Stop AMR Global Media Monitor

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EU announces €10M funding for research on coronavirus outbreak

The European Commission has launched an "emergency request" for research projects that expand on the understanding of coronavirus backed up by a 10 million Euro research fund for such projects. Research projects seeking these funds should contribute to more efficient patient management and public health responsiveness. The funding will support between 2 and 4 projects; applicants have until February 12 to get their proposals in.

Source: Science Business, 02 February 2020

Malaria: Vaccine clinical trial for pregnant women yields promising results

According to the WHO malaria causes 400,000 deaths each year with pregnant women being particularly vulnerable targets. In areas where malaria is commonplace, people generally acquire immunity throughout childhood and have less severe experiences as adults. However, in pregnant women the red blood cells infected with the Plasmodium falciparum parasite responsible for malaria accumulate in the placenta, promoting anaemia and gestational hypertension.

Malaria is linked to higher risks of spontaneous abortion, premature birth, and intrauterine growth delays. In sub-Saharan Africa 11 million women were infected with malaria in 2018, of those, 900,000 babies were born underweight. Researchers from Inserm and Université de Paris led by CNRS Research Director Benoît Gamain are developing a vaccine for gestational malaria. The vaccine, known as PRIMVAC, has been shown to be safe and effective up to 15 months after vaccination. It was studied in 68 non-pregnant women at the Cochin Pasteur Clinical Investigation Center in Paris, then at the National Center for Research and Training on Malaria (CNRFP) in Ouagadougou, Burkina Faso. The results showed PRIMVAC is well tolerated and produced an immune response in all the women after 2 inoculations. The researchers want to continue monitoring the 50 Burkinabe volunteers to study its effects until their first pregnancy.

Source: EurekAlert! 04 February 2020

FDA to review drug for hospital-acquired, ventilator-associated pneumonia

The FDA has accepted a priority review for a supplemental New Drug Application for the antibacterial combination Recarbrio developed by Merck. Recarbrio is used for adult patients with hospital acquired bacterial pneumonia (HABP) and ventilator-associated bacterial pneumonia (VABP) caused by gram-negative pathogens. It is a combination of imipenem-cilastatin and the novel beta-lactamase inhibitor relebactam. Recarbrio was accepted to treat complicated UTIs and complicated intra-abdominal infections in July 2019 and is based on the results of phase 3 clinical trials in patients with HABP/VABP. The FDA is expected to decide by early June.

Source: CIDRAP, 03 February 2020

Medicaid study finds antibiotics often prescribed with no doctor visit

An analysis of Medicaid data found that almost 45% of antibiotics were prescribed for no clear reason over a 10-year period. The study, conducted by researchers from Brigham and Women's Hospital, Harvard Medical School, and Northwestern University Feinberg School of Medicine and published in *Health Affairs*, reported that 17% of the 300 million antibiotic prescriptions filled by

Medicaid recipients between 2004 and 2013 did not involve an infection related diagnosis. 25% of those did not have a record of a clinician visit.

The United States has one of the higher rates of antibiotic prescribing with more than 800 prescriptions per 1,000 Americans every year. Researchers found that overall more than 82 million antibiotic prescriptions were written without a visit to a physician. Of those, only 4% were for dental procedures or chronic prescriptions which are the two subsets often prescribed without a clinician visit.

lead author Michael Fischer, MD, a physician at Brigham and Women's and associate professor at Harvard Medical School suggested that some physicians may have simply neglected to add a diagnostic code. These results have implications for antibiotic stewardship measures which typically focus on cases where patients receive antibiotics for viral infections and often do not consider cases where patients may receive antibiotics without an infection at all.

Source: CIDRAP, 04 February 2020

Half of lupus rashes harbor high levels of bacteria responsible for infections

A new study published in the *Journal of Investigative Dermatology* found that 50% of skin rashes in patients with lupus contained an unusually high level of staphylococcus aureus which is responsible for skin infections. Additionally, patients with lupus have a protein called interferon in their skin which increases the "stickiness" of staph to their skin. The rate of staph colonisation in health adults is typically around 30% whereas patient with lupus that had active skin lesions had a rate of 50%.

Source: EurekAlert! 06 February 2020

Portable lab you plug into your phone can diagnose illnesses like coronavirus

Engineers from the University of Cincinnati are developing a small device that plugs into a smartphone and can test saliva for signs of infection. The "portable lab" is roughly the size of a credit card and can diagnose coronavirus, malaria, HIV, and Lyme disease; it can produce results almost instantly and provide them to the patient's doctor through a custom app.

UC professor Chong Ahn and his team developed the device to test for malaria but envision a wide range or usages. The device takes the sample of saliva and mixes it with freeze-dried detection antibodies then uses freeze-dried luminescent material to read the results.

Source: EurekAlert! 06 February 2020

Sequencing sewage for antimicrobial resistance surveillance

Frank Aarestrup and Mark Woolhouse advocated for a global antimicrobial resistance surveillance system based on metagenomic sequencing of human sewage. They argued that most AMR surveillance focuses on hospitalised patients in a clinical setting that can lead to underestimations of AMR spread in healthy humans. According to the authors analysing raw sewage would provide insight into a large, diverse population; this method is already used for evaluating illegal drug use, caffeine, alcohol, and for monitoring polio.

Such an approach could be used to identify and track outbreaks of intestinal and food borne pathogens. The authors estimate the cost to be less than 1 million USD annually making it less expensive than current approaches.

Source; EurekAlert! 06 February 2020

Tailor-made vaccines could almost halve rates of serious bacterial disease

A new study published in *Nature Microbiology* found that rates of disease caused by Streptococcus pneumoniae could be reduced by optimising vaccinations among specific age groups, regions, and communities of bacteria. Researchers from the Wellcome Sanger Institute, Simon Fraser University in Canada and Imperial College London simulated how different vaccine designs could help reduce overall rates of disease.

Invasive pneumococcal disease (IPD) causes 1.6 million deaths per year and affects infants and the elderly in low- and middle- income countries the most. However, creating vaccines for S. pneumoniae is difficult since each part of a vaccine typically protects against a single serotype. Worldwide there are about 100 different serotypes meaning vaccine effectiveness can vary across regions where different serotypes are present.

Researchers analysed vaccine effectiveness using genomic data from Massachusetts, USA and the Maela refugee camp in Thailand. In Maela there were 64 S. pneumoniae serotypes meaning there are around 100 trillion possible vaccine designs. To even simulate every possible combination, it would have taken the researchers 19,000 years. The team found infant IPD could be reduced in Maela by removing components from the PCV13 vaccine to allow certain serotypes to remain in order to ensure that no highly invasive serotype moved in as a replacement. Their results also found that adults IPD cases could be halved if adult vaccines were redesigned to complement infant vaccines.

Dr Nicholas Croucher, of the MRC Centre for Global Infectious Disease Analysis, Imperial College London, said: "Our research shows that the best vaccine designs strongly depend on the bacterial strains present in the population, which vary considerably between countries."

Source: Science Daily, 03 February 2020