

# New technology to help identify those at high risk from COVID-19

- New predictive risk model to help clinicians identify adults with multiple risk factors that make them more vulnerable to COVID-19
- Over 800,000 adults will now be prioritised to receive a vaccine as part of the current vaccination cohorts
- Research is developed by subgroup of NERVTAG, led by the University of Oxford and funded by the National Institute for Health Research (NIHR)

New technology has been introduced in England to help clinicians identify, for the first time, a new group of people who may be at high risk from COVID-19. Over 800,000 adults will now be prioritised to receive a vaccine as part of the current vaccination cohorts.

The technology analyses a combination of risk factors based on medical records, to assess whether somebody may be more vulnerable than was previously understood, helping clinicians provide vaccination more quickly to them and ensuring patients can benefit from additional advice and support.

This assessment is made possible today for the first time thanks to new technology and emerging evidence about the impact of COVID-19 on different groups and who could be most vulnerable – which means further steps can be taken to protect those most at risk.

The research, commissioned by England's Chief Medical Officer Chris Whitty and funded by the National Institute of Health Research, found there are several health and personal factors, such as age, ethnicity and body mass index (BMI), as well as certain medical conditions and treatments, which, when combined, could mean someone is at a higher risk from COVID-19.

The University of Oxford turned their research into a risk-prediction model called QCovid®, which has been independently validated by the Office for National Statistics (ONS) and is thought to be the only COVID-19 risk prediction model in the world to meet the highest standards of evidence and assurance.

NHS Digital used the University of Oxford's model to develop a population risk assessment. The risk assessment uses the model to predict on a population basis whether adults with a combination of risk factors may be at more serious risk from COVID-19, enabling them to be flagged to clinicians for priority access to vaccination, alongside appropriate advice and support. These individuals will be added to the [Shielded Patient List](#) on a precautionary basis and to enable rapid vaccination.

The research to develop and validate the model is published in the British Medical Journal along with the underlying model for transparency. Additional code underpinning the QCovid® model will be made available openly by the University of Oxford within a month. As our scientific understanding of the

virus develops, we can update the model.

Up to 1.7 million patients have been identified. Those within this group who are over 70 will have already been invited for vaccination and 820,000 adults between 19 and 69 years will now be prioritised for a vaccination.

The patients identified through the risk assessment will be sent a letter from NHS England in the coming days explaining that their risk factors may help identify them as high clinical risk and that they are included within the support and advice for the clinically extremely vulnerable. They will be invited to receive a COVID-19 vaccine as soon as possible if they have not already had the jab, and will be given advice on precautionary measures, including shielding where this is current advice. Their GPs are also being notified.

Deputy Chief Medical Officer for England Dr Jenny Harries said:

For the first time, we are able to go even further in protecting the most vulnerable in our communities.

This new model is a tribute to our health and technology researchers. The model's data-driven approach to medical risk assessment will help the NHS identify further individuals who may be at high risk from COVID-19 due to a combination of personal and health factors.

This action ensures those most vulnerable to COVID-19 can benefit from both the protection that vaccines provide, and from enhanced advice, including shielding and support, if they choose it.

Sarah Wilkinson, Chief Executive of NHS Digital said:

I'm very pleased that NHS Digital has been able to deliver the platform to allow the QCovid® model to be used to identify individuals vulnerable to COVID-19 as a result of combinations of clinical risk factors and personal characteristics.

This extends the work we did last year to develop the Shielded Patients List, which included individuals with one of a number of specific clinical conditions.

It is a privilege to be able to support the Chief Medical Officer and his team in their quest to deliver the most sophisticated COVID-19 risk prediction capability.

The independent validation from the ONS is considered the 'gold standard' in quality assurance. The ONS has shown that the model performs in the 'excellent' range, and accurately identifies patients at highest risk from COVID-19. This shows the model is robust and meets the highest standards of

evidence.

Lead researcher Professor Julia Hippisley-Cox, a general practitioner and Professor of Clinical Epidemiology and General Practice at University of Oxford's Nuffield Department of Primary Care Health Sciences, said:

The QCovid® model, which has been developed using anonymised data from more than 8 million adults, provides nuanced assessment of risk by taking into account a number of different factors that are cumulatively used to estimate risk, including ethnicity.

The research to develop and validate the model is published in the British Medical Journal along with the underlying model for transparency.

This will be updated to take account of new information as the pandemic progresses.

I'm delighted that less than a year after being funded by the NIHR, the model is now being used to help protect people at most risk from COVID-19.

A Royal College of Physicians spokesperson said:

The adoption of this risk-assessment model by the NHS will play an important role in supporting clinicians and patients with conversations about COVID-19 and enable decisions to be made with a greater understanding of personal risk.

As with all research during the pandemic, we are constantly learning and so can continue to further enhance the model as data becomes available.

We look forward to providing continued feedback and views from clinicians to support its ongoing development.

The government is also extending the current shielding guidance for all those already identified as clinically extremely vulnerable and new patients identified through the QCovid® model until 31 March. Those already on the Shielded Patient List will receive an update letter this week to inform them of the extension.

During this national lockdown, we are advising all clinically extremely vulnerable people to follow [shielding guidance](#).

As soon as an individual is flagged as potentially clinically extremely vulnerable by NHS Digital's COVID-19 population risk assessment, they will be sent a letter outlining how they have been identified, that they are being added to the [Shielded Patient List](#) as a precautionary measure, and

highlighting additional guidance to support them.

We will also be issuing letters by email for those who have registered an email address with their GP practice.

For most, they will have been identified as high risk because they have a combination of underlying health conditions or are undergoing specialist treatment and they may be able to discuss this when they get their vaccination.

As a result of their addition to the high-risk group, patients will receive a letter inviting them for vaccination as soon as possible.

Patients can speak to their GP or specialist clinician if they have questions as to why they have been added to the Shielded Patient List, or if they feel they should no longer be identified as clinically extremely vulnerable. GPs and specialist clinicians will be able to make their own assessment of an individual based on their clinical knowledge and are able to add and remove individuals from the Shielded Patient List.

For now, there will be no changes to the existing list of medical conditions used to identify individuals who may be clinically extremely vulnerable to COVID-19. This list is agreed by the 4 UK Chief Medical Officers on the basis of the latest available evidence.

The research underpinning this work was published in the British Medical Journal on 20 October 2020.

The previous shielding guidance extended until 21 February. It will now be extended until 31 March.