

Fusion energy leader wins prestigious physics medal

Professor Ian Chapman, UK Atomic Energy Authority's CEO, has today been awarded the Institute of Physics' prestigious Richard Glazebrook Medal 2021 for his exceptional leadership in fusion technology and the field of physics.

The Institute of Physics (IOP) is the professional body and learned society for physics, and the leading body for practising physicists in the UK and Ireland. Its annual awards proudly reflect the wide variety of people, places, organisations and achievements that make physics such an exciting discipline.

Prof. Chapman received his award for outstanding leadership of UKAEA, the world's foremost fusion energy research and technology organisation, and for the progress it has delivered in plasma physics, deuterium-tritium experiments, robotics, and new materials.

Prof. Chapman said: "I'm honoured to receive this award on behalf of all the team at UK Atomic Energy Authority. Realising fusion energy is one of the biggest scientific and engineering grand challenges, but the rewards for success would be massive.

"We all know we must address the effects of climate change, and fusion offers so much potential. Ensuring a low-carbon, low-land use, sustainable source of energy to satisfy a growing global population is what drives me every day, and I wouldn't be here leading such a talented team if I didn't think we could find the solutions we need."

Fusion energy has been one of science and engineering's biggest challenges. Teams around the world are working intensely to solve these challenges, with UKAEA providing many unique contributions. Plans are well advanced for its prototype fusion power plant (STEP, the Spherical Tokamak for Energy Production), set to be completed in the early 2040s.

Congratulating this year's award winners, Institute of Physics President, Professor Sheila Rowan, said: "On behalf of the Institute of Physics, I warmly congratulate all of this year's award winners. Each and every one of them has made a significant and positive impact in their profession, whether as a researcher, teacher, industrialist, technician or apprentice.

"Recent events have underlined the absolute necessity to encourage and reward our scientists and those who teach and encourage future generations. We rely on their dedication and innovation to improve many aspects of the lives of individuals and of our wider society."

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Government takes decisive action against new COVID-19 variant

Press release

From Tuesday 30 November, face coverings will be mandatory in shops and on public transport and all travellers returning to the UK will require PCR testing.



Temporary and precautionary measures to prevent the spread of the new COVID-19 Omicron variant in the UK will come into force on Tuesday, the government has confirmed.

From 4am Tuesday 30 November face coverings will be compulsory in shops and other settings such as banks, post offices and hairdressers, as well as on public transport unless individuals are exempt from doing so.

All travellers arriving into the country from 4am on Tuesday 30 November will be required to take a PCR test on or before day 2 and self isolate until they have received a negative test result. These PCR tests can be purchased from private providers. Free NHS tests are not valid for this purpose.

Under the UK presidency an urgent meeting of G7 health ministers will also be convened on Monday 29 November to discuss the developments on Omicron.

This update adds to the measures rapidly implemented earlier this week to prevent the spread of the new variant including travel restrictions and meaning all close contacts of anyone who has tested positive for the Omicron

variant are required to isolate for 10 days regardless of whether they have been vaccinated.

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[Prime Minister sets out new measures as Omicron variant identified in UK: 27 November 2021](#)

- Prime Minister confirms new, temporary measures to respond to emergence of UK cases of the Omicron variant
- All international arrivals to take a Day 2 PCR test and self-isolate until they receive a negative test
- Face coverings to be made compulsory in shops and public transport
- Measures are precautionary, and will be reviewed in three weeks

The Prime Minister has today confirmed new temporary and precautionary measures following the emergence of the Omicron variant in the UK.

The Omicron variant contains a large number of spike protein mutations as well as mutations in other parts of the viral genome. Urgent work is ongoing internationally to fully understand how these mutations may change the behaviour of the virus with regards to vaccines, treatments and transmissibility.

Vaccines remain our best line of defence. Experts remain confident that our current vaccines will provide protection against the new variant, but the extent of this continues to be investigated.

Over 16 million people have already come forward for their booster jabs, and we have seen a fall in hospitalisations and deaths. All adults who have not yet received their first or second dose of the vaccine, or those who are eligible for their booster are encouraged to come forward to help protect themselves and others.

Targeted measures will be introduced from next week as a precaution to slow down the spread of the variant while we gather more information. These are:

- All international arrivals must take a Day 2 PCR test and self-isolate until they receive a negative result.
- All contacts of suspected Omicron cases must self-isolate, regardless of their vaccination status. They will be contacted by NHS Test and Trace.
- Face coverings will be made compulsory in shops and on public transport from next week. All hospitality settings will be exempt.

Six million booster jabs will be available in England alone over the next three weeks, and the Health Secretary has today asked the JCVI to consider rapidly extending boosters, as well as reducing the gap between the second dose and booster.

Two cases of the Omicron variant were today identified in Essex and Nottingham. Targeted testing and contact tracing is now underway.

Early indications suggest this variant may be more transmissible than the Delta variant and current vaccines may be less effective against it. A rapid rise in infections in South Africa has been attributed to the spread of this new variant of COVID-19.

International efforts are now underway to gather as much data and information as possible about this new variant, with more detailed information expected over the next three weeks. It is due to South Africa's extensive surveillance system and transparency that the UK has been able to have early warning of this new variant and begin collecting data.

Travel restrictions have already been implemented to slow the spread of the variant and protect our borders. From 04:00 Sunday 28 November South Africa, Botswana, Lesotho, Eswatini, Zimbabwe and Namibia, Malawi, Mozambique, Zambia, and Angola will be added to the UK's travel red list.

The vaccination programme and test, trace and isolate system continue to be the most effective way of reducing transmission, along with practicing good hygiene, keeping spaces well ventilated, and wearing a face covering in enclosed or crowded spaces.

The UKHSA continues to monitor the situation closely, in partnership with scientific and public health organisations across the world. The UK government thanks the government of South Africa for its surveillance of this variant and its transparency.

PM opening statement at COVID-19 press conference: 27 November 2021

Good afternoon.

The UK's plan against Covid has been working.

We've had the fastest vaccine roll-out in Europe, and now the fastest booster campaign in Europe, with almost 16.8 million boosters in people's arms, and though case numbers have remained relatively high, we've seen falling hospitalisations and falling numbers of deaths.

But on Wednesday we received news of a new variant – the so-called Omicron Variant – I want to express my deep gratitude to scientists in South Africa who identified this new variant and shared this information widely and immediately.

This variant is spreading around the world, with 2 cases so far identified here in the UK.

As always, and I must stress this, as always with a new variant, there are many things that we just cannot know at this early stage.

But our scientists are learning more hour by hour, and it does appear that Omicron spreads very rapidly, and can be spread between people who are double vaccinated.

There is also a very extensive mutation which means it diverges quite significantly from previous configurations of the virus, and as result, it might – at least in part – reduce the protection of our vaccines over time.

So we need to take targeted and proportionate measures now as a precaution while we find out more.

First, we need to slow down the seeding of this variant in our country.

We need to buy time for our scientists to understand exactly what we are dealing with.

And for us to get more people vaccinated and – above all – to get more people boosted.

As well as to help our NHS prepare in what is an already challenging winter.

So yesterday we took steps to protect the UK against the variant coming here from southern African countries – and earlier today added four more countries to the red list.

But we now need to go further and implement a proportionate testing regime for arrivals from across the whole world.

So we are not going to stop people travelling, I want to stress that, we're not going to stop people travelling, but we will require anyone who enters the UK to take a PCR test by the end of the second day after their arrival, and to self-isolate until they have a negative result.

Second, we need to slow down the spread of this variant here in the UK.

Because measures at the border can only ever minimise and delay the arrival of a new variant, rather than stop it altogether.

So in addition to the measures we are already taking to locate those who have been in countries of concern over the last ten days, we will require all contacts of those who test positive – with a suspected case of Omicron – to self-isolate for ten days, regardless of your vaccination status.

We will also go further in asking all of you to help contain the spread of this variant, by tightening up the rules on face coverings in shops and on public transport.

And third – and most importantly – we need to bolster our protections against this new variant.

We don't yet exactly know how effective our vaccines will be against Omicron, but we have good reasons for believing they will provide at least some measure of protection.

And if you are boosted – your response is likely to be stronger.

So it's more vital than ever that people get their jabs, and we get those boosters into arms as fast as possible.

So from today we are going to boost the booster campaign.

We are already planning to do 6 million jabs in England alone over the next three weeks.

And now we are looking to go further, so the Health Secretary has asked the JCVI to consider giving boosters to as wide a group as possible, as well as reducing the gap between your second dose and your booster.

And, of course, we are speaking to our counterparts in the Devolved Administrations and will continue to coordinate with them.

The measures that we are taking today – including on our borders and face masks – are temporary and precautionary, and we will review them in three weeks.

At that point we should have much greater information about the continuing effectiveness of our vaccines.

I very much hope that we will find that we continue to be in a strong position, and we can lift these measures again.

But right now this is the responsible course of action, to slow down the seeding and the spread of this new variant, and to maximise our defences so we protect the gains we have worked so hard for and so that we can continue to save lives.

Thank you.

[First UK cases of Omicron variant](#)

identified

- Individuals and their households are self-isolating and contact tracing is ongoing
- From 04:00 Sunday 28 November Malawi, Mozambique, Zambia, and Angola will be added to the UK's travel red list

After overnight genome sequencing, the UK Health Security Agency (UKHSA) has confirmed that two cases of COVID-19 with mutations consistent with B.1.1.529 have been identified in the UK.

The individuals that have tested positive, and all members of their households, are being re-tested and told to self-isolate while further testing and contact tracing is underway. One case has been located in Chelmsford and the other in Nottingham. The two cases are linked and there is a link to travel to Southern Africa. UKHSA is carrying out targeted testing at locations where the positive cases were likely to have been infectious.

In response to the developing situation, the UK is taking decisive action to protect public health. Confirmed cases and contacts are being followed up and requested to isolate and get tested as necessary.

In addition, in line with updated advice from the UKHSA, from 4am Sunday Malawi, Mozambique, Zambia and Angola will be added to the travel red list. Travellers who have returned from these four countries in last 10 days must isolate and get a PCR test. UKHSA are following up recent arrivals from these countries.

This adds to the six countries placed on the red list on Friday.

Secretary of State for Health and Social Care, Sajid Javid said:

Thanks to our world class genomic sequencing we have been made aware of two UK cases of the Omicron variant. We have moved rapidly and the individuals are self-isolating while contact tracing is ongoing.

We will do all we can to protect the UK public against this emerging threat and that is why we are surging testing capacity to the impacted communities and introducing travel restrictions on a further four countries: Malawi, Mozambique, Zambia and Angola. We will not hesitate to take further action if required.

This is a stark reminder that we are not yet out of this pandemic. Getting the vaccine has never been more important – please come forward for your first jab if you haven't already and if eligible, book your booster as soon as possible.

Chief Medical Officer, Professor Chris Whitty, said:

We will continue to work closely with the international community to quickly gather and analyse information on this variant to understand any possible increase in transmissibility or resistance to vaccines.

It is important that everyone takes sensible precautions – get a PCR test if you have symptoms, isolate when asked, wear a face covering in crowded and enclosed spaces, ventilate rooms, get your vaccine and boosters as soon as you can.

Dr Jenny Harries, Chief Executive of UKHSA, said:

We have identified these cases thanks to the UK's advanced sequencing capabilities which means we are able to find variants and take rapid action to limit onward spread. We are particularly grateful to public health colleagues in South Africa for early sharing of information on the Omicron variant to support global health security.

We are continuing our efforts to understand the effect of this variant on transmissibility, severe disease, mortality, antibody response and vaccine efficacy.

If you have any COVID-19 symptoms you must isolate and get a PCR test immediately.

It remains vital to come forward for vaccination, wear a face covering in crowded places and try to meet people in well-ventilated areas.

From 04:00 on Sunday 28 November non-UK and Irish nationals and residents who have been in Malawi, Mozambique, Zambia and Angola in the previous 10 days will be refused entry into England. This does not apply to those who have stayed airside and only transited through any of these countries while changing flights.

UK and Irish nationals and residents arriving from 04:00 Sunday 28 November must isolate in a government-approved facility for 10 days. During their stay, they will be required to take a coronavirus PCR test on day 2 and day 8.

The UKHSA designated variant B.1.1.529 as a variant under investigation (VuI) on Thursday 25 November. In response, the government announced that six African countries – South Africa, Botswana, Lesotho, Eswatini, Zimbabwe and Namibia – would be added to the red list.

The B.1.1.529 variant includes a large number of spike protein mutations as well as mutations in other parts of the viral genome. These are potentially biologically significant mutations which may change the behaviour of the virus with regards to vaccines, treatments and transmissibility.

The UK Health Security Agency, in partnership with scientific bodies across the globe, is constantly monitoring the status of SARS-CoV-2 variants as they emerge and develop worldwide.

As viruses mutate often and at random, it is not unusual for small numbers of cases to arise featuring new sets of mutations. Any variants showing evidence of spread are rapidly assessed.

We are particularly grateful to health protection specialists and the Government of South Africa for early sharing of local information on the omicron variant in an exemplary way to support global health security.