National Core Studies Impact Report

April - June 2022

The COVID-19 National Core Studies (NCS) are a crucial part of the UK's ongoing pandemic response. They are enabling the UK to use health data and research to inform both our near and long-term responses to COVID-19, as well as accelerating progress to establish a world-leading health data and research infrastructure for the future

The 6 National Core Studies are:

Epidemiology and Surveillance led by Ian Diamond (Office for National Statistics) collects and analyses data to inform restrictions and protection against imminent outbreaks.

Clinical Trials Infrastructure led by Patrick Chinnery (Medical Research Council) accelerates delivery of large scale COVID-19 trials for drugs and vaccines.

Transmission and Environment (also known as PROTECT) led by Andrew Curran (Health and Safety Executive) improves understanding of COVID-19 virus transmission in different settings and environments.

Immunity led by Paul Moss (University of Birmingham) supports research to improve understanding of immunity against COVID-19, to inform back-to-work policies.

Longitudinal Health and Wellbeing led by Nish Chaturvedi (University College London) and Jonathan Sterne (University of Bristol) uses data from longitudinal studies to address the impact of COVID-19 and inform mitigating strategies

Data and Connectivity led by Andrew Morris (Health Data Research UK) in partnership with Office for National Statistics makes UK-wide health and administrative data available to catalyse COVID-19 research.

This quarterly report aims to:

Communicate the impact the National Core Studies are having on COVID-19 response

Promote NCS Open Science data, tools and resources to ensure they are taken up

Highlight where advances & learning gained during NCS translates into a legacy of stronger health threat preparedness and recovery

Managed by:

HSE • NATIONAL CORE STUDY (COVID-19 Longitudinal Health & Wellbeing) • Government Office for Science • UNIVERSITY OF BIRMINGHAM • HDRUK Health Data Research UK • PROTECT A COVID-19 National Core Study • UCL • Office for National Statistics • University of BRISTOL

Funded by:

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Between April and June 2022, NCS worked with the public and policymakers to shape and communicate our programme

- **Epidemiology & Surveillance NCS** published a **response** to the Office for Statistics Regulation's review of the COVID-19 Infection Survey and a **blog** outlining future plans. To help maintain impact and public engagement Esther Sutherland, Head of Covid Infection Survey Strategic Development, launched an **ONS twitter account**

- **PROTECT Transmission & Environment NCS'** May symposium marked a shift in emphasis from primary research activities to translational work, ensuring the results and learnings from the study are accessible and applicable by their key stakeholders and end users. Material from the symposium is available **here**

- **Epidemiology & Surveillance NCS'** Sarah Crofts presented at the **International Association of Official Statistics** conference in Kraków, Poland on how the Covid Infection Survey provided valuable insight into government decision making during the pandemic.

- **Longitudinal Health & Wellbeing NCS** Public Advisory Group continue to sit on the study governance executive, also reviewing key study materials, like surveys, ethics applications and communications, and working directly with researchers on workshop topics including GP data reliability improvement and defining long Covid.

- Emma Rourke (Director of Health Analysis and Pandemic Insight at ONS for **Epidemiology & Surveillance NCS**) participated in a **Royal Statistical Society** panel ahead of the COVID-19 public inquiry. The event, focussing on evidence and policy, is part of a series aiming to highlight important statistical and data issues the inquiry should cover.

How NCS informed the UK's Covid response: Impact case studies from April – June 2022

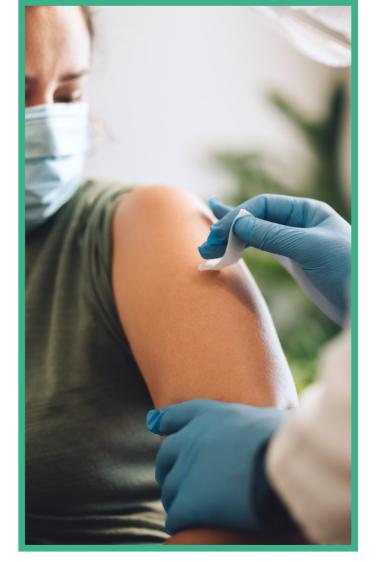## Understanding how vaccine protection wanes

We didn't know how quickly vaccine effectiveness waned over time in adults who hadn't previously had COVID-19 and who received two doses of the Pfizer or AstraZeneca vaccines compared with unvaccinated individuals.

Longitudinal Health & Wellbeing NCS research using NHS health record data on over seven million adults found that rates of COVID-19 hospital admission and death remained substantially lower among vaccinated adults up to six months after their second dose, and then started to wane. The waning rate was consistent across different groups of ages and clinical vulnerabilities.

The researchers shared their results at regular meetings on COVID-19 vaccine effectiveness research organised by the UK Health Security Agency, which include members of the Joint Committee on Vaccines and Immunisation. The researchers used evidence-user feedback from these meetings to refine their analyses.

How did NCS resources make the UK better prepared for recovery and future health threats? Impact case studies from April – June 2022

Getting hospital data in real-time

During the pandemic, policymakers needed timely information on health service burden, potential rare adverse events from new vaccines and treatments, and the effects of new variants of concern. However, existing national hospital admissions data feeds for research operate on a time lag of up to 6 weeks and don't include patients still in hospital. **Data & Connectivity NCS** worked with Luke Readman, Regional Director of Digital Transformation for NHS London, who is leading a cross-region collaboration feasibility-testing regional, near-real-time, linked health data feeds.

The regional acute admissions collaboration pilot covered a population of around 10 million people including **PIONEER Data Hub** (Birmingham and West Midlands), **CIPHA** (Cheshire and Mersey), **DataLoch** (Lothian, Scotland), and **Imperial Healthcare** and **Barts Health** NHS Trusts (London). Analysis was led by the **BHF Data Science Centre.** The group are testing an algorithm they developed to detect very rare blood clotting events associated with the Oxford AstraZeneca vaccine. The group is now validating their algorithm's findings with clinical haematologists.

Feasibility-testing revealed important differences across the 5 regions in data availability, research data access request processes and information governance. Feedback from **patients and the public via a cross regional workshop** confirmed broad public support. The pilot's findings are shaping a **Data and Connectivity NCS**-funded scale up to 5 additional regions across the UK. Building a real-time, data-driven surveillance system for National Healthcare Systems will support research, service improvement and preparedness for future threats.

> **What adverse events are associated with new treatments such as COVID-19 anti-virals?**

> **How can services improve how they manage symptoms such as acute chest pain?**

> **What are the earliest warning signs for hospitals are under admissions pressure?**

Examples of potential use cases for real-time, regional, linked health data feeds.

How did NCS resources make the UK better prepared for recovery and future health threats? Impact case studies from April – June 2022

Linked data to answer key questions for recovery

Estimates suggest the impact of pandemic-related poor health on the economy could be as much as £119bn in 2019/20. There remains a pressing need to understand the ways in which health is influencing economic behaviours such as work, buying, saving, giving, and gambling (and vice versa). Another priority is understanding the long-term impacts of the pandemic on the health and development of children and young people, including early years development, childhood physical health and obesity, mental health and well-being, health attitudes and long-term health behaviours.

Data and analysis platforms created by NCS will ensure there is evidence to guide pandemic recovery in these areas. **Epidemiology & Surveillance NCS** are improving linkage between Census 2021 identifiers and NHS data. Together with UK Health Security Agency, HM Treasury and the Department of Health and Social Care, they are also expanding analysis of the effects of COVID-19 on the economy. **UK Longitudinal Linkage Collaboration**, funded by **Longitudinal Health & Wellbeing NCS**, are linking data from Department for Education, Department for Work and Pensions and HMRC with their data from longitudinal research cohorts, and make this accessible to researchers.