

# Health Spending and Life Expectancy in Eighteen OECD Countries

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## Introduction

I want to produce a version of a figure I first saw in Kenworthy (2014, 51). Versions of it have appeared elsewhere, too. To make it we'll need to get data from the OECD and then write some code to draw the graph.

## The Data

We're working in this little project, so our local data files and our output is defined with respect to where the project is on our computer. In R, the `here` package helps us stay disciplined about this.

We set things up by getting the data from a file in the project.<sup>1</sup> It's a comma-separated values or CSV file. To do our work we'll put it in a thing named `df`.

The data look like this:

```
# A tibble: 2,238 x 5
  country iso3  year life_exp health_ppp
  <chr>   <chr> <int>   <dbl>   <dbl>
1 Australia AUS   1962     71      NA
2 Australia AUS   1967    70.8     NA
3 Australia AUS   1971     NA     999.
4 Australia AUS   1972     NA    1027.
5 Australia AUS   1973     NA    1080.
6 Australia AUS   1974     NA    1199.
7 Australia AUS   1975     NA    1351.
```

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<sup>1</sup>Don't worry at this point if you don't know any R.

```

8 Australia AUS      1976      72.8      1387.
9 Australia AUS      1977      NA        1444.
10 Australia AUS     1978      NA        1451.
# i 2,228 more rows

```

There's more information here than we are interested in.

We'll look at the following selection of countries only: Australia, Austria, Belgium, Canada, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Ireland, Italy, Japan, Netherlands, Norway, New Zealand, Sweden, United States. We're also just interested in 1970 and after. And in particular we want to draw a figure that contrasts the US and all the other countries. For that we'll make an indicator or flag or dummy variable that picks out the US from all the other countries. Finally, we'll smooth the trends a little by calculating a three-year moving average for each country.

At this point our data table of looks like this:

```

# A tibble: 909 x 7
# Groups:   country [19]
  country iso3  year life_exp health_ppp us_flag      avg_spend
  <chr>   <chr> <int>  <dbl>    <dbl> <chr>      <dbl>
1 Australia AUS   1976   72.8    1387. Eighteen OECD Countries 1480.
2 Australia AUS   1981   74.8    1527. Eighteen OECD Countries 1503.
3 Australia AUS   1982   74.6    1526. Eighteen OECD Countries 1523.
4 Australia AUS   1983   75.4    1572. Eighteen OECD Countries 1576.
5 Australia AUS   1984   75.7    1606. Eighteen OECD Countries 1612.
6 Australia AUS   1985   75.5    1649. Eighteen OECD Countries 1655.
7 Australia AUS   1986   76     1706. Eighteen OECD Countries 1702.
8 Australia AUS   1987   76.2    1741. Eighteen OECD Countries 1751.
9 Australia AUS   1988   76.2    1809. Eighteen OECD Countries 1798.
10 Australia AUS  1989   76.4    1850. Eighteen OECD Countries 1842.
# i 899 more rows

```

## The Figure and some Tables

Now we write some code to draw the plot. The results are shown in [Figure 1](#).

Let's also make summary table or two while we are here. First, a table of the average life expectancy at birth for every country. This is shown in [Table 1](#).

# Health Spending and Life Expectancy, 1970–2023

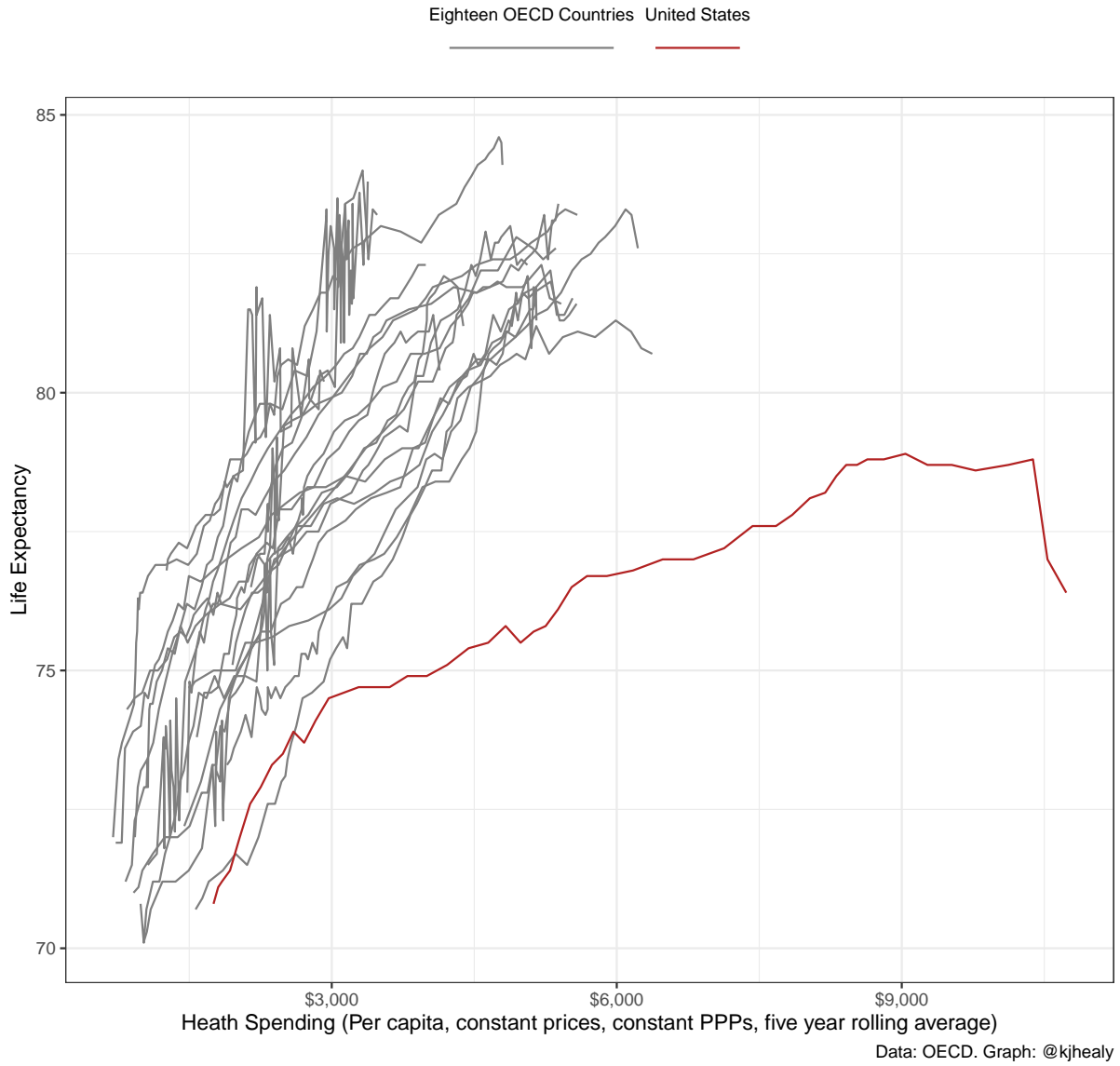


Figure 1: The figure we were trying to draw

Table 1: Average Life Expectancy at Birth, in years, 1970-2023

Country	Mean
Australia	79.3
Austria	77.0
Belgium	77.0
Canada	79.2
Denmark	77.0
Finland	76.9
France	79.7
Germany	76.9
Greece	79.5
Ireland	77.5
Italy	80.7
Japan	79.7
Netherlands	78.3
New Zealand	77.0
Norway	78.5
Spain	79.0
Sweden	79.0
United Kingdom	77.5
United States	75.9

And second, Table 2 summarizes spending on health each year across countries.

Table 2: Range of Spending across countries in Constant PPP per capita, selected years 1970-2023, rounded to the nearest dollar.

Year	Min	Mean	Median	Max
1970	466	962	906	1,663
1975	764	1,557	1,461	2,145
1980	936	1,749	1,774	2,666
1985	976	1,909	1,881	3,455
1990	1,121	2,275	2,413	4,470
1995	1,484	2,567	2,373	5,255
2000	1,904	3,081	2,796	6,068
2005	2,687	3,763	3,508	7,682
2010	2,964	4,282	4,234	8,489
2015	2,123	4,595	4,669	9,355
2020	2,348	5,102	5,171	11,081
2023	3,249	4,699	5,078	5,392

## **Conclusion**

We've drawn the figure we want *and* made some nice tables. Good work everyone.

## **References**

Kenworthy, Lane. 2014. *Social Democratic America*. New York: Oxford University Press.