

MRC Vaccine Strategy

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Medical Research Council

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Agenda

- MRC Vaccines Strategy
- Supporting HCS

Background

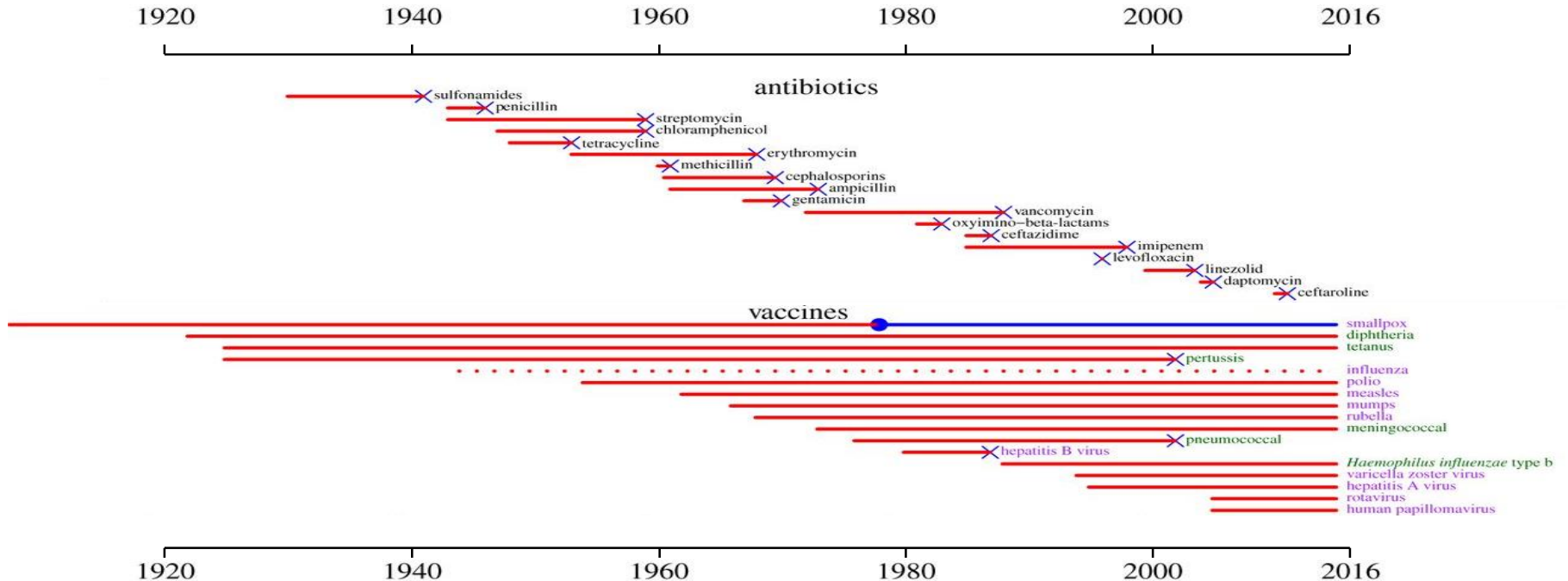
- The recent outbreaks of Ebola and Zika, bird/swine flu epidemics, the growing danger of antimicrobial resistance and the on-going global burden of HIV, malaria, and tuberculosis illustrate the large-scale challenge that infectious diseases continue to pose to human health
- This challenge is exacerbated by our changing climate, rapidly increasing urbanization and expanding globalisation
- Low and middle income countries (LMICs) still bear the greatest burden of infectious diseases

Vaccines have played a critical role in improving public health

- Immunization is one of the most successful public health initiatives. Each year, vaccination averts an estimated 2-3 million deaths from diphtheria, tetanus, pertussis (whooping cough) and measles

.. and could play an equally important role in combatting AMRs

Time to first detection of human pathogens resistant to antibiotics and vaccines



2014 Vaccinology Review

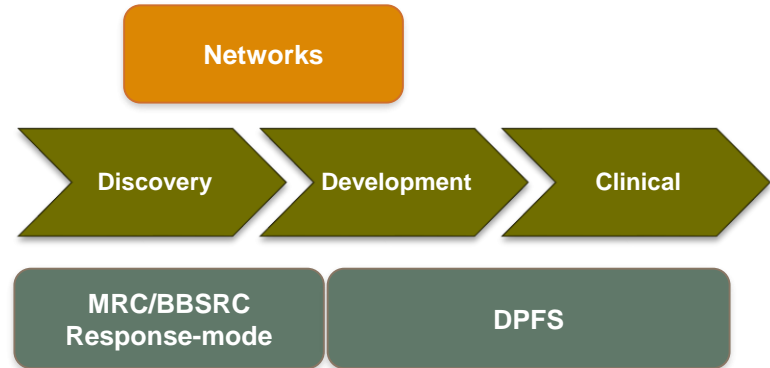
- Key recommendations to the MRC included:
 - Stimulation of basic science research, in understanding protective immune responses to vaccines and pathogens across the life course
 - Stimulate more research into novel tools and technologies
 - Facilitate networking and partnership building
- At the same time BBSRC also reviewed its vaccine-related activities. Key recommendations to the BBSRC included:
 - Opportunities for human and animal vaccinologists to work together on fundamental processes
 - Implementation of more generic platform technologies

Cross Council (MRC, BBSRC and EPSRC) Highlight notice launched in 2015

- Aim of promoting innovation in novel veterinary and medical vaccines through the development and application of new tools and technologies.
- Received 105 expressions of interest which were directed to the relevant research Councils
- MRC received 51 expressions of interest with fifteen full applications submitted to IIB
- Five of which were funded (total £3.7m)
 - Higher than average success rate

Networks Call - Linking UK immunology and pathogen strengthens with Vaccine R&D

- Joint MRC/BBSRC £8m call to support Networks focused on early vaccine R&D challenges, relevant to OECD DAC list countries
- Encourage interdisciplinary working, where this adds value
- Strengthen research capacity, capabilities and methodologies
- Provide catalyst support including to 'Pump-prime' short-term, innovative projects - leading to more competitive, collaborative, cross-disciplinary and integrative research proposals
- Support collaboration between researchers in the UK and developing countries



MRC/BBSRC GCRF Vaccine R&D Networks

PI	University	Title	Duration (months)
Peter Openshaw	Imperial College London	Human Infection Challenge vaccine (HICVac) network	48
Beate Kampman	Imperial College London	IMPRINT: IMmunising PRegnant women and INfants neTwork	36
Cal MacLennan	University of Birmingham	BactiVac	48
Tim Connelly	University of Edinburgh	International Veterinary Vaccinology Network	48
Helen McShane	University of Oxford	VAccine deveLopment for complex Intracellular neglected pATHogEns (VALIDATE)	36

A supportive UK landscape for vaccines R&D

UK Integrated vaccine development process

MRC/BBSRC
Vaccine Networks

5 Networks
Total
£9.4m

EPSRC / DH
Vaccine
Manufacturing
Centre

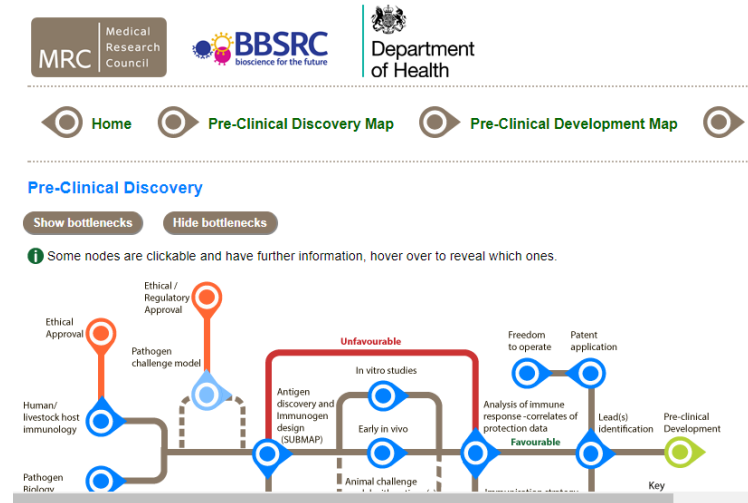
1 or 2
centres
Total £5/10m

Innovate UK
Vaccine
Development and
Manufacturing

1 centre
Total
£66m

UK Vaccines Network

- £120m (£110 Department of Health, £5m MRC, £5m BBSRC)
- Founded in 2015 in response to Ebola outbreak.
- Role is to ensure work on UK vaccines is as coordinated as possible, has the greatest public health impact and there is a mechanism for rapid action in emergencies.
- Funded over £66m in 48 projects aimed to develop vaccines against the UK Priority pathogen list.



www.vaccinedevelopment.org.uk

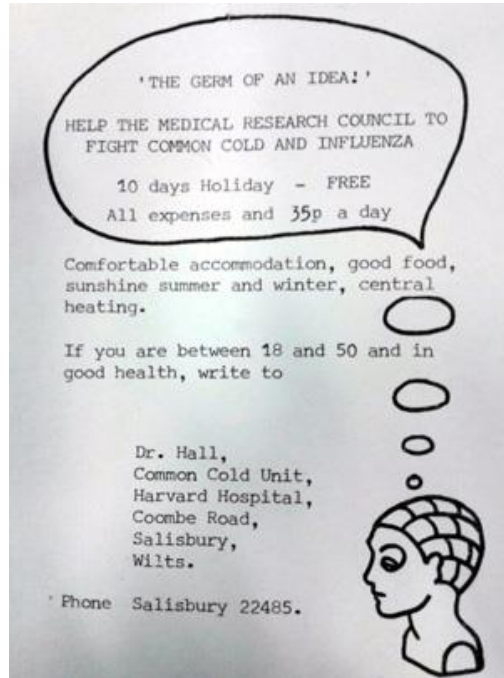
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MRC has a long history of supporting HCS

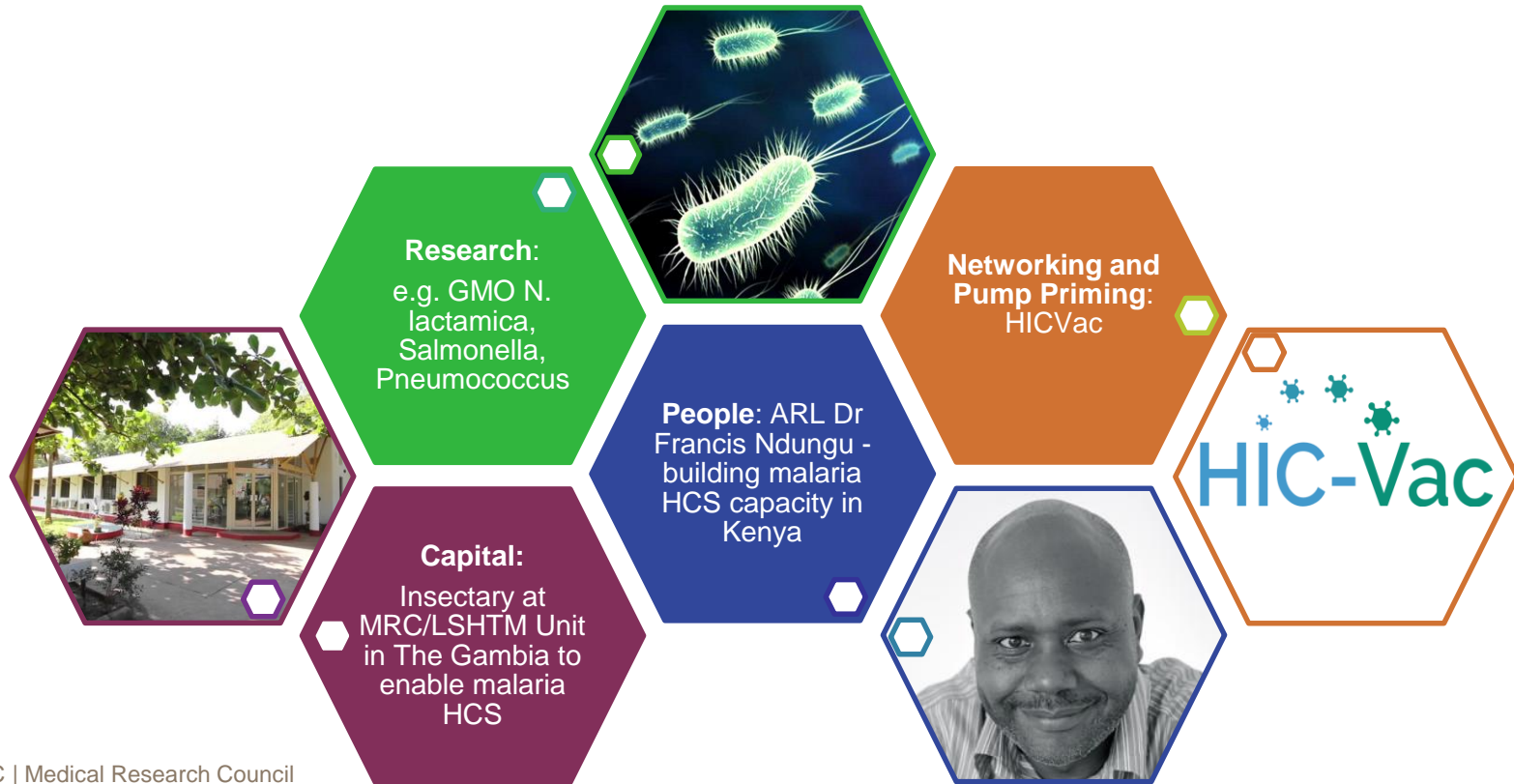
- Common Cold Unit ran from 1946-1990 at Harnham Down near Salisbury
 - Isolated human coronaviruses in 1965 from human volunteers
 - The unit identified the causes of the common cold, discovered how colds were transmitted, and examined the impact of communicable diseases, such as the common cold, on an international scale
 - It also conducted work into the prevention and control of various other infectious diseases, including influenza and ARIs, including research into vaccines, anti-viral drugs and interferon

Ethics of recruitment – remuneration v reward



- Prof Tilli Tansey, a medical historian at Queen Mary University of London, says that it became an oddly popular form of package holiday during the post-war years
 - “It was a bit like Butlins. Some people did see it as a holiday – this was the era of austerity. You’d go off for a couple of weeks, stay in a chalet and have your meals cooked for you.”
- Indeed, many couples returned several times over the years, despite the distinctly spartan accommodation in Nissan huts – which was, however, probably seen as **relatively luxurious** in the post WW2 period of economic hardship
 - “I believe the record was set by one couple who volunteered 22 times”

HCS studies currently make up c.16% of our live vaccines grant portfolio (£9.3m out of £57.4m)



Questions?