

# VACCIREVIEW



## **Profiling vaccine attitudes and subsequent uptake in 1.1 million people in England: a nationwide cohort study**

### **Bibliography**

Whitaker M, Elliott J, Gerard-Ursin I, et al. Profiling vaccine attitudes and subsequent uptake in 1.1 million people in England: a nationwide cohort study. *Lancet*. 2025; Published online January 12, 2025. doi:10.1016/S0140-6736(25)01912-9vaccine-attitude-profilimng.pdf

### **Summary**

The paper reports a nationwide cohort analysis of 1 137 927 adults in England, nested within the REACT studies, to characterize COVID-19 vaccine attitudes and link them to subsequent objectively recorded vaccine uptake. Using data from January 2021 to March 2022, the authors define “hesitant” participants as those refusing, planning to refuse, or undecided about COVID-19 vaccination, after excluding respondents whose self-reported unvaccinated status conflicted with NHS records.

Overall, 3.3% (37 982) of adults expressed some degree of vaccine hesitancy during the study period, with a dynamic pattern over time. Hesitancy peaked at 8.0% early in 2021, fell to 1.1% at the start of 2022, and then rose again to 2.2% in early 2022, suggesting that attitudes evolved alongside the pandemic and the vaccination program. Among 24 229 hesitant participants who consented to data linkage, 65.0% (15 744) ultimately received at least one COVID-19 vaccine dose, allowing the authors to distinguish between “softer” and more persistent forms of hesitancy.

The analytical approach combines cross-sectional logistic regression for determinants of hesitancy with longitudinal modelling of uptake in the hesitant cohort. Consensus clustering of self-reported reasons for hesitancy yields eight stable attitudinal categories, such as concerns about vaccine effectiveness, fear of side-effects or health consequences, perception of personal low risk from COVID-19, mistrust of vaccine developers, and more generalized anti-vaccine sentiment. Sociodemographic predictors of hesitancy are consistent with prior literature: higher hesitancy among some ethnic minority groups and among less-educated and economically disadvantaged individuals.

A key finding is that not all forms of hesitancy behave the same way over time. The most prevalent categories—those rooted in effectiveness and safety concerns—declined markedly during the roll-out and were not strongly associated with remaining unvaccinated later. In other words, many people who started out worried about side-effects or efficacy eventually accepted vaccination, presumably as more real-world data, social norms, and communication accumulated. By contrast, hesitancy grounded

# VACCIREVIEW



in low trust (in institutions or developers), low perceived risk from COVID-19, or broad anti-vaccine attitudes proved more “hard-core”: these forms rebounded in 2022 and were strongly associated with failure to get vaccinated.

The temporal uptick in hesitancy in 2022 appears largely driven by a changing risk landscape: as perceived severity and threat of COVID-19 diminished, complacency-type attitudes gained ground. The authors situate their taxonomy of hesitancy in relation to psychological models such as the 5C/7C frameworks, arguing that their data-driven clusters offer empirical traction on which types of hesitancy are most amenable to change. Methodologically, the study’s novelty lies in linking baseline attitude data with individual-level, prospectively recorded NHS vaccination histories, rather than relying on self-reported uptake.

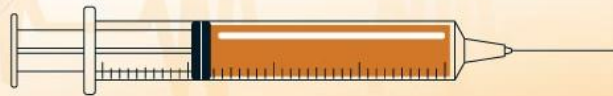
The discussion emphasizes that most COVID-19 vaccine hesitancy in this large English sample was “reversible” given time, information, and experience with the vaccine program. However, persistent pockets associated with distrust and low perceived risk remain a substantial challenge for public health, especially as future vaccination campaigns may face a backdrop of pandemic fatigue and misinformation. The authors acknowledge limitations including potential selection bias from non-consent to data linkage (more common among the hesitant), recall and reporting biases in survey data, incomplete capture of reasons for hesitancy across all rounds, and the lack of detailed timing analyses relative to eligibility or infection history. They conclude that their characterization of hesitancy “subtypes” and their reversibility can help design more targeted communication and interventions in future roll-outs.

## Comment

This study is important because it moves beyond cross-sectional attitude snapshots and links stated vaccine hesitancy to actual, objectively recorded vaccination behavior in over one million adults, something previous work had not done at this scale. The use of NHS vaccination records avoids the familiar problem of misreported uptake and permits a more credible classification of which forms of reluctance truly predict continued non-vaccination.

The data-driven clustering of hesitancy reasons is a methodological strength, reducing reliance on a priori psychological taxonomies while still aligning meaningfully with established 5C/7C constructs. The distinction between “soft” hesitancy (safety/efficacy concerns) that largely melts away and “harder” forms rooted in distrust, low perceived risk, and general anti-vaccine sentiment is highly actionable: it suggests that generic safety messaging may be sufficient for one group but largely wasted on the other. For

# VACCIREVIEW



program design, this supports stratified communication strategies—reassurance and data for the anxious; trust-building, community engagement, and structural interventions for the distrustful and complacent.

Limitations are non-trivial. The cohort is from England and a specific vaccine, so generalizability to other settings, diseases, or more polarized contexts is uncertain. Hesitant individuals were less likely to consent to linkage, plausibly underestimating the most entrenched hesitancy, and reasons captured at a single timepoint may not fully reflect evolving attitudes. Nonetheless, for public health planners, the key message is that most hesitancy is not an immutable trait but a modifiable state—provided that communication, trust, and perceived risk are addressed honestly and intelligently. As future pandemics and routine adult programs compete for attention in an infodemic, this paper offers rare quantitative evidence on where effort is most likely to shift actual behavior, rather than just survey responses.

*Brought to you by Chief Editor **Joe Schmitt**—Supported by AI*