

Title - Melanoma and Non-melanoma skin cancer mortality trends – time to re-focus?

PI - ZCV

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Research question – what are global trends in NMSC and melanoma mortality rates 2010-2019?

Study design – Retrospective observational cohort study using openly available national data

Data source – various national websites

Study population – nations as listed above

Exposure – time 2010-2019

Outcome – skin cancer deaths

Analysis - NMSC and MM mortality counts, crude and age standardised mortality rates with joinpoint analysis and annual percentage change for England, Scotland, Nordic countries, Australia, USA

Sensitivity analysis – N/A

Missing data – N/A

Sample size – national data

We will report mortality incidence rates from openly available sources which are considered high quality (5* as per [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)32203-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)32203-7/fulltext)) openly available data and represent the more commonly affected skin cancer communities - England, Scotland, US, Australia, Japan and Nordic countries. NB Japan has 4* data but was chosen to represent an ethnically different population with high quality openly available data.

We will report mortality counts, crude and age standardised rates from 2010-2019 and perform joinpoint analysis to provide annual percentage changes and trend analysis where possible for melanoma and non melanoma skin cancer (nmisc) specific rates. We rely upon open data and so age standardised rates will likely use their own country's standard population which will be a limitation when comparing rates, furthermore some countries do not provide confidence intervals or raw data and so joinpoint analysis may not be possible for asr for all countries.

Mortality rates are reported using ICD-10 codes which group NMSC, previous studies have reported that a majority of NMSC deaths are attributed to SCCs but a lack of more specific NMSC subtype is one of our limitations.

2020 data is available for most countries but will be excluded from joinpoint analysis due to the excess mortality seen during the COVID-19 pandemic.

We hope to highlight the different trends in mortality for melanoma and nmsc to support nmsc research.