**Program descriptions for “Heat exposure and drug overdose mortality in the United States: a quasi-experimental study”**

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**Notes**:

* This document describes the code used to analyze “Heat exposure and drug overdose mortality in the United States: a quasi-experimental study” (Dennett, Carrión, Fiellin, and Gonsalves).
* This code analyzes data from the National Center for Health Statistics (NCHS) restricted Vital Statistics multiple cause of death data. This data is not publicly available. For information on applying to access restricted Vital Statistics data, see <https://www.cdc.gov/nchs/nvss/nvss-restricted-data.htm>
* All code is written using Stata .do files.
* Code uses the following Stata commands that need to be separately installed:
  + ***reghdfe***: Sergio Correia, 2017. reghdfe: Stata module for linear and instrumental-variable/GMM regression absorbing multiple levels of fixed effects. Statistical Software Components S457874, Boston College Department of Economics. <https://ideas.repec.org/c/boc/bocode/s457874.html>
  + ***estout***: Jann, Ben (2005): Making regression tables from stored estimates. The Stata Journal 5(3): 288-308. <https://repec.sowi.unibe.ch/stata/estout/>
  + ***coefplot***: Jann, Ben (2013). COEFPLOT: Stata module to plot regression coefficients and other results. <http://ideas.repec.org/c/boc/bocode/s457686.html>
  + ***spmap*** (used only in ***mapping.do*** – see below): Maurizio Pisati. 2007. SPMAP: Stata module to visualize spatial data. Statistical Software Components S456812, Boston College Department of Economics). <https://www.stata.com/support/faqs/graphics/spmap-and-maps/>
* To run all code, please update the *<directory information>* (stored as local variables) at the top of each .do file.

**Program descriptions**:

* ***gen\_analytic\_data.do*** – Generates the analytic data set (*analytic\_data.dta*) used for all analyses by merging all data sources. Inputs are cleaned monthly, county-level data sets (as described in the methods and supplemental information).
  + Note: also creates an “all month” data set (*analytic\_data\_ALLMONTHS.dta*) for use with ***analysis\_allseasons.do*** (below).
* ***analysis\_allseasons.do*** – Creates Figure S1.
* ***summary\_stats.do*** – Creates **Table 1**, Tables S1a and S1b, and Figure S2.
* ***mapping.do*** – Creates Figure S3.
  + Note: mapping data obtained from: U.S. Census Bureau 2020 Cartographic Boundary Files, Counties (1:20,000,000 resolution level), shapefile, available: <https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.2020.html#list-tab-1883739534> (originally downloaded 10/30/2023); used .shp and .dbf file according to <https://www.stata.com/support/faqs/graphics/spmap-and-maps/>
* ***main\_analysis.do*** – Creates **Figure 1**, **Figure 2**, and Figure S4.
* ***county\_char.do*** – Creates **Figure 3**, Figure S5, and Table S2.
* ***excess\_deaths.do*** – Creates **Figure 4**.
* ***robustness\_testing.do*** – Creates Figure S6, Figure S7, Figure S8, Figure S10, and Figure S11.
* ***alt\_regressions.do*** – Creates Figure S9.