



# Highlights from this issue

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*The Triumvirate*

This month's Airwaves explores what might be the "new normal" as we move tentatively out of lockdown. We bring you tales of beetroot, loneliness, imaging on the Starship Enterprise, the increased need for high tech equipment and a possible baby boom.

## PERFORMANCE ENHANCING BEETROOT

With few options for leaving home, besides frontline patient care, many of us have had more time to devote to our gardens. For one member of the Triumvirate, this involved getting the vegetable plot ready weeks ahead of last year and beetroot seeds were sown in April (with frost protection in place). Potential applications for a plentiful crop of beetroot are described in this month's journal (*see page 547*) where Pavitt and colleagues report a randomised controlled trial of beetroot juice given to enhance pulmonary rehabilitation in COPD. Beetroot is rich in nitrates and the placebo group received nitrate depleted beetroot juice. The findings are encouraging with a 60m improvement in the incremental shuttle walk test with active treatment (vs 30m in the placebo group). Beetroot juice also reduced systolic blood pressure by 5 mmHg (compared with an increase in the placebo group). This editor hopes the veg plot this year will yield good harvest of beetroot which might enhance his 10k run time!

## SOCIAL ENGAGEMENT VS. SOCIAL DISTANCING

One of the challenges of lockdown has been family members left with no option but to spend a great deal of time together. However, for those living alone, the challenge has been a very different one of increased loneliness, reduced social contact and social disengagement. Some, but not all, of these factors may contribute to hospital admissions for respiratory disease, as described in a study of data from the English Longitudinal Study of Ageing in *Thorax* this month (*see page 597*). The authors found that the hazard of a respiratory admission was one third greater in those who live alone. Individuals who were socially disengaged (not involved in community groups, volunteering etc) were 24% more likely to have a respiratory admission. In an accompanying commentary (*see page 536*), Susan Nunn suggests "social prescribing" as a tool to increase social engagement. As the lockdown eases we will find out if it is possible to be socially engaged while practising social distancing!

## IT'S LIFE, JIM, BUT NOT AS WE KNOW IT...

Aficionados of episodes of Star Trek from the 1970s may remember McCoy, the "ship's doctor" on the Starship Enterprise, pointing a small imaging device at his patient and making a confident diagnosis of a virulent intergalactic pathogen. Two papers in this month's issue explore whether technological advances back on earth may allow us to diagnose micro-organisms and predict their behaviour.

One of the more controversial issues of medical management in the COVID-19 pandemic has been the use of radiology (CT) to make a virological diagnosis (Covid-19 pneumonia). In one of our series of 'Controversies and challenges in respiratory medicine' (*see page 537*), Tavare and colleagues propose a CT protocol for patients where there is a high suspicion of COVID-19 but who are RT-PCR negative. Another link between radiology and microbiology is proposed by Grandjean *et al* who studied *Mycobacterium tuberculosis* isolated from patients in Peru, using whole genome sequencing (*see page 584*). The authors studied homoplastic variants - mutations occurring on multiple occasions at the same locus, suggesting they confer an evolutionary advantage. They found that two such mutations (Rv2828c.141 and rpoC.1040) are associated with more widespread radiological pathology. Even Dr Leonard McCoy, of the USS Enterprise, would have been impressed!

## WE NEED MORE VENTILATORS

During the COVID-19 surge it became apparent that the degree of Acute Lung Injury and the numbers of patients developing Acute Respiratory Distress Syndrome (ARDS) would stretch the capacity of Intensive Care Units across the world. One obvious, and immediate solution was to ask the manufacturers of vacuum cleaners to build some more. An alternative, longer term, strategy is to develop therapies that might mitigate ARDS. Younes and colleagues describe an experimental medicine approach in this issue of *Thorax* (*see page 556*). Taking a transcriptional profiling approach they measured microRNAs in the lungs of mice treated with mesenchymal stem cells compared with controls. They found that down-regulation of miR-27a-5p and upregulation of VAV3. In vitro manipulation of the system had functional effects in the endothelial

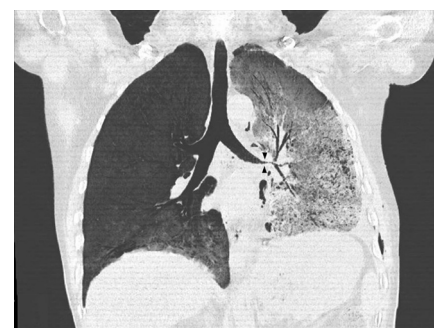
cell cultures, and intratracheal administration of an miR-27a-5p inhibitor into the lungs of mice reduced cellular infiltration, but did not protect against endotoxin in pulmonary oedema. While these results are promising and may lead to new therapeutic approaches to ALI it is unlikely that the orders for James Dyson's ventilators will be cancelled anytime soon.

## IN HONOUR OF OUR FELLOW EDITOR-IN-CHIEF

I suspect it is not often that the Editor-in-Chief of *Thorax* has had a Prime Minister name his child after them, but this indeed is the honour bestowed up on our very own Professor Hart. It was an understandable time of anxiety for the Prime Minister and his wife that they should fall ill at a time when the Prime Minister's wife was pregnant, as pregnancy is a vulnerable period for both the unborn child and mother. In this issue of *Thorax*, Inparaj and colleagues (*see page 568*) describe the pulmonary complications in pregnant women suffering with sickle cell disease. In their meta-analysis of 3767 pregnancies compared with 336559 controls they found a 13-fold increase risk of pneumonia, nearly an eight-fold increased risk of pulmonary embolism and a seven-fold increased risk of Acute Chest Syndrome. Understanding the risks of various diseases in pregnancy is crucial for the development of mitigation strategies because the outcome can have dramatic consequences, including a boom in the number of babies named 'Nicholas'.

## A TALE WITH A TWIST

Test your own skills of radiological diagnosis. Our teaser image shows "an unfortunate surgical twist" (*see page 611*).



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