This is an updated list of projects aimed at exploring reasons for the changing mortality rates in Scotland and the UK. They have all been discussed within and/or undertaken under the auspices of the Mortality Special Interest Group (SIG).

| **Broad category** | **Project title** | **Brief description** | **Lead(s)** | **Update May 2021** |
| --- | --- | --- | --- | --- |
| Artefact | Chance | Examining using Bayes factors the extent to which the trends can be explained by chance | Jon Minton and Rebecca Devine | Delayed because of Covid |
| Austerity | Impact of changes to social security on mortality | Adaptation of Triple I model to estimate contribution of changes to social security to the trends | Liz Richardson/ Martin Taulbut | 🗸 Published in JECH[[1]](#endnote-1) |
| Austerity | International analysis | Analysis of the international datasets based on the austerity protocol | Gerry McCartney | This is part of GM’s PhD. Various analyses have been complete with results available c. mid-2021. |
| Austerity | Intra-UK analysis | Analysis of the impact of varying austerity within UK | DW/GM | The original proposed analyses (intended to be included as part of GM’s PhD) were not done. However, a new, short-term, project has been now proposed. This will examine different measures of austerity and changes-in-mortality outcomes at local authority level across the UK. |
| Austerity | Austerity protocol | Protocol for testing the austerity hypothesis with more up to date data (NB protocol for the main analyses included within Gerry’s PhD) | Gerry McCartney | 🗸 Published in BMJ Open[[2]](#endnote-2) |
| Austerity | Systematic review | Systematic review of the relationship between austerity and mortality | Phil Broadbent | This is ongoing – being undertaken as part of Phil Broadbent’s MPH (with DW & GM). |
| Circulatory | Triple I modelling | Using Triple I tool to estimate the likely impact of increases in obesity prevalence on changing mortality outcomes. | DW | This was originally work led by Katy Levin (later passed to DW) based on use of the IMPACT tool. However, after further investigation, it transpired that IMPACT wasn’t an appropriate tool to use for this purpose. New work using Triple I (and with help from Liz Richardson) is now being undertaken instead. |
| Co-ordination | Scotland workshop | Workshop co-ordinating LE work across 4 nations. Date tbc (Spring 2020) | Gerry McCartney | Postponed because of issues with PHE and Covid-19. However, it may be returned to in future. |
| Descriptive | Time-indexed age trends | Trend analysis of age-specific trends in mortality rates internationally | Jon Minton | 🗸 Accepted for publication[[3]](#endnote-3) |
| Descriptive | Seasonality | What is the contribution of seasonality and high winter peaks in deaths to overall mortality trends? | Jon Minton and Lynda Fenton | This was in the process of being written up when Covid hit. GM has agreed to try and complete the writing of a first draft. |
| Descriptive | Life expectancy and mortality trends | International comparison of trends, breakpoint analysis | Lynda Fenton | 🗸 Published in BMJ Open[[4]](#endnote-4) |
| Descriptive | Deprivation trends | Description of trends in LE by deprivation | Lynda Fenton | 🗸 Published in JECH[[5]](#endnote-5) |
| Descriptive | Spatial analysis | Analysis of LE trends by local geographical areas, deprivation and rurality | Clare Campbell | Was in the process of being written up pre-covid. Awaiting update. |
| Descriptive | Decomposition of LE by deprivation | Decomposition of LE trends by age, sex, cause, deprivation | Julie Ramsay | Writing up commenced pre-covid. However, progress stalled by resource limitations at NRS. |
| Descriptive | Decomposition of LE | Decomposition of LE trends by age, sex, cause | Julie Ramsay | 🗸 Published in JECH |
| Dissemination | Media discourse analysis | Analysis of public responses to LE stories on BBC website | Lynda Fenton | Analysis was ongoing pre-covid. Priority of this for future report to be discussed. |
| Dissemination | Visualisation app | App for visualising the Human Mortality Database resource | Jon Minton | Completed, published online |
| Dissemination | Communications and engagement strategy (v1) | Strategy to maximise the impact of the work | Paige Somerville/ Gerry McCartney/ Emma Baird | This is/was a ‘live’, unpublished, document. Aspects of it will now feed into a final report (alongside the policy recommendations work), while the communications aspect is now being led by GCPH (see below). |
| Dissemination | Comms strategy v2 | Maximising impact | Jennie Coyle | Various activities planned including publishing an online animation which seeks to explain the causes of recent mortality changes. |
| Dissemination | Policy recommendations | Policy recommendations to be included in a final report | Rebecca Devine/ Emma Baird | To be incorporated into a final summary report. |
| Dissemination | ScotPHO webpage | Webpage summarising all the work to date, synthesis and recommendations | GM/DW | Being updated regularly. |
| Influenza | Influenza contribution | Estimating the extent to which influenza can explain the trends | Arlene Reynolds, Richard Peabody, etc. | No real update on this. Analysis was underway pre-covid, but was never completed.  Discussion required re. what more is needed. |
| Limits to LE | Testing of ‘limits to life expectancy’ hypothesis | Ecological analysis of whether the trends in LE are slower in countries with higher LE | Rebecca Devine and Jon Minton | Draft written but not progressed. May be revised and updated in coming months (JM). |
| Morbidity | Trends in Healthy Life Expectancy (HLE) | Analysis of the trends in morbidity and HLE | DW/Grant Wyper | This has now become a slightly different project than was originally envisaged. It will now seek to calculate pre- and post-austerity trends in HLE using data from the Scottish Health Survey. |
| Obesity | Ecological analysis | Analysis of whether countries with greater increases in obesity have seen the greatest slowdowns in LE | Rebecca Devine | Analysis was started pre-covid but never completed. Future progress to be discussed – but likely to be dropped if Triple I obesity project (see above) provides useful evidence. |
| Services | Service pressures protocol | Analysis of the extent to which markers of health and social care pressures can explain trends in Scotland | Christina Wraw | Analyses completed and write-up nearing completion. |
| Descriptive | Projections | Compares projected with actual LE data for UK nations from 2011 | Jon Minton | 🗸 Published in JECH[[6]](#endnote-6) |
| Descriptive | UK countries and cities | Trends in all-cause and cause-specific mortality in countries and cities of the UK | DW | 🗸 Published in BMJ Open[[7]](#endnote-7) |
| Descriptive | Male/female differences | Male-female differences in changing mortality rates in the UK | DW/GM/Ruth Dundas | New project: this will (1) update previous trends; (2) examine male-female differences alongside assessment of potential differing gender impact of austerity; (3) quantify the extra observed deaths across the UK since 2010 (in comparison with ‘expected’ rates based on previous trends). |

**References**

1. Richardson E, Taulbut M, Robinson M, Pulford A, McCartney G. The contribution of changes to tax and social security to stalled life expectancy trends in Scotland: a modelling study. Journal of Epidemiology & Community Health 2020; 75(4): 365–70. [↑](#endnote-ref-1)
2. McCartney G, Fenton L, Minton J, et al. Is austerity responsible for the recent change in mortality trends across high-income nations? A protocol for an observational study. BMJ Open 2020; 10(1): e034832. [↑](#endnote-ref-2)
3. Hiam L., Minton J., McKee M. What can lifespan variation reveal that life expectancy hides? Comparison of five high-income countries. Journal of the Royal Society of Medicine (in press) [↑](#endnote-ref-3)
4. Fenton L., Minton J., Ramsay J. et al. Recent adverse mortality trends in Scotland: comparison with other high-income countries. BMJ Open 2019; 9: e029936. [↑](#endnote-ref-4)
5. Fenton L., Wyper G.M., McCartney G., Minton, J. Socioeconomic inequality in recent adverse all-cause mortality trends in Scotland Journal of Epidemiology & Community Health 2019; 73: 971-974. [↑](#endnote-ref-5)
6. Minton J, Fletcher E, Ramsay J, Little K, McCartney G. How bad are life expectancy trends across the UK, and what would it take to get back to previous trends? Journal of Epidemiology & Community Health 2020;74(9): 741-746. [↑](#endnote-ref-6)
7. Walsh D., McCartney G., Minton J., Parkinson J., Shipton D., Whyte B. Changing mortality trends in countries and cities of the UK: a population-based trend analysis. BMJ Open 2020; 10: e038135 [↑](#endnote-ref-7)