COVID–19: the NICOLA perspective
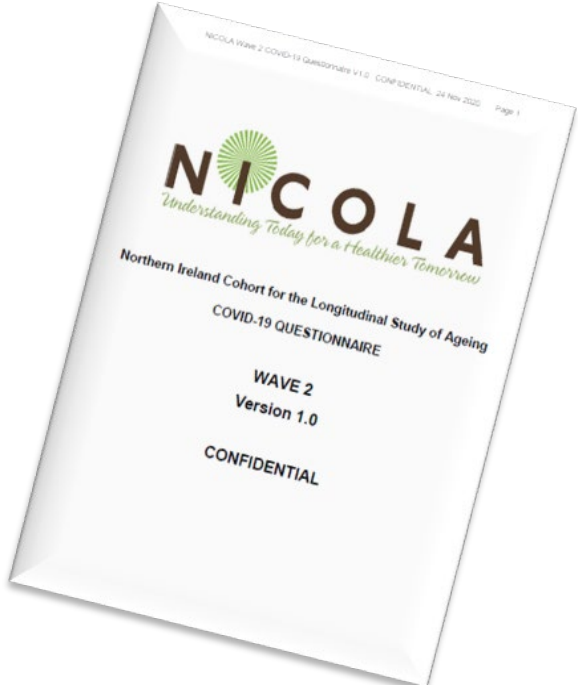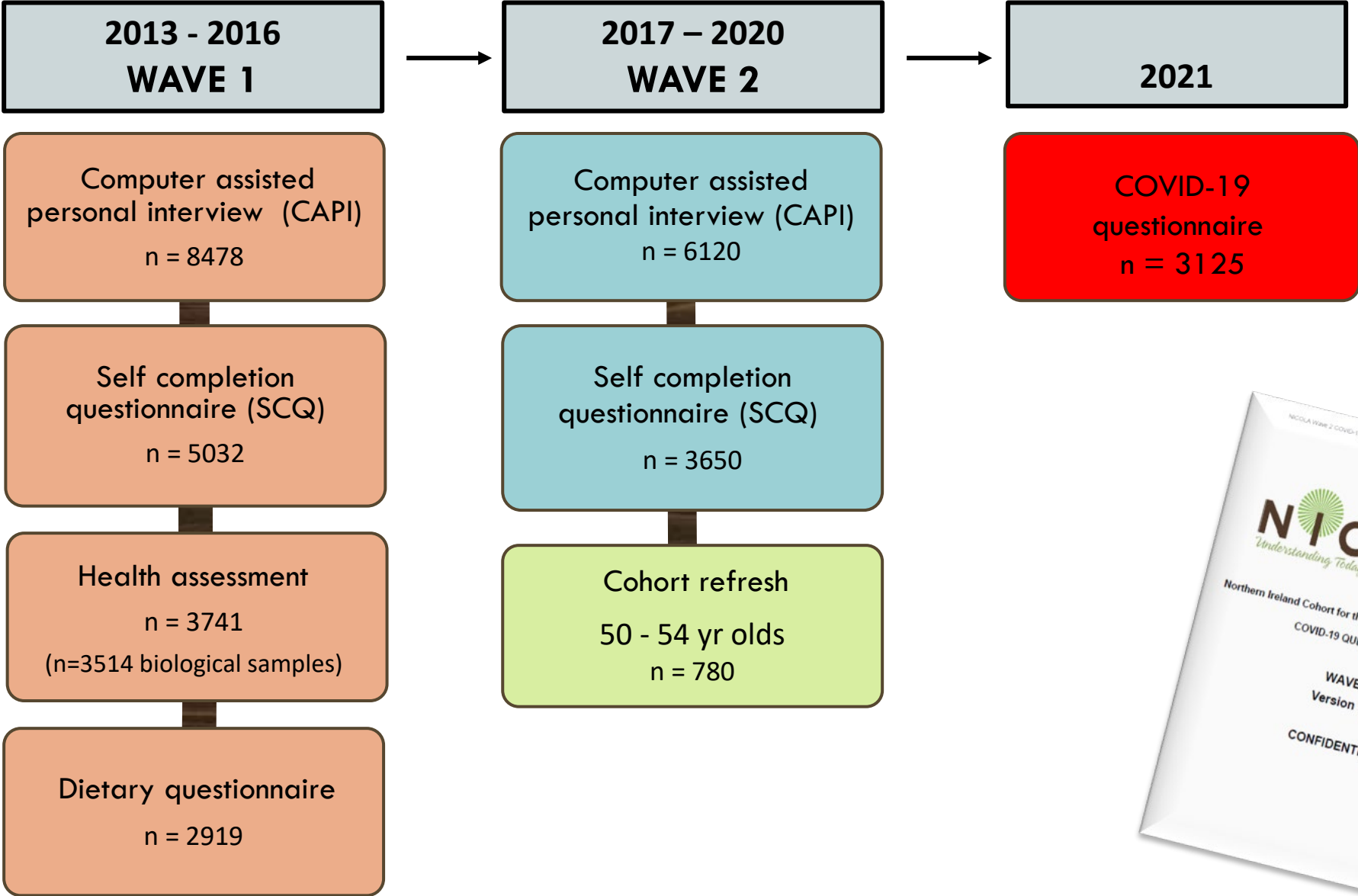
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COVID-19 in N.Ireland

- COVID-19 has had a variety of direct and indirect changes on the health and wellbeing of the population

- As we emerge from the pandemic, it is now that we need to understand its impact on older adults

- In 2021, NICOLA identified the need to carry out an ad-hoc survey

- Simultaneously, ELSA and TILDA had already commenced COVID data collection, therefore an ideal opportunity to align NICOLA data collection with our sister studies

- **Aim: To examine the impact of the COVID-19 pandemic on the health and wellbeing of older adults.**

Context - Stages of NICOLA Data Collection

2013 - 2016 WAVE 1	→	2017 – 2020 WAVE 2	→	2021

Wave 1 (2013 - 2016)

- Computer assisted personal interview (CAPI) n = 8478
- Self completion questionnaire (SCQ) n = 5032
- Health assessment n = 3741 (n=3514 biological samples)
- Dietary questionnaire n = 2919

Wave 2 (2017 – 2020)

- Computer assisted personal interview (CAPI) n = 6120
- Self completion questionnaire (SCQ) n = 3650
- Cohort refresh 50 - 54 yr olds n = 780

2021

- COVID-19 questionnaire n = 3125

NICOLA
Understanding Today for a Healthier Tomorrow
Northern Ireland Cohort for the Longitudinal Study of Ageing
COVID-19 QUESTIONNAIRE
WAVE 2
Version 1.0
CONFIDENTIAL

Content of COVID questionnaire

Domain	Included Measures
Health and health behaviours	Generalised anxiety disorder (GAD-7); CES-D depression scale; personal well-being (ONS); CASP-12 quality of life; health issues/behaviours; weight; physical activity; sedentary behaviour; sleep; TV viewing; smoking; alcohol; eating; food provision; supplement use
Employment	Changes in employment status incl. work hours, work patterns; future work expectations; keyworker status; government financial support; COVID-19 risk at work; job security
Health during COVID-19	COVID symptoms, testing, hospitalisation; loss of loved ones; shielding advice; self-isolation and social distancing; use of COVID-19 government app; vaccine uptake
Health and social care utilisation	Care needs; self-rated health; medical treatment; GP contact; access to community health and social care services and support; access to medication
Social participation and connectivity	Volunteering; carer; loneliness; social isolation; social support and internet use; relationships and contact with immediate family and/or friends; religious activities
Financial situation	Income, spending; pension value and expectations; food, job and financial security; financial and employment worries; benefit claims; financial assistance
Experience of COVID-19	Uplifting moments; aspirations

Social isolation

- **Subjective social isolation: examines self-perceived lack of relational and social connections**

- Measured using 3-item loneliness scale (responses: hardly ever, sometimes, often)

    - **How often did you feel that you lacked companionship?**

    - **How often did you feel left out?**

    - **How often did you feel isolated from others?**

- Social isolation increased 3-fold during COVID (33% *versus* 12% pre-COVID)

    Gender: higher in females than males (37% *versus* 27% in males)

    Age: higher in 50 - 64 year olds (34% *versus* 30% in older age category)

    Marital status: higher in single *versus* married/living with partner (22% *versus* 9%)

    Deprivation status: higher in most deprived areas *versus* least deprived (40% *versus* 30%)

    Mental health: 56% of those who were depressed were socially isolated (*versus* 24% no depression)
    75% with severe anxiety were socially isolated (*versus* 23% with mild/no anxiety)

- Religion = a key source of connectivity (44% engaged with online religious or church activity)

Loneliness

- **Direct measure: "How often did you feel lonely?"**

- Captures the negative consequences of the perception of social isolation

- Increase in loneliness during COVID:
    - 42% reported feeling lonely some of the time or often (*vs* 29% pre-COVID)
    - 10% reported feeling lonely often (vs 3% pre-COVID)

- Higher in females (48% *versus* 35% in males) and in those who were single (60% *versus* 33% in married/living with partner)

- Higher levels of loneliness in most deprived *versus* least deprived (53% *versus* 37%)

- Loneliness was more than double in those who were depressed (68% *versus* 31%)

Mental wellbeing

Measures of mental wellbeing:

Anxiety: Generalised Anxiety Disorder Assessment-7 (GAD-7 scale)
- 7-item instrument with scores 0 to 21
- Score of ≥10 indicative of generalised anxiety disorder

Depression: CES-D 7 scale
- ≥ 3 depressive symptoms were classified as being depressed

- Symptoms of depression more than doubled during COVID (23% pre-COVID *versus* 48% during COVID)

- Higher proportion of 50-64 year olds (*versus* older age groups) and females suffered anxiety and depression

- Of those with depression, more than a third (39%) were from deprived areas

- Those with multi-morbidity experienced higher levels of anxiety

- Caregivers experienced greater anxiety compared to non-carers

Depression, social isolation, loneliness by morbidity*
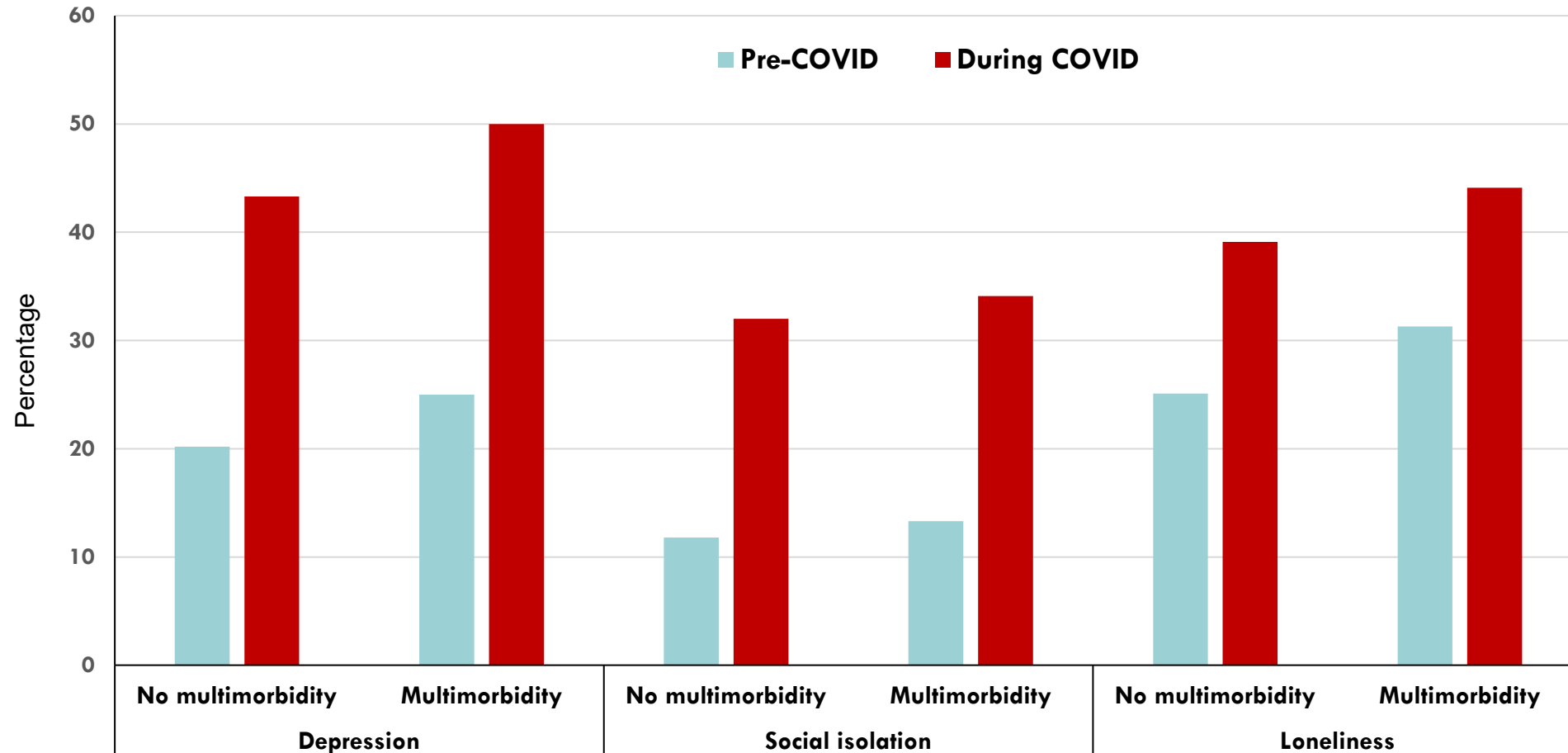
* 24% of responders had ≥2 co-morbidities

Change in lifestyle behaviours

- 1 in 3 older adults reported weight gain

- More than a third (39%) reported doing less physical activity

- Increase in sitting (46%), eating (23%), watching TV (46%) and sleeping (80%)

- 68% of internet users reported using the internet every day or more than once/day

- Just over a quarter of smokers reported smoking more

- One in five drinkers reported drinking more alcohol

- Half of older adults started a health supplement during COVID (33% Vit D)

Financial security
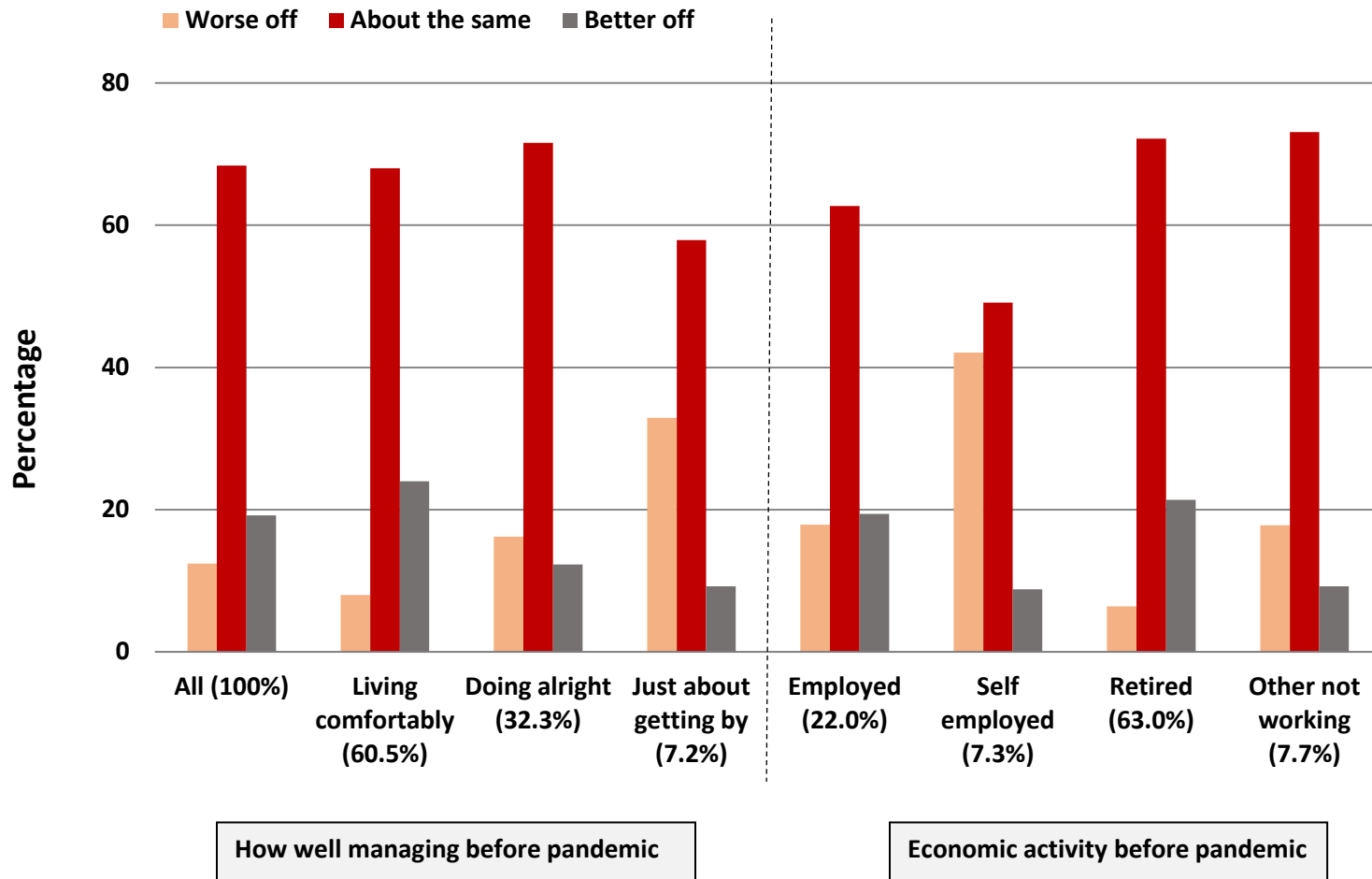
Questions:
- ***"How do you feel your current financial situation compares to before the outbreak?"***

- ***"How well were you managing before the pandemic?"***

- Just over two thirds (69%) felt their status was about the same as prior to the pandemic

- More than a third who were 'just about getting by' prior to the pandemic were worse off compared to only 8% of those who were living comfortably pre-COVID

- As expected, those in employment, especially self-employed, were worse off financially

Summary

Decline in mental wellbeing
- Mental health declined during the pandemic, especially in those living in more deprived areas.
- Females and those aged 50-64 years were at heightened risk of poor mental health
- Carers mental health deteriorated more than non-carers

Decline in social wellbeing:
- Loneliness and social isolation was evident across the whole population group

**Widening of socioeconomic and financial inequalities:**
- COVID-19 had greater impact on those living in areas of greater social deprivation, those struggling financially

Increase in sedentary lifestyle
- Increased sedentary behaviour: weight gain, eating, TV watching, sleeping
- Increased smoking and drinking

Supplement use: Increased vitamin use

Use of COVID data
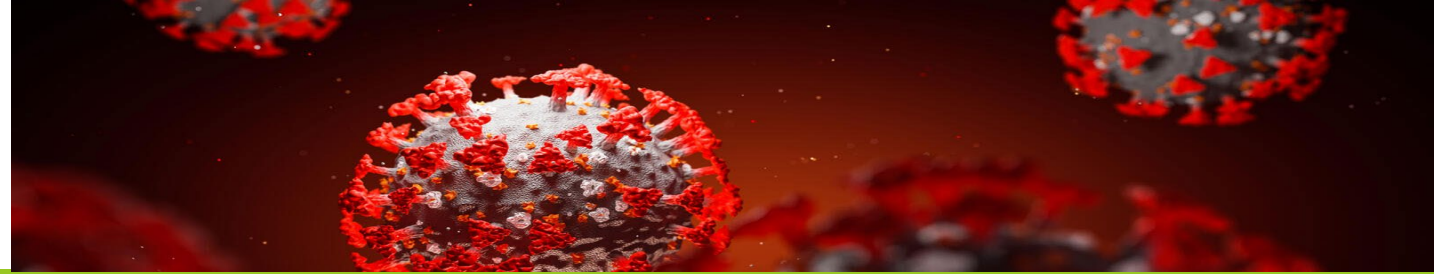
Existing data:

- Linking to pre-pandemic data:
  - Wave 1: CAPI, SCQ and health assessment
  - Wave 2: CAPI, SCQ
- Facilitates comparative analyses (pre- *versus* post-COVID, across study comparisons)
- Data linkage to health records to map changes in health status

New data (Wave 3 proposal):

- CAPI to include post-COVID questions
- Biological samples (blood and faecal): analysis of the microbiome and COVID-19 antibodies
- Explore changes in eye health post COVID

UK Longitudinal Linkage Collaboration (UK LLC)

- New research infrastructure designed to inform the UK's research response to the COVID-19 pandemic

- Supports the COVID-19 Longitudinal Health & Wellbeing National Core Study

- Facilitates comparison of COVID-19 related outcomes against pre-COVID-19 baseline data from established UK cohorts

- NICOLA is one of 20 contributing studies

Aims:
- To examine COVID-19 and the impact that 'lockdown' mitigation measures and other restrictions have had on wider health, such as psychological health and the provision of healthcare

- To develop centralised linkages which give comprehensive access to primary, secondary and C-19 relevant health records

- Evolve into a long-term resource for any research investigation requiring study data linked to routine records

Ongoing Research with COVID data and UK LLC

- *"Risk factors and prediction models for long COVID: analysis of longitudinal cohort studies with linked NHS data"*

- *"Multi-longitudinal cohort study into occupational factors and COVID risk as part of PROTECT National Core Study"*

- *"Comparing the burden of long COVID in the community as measured by self-report and electronic health records: a study by the CONVALESCENCE consortium"*

- *"Are immune-mediated diseases risk factors for long COVID?"*

- *"Examining the serological response to SARS-CoV-2 infection and vaccination across the National Core Studies"*

- *"The mental health and wellbeing consequences of contracting COVID19"*

Identifying clusters of COVID-19 and long COVID symptoms

Objective: To retrospectively characterise patterns of symptoms of COVID-19 and long COVID that commonly appear together

Aims:
1) To investigate whether specific symptoms of COVID-19 and long COVID typically occur together
2) To determine whether the membership of any of the symptom clusters identified depends on the time since the COVID infection or COVID status

Methods: Pooling of COVID data from 15 cohort studies incl. symptoms, age, sex, ethnicity

Statistics:
i) Cluster analysis of self-reported symptoms based on 3 groups:
- No COVID
- COVID-19 ≤ 12 weeks ago
- COVID-19 > 12 weeks ago

ii) Association with symptom patterns using logistic regression and latent class analysis on age, sex and functional limitation

🌡️	FEVER OR CHILLS
Zᶻ	FATIGUE
😷	COUGH
😣	SORE THROAT
😖	HEADACHES
😷	RUNNY OR STUFFY NOSE
🫁	SHORTNESS OF BREATH
🧍	BODY ACHES
🍽️	LOSS OF TASTE OR SMELL
🤧	SNEEZING

Importance of COVID data

- BMJ briefing (Appleby, 2022): '*the true cost impact of COVID is still not fully known and evaluative research is needed*'

- Long term effects of COVID are evolving e.g.
  - *Has COVID accelerated early retirement?*
  - *Have restrictions, delays in treatment and reduced preventive care during COVID lead to post-COVID increases in disease prevalence rates?*
  - *Impact of long COVID: approx. 1.9 million (2.9% of the population) have long COVID (ONS, July 2023)*
  - *What factors predicted the change in levels of loneliness or mental wellbeing during COVID? e.g. personality traits, frailty, lifestyle, economic threats*

- Measurement strategies and research focus can rapidly change within and across studies over time and this is often reflective of public health priorities

- Highlights the importance of standardising data collection methods for emerging research

- Important for longitudinal studies to continue to monitor health and behaviour changes

THE IRISH NEWS

More than one million dental appointments lost in NI since pandemic

Acknowledgements / Funders

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Dr Ruth Hogg - Ophthalmology

Dr Paula Devine – Social environment

Prof AJ McKnight – Multiomics, CKD

Prof Jose Bengoechea – Microbiome

Prof Mark Tully – Physical activity

Dr Chris Watson – Cardiovascular health

Website: https://www.qub.ac.uk/sites/NICOLA/Informationforresearchers/