



Highlights from this issue

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The Triumvirate

Third wave or ocean wave? As we write this edition of "Airwaves" lockdown measures have been eased in the United Kingdom. Healthcare planners are preparing for the possibility of a third wave, hopefully mitigated by the vaccination programme. The rest of the population are dreaming of holiday breaks, currently restricted to green list destinations. This issue of *Thorax* provides both insights into pandemic control and a smorgasbord of excellent respiratory research to provide intellectual stimulation while you soak up the sun...

CANDY CRUSH OR SYMPTOM APPS FOR POOLSIDE ENTERTAINMENT?

On your holiday or staycation will you be playing Candy Crush or filling in the COVID-19 Symptom Study app on your phone? In Spring 2020, the first wave of COVID-19 was rapidly accelerating in the UK and, on 23 March, the first lockdown was announced—schools were closed and non-essential workers were instructed to stay at home. The following day, COVID-19 Symptom Study app was launched, allowing users to record demographic information, symptoms, hospitalisation, PCR results, co-morbidities etc. In this month's journal, Bowyer and colleagues (*see page 723*) present data from almost 2 million app users, describing geographic and socioeconomic gradients seen during the first wave of COVID-19. The authors predict COVID-19 prevalence from symptom score and find a higher prevalence in urban vs rural areas and in more deprived vs less deprived areas. The authors suggest that the app could be used to monitor COVID-19 over a period of time, highlighting hotspots as the pandemic progresses and restrictions are implemented or eased. In a linked editorial (*see page 636*), Hannah Stagg discusses the role of citizen science in the COVID-19 pandemic.

MYTH BUSTING WITH APP DATA

Some reports have suggested that smoking rates in hospitalised patients with COVID-19 are lower than expected from the general population. Surely smoking can't protect against COVID-19 can it? Well don't be tempted to have a sly ciggie, while sipping your pina colada in the tropical sunset this Summer. In this month's *Thorax*, Hopkinson *et al* (*see page 714*) explode this myth with more data from the COVID-19 Symptom Study app. In this study, data from 2.4 million app users showed that 11% of users were current smokers and this group were more likely to report classical symptoms suggesting COVID-19. The authors conclude that smoking may increase the risk of symptomatic COVID-19. Don't stock up on ciggies from the duty free this Summer!

MAVERICKS

It is not possible to write about waves, especially big waves without considering Mavericks, the

legendary wave that pounds the coast at Half Moon bay just south of San Francisco down Highway 1. Each year the legends of big wave surfing descend on Mavericks beach when the swell is right. However, knowing when this is going to occur is almost impossible to predict and the competition is organised at very short notice, which is a problem for post-doctoral fellows with ongoing experiments but a desire to watch Big Wave surfing competitions! What is needed is an early warning prediction score, much like those developed for the pandemic waves. In this issue of *Thorax*, Chua and colleagues (*see page 696*) described the SOARS Score (strangely appropriate) which identified that a 5-item score based on SpO₂, Obesity, Age, Respiratory rate, Stroke history was able to predict mortality, in a pre-admission setting. The score was validated in two independent cohorts, thus helping define who might benefit from hospital admission or discharge to ambulatory care. Maybe using tools such as the SOARS score we may be better able to surf future COVID-19 waves?

CHURNED UP IN THE GREEN ROOM

Holiday destinations are now listed by the traffic light system and Portugal is the only traditional holiday destination which is listed as Green. Portugal is also famous or the Nazare wave, WHAT A WAVE! Rodrigo Koxa from Brazil currently holds the big wave record, surfing an 80 foot wave at Nazare on 8 November 2017. Now one thing is for sure, to succeed in such an endeavour you need a cool head and strong legs. In this issue of *Thorax* (*see page 672*) Marillier and colleagues demonstrated that the exertional hypoxia observed in patients with fibrotic lung disease is associated with reduced muscle oxygenation and fatigue which can be improved by supplemental oxygenation! This is a hugely important consideration when trying to support exercise in this patient group. However, even supplemental oxygenation is unlikely to encourage the Editors of *Thorax* to get on a surfboard off this section of the Portuguese coast this summer.

WAVE EBIKE

From 'beach cruisers' to 'dune hoppers', electric bicycles such as Wave eBikes, can transport you faster and further. This was likely the inspiration for the two randomised controlled trials investigating the effect of functional electrical stimulation cycling in mechanically ventilated patients in the ICU. Berney and colleagues (*see page 656*) and Waldauf (*see page 664*) delivered FES-cycling in addition to standard care with a co-primary outcome of hospital discharge muscle strength and cognitive impairment at 6 months in the Australian trial and SF-36 physical component summary at 6 months in the Czech trial. Despite ensuring delivery of the FES-cycling intervention, there were no

differences observed in either trial, discussed by Stutz and colleagues in an accompanying editorial (*see page 640*). Perhaps, we need to learn from our experiences with electric bikes and a just cruise along the beach, relax and watch the waves. That could, at least, improve our mental health. However, difficult to undertake in our critically ill patients.

CILIARY WAVE

Direct visualisation of ciliary beat pattern and frequency are required to diagnose primary ciliary dyskinesia with the impaired ciliary wave action affecting mucociliary clearance. Singer and colleagues (*see page 681*) investigated if they could wave goodbye to the current issues with predicting exacerbations by measuring the lung clearance index (LCI) in PCD patients. The authors completed an international, multi-centre, observational cohort study with 90 PCD patients undergoing nitrogen multiple-breath washout. 379 person-years at risk contributed to the analysis with each unit increase in LCI (deterioration) associated with a 13% risk of future exacerbation. Furthermore, if LCI changed from normal to abnormal, the risk of future pulmonary exacerbations increased by 87%. Perhaps, we can now wave hello to predicting exacerbations in PCD.

A DETOUR INTO THE ABDOMEN

Many holiday breaks are enhanced by the unexpected detour or the surprise discovery. Our taster image may suggest a detour into the abdomen where a surprising cause of pleural empyema is found.



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