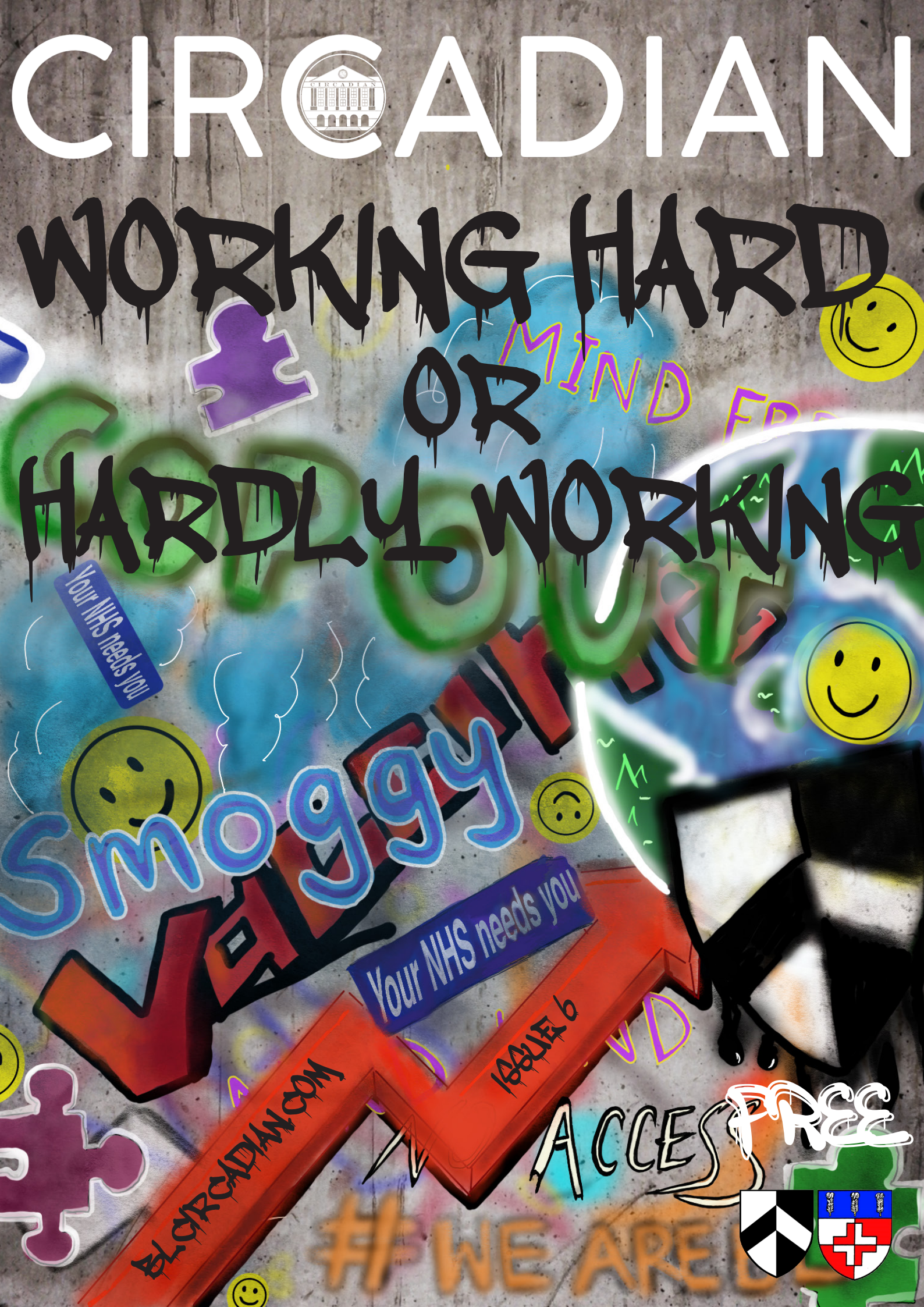
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Meet the team

SEASONS GREETINGS!

As our first term ends and we see in the new year, I'd like to spend some time on reflecting on the past year. There were the usual ups and downs that accompany university mid-Pandemic; a packed Griff during Fresher's was a sight for sore eyes, but one had to wonder how so many students could fit in a space and still consider it to be 'Covid secure'? Nevertheless, the term got off to a flying start with fantastic events from the likes of Women in Healthcare Soc, Global Health Soc and many more. The mix of online and in-person events managed to find a way to suit everyone! Even those nay-sayers who said nothing would be in-person this term were pleasantly surprised by the real-life teaching that has been offered across BL courses.

Now that progress tests, mocks and the SJT have run their course, I hope everyone can find time to relax over this festive period. I've found it helpful to stay off the news and social media for a few days when I start to feel like my recuperation period is being disrupted- the world is a pretty intimidating place right now, and sometimes distancing ourselves from that, even if just for a short time, can help us find a balance.

Merry Christmas, everyone. And a Happy New Year!

Rebecca X

The rise of Smoggy Brains

by Zainab Khan

NO2, PM10 (Coarse Particulate Matter) and PM2.5 (Fine Particulate Matter) are molecules you would expect to find in a chemistry book, but not really in the brain. Since 2016, the Greater London Authority has been keeping track of air pollution levels involving these chemicals, after research showed they contribute to respiratory issues in the population. However, it has only been within recent years that studies are now uncovering the worrisome effects these molecules have on brain function.

Within London, the limit of 40 μg m-3 for NO2 was exceeded by 10 μg m-3 in 2016. The good news is that in 2019, this dropped to 39 μg m-3. Similar trends were observed for PM10 and PM2.5. Vehicle exhausts contributed most of these emissions alongside construction sites, burning wood and large-scale cooking.

But how do these particles impact the functionality of our brains? One study demonstrated long term exposure of both fine and coarse particulate matter lead to cognitive decline. Studying 19,409 women aged 70-81 years in the US, they found that each 10μg m-3 increment of exposure to PM10 and PM2.5 was equal to 2 years of cognitive ageing.

Neurodegenerative diseases such as Alzheimer's have also been linked to elevated levels of air pollution. In Mexico City, dissected dog's brains from two regions with distinct levels of smog were compared. Dogs living in the regions of high air pollution, displayed greater brain inflammation. Such inflammation may damage the endothelial cells involved in the Blood Brain Barrier, triggering a cycle that further initiates inflammation and the deterioration of nerve cells. This can then lead to the accumulation of amyloid plaques, a significant biomarker for Alzheimer's Disease.

Pollution particles not only affect mature brains but can also start to impact child ones too. It begs the question: How could air pollution affect children living in cities such as London? Children, of a mean age of 9.7 years, participated in studies in Boston, MA. Through neurocognitive tests such as the Kaufman Brief Intelligence Test (K-BIT) and Wide Range Assessment of Memory and Learning, they were able to assess verbal and non-verbal communication and memory- visual and verbal, as well as learning skills. An association between higher levels of air pollution (black carbon; particulates) and reduced abilities in vocabulary, general and verbal memory was established.

Concerningly, memory function is not the only aspect of cognitive health hindered by air pollutants. Another consequence is poor mental health, which has been associated with fine particulate air pollution such as PM2.5. Experiments in mice have displayed significant reductions in dendritic branching and spine density in the hippocampal subregions CA1 and CA3 after exposing them to PM2.5 over 10 months. In turn, spatial memory and learning was inhibited. Depressive- like symptoms were expressed in the mice's behaviour when performing forced swim tests, where they were less inclined to immediately try to float in the water to survive. This was compared to mice administered with filtered air (FA). It may then come as no surprise that along with depressive behaviour, anxiety-like behaviours also arose. PM2.5 mice spent a lesser time of 8 minutes in the centre of a forum compared to FA mice. This suggests that the mice exposed to PM2.5 were more cautious and anxious alone in a wide area.

Through these studies discussed, it is becoming clearer that elevated levels of air pollution are significant in overall cognitive functionality. More research is required to fully understand the extent to which cognition is impacted and expanding research into the type of molecules, associated with air pollution, that may reside in the brain, would be of great import.

Although many questions remain, current knowledge highlights the importance of maintaining clean air in areas with great vehicle density. London may be on the correct track, if the reduced levels of NO2, PM10 and PM2.5 are anything to go by, potentially showing the efficacy of implementing clean air policies, such as the Ultra-Low Emission Zone, and with the world considering its impact on greenhouse emissions, this research adds yet another benefit to providing clean air.

Sources:

Mayor of London, Greater London Authority. (2020) Air pollution monitoring data in London: 2016 to 2020. London: Greater London Authority.

Weuve. J et al. (2012). Exposure to Particulate Air Pollution and Cognitive Decline in Older Women. Arch Intern Med. 172(3). pp 219–227. DOI:10.1001/archinternmed.2011.683

Lillian Calderon - Garciduenas, Biago, Azzarelli, Hilda Acuna, Raquel Garcia, Todd M. Gambling, Norma Osnaya, Sylvia Monroy, Maria del Rosario Tizapantzi, Johnny L. Carson, Anna Villarrenai-Calderon, and Barry Rewcastles. (2002). Air Pollution and Brain Damage. Toxicology Pathology. 30. (3). pp 373–389. DOI: 10.1080/01926230252929954

S. Franco Suglia, A. Gryparis, R. O. Wright, J. Schwartz, R. J. Wright. (2008). Association of Black Carbon with Cognition among Children in a Prospective Birth Cohort Study. American Journal of Epidemiology. 167 (3). Pp 280-286. DOI:10.1093/aje/kwm308

Fonken, L., Xu, X., Weil, Z. et al. (2011). Air pollution impairs cognition, provokes depressive-like behaviors and alters hippocampal cytokine expression and morphology. Mol Psychiatry. 16. Pp 987–995 DOI: 10.1038/mp.2011.76

I just spent 9 weeks of my summer doing a research internship.

Here's why you should too.

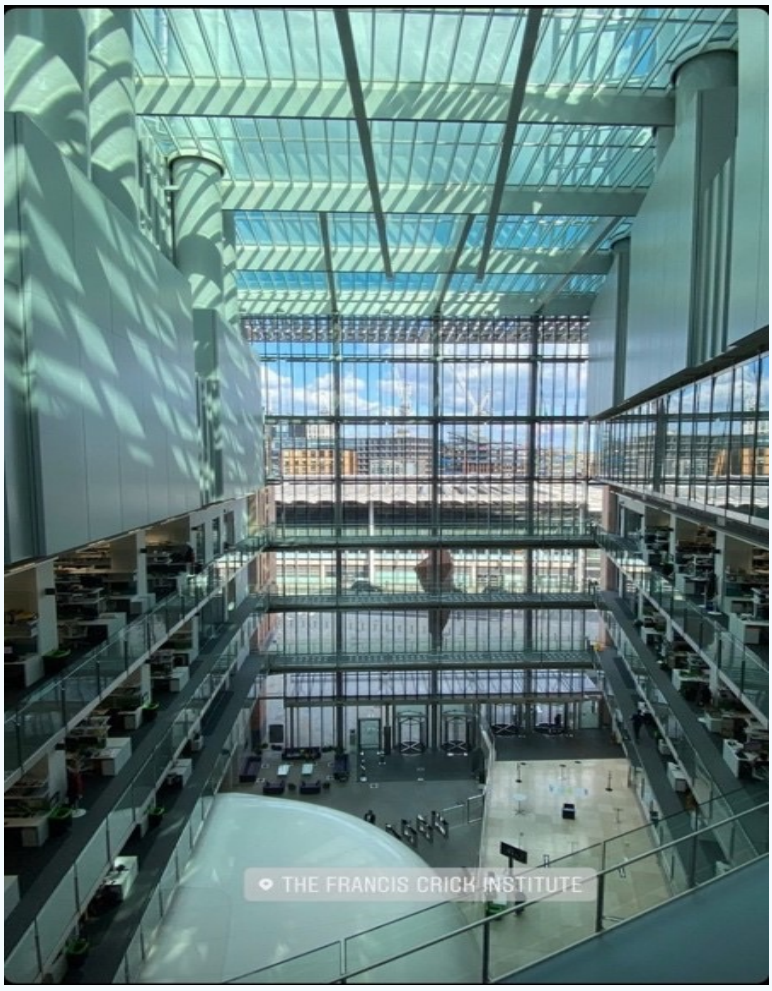
By Maria Riscado-Ramos
Neuroscience Editor

As the journey into my BSc progressed, trying out the practical aspect of working in a lab to gain a holistic viewpoint of Neuroscience became increasingly crucial. Luckily, as a second year Neuroscience student, there was no shortage of programmes to help me achieve exactly what I needed.

After 2 months, or rather what seemed like an eternity, I got into The Crick-Calleva Summer Student programme. Under the supervision of Dr. Andrea Adden, and as a member of the Prieto-Godino lab, I worked in developing and optimising behavioural assays to determine the response of tsetse flies to larviposition pheromones. This presented a fantastic opportunity to conduct research within Neuroethology, a fascinating field that is unfortunately not covered in the BSc curriculum.

This specific project is part of an international collaboration as a matter of global health and economic development. As a hematophagous species, tsetse flies feed on vertebrate blood, carrying with them the ability to spread diseases such as Nagana in livestock (also known as sleeping sickness when presented in humans). These not-so-little flies are a hindrance to the development of sub-Saharan communities that depend on agriculture. Should we be able to develop efficient traps based on their olfactory pathways, economic prosperity and hopeful eradication of a disease could take place.

Thus, so began this intense 9-week journey. I believe the most satisfying thing I got out of the internship was experiencing the progress in my learning and ability curve first-hand. Carrying out and being responsible for my own project means I am now able to discern the most important parts of experiment



design. I am also able to appreciate the importance of thorough step-planning when performing tasks in the lab whilst alternatively leaving room for flexibility.

This summer gave me the opportunity to see how I, fit in a highly demanding environment. Unexpectedly, research is incredibly taxing, but I was shocked to experience how draining 8-hour laboratory work was, even on the days

where the tasks were repetitive. It can leave you extremely frustrated, feeling like an entire week's worth of work doesn't yield the proportional number of results. I quickly learned that motivation can easily be lost, as perpetually going into uncharted territory can lead to many brick walls.

Maintaining perspective whilst obtaining results is also highly crucial, as unexpected outcomes, often confirming your null hypothesis, can leave you feeling helpless. After 7 weeks of optimisation and protocol writeups, results showed that my designed environment didn't favour larviposition pheromone attraction, thus rendering my assay inadequate as a method. At this stage, the importance of teamwork shone through, as the discussion following my 2-hour lab presentation brought up very plausible reasons explaining the lack of success. The additional lesson embedded in obtaining inconclusive results was finding out

that this is not always a negative thing. Going from replicating meticulously designed experiments to familiarise myself with different techniques in my degree, to putting extensive effort and obtaining inconclusive answers in my internship was quite the shock. Nevertheless, all this determination later served to come up with promising designs that would be executed beyond my internship's timeline.

Something I didn't expect to be reminded of was the importance of giving yourself credit. Yes, my results didn't support my hypothesis, nor were they significant, but I had completed 122 assays in total which meant having tested over 322 flies in 7 weeks. Quantifying your determination and discipline can help in recuperating that fragile aforementioned motivation.

I couldn't finish without mentioning the immense luck I feel to have had the opportunity to complete an internship in an institution such as The Crick. The thorough selection process is justified by the importance given to finding a candidate that will fit well into the lab group and its dynamic. Upon my arrival, I was quickly embraced by an amazingly supportive and enthusiastic group, who made integration and discussion incredibly easy.

The Crick-Calleva Summer Student programme is designed to provide a comprehensive experience of the academic world and the skills required to broaden your toolset as an aspiring scientist. The programme included workshops in presentation techniques and PowerPoint. And yes, I too was surprised to learn how much I didn't know about the famous go-to presentation tool! Additionally, a PhD workshop was planned where we had the opportunity to talk to different cohorts of students about their experience and their application tips. This programme is a fantastic way to spend your summer and dive headfirst into your introduction to research, and I wholeheartedly urge you to apply in the hopes that you'll be able to learn and enjoy yourself as much as I did! Applications for the 2022 programme open in early January, so if you happen to be a 2nd year BSc student interested in contributing to fascinating research in an incredible institution, make sure to check out The Crick's website!

What can we learn from COVID-19 to tackle climate change?

By Rachel Lee
Global Health Editor

Image by Rebecca Walker

Covid-19 has dramatically upheaved much of the world as we know it. Nations around the world united to fight the pandemic through lockdowns and vaccinations. From mask wearing and hand sanitisers to working from home and Zoom, the virus has redefined our lives in ways that will remain long after the pandemic subsides.

In just two years, it is shocking to see both how much the world can change and yet how much that remains the same. Many countries are now beginning to open themselves up again both domestically and internationally. Unfortunately, at the same time, the climate change crisis fell to the background, overshadowed by the urgent severity of Covid-19 peaks. In November, world leaders finally met in Glasgow for the annual UN climate change conference, COP26, after being postponed by over a year due to the Covid-19 pandemic. Over 100 business leaders, climate activists, and world lawmakers met to accelerate climate action and establish or renew targets that urgently tackle the climate crisis.

As the COP26 comes to a close, the media spotlight on different nations' plans to tackle climate change will gradually fade. But the pressing issues that climate change has brought forward will not. As countries begin to open their economies and borders again, the path we choose as we recover from Covid-19 will have great implications on how climate change affects the generations to come. We need to act urgently with both individual and international interventions to truly tackle climate change before it's too late.

How Covid-19 affected climate change

During the Covid-19 pandemic, countries closed their borders, employees and students began to work and learn from home, and much air travel and industrial production came to a halt. As a result, greenhouse gas emissions

worldwide decreased by 5.4% in 2020. In the United States, carbon emissions decreased by nearly 13% due to decreases in vehicle transportation following lockdowns1. Globally, the aviation sector saw emissions levels drop by 48% compared to their 2019 totals1. Lockdowns gave rise to clearer skies and cleaner air in areas once plagued by pollution, from industrial northern Italy to New Delhi2. For just a moment, the climate change outlook appeared more hopeful as skies cleared and pollution decreased.

In anticipation of COP26, the editors of over 200 medical journals published a joint statement titled 'Call for Emergency Action to Limit Global Temperature Increases, Restore Biodiversity, and Protect Health" declaring climate change as the "greatest threat to global public health". The statement, which calls on world leaders to take urgent action, highlights the need for fundamental changes in all levels of life. According to the World Meteorological Organization (WMO), the reduction in emissions in 2020 had little effect on the overall concentration of greenhouse gases, and the little progress that was made last year is at risk of being eclipsed as the world returns to 'normal'3. We are slowly learning how to live with the virus, and for many nations, the worst has likely passed. However, while the severity of the Covid-19 pandemic is gradually improving, little has changed in the prognosis of our climate change crisis.

Image by Unsplash

The path to recovery

As we emerge from the Covid-19 pandemic, our approach to tackling the virus offers insights into how we could approach climate change in the near future.

Firstly, much like our response to Covid-19, the climate crisis demands urgent action. A recent report by the WHO states the coming few years are a "crucial window" for climate change. While the drop in carbon emissions during Covid-19 represents a promising first step in the path towards climate recovery, it is not enough to sit back and assume that things will fix themselves. To truly limit global temperature increases to 1.5 , as was first targeted in the Paris Agreement4, the ambitious promises reestablished in Glasgow must be truly met by all nations.

Secondly, climate change cannot be properly addressed without international cooperation. Nations must continue to work together using science-backed approaches. While Covid-19 required countries to erect barriers and close themselves off to other nations, climate change, which has already spread to every part of the planet, demands the exact opposite. Conferences like COP26, as well as smaller initiatives within groups of countries - such as the EU Emissions Trading Scheme and European Green Deal - can help promote teamwork, share costs, and split the workload between countries.

Lastly, higher-income nations have a moral responsibility to lead the way. G20 nations account for almost 80% of global carbon dioxide emissions, and yet it is often the less wealthy nations that are disproportionately harmed by climate change5. Not only should higher-income nations pave the way towards zero-carbon development, but they also need to provide financial and expert support to more economically and environmentally vulnerable nations. Just as world leaders and governments tackled Covid-19 by offering economic boosts, pouring money into vaccine development, and providing stimulus cheques to individuals, so too does the climate crisis necessitate generous funding and resources to support those who need it most and minimise the further harm that climate change could cause on the world.

We can't stop now.

In the UK, 40% of CO2 emissions are caused by individuals, mostly from energy used in the home, driving and air travel6. Although it might not feel like it, that means that you and I play a large role in the fight against climate change. From the carbon footprint of your choices in food and clothes to the environmental stances of the politicians you vote for, every individual has an impact in the fight against climate change. The combined effect of everyone's individual efforts can set in motion the momentum needed to tackle the climate crisis. Furthermore, the rise of virtual conferences and telehealth following Covid-19 could remain important long-term strategies to reducing travel emissions even after countries recover from the virus.

The Covid-19 pandemic has highlighted not only the importance of humanity, hope, and teamwork, but also the pain and inequalities around the world. Just as we mobilised a rapid response to the pandemic, so too do we need a rapid response to the climate crisis. We need to work together as part of a global community to tackle climate change. We need Covid-19 recovery plans that put climate change at the heart of its goals. Through cooperation, ambitious targets, and rapid action, we can still prevent the suffering and inequalities that climate change will otherwise bring on. So, what changes will you make as part of Team Planet Earth? The clock is ticking.

References

1. Liu, Zhu et al. "Near-real-time monitoring of global CO2 emissions reveals the effects of the COVID-19 pandemic." Nature communications vol. 11,1 5172. 14 Oct. 2020, doi:10.1038/s41467-020-18922-7
2. Newburger, Emma, and Adam Jeffrey. "Photos show impact of temporary air pollution drops across the world from coronavirus lockdown." CNBC, 23 April 2020, https://www.cnbc.com/2020/04/23/coronavirus-photos-show-effect-of-air-pollution-drops-from-global-lockdown.html. Accessed 16 November 2021.
3. World Meteorological Organization. "State of the Global Climate 2020." vol. WMO- No. 1264, 2021. Accessed 16 November 2021.
4. Evans, Simon, et al. "COP26: Key outcomes agreed at the UN climate talks in Glasgow." Carbon Brief, 15 November 2021, https://www.carbonbrief.org/cop26-key-outcomes-agreed-at-the-un-climate-talks-in-glasgow. Accessed 16 November 2021.
5. Schmid, Helga Maria. "To build back better, international cooperation on climate change is needed." EURACTIV.com, 23 September 2020, https://www.euractiv.com/section/climate-environment/opinion/to-build-back-better-international-cooperation-on-climate-change-is-needed/. Accessed 16 November 2021.
6. City of Bradford Metropolitan District Council. "What is climate change and how will it affect the UK?" Bradford Council, https://www.bradford.gov.uk/environment/climate-change/what-is-climate-change-and-how-will-it-affect-the-uk/. Accessed 16 November 2021.

Vaccine hesitancy...?

By William Wang, Medicine Editor

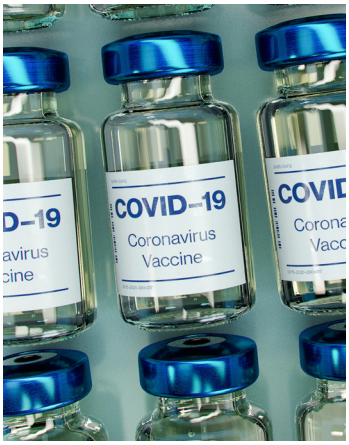
The Covid-19 vaccine has been one of the most frequently discussed topics in medical news across the world. The UK, with the introduction of Pfizer and the AstraZeneca vaccine, has reduced hospitalisation and death rate significantly. The public, however, did express their concerns regarding this newly developed silver bullet. In this article the various reasons for vaccine hesitancies will be discussed together with the decision of introducing vaccines to the younger aged children.

Regardless of all the reassuring numbers from numerous studies proving the efficacy of vaccines – the fact that the vaccine was approved and rolled out within a year since development has both its benefits and doubts. According to an October 2020 study in Nature Medicine, out of all the respondents of the survey, only 71.5% of them would consider taking the vaccine and 61.4% would take it if their employer recommended it. The hesitancy is relatable considering the autism controversy which stemmed from the rapid development of the mumps vaccine, 4 years from development to approval, compared to existing vaccines.

Another important factor contributing to vaccine hesitancy is the unscientific conspiracies spreading across all the major social media platforms, for example Twitter and Facebook. One of the theories claimed that the vaccine will implant microchips into people. Social media platforms can be a dangerous place to spread these theories as many people do not possess the skill to critically analyse the information presented so they may truly believe these theories, despite having zero scientific evidence to support it.

The AstraZeneca vaccine was one of the earliest rolled out vaccines in the UK, primarily targeting the elderly, immunodeficient and frontline healthcare workers. Unlike the common complications from a variety of vaccines - muscle pain, headache and temperature, some serious and potentially lethal complications were reported – blood clots and unusual bleeding. Although official reports claim that only over 10 people have developed these complications per million dose of AZ vaccine administered, this inevitably has planted the seed of uncertainty in the public's mind. Nobody wishes to be the unlucky few getting this life-threatening complication from the vaccine.

One of the more recent reasons for the hesitancy is the introduction of the booster jab. The UK has introduced the concept of a booster jab which can be picked up by adults 6 months after the second jab. With it already being a very new scientific development, the fact that they are suddenly introducing the need for a booster further raises concerns over the efficacy of the vaccine.

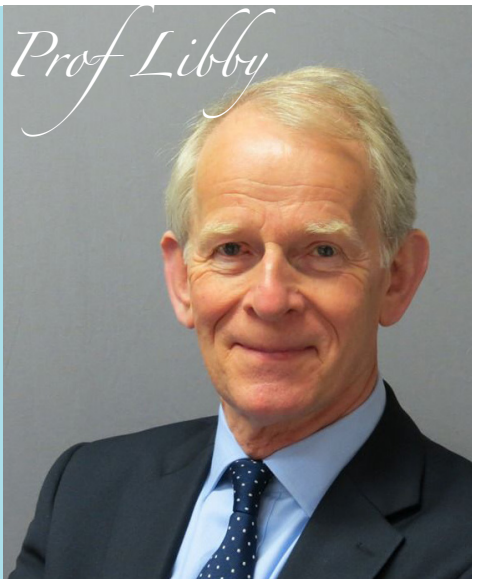


I am proud to be President of BATLAA as a dynamic alumni association with substantial benevolent funds accumulated, guarded and treasured for many years by Trustees from the Dental and Medical Schools. These are for the benefit of students and alumni in need.

There is much more to BATLAA than these benevolences, as together with BLSA we also treasure and guard our name as the Heritage of our two hospitals and Medical Schools.

Back in the '60s when I was at "Barts" we valued the "Purple" of UL and shared that with "The London" as it represented the university and academic side of things. Our spiritual heritage arose from our hospitals in Whitechapel and Smithfield - how proud we were of our histories. We have passed our 25th (silver) anniversary of joining with Queen Mary and we are proud of this relationship.

This remains the position now and our very name speaks to this.



Trying to be an ethical charity

One of the primary aims of BATLAA – Barts and The London Alumni Association – is to support current and former students in financial difficulty. BATLAA does this using money it receives from bequests and donations, but it turns out that this beneficent activity has potential moral pitfalls.

Over many years, a fair-sized sum has accumulated through generous donations to BATLAA and our predecessors at the London Hospital Medical College and Barts Medical College. A recent large bequest, for example, was a legacy from Dr Richard Callandar Hudson. Like most such bequests, it was specifically dedicated to helping current and former students who are in need.

We also have a much smaller pile of money, raised through alumni events, which we use to support BLSA student activities.

The Trustees of BATLAA are responsible for looking after all this money so it can help as many people as possible now and in the future. The Trustees have invested it in a low-risk way that provides steady income that we then give as grants to students and others, mainly through the School of Medicine and Dentistry.

Of course, we aim to invest in an ethical fashion that matches our values as healthcare professionals. For some years the money has been managed in a fund called CMAF (Charities Multi-Asset Fund). This consists of a package of low-risk investments that together generate modest but reliable levels of income for charities.

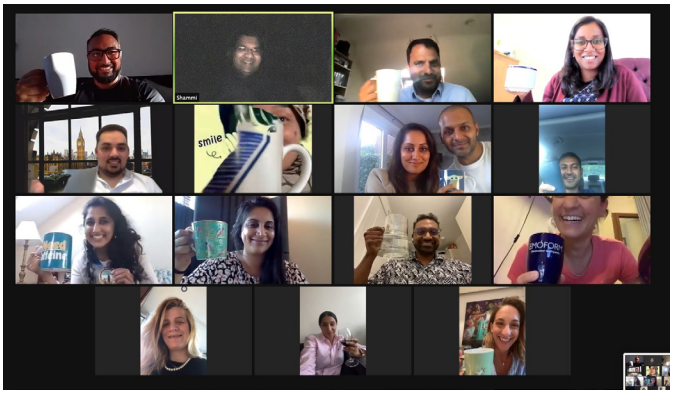
When we enquired in late 2019, we discovered that some investments within the CMAF portfolio were in "areas of charity concern" – alcohol and tobacco, gambling, arms manufacture, predatory lending, fossil fuels and so on. Not large investments, but not zero either – something like 3-4% of the total money in the fund.

This troubled us but luckily an answer then presented itself: RMAF, a new fund that is closely managed to eliminate all these concerns – the R stands for "Responsible". Perhaps surprisingly, we don't have to choose between our values and our income either – RMAF generates pretty much the same level of return as CMAF does, so we can provide the same level of support to students and alumni, but without ethical concerns.

It seemed an obvious move, so we made this switch to RMAF this year. We hope that people receiving or supporting BATLAA's financial aid can feel assured about how that money is managed, now and in the future.

Dr Tom Dolphin, BATLAA vice-president

If you are a BL student in severe financial need, you can approach Kate McFarlane in the Student Office at the School - k.mcfarlane@qmul.ac.uk for advice about the support that is available from BATLAA and other sources.



BDS Class of 2006 celebrates 15th graduation anniversary with virtual reunion

Our first virtual alumni reunion took place on Wednesday 7 July, celebrating the 15th graduation anniversary of the BDS Dentistry Class of 2006. This informal catch-up was held over Zoom and organised by year group representatives Dr Asma Qureshi and Dr Froso Georgeou-Philippides. Former classmates joined from across the globe and were encouraged to bring their favourite mugs for a 'mug shot' [pictured]. For more information about how the Alumni Engagement team can support bespoke reunions, both physical and online, please email batlaa@qmul.ac.uk.

Consultant Pathologist, Academic, Educator and Communicator

It is now two years since Paola's sad death, but we believe that alumni will wish to remember an outstanding colleague. Paola was a person with a huge range of talents and she used them to the full in medical practice, academic life and administration. She was an important figure in the Trust and School, but her influence was national.

Barts Health NHS Trust

Paola was a paediatric histopathologist with a special interest in inflammatory bowel disease but she made her name as an educator and the academic title, Professor of Pathology Education, fitted her perfectly.

Barts and The London School of Medicine and Dentistry (SMD)

After her appointment as a consultant, Paola soon used her skills to provide educational opportunities in pathology, at a time when the subject was disappearing from formal recognition in the medical curriculum. She was also a Senior Tutor for the SMD and this was an important role to which she made a most effective and enthusiastic contribution to student support and guidance in the newly formed SMD within Queen Mary University of London. She understood that management of academic difficulties and personal problems in student life often cannot be separated and supported her students with great commitment, tact and wisdom. She was adored by all her students and they loved her for what she gave to them.

Curator of the Museums

Paola was appointed Curator of the historic Pathology Museums at Barts and The London in 2009, managing the 4000 or so specimens which had been rather neglected as medical practice and teaching methods changed over the years. Paola was also a keen advocate of our emerging Public Engagement strategy.

Steve Moore, Manager of the Museum writes:

"Paola fully shared our enthusiasm to restore the collection and open-up the Museum to the public, whenever this was possible. She gave us excellent advice in the field of public engagement through her experience at the Royal College of Pathologists. Later she had to take time off from work due to her illness, but she kept in touch and we frequently visited her at her home to keep her updated. She reminded us at one visit that she would often sit alone in the museum after work and just soak up the atmosphere.

Paola was a very determined person, and this determination not only kept her going through illness but inspired us to pursue many diverse activities. Her enthusiasm and desire to see a future for the collection reminded us all never to give up and to keep trying, even in the face of the most serious illness."

Royal College of Pathologists

Professor Adrian Newland - Past President RCPath writes:

"Paola served as Assistant Registrar and then Registrar from 2001 to 2009 and was appointed as the College's first Director of Public Engagement from 2011.

She was the perfect representative for the profession as an outstanding administrator and, in the field of public engagement, she became fully involved with the media, explaining what pathologists actually do to provide a scientific basis for medical practice. She was very organised in her administrative roles, supporting Council and the business of the College with a steely grip behind an enchanting smile. A born communicator she was always keen to share her passion for pathology with the public, but also with members of the College; a passion that was probably equal to that she held for her beloved Chelsea Football Club. As Director for Public Engagement she helped develop National Pathology Week and oversaw the introduction of the Public Engagement Innovation Grant Scheme to provide financial support for pathology-related public engagement activities. She was very proud of the increasing importance of public engagement at the College and was an enthusiastic contributor to public talks and activities. She did not need encouragement to become involved with the College's Lay Advisory Committee and was very involved with making sure that their views were heard and became central to the work of the College".

Professor Paola Domizio (1960 -2018)

Personal Life in the final 10 years

Sasha and Aron were born just as Paola became aware of the illness that eventually led to her death in 2018. The boys have become a wonderful credit to her and to their father Michael and they played an active part in her memorial service held at St. Peter's Italian Church in the City.

Paola Domizio was a fine pathologist, teacher, communicator, administrator and friend and we were privileged to have known and worked with her.

Professor Brian Colvin

Dean for Student Affairs at the School of Medicine and Dentistry (1998-2008)

Vice President Barts and The London Alumni Association

Director of Development Barts Pathology Museum

History of the NHS and you

By Dr Geoffrey Rivett

Dr. Geoffrey Rivett is a renowned NHS historian that has dedicated decades to healthcare. He has worked as a theatre orderly, GP and medical civil servant and is something of an expert about the complex organisation of the NHS, having written two books on the subject. Here, Dr. Rivett imparts some wisdom on what we, as students, can learn from the history of the NHS.

My first job in the service was in 1951, as a ward and then a theatre orderly. Years later, my patients benefited from the skills I acquired while the anaesthetist left the operating theatre to place bets on horses.

Living in the Barbican, I frequented both St. Bartholomews and The Royal London hospitals. I can even claim some insider knowledge of St. Bartholomews, which in fact turned me down as a medical student. I also frequented UCLH, where I did my clinical training after studying preclinical medicine at Oxford. When working at the Department of Health (1972-1992), I came to know the London hospital scene well, writing histories of the London Hospital System[1] over two centuries and of the NHS since 1948[2].

Image by Harris Nageswaran

But what can you, entering the profession some 70 years after me, take away from its history? I would like to suggest four things:

First, the NHS was over a century in gestation, and no one political party can claim ownership

After the First World War (1914-1918), a senior physician at The London, Sir Bertrand (later Lord) Dawson, wrote a report for the Government suggesting something very like the ultimate NHS - his ideas were turned down as there was no money at the time. Between the two World Wars, almost everyone – including the medical profession – saw the need for at least a hospital service. At the beginning of the Second World War, an emergency form of this service was established to serve the population and the military when Hitler invaded Poland, and the devastation of London was predicted. This emergency service was never abolished and eventually morphed into the NHS.

Second, Nye Bevan writings deserve to be re-read.

He welcomed health services research and foresaw that advances in medicine were continuous, and the service would always be catching up with new problems. It would never be perfect, even if it were continually improving. in his book 'In Place of Fear,' he said that the victories won by preventive medicine were much the most important for mankind. He had a special concern for the mental health services and had "a warm spot for the general practitioner despite his tempestuousness."

Third, the establishment of the NHS added not a single doctor, nurse, or hospital to what existed previously.

No hospital in London had escaped bomb damage.

It was decades before the country recovered from the economic damage from the war, and the vast maldistribution between cities with halfway decent services, and the North and the Shire counties, began to be remedied. It also took time before a halting start was made to increase the numbers of trained staff. Major changes were led by one of our less popular politicians and Ministers of Health, Enoch Powell, who's political legacy has gone on to be dominated by his infamous 'Rivers of Blood' speech.

Powell was responsible for the first plan to rebuild our ageing and battered hospitals, and if that was not enough, it was he who insisted on the elimination of our lunatic asylums and the establishment of the modern community-based mental health service. You have never seen, as I have, the horrors of the provision we once made for the mentally ill and elderly who were warehoused en masse till they died. Perhaps one should not judge someone by a single episode; which of us would like to be judged by our worst episodes?

Fourth, healthcare is a team game

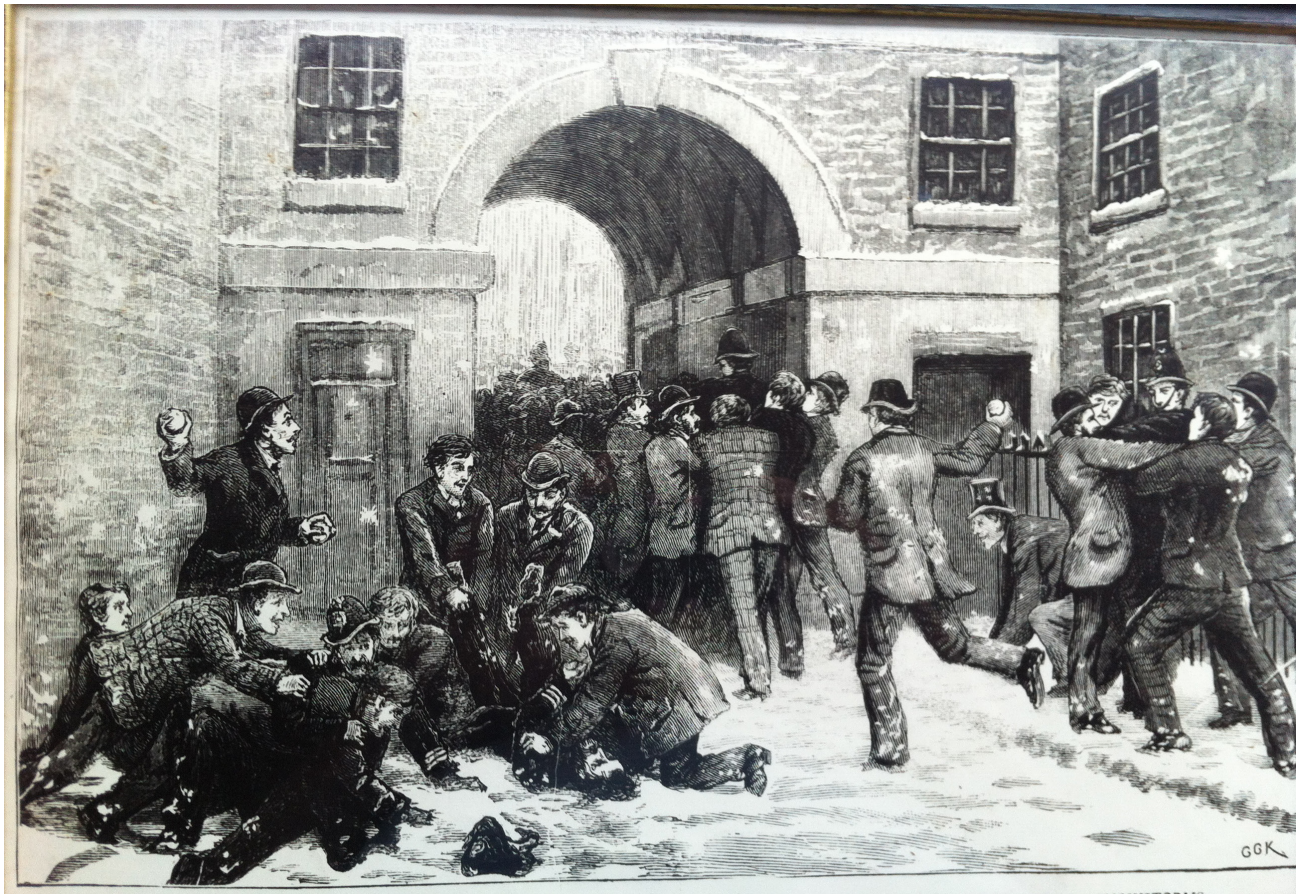
The day of the all-knowing physician and the all-competent surgeon ended a century ago. The cancer patient needs a surgeon, a radiotherapist, an oncologist and increasingly a geneticist. Primary care is as much about nurses and paramedics as it is about family doctors.

So, how might the NHS change in the future? It is a cliché to refer to the interdependence of social and health care. Health promotion is great, but it is a recipe for ever-increasing expenditure as we cure diseases that killed cheaply and prolong lives with costly multiple disabilities - ending in an expensive death.

At 88 years of age, I am uncommon in that I am on no medication and have sound joints – largely unused because when I feel a need for exercise, I lie down in a dark room and it soon passes. Perhaps the next public health advance will be eliminating sport, which would prevent some cases of dementia and decimate our orthopaedic departments?

None of us get out of here alive, and it is likely we will all need a hospital sooner or later. That being said, the steady growth of specialisation over the last century will likely continue and, with it, the need for the networking of hospitals and specialists will influence our organisation. COVID has dominated the last two years, and a Public Health physician friend who told me she did "not see her mission as sweeping cholera from the streets of Bloomsbury" got it wrong. A series of diseases moving between animals and humans - BSE, HIV, and COVID - has re-established the importance of traditional Public Health. Our knowledge of the variations in survival, whether between wards with differing levels of nurse staffing or between communities that reflect Tudor Hart's Inverse Care Law and Michael Marmot's work, will influence the shape of the health service you are entering.

Every part of the country has its own specific



THE POLICE AND THE STUDENTS OF ST. BARTHOLOMEW'S HOSPITAL: A FRACAS DURING THE RECENT SNOWSTORMS.

healthcare issues. Before the NHS started, London had a legacy of problems as the capital seemed to attract many groups with major health care needs. For some, it was the last resort; those affected by tuberculosis, homelessness, alcohol and abuse problems came in waves to London. It trained perhaps half of the country's doctors, and many were encouraged to look down on primary care. Indeed the presence of a major hospital with its Receiving Room militated against family practice, for in the days before the NHS the services provided to the indigent poor were a major feature of financial appeals for charitable giving. Many people preferred the free care of the hospitals to the GPs, who might have to be paid.

The health care system in East London reflects, in a microcosm, many of the problems of the country's health care system. Poorly accommodated General Practitioners working alone without support; a multitude of hospitals well past their sell-by date; sometimes an unhealthy dismissal of rival institutions, summed up by such comments as 'you can tell a St Swithin's Hospital man, but not much.'

You are heirs to much hard work that has turned a high quantity but low-quality service into what it is today. Much blood was spilled in the closure of small and ill-equipped units; five or more made way for the Newham Hospital and the Homerton, where for six years I was lead governor. Now, much effort goes into the networking of general practice with hospitals, and hospitals in networks with each other.

In 1900, the great physician Sir William Osler pitied the new graduates of his day. He felt they would not experience his joy in the advances in his lifetime of anaesthesia, aseptic surgery and a few effective drugs. In mine, I have seen the appearance of drugs for cancer, heart surgery, joint replacement, and transplantation. When you retire, I believe you too will look back with amazement at the crudity of medicine today.

Image by Unsplash

KEEP CALM AND CARRY ON

'Every Mind Matters' reads the mental well-being awareness campaign launched by Public Health England in response to the COVID-19 pandemic, an effort to encourage the country to take better care of their mental health and mitigate stress and anxiety caused by the state of uncertainty we are seem to be suspended in. The campaign is centred around an interactive quiz that provides quick tips and tricks regarding self-care during these unprecedented times. And indeed, in a pinch, it must be said that countless people stand to benefit from a spotlight being placed on mental well-being.

In direct contrast, as the ongoing pandemic takes its toll, it is becoming increasingly apparent how challenging it can be for most people to access more traditional avenues for psychiatric care – beginning with how difficult it can be to get an audience with a GP in the first place, considering the COVID-19-related restrictions on in-person appointments that were in place until recently, and continue to persist even now. Considering the increased strain on most GP surgeries since the start of the pandemic, it has become increasingly common for one to get stuck in a telephone queue for veritable ages or attempt to book an appointment only for the earliest date available to be a full week away.

Let us assume that you've gotten an appointment with your GP and spoken with them about your struggles with whatever mental health concerns you have – which could potentially range from illnesses such as anxiety disorders and depression, to neurodevelopmental issues like OCD, ADHD, autism spectrum disorder, etc. Perhaps they have you fill out a few standard diagnostic forms to solidify the potential diagnosis. What happens next? Typically, you'd be referred upon request to an organisation such as your local community mental health team wherein a psychologist will have a closer look at your case. It is also worth noting that at this stage, you have not gotten an official diagnosis yet.

So, what now? If you meet the NHS criteria for diagnosis, you would be referred to a consultant psychiatrist who can officially issue a diagnosis and move forward with coaching and treatment options. But herein we hit a snag: getting to this stage in an immense challenge in and of itself. NHS waiting times are notoriously long in most cases, let alone psychiatric healthcare. According to the Royal College of Psychiatrists close to two thirds of patients were left waiting for over four weeks between their initial and second appointment, while one in four patients often wait over three months, with one-in-nine patients waiting over six months.

"Respondents living with severe mental illness - including eating disorders, bipolar disorder and PTSD - were left waiting up to two years for treatment. Others were left waiting up to four years for treatment for depression, anxiety and suicidal thoughts," purports the Royal College of Psychiatrists citing a Savanta ComRes poll of 513 British adults.

These numbers are a stark contrast to the 18-week maximum waiting time for referrals that the NHS stated to be their goal back in the early 2000s. Under new plans proposed in July of this year, aims to attempt to close this waiting time gap by proposing that patients who require urgent care or treatment are seen within 24 hours by their community mental health crisis teams, with the most urgent cases to be seen within four hours.

However, the fact of the matter remains that the official waiting list for mental health patients in the country is currently 1.6 million – additionally, it is estimated that over 8 million people in England are currently unable to get access to psychiatric care because

their condition is deemed to not be "unwell enough", according to Saffron Cordery, deputy chief executive of NHS Providers. These are 8 million people whose mental state is at risk of worsening severely until they are able to receive the treatment that they require – this includes people who are at the point of self-harm or psychosis, as well as people who are in relatively vulnerable circumstances, such as pregnancy or poverty.

At the moment, the most effective way of bypassing these waiting lists seems to be private psychiatric care – however this option is far from realistic for most, as prices for consultations range from hundreds to thousands of pounds per session, not accounting for the price of medication. This leaves a substantial number of people at mercy of the NHS psychiatric care pathway, waiting for the light at the end of the tunnel, as the goalpost seems to move further away.

As the pandemic continues to persist, it is safe to assume that it is going to take a significant amount of time to put a dent in this treatment gap – the NHS Long Term Plans aims to invent a minimum of £2.3 billion over the next two years, which may have a positive impact on the efficiency of NHS mental health services. For the time being, most mental health patients have not got much of a choice but to plod through and wait it out.

By Anushika Dubey

Image by Unsplash

In Interview with Zain Sikafi

By Rebecca Walker

Zain Sikafi is a jack of many trades. He completed his medical degree at Imperial with a BSc in Business Studies. He went on to get an MSc in Public Health with the London School of Hygiene and Tropical Medicine. He eventually went on to specialise in general practise, where he established his first start-up during his training. Since then, he had been at the forefront of two more start-ups and since 2017 he has been the CEO and co-founder of mental health provider Mynurva. Mynurva is a telemedicine platform that aims to provide fast access to confidential therapists. I sat down with Zain to chat about mental health at medical school -and beyond- and what lead him towards being an entrepreneur.

Rebecca: Even before the pandemic, when everything moved online anyway, Mynurva was set up as a telemedicine platform for mental health. What was happening at that time that made you want to set up Mynurva?

Zain: At that point, I was really making a very large effort to keep up my general practise. I finished my GP training in 2015, and before that I'd done a bit of public health for 2 years. I launched my first start up during my GP training, and so in terms of how things started around 2017 I was still doing clinics here and there to keep up my training. The waiting times were six to nine months for primary mental health care. When anyone goes to their GP, because you can't access anything unless you go to your GP first, their GP will refer them or give them a self-referral note for IAPT (Improving Access to Psychological Therapies). I thought six to nine months was a ridiculous waiting time, and that was pre Covid! So, I thought about this and I was already familiar with telemedicine like technology; Rachel, cofounder and CTO, owns and runs a web development company. We put our heads together and designed a very simple website to test if our idea would work. All this website had on it was a pink button on it that said 'Book to see UK trained therapist now'. It was mobile friendly, so you clicked on the pink button through on your phone, it would telephone straight to us and we would book you in with a therapist. In about 2 or 3 weeks we built a very simple straight forward live video platform that allowed people to book really quickly. And that was how it started.

R: Mental health is a pretty hot topic at the moment, and I think a lot of students in particular are struggling. What do you think good mental health looks like at medical school? I think we're pretty notorious for not being great at it!

Z: Such a tough question! For me, university was a really transformational experience. Everyone could get involved in anything, whatever they wanted to do and it really allowed me that space to breathe. But that mentality existed, and still does, where you're expected to be a certain thing. There are strict standards that are in place and have been around for so long and even though there were people that clearly were struggling those standards were unwavering. For me, the strong camaraderie with my friends really helped me. I was able to take things seriously, but also be quite laid back with the challenges.

I think a big problem with that mentality is that is starts at medical school but gets even worse in post grad training. The team you're working with- the consultant, the nurses- always have the patient as their number one priority (and so they should). But there's a task list that needs to be done, and if it's not done then someone gets the blame. And if you're the F1, that's you. And the relationships that you maybe relied on in medical school are really put to the test. You could end up in one part of the country, and your friends are in the other. Those relationships that are powerful and keep you going are taken away and you're having the hardest time of your life. It's not easy being a doctor! It's fantastically fulfilling and rewarding, but there's a massive gap in wellbeing that needs to be addressed.

I don't think people appreciate how tough and challenging medical school can be. You're surrounded by the brightest and nicest people you've ever met and you're all doing endless exams that measure you up against one another. People are culled every year, even four years into a degree, after failing exams and they walk away with nothing to

show for years of study and hard work. We need to be putting more work into supporting people, and I'm not talking about people simply having a problem and 'not cutting it'. I'm talking about rehabilitation, the same that you would expect with any physical injury. And in terms of medical students being able to access mental health support, I think we could do more to address the obstacles they face. Anything could be going on in their life – break ups, addictions or missing family that is miles and miles away – and you can't just expect a medical student to show up to an exam and perform regardless of what's happening in their life. It just doesn't work that way. I think a lot of medical schools could be doing more to provide confidential tools that can support medical students through whatever is happening in their life, without this fear of getting culled or not cutting it.

R: A lot of the entrepreneurs I've met are practising GPs. Is GP a speciality that lends itself well to entrepreneurship?

Z: Oh, absolutely. The first thing I did that got my brain ticking was Business Studies at Imperial. It really opened my mind to the possibilities about how you think about healthcare. More than just medicine, you need to know about strategy and accounting. It blew my mind as a subject, and got me reading the Art of War, which is a great text for learning about business strategy. When I began getting into start ups, my mentality was definitely a 'see what happens' mentality – and it still is. I do stuff to see what happens and to see if I can do it as well. It's really important to challenge yourself. At the beginning of all of this, I put together a very simple website, not knowing anything about any of this stuff. It got a lot of traction on social media, and I thought to myself, this is where I think I want to go.

At that time, my wife was already in GP training. She was having a fantastic time! They had protected study time, and her and all of her GP trainee chums would walk out of the hospital on a Wednesday afternoon and head to the library and study. And they all had trainers! Trainers were allocated to them right at the beginning and stayed with them throughout the entire time, and their trainer would help them meet their own educational needs! You could say whatever you like, like I want to do digital health and they would help you achieve that. It was an environment where you could service your own interests, and there was nothing wrong with that. The GP trainers themselves were all doing different things – educationalists, sports medicine or owning a set of care homes. It was really mind blowing for me that they could have these other interests and there was nothing wrong with that.

The trainers were super supportive during my GP training, and I was able to help develop tech stuff for what used to be the London deanery. I got to take part in the Royal College of GPs as the representative for London and I introduced ideas in conferences of GPs being involved in entrepreneurship. We were talking about digital health programmes, and suddenly up and down the country we were having conferences about these things. We really bashed open the door, and that's how innovation starts! That's what innovation is all about.

Being a GP is difficult, but it can be immensely rewarding. I strongly advocate it as a speciality – it offers tremendous flexibility, it's rewarding and you get to make of it what you want.

R: I think GP has quite a poor rep at medical school. Any parting words for our readers about GP as a speciality?

Z: Honestly, primary care is the crown jewel of the NHS. Not just the GPs, but all the specialty nurses and physiotherapists who do their work with the community. As a GP, you also get time to pursue your own interests, and it's not seen as a dagger to the heart for wanting to have interests outside of medicine.

I know a lot of friends in hospitals, as consultants, that would turn back time to be a GP. Not because it's easier, but because of the quality of life and the impact you have. As a GP, you shape the NHS. You decide, with your colleagues, what the healthcare system in your locality looks like. You make those decisions because you see so many different patients every single day. If you desire to, you can be involved in that level of decision making and you have a much greater say in how things are done.

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COP IN OR COMPLETE COP OUT?

By Abhiram Magesh, Politics Editor

"Political Language is designed to make lies sound truthful and murder respectable, and to give an appearance of solidity to pure wind" George Orwell argued in his famous 1946 essay, 'Politics and the English Language'.

Indeed, the 26th Conference of Parties, sanctioned by the UNFCCC was filled with all sorts of this, as bleary-eyed diplomats, alongside bureaucrats, big business lobbying interests and the occasional protester who managed to climb over the fence, haggled out some form of agreement that would be acceptable to the 197 countries present.

Trying to get even 3 people to agree on where to eat is a challenge in itself, but who had the misfortune of the responsibility to mediate between 197 different opinions? Britain, who found herself the host of this UN sanctioned travelling circus.

And despite the SNPs best efforts to sully our international reputation by causing a rail strike scare and failing to pick up garbage amongst the rats of Glasgow (doubtless Westminster's fault for engaging in a covert propaganda campaign to entice them over the border) and having Boris Johnson as our PM, which is always a noteworthy liability, the convention turned out to be a nominal success.

Being realistic, no- one seriously expected the hard questions facing our generation to be answered. This crisis is unlike the world has faced, and it is yet to be seen whether out national and supranational organizations have the capacity and will to ensure a successful outcome.

But progress has been made, at least through words for the time being, if not action. While the Paris agreement, set the wheels in motion, it was hoped the coming 'Glasgow Pact' would ensure fresh pledges and mechanisms to keep the world well below the 2°C limit and hopefully on course to keeping the 1.5°C target.

Alas, on the face of it however, it seems Glasgow missed the mark. Fresh NDC pledges (nationally determined contributions of CO_2 emissions) failed to be radical enough cuts to meet the targets. If current modelling of NDCs are accurate, there is 68% chance temperatures will rise to 1.9-3.0 with the median being 2.4°C. Even if we take nations' net zero pledges into account, which, it should be noted, is just talk; many countries' net zero plans are extremely light on detail; the temperatures only look marginally better, with rises looking like they'll be in-between 1.5- 2.6°C.

However, Britain has sought to alter this outlook, with 3 main methods outlined in the final plenary. The Glasgow pact 'requests' member nations to revise their NDCs, and

increase them by 2022, 3 years earlier than what was originally planned. To this there were many notable disagreements, especially from large emerging economies, such as India, who felt that they were already doing as much as they can; India has one of the largest total emissions in the world, but due to its population size, its per capita emission rate is rather small and lower than the word average and so felt justified in arguing for more room to manoeuvre. But they all eventually acceded, as without such a pledge, the 1.5°C target would be dead in the water.

The second method focused on financial pledges and the transfer of capital from rich economies, to emerging ones. The argument went that rich countries had grown to be wealthy through free burning of fossil fuels, and so emerging economies, which have relatively speaking, burnt little, had a moral claim for assistance. In 2009, the rich promised $100bn in climate finance every year, by 2020. But as we all too well know, the pandemic hit, economies contracted, wealth was lost, and the OECD had only managed to hit $80bn by 2019, with no-one seriously believing that the $100bn target was met in 2020.

This was a major sour point in negotiations and the emerging countries wanted several concessions from the rich economies, such as filling the gap of the previous shortfalls of the $100bn target, and a higher annual target to be placed by 2025. They framed these cash transfers as not just a form of aid and moral due diligence, but essential to undergo a clean energy transition. Some of these emerging economies also pressed for compensatory finance for the impacts the climate is currently having, and therefore lobbied for an additional fund for such "loss and damages"

Glasgow did not deliver all of this. The loss and damage fund was stymied, with nations such as the US worried that it could set a precedent that would entail enormous liabilities, which would be unpopular domestically and put a major strain on any government balance book. Other rich economies, such as the EU, pushed back against making up the shortfalls, and on setting a new, larger sum by 2025. They instead settled for vacuous wording which kicked the can down the road, by pledging to further discuss a potential loss and damage fund and a more ambitious finance deal by 2025.

The only area that emerging countries won concessions, was in the realm of climate adaption, such as flood barriers to protect coastal communities, with rich nations' pledging to contribute double the amount they previously had for that purpose. Yet, while this is sorely needed and will ease suffering as the climate crisis progresses, it does nothing to achieve the 1.5°C target.

Image by Unsplash

You may be thinking then, on finance, Glasgow was a failure. However, the conference brought about a novel process, the third method, involving so called "Coalitions of the willing" to act on issues that interested them, with Britain as COP president co-ordinating and mediating such agreements. One example of this is found with a coalition involving Germany, America, Britain, France, and the EU, which will mobilize $8.5bn over the next half decade for South Africa, in exchange for decarbonizing its coal powered energy sector while protecting jobs and livelihoods of the people who work in the industry.

There were many other such deals done throughout, often involving major countries and companies, relating to phasing our coal, reducing methane emissions, ending deforestation, and greening the finance industry. And while some were not as ambitious and encompassing as one might have hoped; the coal pledge did not include the 5 biggest coal consumers for instance, it is hoped that this type of dealing could be used to accelerate the process of decarbonization, by engaging willing private and public institutions to act together regardless of the greater 'minimum standards' being set out at large multi-

national events such as COP. It is yet to be seen however, whether this method will produce the desired result, but if the outcome is positive, it could prove a template for other countries' decarbonization plans.

Such 'Coalitions of the willing' have the potential to help keep temperatures cool, with current coalition pledges decreasing the emission load by 2-4 gigatons of carbon, than when compared to the NDC pledges alone. And there were other areas of progress of note too, with plans for the carbon emission offset market finalised after much wrangling, although it is far from greenwash- proof.

There was even, for the first time, a reference to phasing out coal, a massive fuel- specific undertaking, which while not binding, would have been a great symbolic victory in the acknowledgement of the role that coal plays in greenhouse emissions. But just as Alok Sharma, the British chair of the COP, was dotting the Is and crossing the Ts, India and China intervened and forced a word change: from phasing out coal, to phasing down coal, causing much dismay across the conference, and even bringing tears to the chair as he closed the proceedings.

Fundamentally, it is hard to see any agreement, where one party can hold everyone hostage and there is tenuous and fierce debate over the phrasing and word choices of non-binding sentences, being a great success. This UN process, on the face of it, accomplished little of concrete, but it does deliver something alongside multilateral engagements which have the potential to deliver much more.

As with any diplomatic engagement, the conclusion is always one of unhappy but tolerable compromise. And while the current situation may not be exactly heartening, especially to those of us where climate change poses an immediate existential threat, there is still hope that the 1.5 target remains attainable. Such UN sanctioned circuses may not achieve much, but they are better than leaving the word without any such forum at all, and at the very least, they keep the hope of a better tomorrow alive.

Image by Unsplash

Emer McDaid as Romaine Vole. Photo by Ellie Kurtzz.

ARTS AND CULTURE CORNER

Witness for the Prosecution Review

By Kavi Thobhani, Arts and Culture Editor

London County Hall

Declarations by reviewer – Free tickets given to the Circadian

Rating 4/5

Stepping into the chamber of London County Hall, you really get the feeling of being witness to a true spectacle of modern society, a process of law and order, used to decide whether a man is to be hanged, or found not guilty of all charges. The tradition and formality that comes with the set is mirrored in the almost ritual-like procedure of set changes that hide their clunky reality with an air of drama that utilises the intimate stage and huddled

Photo by Ellie Kurttz.

audience superbly.

Based on Agatha Christies 1925 book, 'Traitor's Hands', Leonard Vole (Joe McNamara) stands accused of murdering a wealthy woman for her inheritance, and it is down to his lawyer, Mr Mayhew (Teddy Kemper) and defence barrister Sir Wilfrid (Jonathan Firth) to prove his innocence to avoid the grim reality of the death penalty, so sharply illustrated by a dramatic opening scene of Vole picturing his own execution.

Despite a harsh, and at sometimes brutally, delivered story, the writing manages to keep its fair share of levity and wit. A personal favourite of mine is the early repartee between Sir Wilfrid and Romaine Vole (Emer McDaid), Leonards German immigrant wife, whom he was able to help escape from eastern Germany, but not without carrying some secrets of her own.

Romaine is a polished gem of a character from perhaps what could be seen as a selection of unidimensional murder mystery board game tokens, and McDaid does her character the justice she deserves, with an enthralling performance only rivalled in the cast by that of Firth as Sir Wilfrid. The themes of foreign distrust sowed around Romaine seem as sadly relevant now as they did in the 20s with Christie's short story, or the 50s with the film and theatre adaptations.

It would not be proper to mention the acting prowess and writing on display without framing it with the atmosphere produced by William Dudley and the design team. The immersion felt by audience members from this production is up there with anything I've seen, even to the extent of sequestering audience members to act as the jury throughout the production, further breaking the barrier between what is art, and what is life. The chamber feels to almost breathe with the production, rising and falling as Vole's defence rises and falls with it.

As with any Christie story, half of the fun is in the whodunnit nature and constant internal questioning, playing detective from the safety of your seat. I felt that my summer spent watching hours upon hours of Law and Order had prepped me thoroughly for any twist and turn that may occur, and I was pleasantly surprised to see that illusion shattered. I was less pleased to see the twist that shattered my illusion as something that would not be out of place in an M Night Shyamalan film.

The superbly paced drama with a flow so natural it seems to have almost been written in a state of unconscious mastery is only let down by its ending. Despite this rather tepid conclusion, I highly recommend you go check this play out, with student (Under 26s) tickets available at a discounted price of £25 (down from the usual £60) for Band A stall seats until December 20th during off peak performances. 'Witness for the Prosecution' is running at London County Hall until September 2022.

East is East Review

By Kavi Thobhani

Lyttleton Theatre – The National

Ticket prices £20-£89

Declarations by reviewer – No conflicts of interest

Rating 3/5

First brought to the stage 25 years ago, the topic of the South Asian diaspora to Britain has been a mainstay throughout art and media since, with many believing East is East to be one of the first to explore the cultural identity of the children of immigrants.

Quick-witted dialogue, interspersed with poignant lines that quickly bring the mood sombre, reminding us of the realities of first- and second-generation immigrants make for a play that can often feel incredibly serious, yet almost whiplash-like in the speed from which it makes jumps from one emotion state to the other.

The Khan family, headed by George (Tony Jayewardene) and Ella (Sophie Stanton) are a dynamic representation of a household with the feet of the patriarch firmly in Pakistani-born George's past, and the eyes of their children looking forward towards a future, yet unsure whether it is a British-Muslim, or a Muslim-British one.

Eldest sons Tariq (Gurjeet Singh) and Abdul (Assad Zaman) perfectly encapsulate the confusion of being brought up in a household that differs so wildly from that of the world around them, with some of the more potent lines being spoken by these two excellent actors and well written characters.

The humour brought by the other children gives breathing space between topics that would otherwise be overly heavy. Only daughter Meenah (Amy-Leigh Hickman), traditionally minded Maneer (Joeravar Sangha), and secret art-student Saleem (Adonis Jenieco) bring levity to the production, with the final scene of an arranged marriage proposition derailed in what some may call a cheap punch line, but still provides much needed shock-factor in what would otherwise be a bland scene. Youngest son Sajit (Noah Manzoor) creates a superb lens for the audience to fully grasp the effects of a dysfunctional family, with his symbolic puffer jacket creating a 'shield' for him from his family, but also cuts him off from the audience, only with the closing moments showing us how truly deep the character goes.

Topics ranging from education and career paths to marriage and circumcision all make appearances in this production. The seemingly absurd shifts can make certain sections difficult to watch, and the content warnings at the start of the show are not ones to be ignored. Despite being released over 25 years ago, the relevancy of the dialogue and content in today's Britain poses interesting questions on today's society compared to that of the past.

Whilst entertaining and wonderfully performed, the heavy shifts and relatively shallow exploration of deeper themes can sometimes give 'East is East' a rushed feel, with oddly paced scenes and badly placed jokes. BL circadian gives East is East three stars out of five.