# Technical report:

# Rapid analysis of ethnic variation in Covid-19 outcomes in Wales using Onomap, a name-based ethnicity classification tool

Name Redacted

Public Health Wales Communicable Disease Surveillance Centre

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## Key points

1. Ethnicity is not recorded in routine Covid-19 surveillance data sets.

2. We used Onomap, a name-based ethnicity classification software package, to investigate ethnic variation in SARS-CoV-2 testing, proportion testing positive, proportion attending hospital, and of those attending hospital, the proportion receiving intensive care and those who died.

3. Onomap has limitations in its performance, and all findings should be interpreted in light of these. Miss-classification of ethnicity is likely to produce more conservative estimates of increased risk in black, Asian or other minority (BAME) groups.

4. By classifying ethnicity using names, we estimate that 5% of the 35,618 SARS-Cov-2 tests carried out in Wales to 3 May 2020 were in BAME groups. This is similar to the estimated proportion of BAME people in Wales.

5. People tested are a mixture of those tested in the community and their families, and those tested when hospitalised. Of those tested, proportion positive for SARS-Cov-2 was similar in BAME and white people.

## Discussion

This rapid analysis of existing surveillance data using a name-based ethnicity classification software found some ethnic variation in Covid-19 outcomes in Wales. BAME people hospitalised in Wales with Covid-19 were significantly more likely to receive intensive care, and were significantly younger than white people receiving intensive care. When specific ethnicities were examined, 'white-other', 'Asian and British Asian – Bangladeshi', and 'Asian and British Asian – Pakistani' ethnic groups were most likely to receive intensive care, even after adjusting for differences in age and gender. However, the role of ethnicity in predicting a fatal outcome was less clear and BAME and white people living in Wales appeared to have similar risk of death after being hospitalised.

This finding that certain minority ethnic groups are at higher risk of attending intensive care units but are less likely to die than white British and Irish people, was also found in the recent CO-CIN cohort study involving 23,577 Covid-19 patients attending hospitals in the UK. The increased risk of attending ICU was accounted for by differences in prevalence of underlying chronic disease. [14] We only had information on underlying conditions for a proportion of deaths, and no information on medical history for hospitalised people who didn't die.

Onomap does have its limitations, but in the absence of well recorded ethnicity data is a useful tool. Previous validation work indicates that a proportion of black people or people of mixed ethnicity will be misclassified as white. This is likely to result in an underestimation of risks associated with black people. Onomap performs better at classifying Asian and white Eastern European people, so risks identified in these population groups are more likely to be real findings.

We recommend more in-depth epidemiological research is carried out to further understand this complex and important public health issue. Two approaches should be considered. A focused analytic study, where more detailed and accurate clinical and ethnicity data are collected on cases and a comparison group, including through interview, should provide clearer results with more complete and valid exposure information. Alternatively, anaylsis of larger routine health data sets with linkage to ethnicity data through for example the SAIL Databank could be undertaken. We also recommend that qualitative research is carried out