Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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ity. Antibiotics for atypical pneumonia were initiated. Bronchial washings were negative for AFB and mycoplasma.

His respiratory failure progressed and he required ICU admission for CPAP. Intubation and sedation were undertaken as CPAP was insufficient. Multi-specialty speculation following a barrage of negative tests was put to rest when leptospirosis serology came back positive. He improved on broad spectrum antibiotics. An outpatient chest x-ray showed resolution of changes from previous reports.

Leptospirosis is rare in England and Wales, averaging fifty cases per annum. Fulminant sequelae are even rarer, with two to three cases resulting in death. Papers detailing similar cases are predominantly based in tropical climates. Due to incomplete history and disease rarity, there was delay in requesting leptospirosis serology.

This case presents a rare manifestation of leptospirosis. It highlights the importance of considering non-endemic infections based on a patient’s environmental exposures.

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10 Are Phase 1a and Phase 1b clinical trials of malaria vaccine candidates justified?
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Abstract
Introduction: Early clinical assessment of malaria vaccines has typically been performed first in Phase 1a clinical trials involving healthy individuals in non-endemic regions, prior to the conduct of the same study in malaria endemic regions (Phase Ib). We sought to understand the rationale for duplicating the assessment of vaccine safety and immunogenicity in these trials given this can contribute to a delay in vaccine development and additional cost.

Methods: We reviewed publications from the WHO ‘Rainbow Table’ of malaria vaccines in development in May 2020, and performed a literature review searching PubMed, Cochrane and Embase databases for papers relating to clinical malaria vaccine development.

Results: Several arguments in support of Phase 1a trials were identified. Justifications relating to a lack of research infrastructure in malaria endemic regions and suggested inability to obtain informed consent are now outdated and paternalistic. Concern that individuals’ prior exposure to malaria may confound assessment of vaccine immunogenicity is not necessarily a barrier to performing first-in-man trials in endemic populations, given understanding of the impact of prior exposure to malaria on vaccine immunogenicity is important for vaccine optimisation. Indeed, conducting Phase 1 malaria vaccine trials in non-endemic populations, where participants are exposed to the risks of an early-phase trial with little prospect of personal benefit, can itself be of questionable acceptability.

Discussion: This review identified no convincing arguments necessitating the routine conduct of Phase 1a trials in non-endemic populations prior to assessment of candidate malaria vaccines in Phase 1b studies in endemic populations.

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11 An uncommon complication of a common infection
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Abstract
Introduction: Arcanobacterium haemolyticum, a catalase negative, gram-positive bacillus, is a rare pathogen most linked to pharyngitis and soft tissue infections. Generally seen to affect two population groups: healthy adolescents and immunocompromised older patients.

Case: A case of a 17-year female who initially presented with orbital cellulitis and sepsis is discussed. She suffered from headaches, orbital swelling, and vomiting. A series of images revealed frontal bone osteomyelitis and sinusitis. We have also discussed the role of A. haemolyticum in head and neck infections along with its susceptibility to antimicrobials.

Discussion: Identification of A. haemolyticum is delayed due to its presence as part of normal skin and nasopharynx flora. A further delay occurs due to its weak haemolytic activity, cornyform appearance and slow growth rate on commonly used sheep blood agar. A. haemolyticum is more commonly linked to head and neck infections such as pharyngitis compared to other reported infections such osteomyelitis and endocarditis. Multiple case reports have also highlighted sinusitis complications caused by A. haemolyticum progressing to cerebral abscess requiring surgical intervention. Similarly, A. haemolyticum has also been linked to lemiere’s syndrome which were managed with intravenous antibiotics.

Conclusion: haemolyticum is generally overlooked due to its presence as part of normal skin and nasopharynx flora. There have been many case reports and case series which describe the limited clinical success of penicillin in treating A. haemolyticum infection. Improvement in the efficiency A. haemolyticum detection along with use of correct antimicrobial agents would significantly reduce complications like cerebral abscesses.

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12 Exhaled SARS-CoV-2 viral load kinetics measured by facemask sampling and its association with household transmission – a longitudinal cohort study
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Abstract
Background: Few studies have examined the pattern of exhaled SARS-CoV-2 viral load (VL) over the course of acute infection. Using facemask sampling (FMS), we report the natural history of viral RNA emission from community-managed SARS-CoV-2 infections and their relation to household transmission.

Methods: Between December 2020 and February 2021, participants recruited within 24 hours of a positive polymerase chain reaction (PCR) on upper respiratory tract sampling (URTS) (day 0) gave FMS (for 1 hour) and URTS (self-taken) on 7 occasions up to day 21. Samples
were analysed by RT-qPCR; exposed masked were processed by analysis of sampling matrix strips within the mask and symptom diaries recorded. Participants who transmitted to their households were assessed through reporting of URTS PCR analyses on household contacts.

**Results:** Analysis of 203 FMS and 190 URTS from 34 participants revealed similar overall patterns of VL change, peaking in the first five days following sampling; most individuals tested negative by day 10. URTS results were poor predictors of contemporary FMS result and symptom scores. Of 28 participants who had household contacts, 12 (43%) reported positive transmission. In contrast to URTS, negative FMS was associated with household negative for transmission on days 1 and 3 while frequency of transmission showed a biological gradient trend with peak FMS VL (negative VL, 0% household transmission, 1-1000 copies/strip: 20%, 1001 – 10,000 copies/strip: 50%, >10,000 copies/strip: 75%, p=0.07).

**Conclusions:** Exhaled viral load measured by FMS is highest in early infection and is an important route of SARS-CoV-2 transmission.

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13 Tissue is the issue – an unusual case of a mycotic aneurysm

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**Abstract**

A 65-year-old Turkish-Cypriot gentleman presented to hospital with a ten-day history of abdominal pain, an irreducible left inguinal hernia and drenching night sweats. He reported no past medical history. He worked as a lorry driver and moved to the UK thirty-four years ago. He last visited Cyprus four months prior to admission, but he denied consumption of any unpasteurised or raw animal products.

On examination, he was afebrile and tender over the left groin and abdomen. A computerised tomography angiogram aorta was consistent with rupture of the infrarenal abdominal aortic aneurism (AAA).

He underwent an open AAA repair, the infrarenal saccular aneurysm was noted to be inflamed intra-operatively and six intra-operative tissue samples were taken for culture. He was commenced on intravenous ceftriaxone 2g OD, oral rifampicin 450mg BD and ciprofloxacin 500mg BD. Treatment was switched to intravenous ceftriaxone 2g OD, oral rifampicin 450mg BD and ciprofloxacin 500mg BD, due to vomiting to complete an initial twelve-week course with a view to review in clinic.

This case highlights the importance of intra-operative tissue sampling to aid diagnosis and correct antibiotic coverage as otherwise this may have resulted in a relapse of infection with an infected graft secondary to Brucellosis.

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14 My milkshake is better than yours! An outbreak of bacterial gastrointestinal illness fuelled by a social media craze

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**Abstract**

**Introduction:** We highlight a regional outbreak of Campylobacter from raw dairy milk (RDM) milkshakes, focusing on initial detection, then outbreak-control measures by the Health Protection Team (HPT).

**Methods:** In April 2021, HPT convened a multi-agency Outbreak-Control Team (OCT) after initial notifications of food-poisoning from Primary/Emergency Care sectors in Northumberland. Active case-finding was pursued via:

- case interviews
- outbreak awareness-alerts to GPs/Emergency Care
- surveillance systems (based on case-definition / geography / exposures)
- online questionnaire to recent food-poisoning cases.

Multi-agency partnerships with Environmental Health / Food Standards Agency ensured a swift response.

**Results:** 43 cases were identified in the outbreak (27 laboratory-confirmed Campylobacter, plus 16 strongly suspected based on clinical symptoms), aged 3-65 years, who had all visited a specific Northumberland dairy farm in the weeks preceding. Symptoms were typical: abdominal pain +/- (bloody) diarrhea +/- fevers +/- myalgia. 11 cases (all children) required emergency admission to hospital. The common exposure was they had all consumed RDM novelty milkshakes from a specific farm.

We present Epidemiological results (Epicurves of exposure dates, symptom-onset, which supported outbreak investigations and hypothesis development) and Microbiological results (whole genome sequencing (WGS) which matched Campylobacter isolates from the farm’s milk storage tank to faecal samples obtained from multiple cases).

We present graphic representation of Outbreak Control measures.

**Discussion:** Clinicians should be encouraged to notify suspected cases if there is potential for an outbreak (i.e. not awaiting confirmation). Clinicians must aim to send diagnostic samples as WGS of pathogens is crucial to support outbreak investigations. Many cases consumed the contaminated milkshakes after they were popularised via social-media.

**Conclusions:** Exhaled viral load measured by FMS is highest in early infection and is an important route of SARS-CoV-2 transmission.

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15 A curious case of chronic cough and complex partial seizures

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**Abstract**

A 55-year-old Congolese male with type 2 diabetes presented to infectious diseases clinic with a one month history of cough. There were no fevers, night sweats or weight loss and a chest radiograph showed...