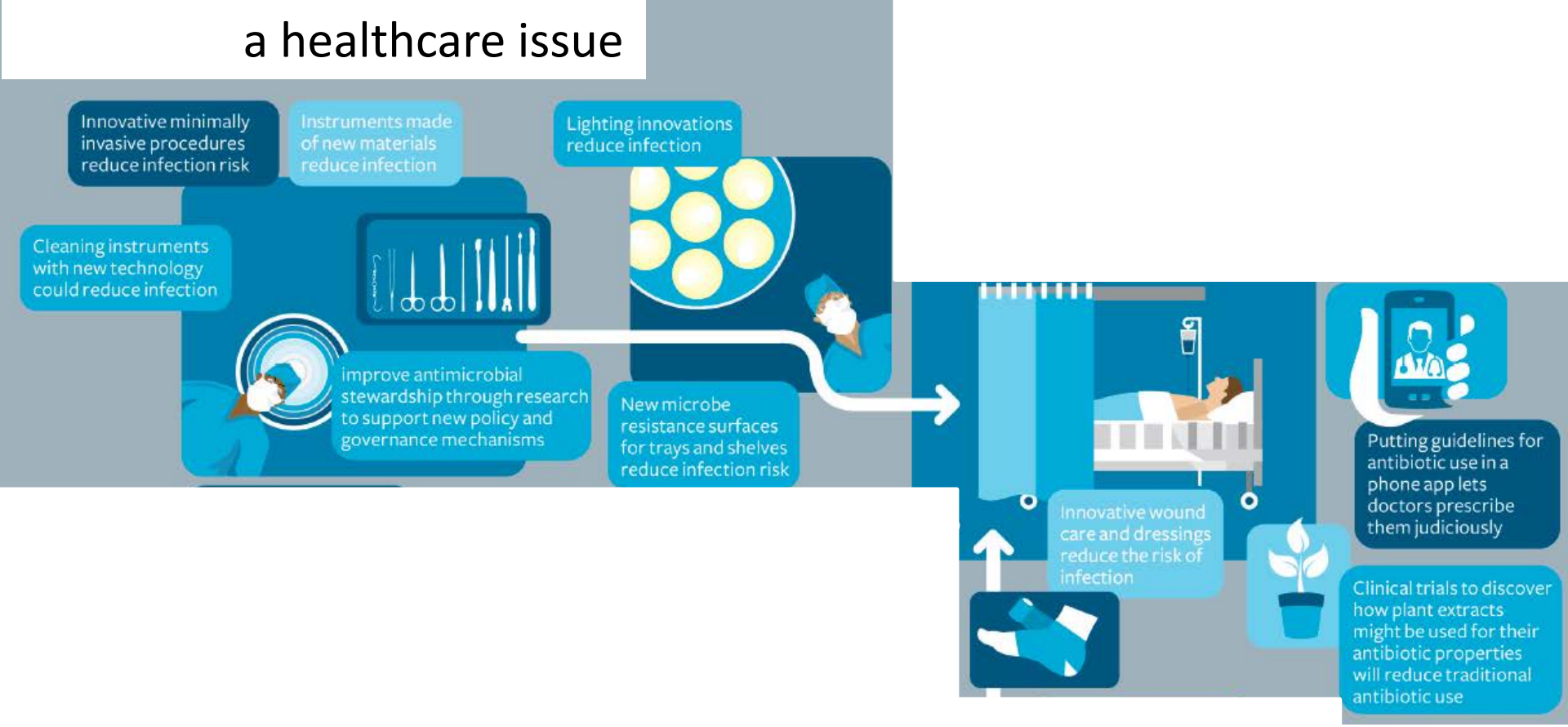
a healthcare issue

a healthcare issue

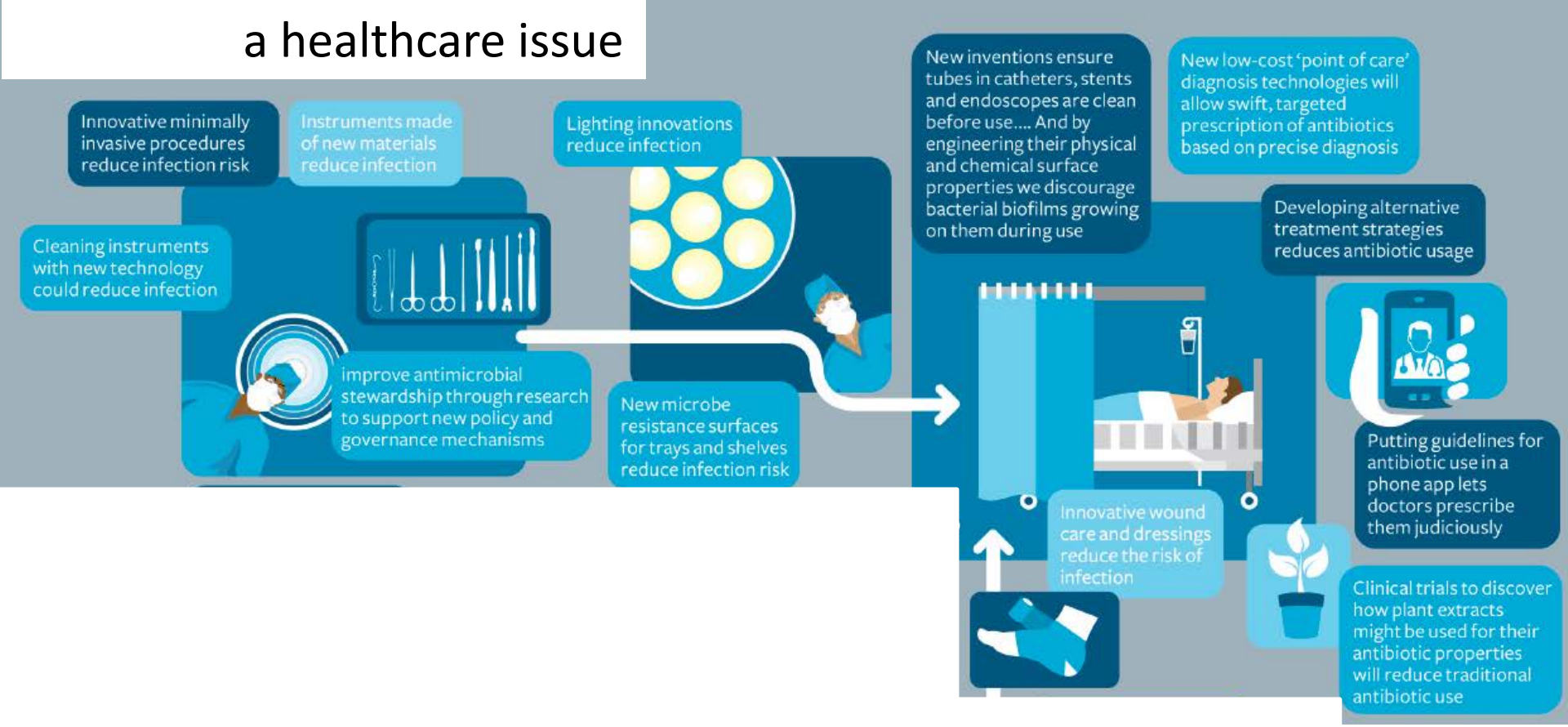
a healthcare issue



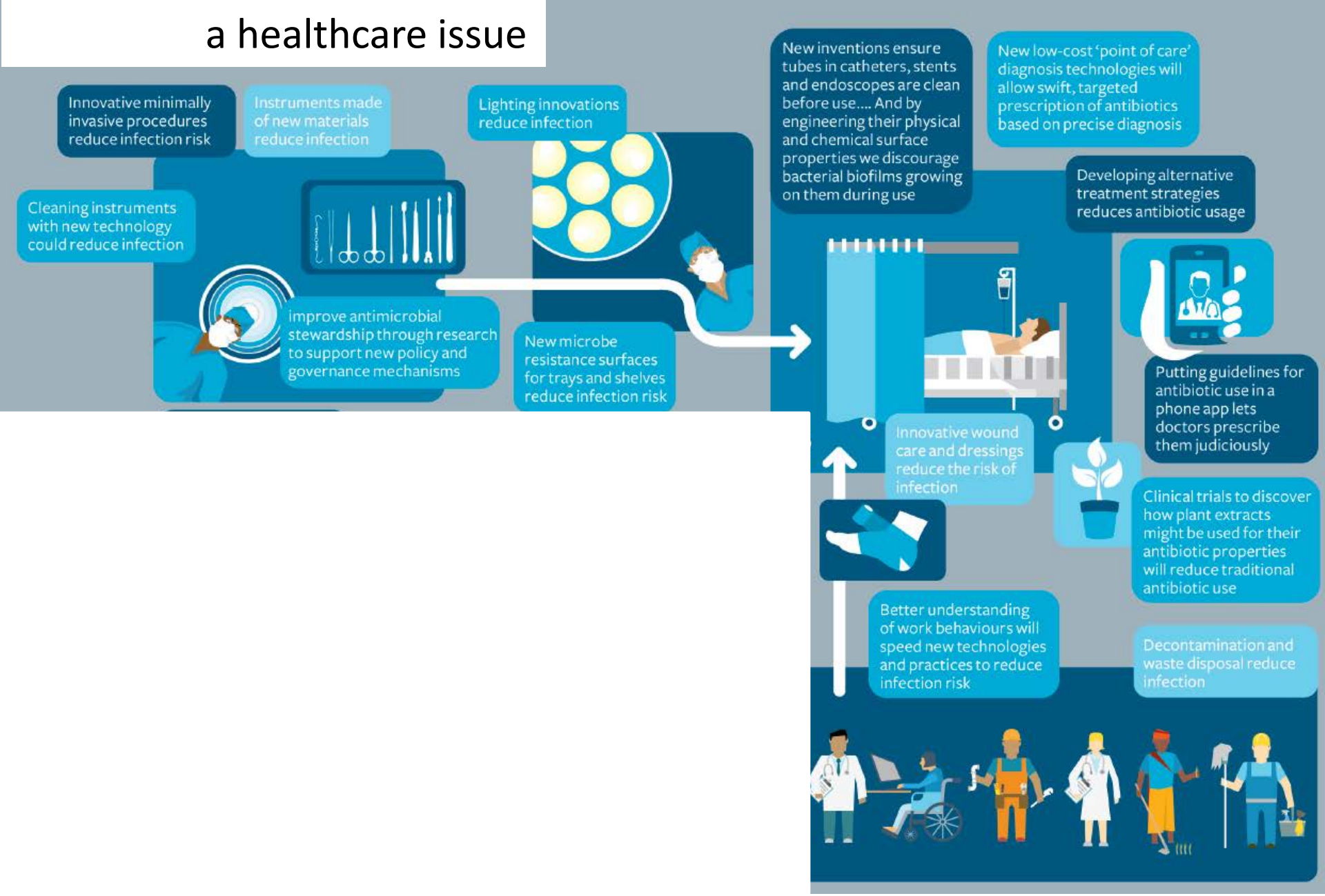
a healthcare issue



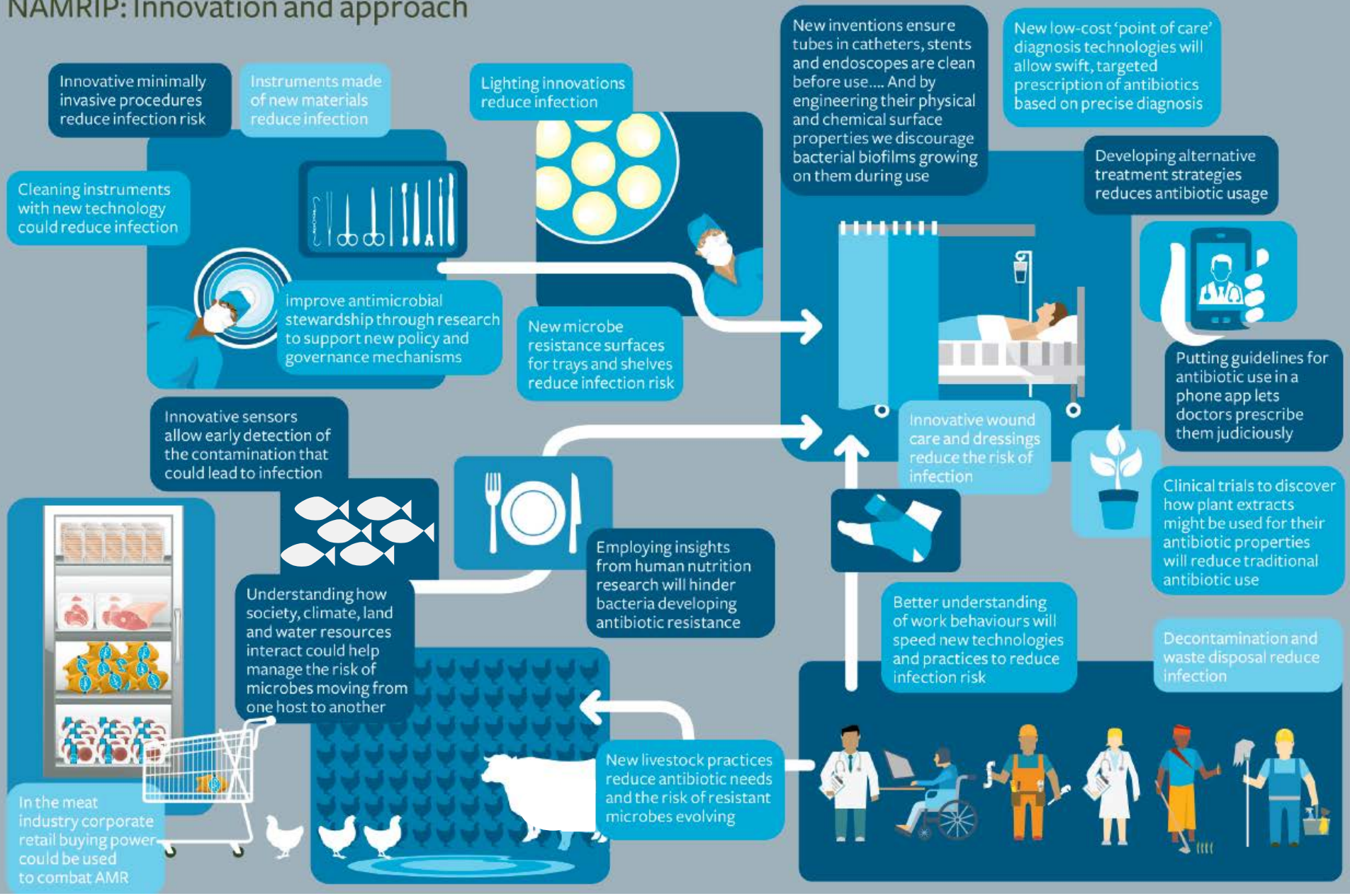
a healthcare issue

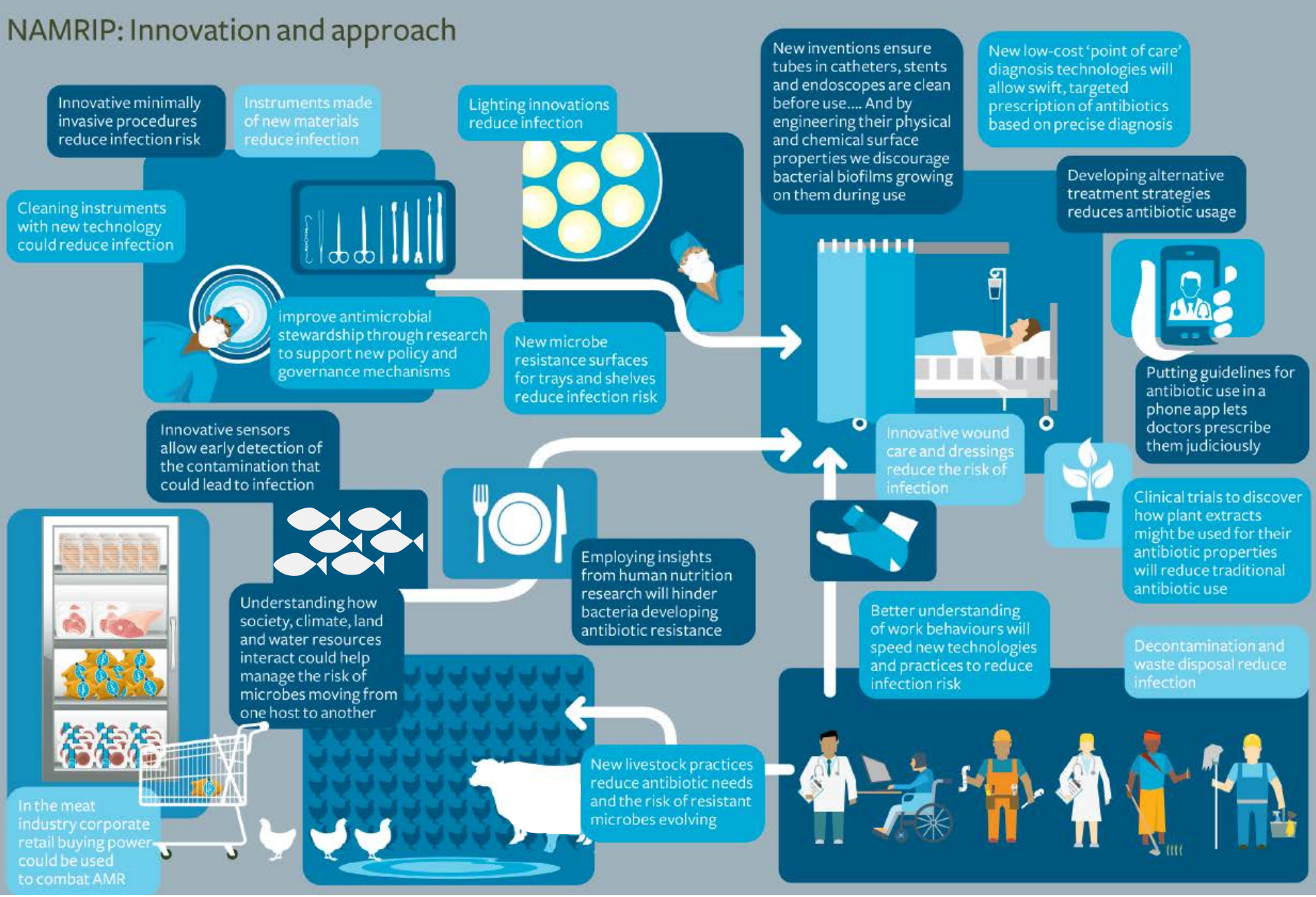


a healthcare issue



NAMRIP: Innovation and approach





https://www.southampton.ac.uk/namrip/news/latest.page

NAMRIP's 5 Research themes

Preventing Infection

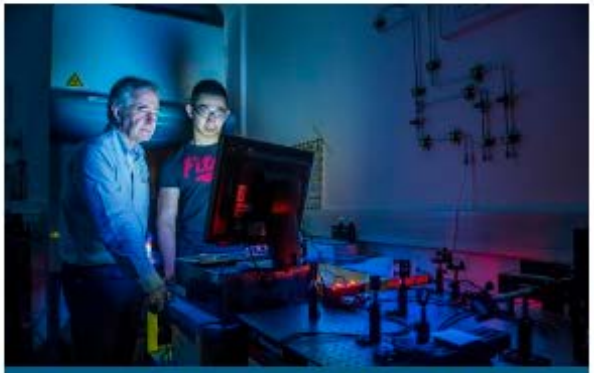
Our interdisciplinary research spans medicine, engineering and biological science faculties

Behaviour in the wider world

Behaviour, landscape and environment influence the relationship between animal and human health

Pharmacology and Therapeutics

We need to consider how to achieve impact in the wider world



Sensing and diagnostics

Diagnosis and correct antibiotic treatment can help prevent serious antibiotic resistance

Clean water, sewage and waste

New technologies to produce clean water and treat waste, preventing the spread of infection

Pharmacology and Therapeutics

Characterising infectious diseases

Using cutting edge sequencing technology in developing countries

Novel approach to tackle tuberculosis

Combining research in cell culture and microfluidics

Preventing prosthetic infection

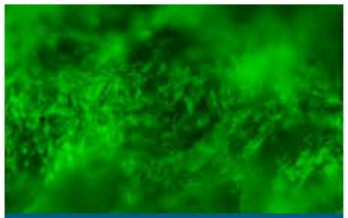
Localised use of antibiotics to improve infection management

Antibiotics and nanoparticles

Understanding which nanoparticles bind to bacteria, in the delivery of antibiotics

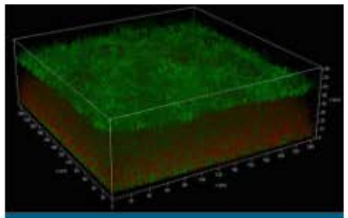
Pelargonium for cough

A clinical trial evaluating the feasibility of using pelargonium for acute cough



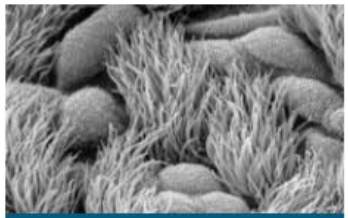
Innovative wound cleaning

exploring the use of a novel flushing system for cleaning wounds



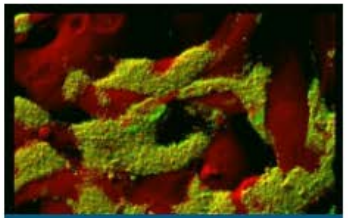
Tackling Otitis Media (Glue Ear)

Targeting bacterial metabolism to reduce antibiotic tolerance



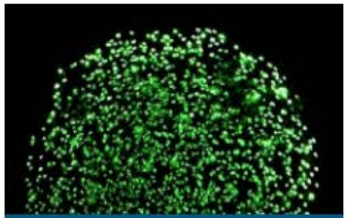
Protecting our airways from infection

Using simple sugars to clear bacteria and prevent infection



Tackling the 'superbug' Neisseria gonorrhoeae

Developing vaccines to combat resistance to antibiotics



Fighting tuberculosis

A new way of testing antibiotics to help in the fight against TB and other infectious diseases.

Award-winning Public Engagement Programme

Recognition for NAMRIP team

NAMRIP awarded the 'Wow Factor and Impact' prize at awards evening

NAMRIP takes AMR to BBC Countryfile Live show

Spreading the word about Anti-microbial Resistance

NAMRIP members attend Camp Bestival

Chatting to families about AMR and the research underway at Southampton University

NAMRIP members participate in Meet the Scientist

Talking to Secondary school students about our AMR research

NAMRIP at the Cheltenham Science Festival

Sharing our NAMRIP exhibits with an enthusiastic young audience

NAMRIP exhibits at Science and Engineering Day

Visitors of all ages interested in how we're tackling resistance to antibiotics

NAMRIP members take part in Pint of Science

Science talks delivered in a fun, engaging and approachable way

Beating infections without jargon

NAMRIP are training AMR scientists to communicate with the public and each other without the use of jargon

The game has been used to communicate with ministers, public, children etc., and proved successful in encouraging children to wash hands for as long as it takes to sing ’Happy Birthday” twice

Hand Cleaning

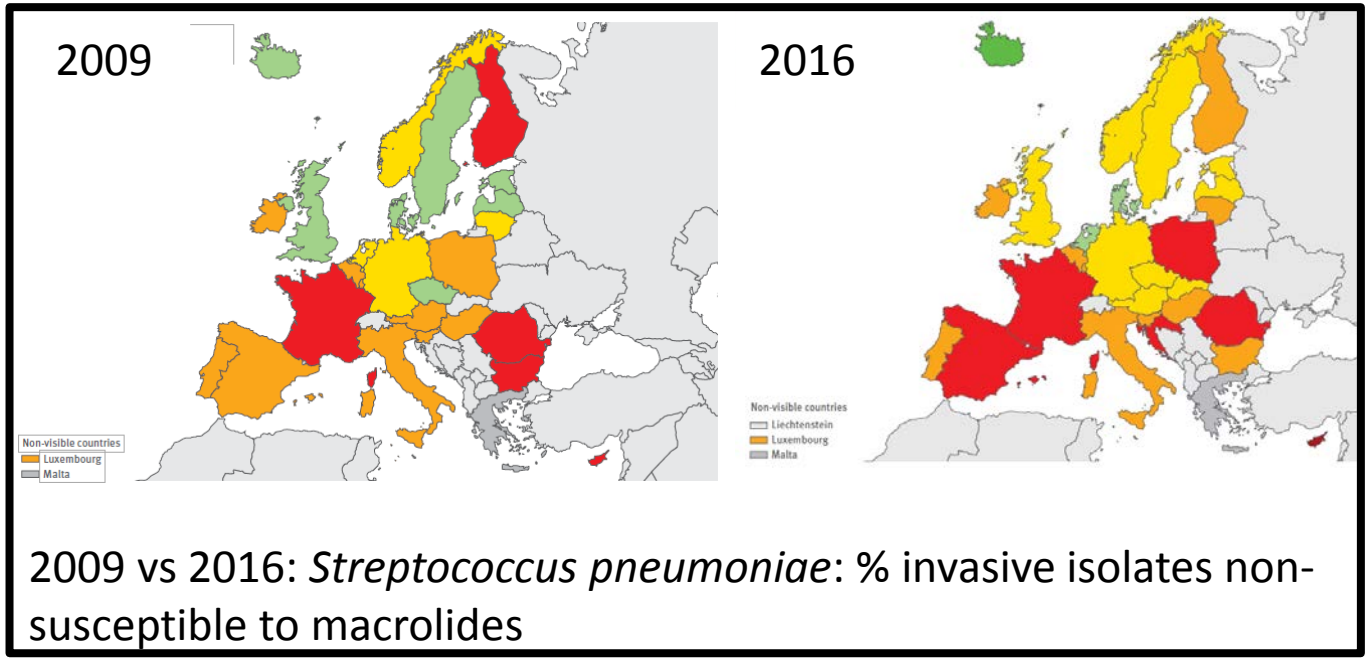
This is not just a healthcare issue

Conclusions

We don't have 35 years.

Multidisciplinary research results in 3-5 years translated to 1 million people in 10 years.

A global problem: AMR does not respect borders.



2009 vs 2016: *Streptococcus pneumoniae*: % invasive isolates non-susceptible to macrolides

(European Centre for Disease Prevention & Control, Surveillance Report 2016)