



IESF
SOCIÉTÉ DES INGÉNIEURS ET
SCIENTIFIQUES DE FRANCE

Newsletter



British Section

www.iesf.co.uk

Issue 32: December 2021

"Good COP, Bad COP"

COP 21 held in 2015 in Paris was different in that it was the only one where every country coalesced around the vision of a 1.5 deg C rise. No other COP has achieved such unanimity and Glasgow was no exception; it was back to the diplomatic grind and horse-trading of lowest common denominator rather than any aspiration of highest common factor. The prime minister suggested that the mantra for COP 26 was Coal, Cash, Cars and Trees and these form a useful set of headings to mark the Glasgow Climate Pact or COP Report.



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY

Coal appeared for the first time in a COP Report. Yes, the verb was watered down from 'phased out' to 'phased down' and it is likely that internationally China and India will pay a price for their late intervention. Importantly for the first time in 26 years of COPs, coal has been acknowledged as a primary contributor to the climate emergency and Saudi Arabia, Australia and the West Virginia Senator Joe Manchin cannot air brush out the effect of coal or fossil fuels on climate. Whether 'phased out' or 'phased down', any new mine in Cumbria now seems politically dead.

Methane, as part of the fossil fuel family, was another success with 30% reduction by 2030. Whilst methane has only small emissions, its behaviour as a greenhouse gas is up to 100 times that of CO₂, depending on the time frame over which it is considered active.

Cash was one of the failures. The prime minister had tried to rally the G20 in Rome to support the \$100 billion a year fund for climate adaptation, but commitments are still only 80% of this and it may be 2023 before the target is reached. Although developing countries had proposed a new loss and damages fund to deal with the impacts of extreme events, the US opposed such compensation.

Mark Carney came out with his huge private sector green industry-funding package at \$130 trillion. The numbers are huge, but the concern is whether the funding package will change perceptions or whether it is just a good sound bite to hide business as normal with funding of coal and fossil fuels.

Cars were not a major success at Glasgow. Some 30 countries signed a UK led declaration on the phasing out of fossil fuel cars by 2035-2040 but the USA, China and Germany were among those who declined.

Making a connection with French engineering and science



Txai Suruí, a Brazilian indigenous activist

Image: UNFCCC/Flickr, [CC BY-NC-SA 2.0](#)

Trees were a success with a commitment to save the rain forests by 2030. Some of the signatories were surprising and the behaviour of Brazil and others will need to be carefully monitored over the remainder of this decade.

Inertia is probably the greatest success of Glasgow. It was recognised that Glasgow was a stepping stone on the route to address the climate crisis. In future, countries will need to report their Nationally Determined Contributions (NDCs) for carbon reduction on an annual basis. As importantly, it will also mean that their progress against their pledges can also be scrutinised annually.

The Global Warming Outcome: the hype says that 1.5° C rise is still possible, the head says that 1.5° C rise is only now possible after overshooting to a higher peak and pulling back down to 1.5° C later in the century.

Heroes included:

Sir David Attenborough with his passionate and eloquent plea to the leaders 'if working apart we are a force powerful enough to destabilise our planet, working together, we are powerful enough to save it.'

Antonio Guterres (UN Secretary General) with his less than diplomatic 'Enough of brutalizing biodiversity, killing ourselves with carbon, treating nature like a toilet, burning, and drilling and mining our way deeper. We are digging our own graves'.

The small island states with their dignified, yet angry, stoicism.

Beyond Oil & Gas Association (BOGA) as a Danish led initiative, to phase out oil and gas production. Scotland are mindful to join, it is just whether this is before or after their decision on the Cambo field extraction licence.

Alok Sharma (the COP26 President) respected by most, and unafraid to show his emotion at the end. Glasgow was just the start of his Presidency that will last to COP27 in Cairo in 2022.

Surprises. The biggest surprise was not at Glasgow, but the bilateral agreement between the USA and China recognising that whatever their political differences, they recognised that Climate was a global challenge that they both faced. Hopefully, this rapprochement can be fed back into the G20 with movement on funding.

Overall Score: it was good and bad in places. The key issue was the impetus that was generated and the urgency with annual updates on NDCs targets commencing at COP27 in Cairo. COP27 will be an African COP, where the developing world perspective will be more evident.

Working Group 3

The Glasgow Climate Pact keeps 1.5°C alive!

Just. UN Secretary-General António Guterres: "It's an important step but is not enough. We must accelerate climate action to keep alive the goal of limiting global temperature rise to 1.5 degrees."



Some key points from [UK COP26](#):

- Agreed to strengthen Nationally Determined Contributions to 2030.
- Yearly political roundtable. Leaders' summit in 2023.
- Paris Rulebook completed after six years of discussions. Includes process to hold countries to account.
- For the first time, COP agreed action on phasing down fossil fuels.
- Went further than before in recognising and addressing loss and damage.
- Commitments to increase financial support.

Helm: "[Woefully inadequate](#)"

"At the Paris COP, the world leaders failed to come up with a legally binding set of targets. Glasgow sang from the same old hymn sheet, one more heave is going to crack the climate change problem.

"It has not and it will not."

Sir Dieter Helm is Professor of Economic Policy at the University of Oxford. He was Chair of the Natural Capital Committee, providing advice to the UK government.

How can IESF British Section lend its weight to Net Zero?

On the face of it, there is much to welcome in the Glasgow Climate Pact, though success depends on immediate and determined action by all. Without that, I fear that Professor Helm is right, we - or rather our children and succeeding generations - are staring down the barrel of climate catastrophe.

Christiana Figueres, former Executive Secretary of UNFCCC and an architect of COP21 in Paris, has a good approach: Stubborn Optimism, grit and determination in the face of daunting but unavoidable challenge.

Engineering actions

One of the best hopes for accelerating progress is that many businesses are making firm commitments to net zero, supported by increasing expectations to measure and report progress

Making a connection with French Engineering and Science

through ESG, TCFD and other regulatory mechanisms. Considerable carbon emissions derive from carbon embodied in the concrete and steel in infrastructure and buildings and so it is good to see many engineering and construction companies amongst them.

Arup declared on 8th November that it would not take on new energy commissions involving the extraction, refinement or transportation of hydrocarbon-based fuels from next year, having already committed to whole lifecycle carbon assessments for all its building projects. The New Civil Engineer magazine reports Andrew Wolstenholme, Group Technical Director of Laing O'Rourke, discussing the need to find a procurement pathway to net zero. Laing O'Rourke is one of the many engineering and construction businesses who have committed to net zero.

Two documents, PAS 2080 Carbon Management in Infrastructure, and the Carbon Reduction Code for the Built Environment, provide excellent guidance on how to manage whole life carbon. They should be promoted by government and institutions, and adopted widely.

There are many engineering business opportunities in which the UK can lead, including decarbonisation of the manufacture of steel and concrete, small modular reactors, conversion of coal-fired power stations, carbon capture and storage, hydrogen by electrolysis, and development of battery technologies. And, looking further ahead, nuclear fusion.

IESF and personal actions

IESF and its members are in strong positions of influence. We can discuss these ideas and many others with our families, friends and colleagues. We can lead by example by starting to make choices in our own lives to reduce our own carbon footprints. As a professional body, we have greater reach.

Little public attention is paid to the extent to which consumption drives carbon emissions. For the UK, net imported emissions account for close to 40% of the total emissions for which we are accountable. But, imported emissions are excluded from formal reporting per the Climate Change Act. So targets for future emissions and the means of achieving them are about production and only include UK territorial emissions, not imports. Consumers make choices that impact suppliers and manufacturers: we can choose products and services that reduce our carbon footprint and thereby show that we are serious about rapid reductions. Governments can exert more direct influence by taxing carbon at borders or the point of sale.

IESF members could apply a similar, but simple, methodology to that we should increasingly expect of businesses by setting a baseline and seeing how choices we make can set us on a pathway to net zero. We can then use our wide networks of contacts to influence others to do the same. For success, *Everybody* (person, family, community, society, organisation, business institution, council, government,) has to be on board.

Will The Glasgow Climate Pact keep 1.5°C alive?

As Professor Helm says, 'experience offers no hope that it will'. Momentum towards net zero, or at least talking about it, built considerably in the run up to COP26. What can each of us do to help turn that momentum into real and substantial action?

Philip Pascall

Delivering Cities and Communities that work for Society The Ethical Challenge.

There has been intense public attention on and concern about our environment, with heightened awareness of the effects of climate change, brought into sharp focus by the CoP26 meeting in Glasgow. Climate change is here now and the effects will only get worse unless we act now. However, if we look forward there is a whole range of other challenges. For example, we will need to address and mitigate the effects of the world's burgeoning population, which could grow by a third over the next 30 years.

Much interest has focussed on the ethical dimension of not just what we as engineers, scientists and technologists do, but how we do it. Indeed, ethics has been quoted as '*the new hot topic*', attracting widespread public interest.

Social responsibility is an ethical framework and suggests that an individual has an obligation to work and cooperate with other individuals and organisations for the benefit of the community that will inherit the world we leave behind. Never has the old adage, '**Engineering is the link between Science and Society**' been more apt.

Nevertheless, ethics is much more than this. It is a vast subject area, encompassing amongst many other elements, professional ethics.

Most professionals have internally enforced codes of practice that members of the profession must follow to prevent exploitation of the client and to preserve the integrity and reputation of the profession. This is not only for the benefit of the client but also for the benefit of those belonging to that profession. Disciplinary codes allow the profession to define a standard of conduct and ensure that individual practitioners meet this standard. This allows those professionals who act with a conscience to practise in the knowledge that they will not be undermined by those who have fewer ethical qualms. It also maintains public trust in the profession, encouraging the public to continue seeking their services, whilst at the same time reassuring clients, insurers and governments.

The various professional bodies, across the engineering and scientific spectrum are refocussing attention on their ethical credentials and in particular, how we educate young aspirants to those professions, a path well-trodden by our medical and legal colleagues.

You can read more on these topics by following the references below both from the recent feature in 'New Civil Engineer' and the Engineering Council/RAEng 'Statement of Ethical Principles', first published in 2005 and updated several times since.

- <https://www.newcivilengineer.com/ice/trustees-view-why-an-engineering-ethics-review-is-needed-27-10-2021/> -
-
- www.engc.org.uk/professional-ethics

John Beck

Covid-19 - The Invisible Enemy: UK Armed Forces Support in the Pandemic

Lecture to the Worshipful Company of Engineers and IESF British Section by Lt Col Al Jarvis RE and Maj Chrissy Curle RE.



The 6 September 2021 was an historic day for The Worshipful Company of Engineers (WCoE) and The British Section of Ingénieurs et Scientifiques de France (IESF), for they came together for the first time to present jointly a lecture on a topic of major importance nationally - the Covid-19 pandemic and the support provided by the armed services. The WCoE and the IESF have much in common. Both are engineering societies with entry requirements of Chartered Engineer or equivalent, and both organisations have strong military connections, IESF having been established after the First World War in 1919. Further, both societies combine engineering interest with social fellowship, and their programmes include technical and cultural visits both in the UK and overseas, notably to France by the IESF, while encompassing science as well as engineering in its membership and programme.

Lt Col Al Jarvis RE. Al joined HQ SJC(UK) in March 2021 to lead the current operations staff Branch. Previously he had planned the

military response to COVID throughout the Summer of 2020.

Maj Chrissy Curle RE. Chrissy joined HQ SJC(UK) in April 2021 to work in the UK's Resilience Operations Room, running approved Military Aid to the Civil Authorities (MACA) Tasks and responding to emerging situations.

Lt Col Jarvis and Maj Curle outlined the structure under which military support is provided to civilian authorities, and described the many strands of assistance in the fight against the pandemic. The armed services' contribution to UK resilience operations and support in national emergencies is coordinated by the Headquarters Standing Joint Command (UK), comprising both civil and military personnel across the three armed services. Their support, known as Military Aid to Civilian Authorities (MACA), is authorised and provided under clearly defined circumstances, namely:

There is a definite requirement and the tasks of the armed forces are clear.

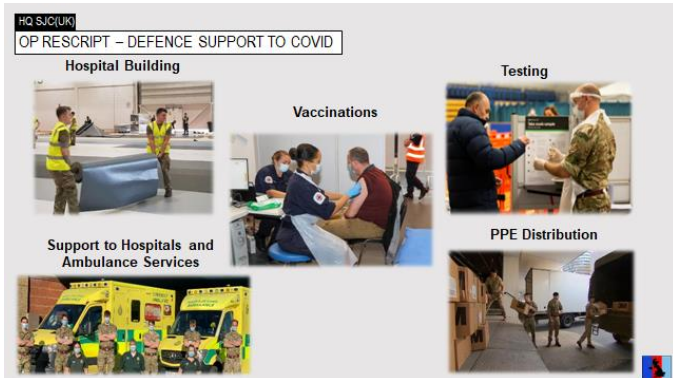
No other options, including mutual aid and commercial provision, are available.

The civil authority does not have sufficient capability on its own and cannot reasonably develop it.

The urgency of the situation requires military support.

Requests may include support in handling environmental emergencies, such as flood or fire events, civil unrest and strike action, or security cover for major events such as the Olympic and Paralympic Games or the G7 Summit. Between 2016 and 2019 there were about 400 requests, and 2020 alone saw 359 requests for military support, the covid-19 pandemic placing a particularly heavy demand.

Code-named **Operation Rescript**, the operation to help tackle the pandemic has been described as the UK's biggest homeland military operation in peacetime, involving up to 23,000 personnel. Areas in which support has been given include hospital building, hospital and ambulance services, vaccinations, covid-19 testing and the distribution of personal protective equipment (PPE).

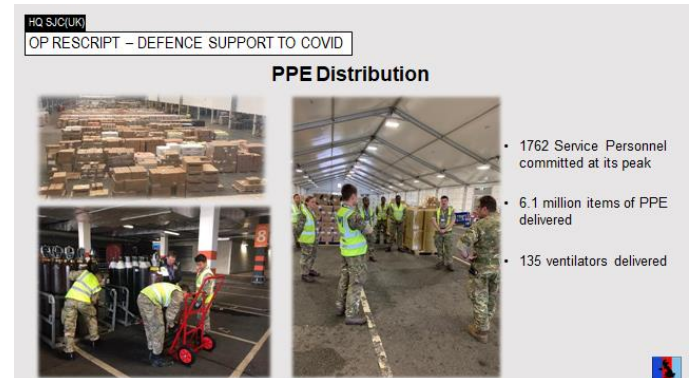


The hospital building operation employed 665 military planners, construction workers and logisticians, and achieved the completion, sometimes in as little as three weeks, of the well-publicized Nightingale Hospitals in London, Birmingham, Manchester, Bristol and other UK sites.

The health services throughout the country were placed under unprecedented strain during the acute stages of the pandemic. Morale and capability were severely tested and support of the military has been described as a "shot of adrenalin". Assistance included portering, cleaning, patient support and distribution of medicines, as well as the more high-profile operations of air-lifting patients, personnel and equipment.

The vaccination programme has been a key weapon in the control of the pandemic and a major success story for the UK. The success of the operation has been in no small measure due to military support, covering planning, construction of vaccination centres and the administering of vaccines to patients.

In parallel with the vaccination programme, a testing regime was established in a bid to reduce transmission of the corona virus. Military personnel assisted in the establishment of mobile test centres and the conduct of tests in schools, care homes and community centres, and testing in support of cross-channel operations.



In the early stages of the pandemic, the provision of PPE became a major problem in hospitals and care homes as demand rapidly exceeded manufacturing and distribution capacity. Over 1,700 service personnel were deployed to distribute over 6 million items of PPE, and around 130 ventilators.

Of course, operations on the scale of RESCRIPT do not just happen and military expertise in planning and execution were key to success. Five major tools are brought into play to progress these complex operations: "Neural networks", using liaison officers across UK and local government departments, and appropriate military units to ensure mutual understanding and rapid action.

Mapping, using the on-line mapping tool ArcGIS to produce maps and develop up-to-date information across the zones of operation.

Mission Command - developing a system of trust across operating units by stating the INTENT and giving FREEDOM of action to operators.

The Engineer and Logistic Staff Corps, established in 1865 and consisting of specialist experts who can be called upon when required.

The Rehearsal of Concept - a walk- and talk-through of the planned operation.



Following the comprehensive presentation by Lt Col Jarvis and Maj Curle, an enthusiastic question and answer session confirmed the interest and attention paid by the members of the WCE and IESF, and the two presenters were warmly thanked for their interesting and informative lecture.

Edmond Morgan-Warren

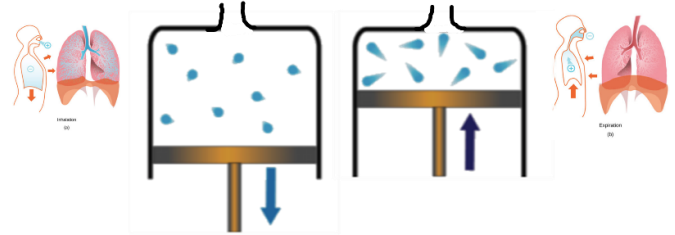
The History of Ventilation from Iron Lung to Mobility Ventilators ~ 20th October 2021

This lecture was given by Dr Mike Davies, Consultant Respiratory Physician and Clinical Director for Thoracic Services at the Royal Papworth Hospital, Cambridge. He described the development of ventilation, driven by two epidemics, polio and Covid-19, and also described some of the work of the Royal Papworth Hospital.

Dr Davies started his lecture explaining how natural breathing works - the body pulls the diaphragm down, increasing the volume of the lungs and thus decreasing the pressure in the lungs, so that the air is pushed into the lungs by atmospheric pressure. Breathing out is

achieved by relaxing the diaphragm and reversing the process.

How do the lungs work?

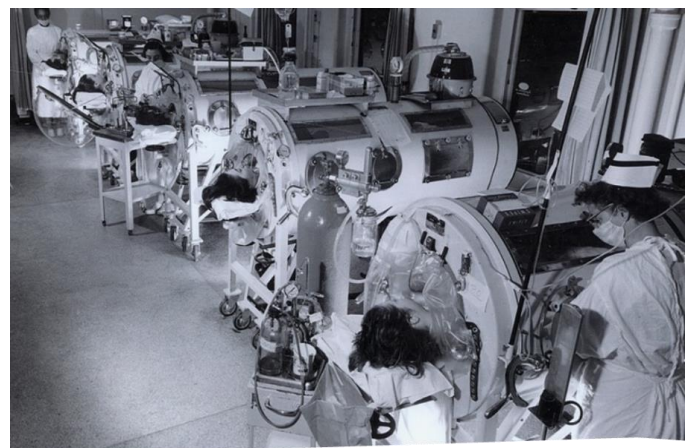


Boyle's Law: $P_1V_1 = P_2V_2$
1662

(Mariotte's Law)
1679

It is necessary both to exhale carbon dioxide and to inhale oxygen. The balance of these functions can be upset by infection, and corrective methods may be needed to support either or both.

The first successful artificial aids to breathing were 'negative pressure ventilators' in the mid-19th century, which placed a box round the chest, with seals to the body. Air was drawn out of the box, reducing the pressure, and increasing the volume of the lungs, allowing air to be driven in to the lungs by the atmosphere, as in natural breathing. Around the beginning of the 20th century, the epidemics of paralytic polio drove improvements in these machines to develop the 'iron lungs' used over the next several decades.

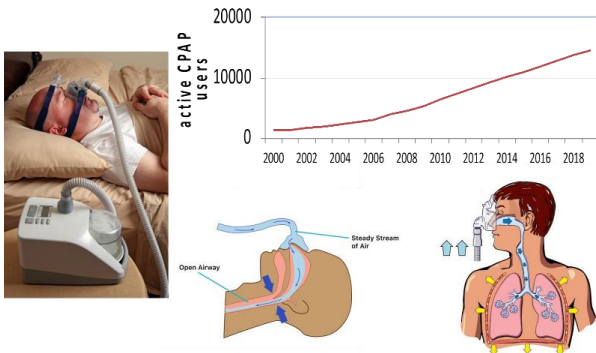


Polio Iron Lung ward in Boston, Massachusetts, 1955.

These were cumbersome machines, in short supply, and alternatives were sought. A polio epidemic in Copenhagen in 1953 saw medical

students manually ventilating patients because of the lack of enough iron lung machines. In this case, air was pushed into the lungs by squeezing a bag. This led to an increased focus on positive pressure means of assisting breathing and also the development of specialist intensive wards. The aviation industry had developed positive pressure breathing apparatus for pilots, which was further developed for medical use leading to positive pressure breathing machines, which would 'breathe' in time with the patient.

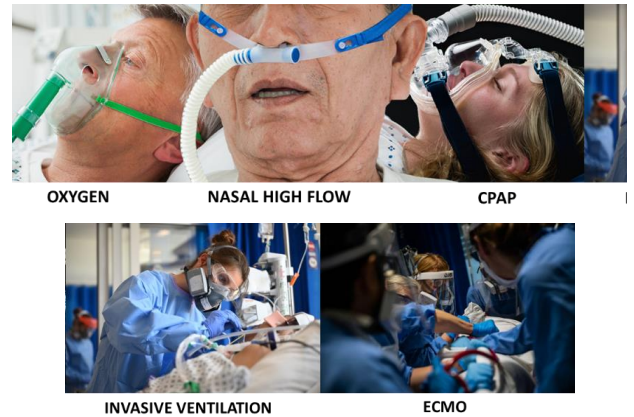
'Continuous Positive Airway Pressure' devices, which maintain a continuous pressure into the lungs, were found to assist patients with Obstructive Sleep Apnoea, by keeping the airway open, and could assist many patients in their home.



Continuous Positive Airway Pressure (CPAP)

The COVID-19 pandemic was exemplified by dramatic early events in Italy, which saw critical care being overwhelmed, despite Italy having twice as many critical care beds as the UK per head of the population. This accelerated the development of improved ventilators and better techniques of ventilation. In the first wave of the pandemic, the Royal Papworth Hospital formed a Critical Care Surge Area and applied their respiratory expertise on acute patients transferred in from other hospitals. A number of techniques were used throughout the country: oxygen, nasal high-flow, CPAP, invasive ventilation, where a tube is put down

the throat of an unconscious patient, and ultimately Extra Corporeal Membrane Oxygenation, (ECMO), where blood is taken out of the body to be oxygenated. Invasive ventilation is effective, but has several disadvantages, including tissue damage, muscle wastage and infection.



During Covid, significant development was put into external ventilators, spurred on by a 'Ventilator Challenge' sponsored by the government. A UK study showed that non-invasive ventilation, such as CPAP, reduced mortality from 20% to 10%, and reduced hospital stay by 3 days. As a result, CPAP was used extensively during the 'second wave' of Covid-19 from December 2020.

During this second wave, the Royal Papworth Hospital responded by forming an Acute Respiratory Care Unit (ARCU), which was created within 24 hours and accepted 20 patients within 48 hours. This unit drew staff from many areas of the Royal Papworth Hospital. Much use was made of simple CPAP plus mask therapy. This did put great demand on oxygen supplies. In answer to a question, Dr Davies explained that the limitation was not the amount of oxygen available in the bulk tanks, but the large flows which were being demanded on wards and which had to travel down the existing infrastructure of narrow pipes, designed for much smaller flows. This was addressed temporarily by moving

patients around the hospital so that all branches of the network could be used.

The Vote of Thanks was proposed by Barry Brooks, who had first-hand knowledge of some of the developments discussed, as he had been involved in the Ventilator Challenge.

John Duthie

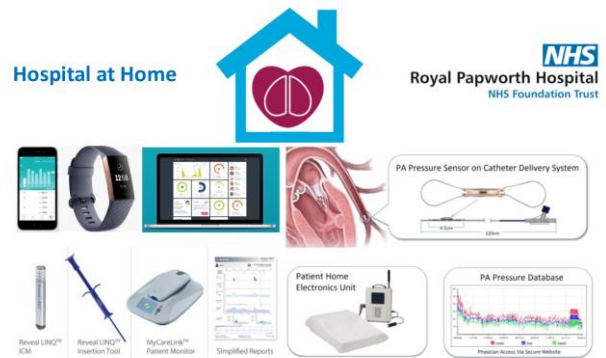
Digital data in clinical trials design-go big or go home (or go big and go home)? ~ 9th November 2021

Dr Mark Toshner, an Associate Professor in the University of Cambridge and clinician at the Royal Papworth Hospital, presented this lecture, held at the premises of the Royal College of Anaesthetists. He is in the vanguard of a new movement in the investigation of novel treatments and the operation of clinical trials.

Dr Toshner described how his interest in medical research grew out of his participation in a study of the effect of altitude on a group of 100 young doctors high in the mountains of Bolivia. He participated as a climber and as a research subject, but came back with an interest in pulmonary circulation, which he followed up by moving to Cambridge to work on molecular biology. There he found that some of his patients presented with the same symptoms he had seen at altitude. He started working on pre-clinical research but said that he then 're-booted' to deliver trials on patients.

Dr Toshner deliberately developed networks as the basis for the research project, which he set up on pulmonary hypertension, involving all the specialist centres in the UK. The project pioneered the use of remote monitoring, both to avoid the need for patients to make the trip to distant hospitals, and also to provide a continuous data stream,

rather than data points spaced at three-monthly intervals. This made it much easier to identify clearly the effects of treatment. Dr Toshner illustrated a number of measurements that could be recorded automatically at home and transmitted digitally back to the researchers. Some of these were intrusive monitors, but others were simply smart watches - a 'hospital at home'.

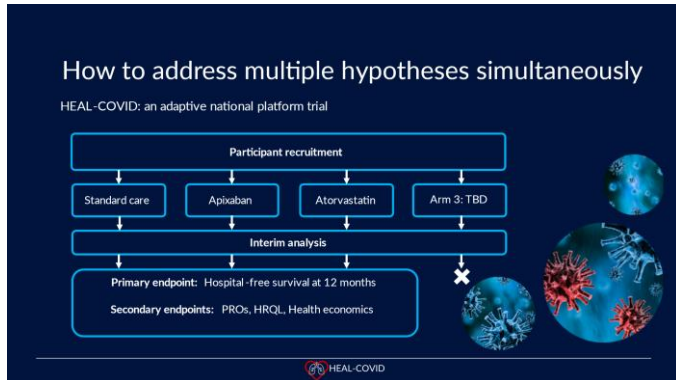


When the first COVID-19 lockdown was imposed, Dr Toshner was able to continue monitoring the data and to use it to look for the effect of the lockdown on, for example, activity levels and heart activity.

Dr Toshner's planned directions for further research were interrupted by the pandemic, and he took part in the REACT studies, to identify drugs to help treat COVID-19, and in the Oxford vaccine trials.

An aspect of the effects of COVID that is less reported than the acute effects or 'long-COVID', is the response of patients after discharge from hospital. One in three patients is re-admitted to hospital within three months of discharge, and one in ten patients dies within three months of discharge. Dr Toshner developed a research project to address this, the HEAL-COVID project, which addresses the treatment of post-COVID syndromes. Two new therapies were to be compared with the standard therapy, with provision for a third to be added later. The project exhibited three

characteristics that he had learned from his previous experience: the need for networks and collaboration, the power of adaptive design of trials and the benefit of defining



digital endpoints, i.e. result data that can be collected digitally. There was also the issue of running the project in an NHS system that was already overstretched. This was done by making it 'ruthlessly simple'. The main data collected were mortality and hospital re-admission statistics.



Centres participating in the HEAL-COVID study
Currently there are over 600 patients in the trial, in 100 centres in the UK, both specialist and general hospitals. This is a huge number of trial centres compared with previous research projects.

In response to questions, Dr Toshner said that the UK was in a unique position to run trials like this because of the organisation of the NHS and the amount of data held on NHS

Digital. He also said that many studies related to COVID could be set up quickly, because the drugs/treatments being trialled were well known and their safety characteristics understood, so data collection could focus on efficacy, rather than safety.

Dr Toshner concluded by looking forward to a new generation of later-phase clinical trials which are pragmatic and embedded in clinical practice, streamlined to minimize the burden on trial teams, and use digital and decentralised designs that are pointed at the patient and their daily life.

John Duthie



Rosemary receiving her award from Alan Titchmarsh

The life's work of Rosemary Cox in setting up the first organ donor register was honoured with a very special surprise when, met by Alan Titchmarsh in a garden where she was walking, she discovered that everyone else around her had been saved by her feat.

The 82-year-old began campaigning for a national register of donors' wishes after her 24-year-old son Peter died following a brain tumour in 1989. Because of his request for his organs to be used to help others, he saved 17

people. Vera Davison, the wife of one of them with whom she became best friends, was in the audience to see her get her award.

Rosemary humbly claimed that "anyone would have done" what she did, and said of the surprise from the Daily Mirror's gardening guru: "Alan is very charming, it was wonderful."

December Zoom Socials

Following the success of the Zoom Socials in December 2020, three online 'Pre-Christmas social gatherings with the President' were held on 14, 15 and 16 December. A total of 52 people attended (31 members) and all seemed to enjoy just the simple acts of getting together and catching up. Conversations ranged from the pretty serious to personal updates, and with (surprise, surprise) the odd bit of nonsense and associated hilarity.

Towards the end of each event, Jane Hughes lit and showed us a Christingle she had made for the occasion. Discussion of what it is, what it means to the Christian churches and how it is used and presented, brought us all new knowledge and insight, and a seasonal closure to enjoyable and important gatherings.



Here's a flavour of what else we talked about. Jane highlighted the trials at Addenbrookes for early identification of cancers. Updates on renewable energy led to discussion on whether hydrogen can ever be a suitable alternative fuel for vehicles. Andrew Graham

mentioned U3A lectures on Science Nobel Prize winners. Liz Jefferson, who works in the witness service for her local Magistrates Court, highlighted the long backlog of cases as being not just Covid-19-related but also from shortages of resources all round. David Park suggested that all members could usefully read the report on the review of governance of the RICS to learn how NOT to run a professional institution.

Short snippets on various travels, visits and personal changes included a new house for the Becks, happy memories from David & Jane's IESF trip to Stroud and its canal, and seal-watching off North Norfolk. Oh, and every day we discussed sprouts - love, hate or need to be bribed to eat them. Happy Christmas!

Roger Venables

RIP

John Porter died on 30th September, age 88. John was a Fellow of the Institute of Marine Engineering, Science & Technology (IMarEST), a Member of the Newcomen Society and a Member of the Association of International Accountants and, before retirement, a Consultant with Three Quay Marine Services (P & O Group). An IESF member since 7th November 2019.

Brian Simpson OBE died unexpectedly on 4th November, age 89. Brian was a Fellow of the Institution of Structural Engineers and the Royal Society of Arts and a Member of the Association of Consulting Engineers. Before retirement, Brian was a Partner at Husband and Co, a Past-President of the Institution of Structural Engineers and previously an IESF Council Member. An IESF member since 18th September 1979

Our thanks are due to those who have contributed to this newsletter. The editor welcomes contributions on matters that relate to the objectives of the Société. Email: paulgerrard24@gmail.com