# Essay 2: The cost to save a year of life

## Abstract

In this paper, I will show that poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally. I will define CSY as the cost to save a year of life. I found that CSYs vary over 5 orders of magnitude, and that rich people and governments could reallocate a lot of public and private spending to close the gaps in CSYs. Therefore, poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally.

## Theory

I will refer to the cost to save a year of life in a country as the CSY[[1]](#footnote-2). In this section, I will use theory to make five conclusions.

1. The more people and governments behaved as if all life mattered equally, the less CSYs would vary.
2. The average of the cost-effectiveness ratios that publishers have published will be roughly related to the CSY.
3. Although the average of the cost-effectiveness ratios publishers have published might not precisely equal the CSY, I don’t know of any factor that would bias this estimate and that would also vary between countries.
4. If CSYs do vary, people and governments could close this gap by reallocating health-care spending on themselves and donate this money externally instead.
5. If rich people and governments do not behave as if all years of life matter equally, poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally.

If a person or government maximized the cost-effectiveness of their spending, then they would implicitly only purchase treatments below a certain cost-effectiveness threshold. This is because, if the person or government decided not to purchase a treatment with a cost-effectiveness ratio below the threshold, and instead purchased a treatment with a ratio above the threshold, the person or government would reduce the total amount of QALYs they saved, because the treatment above the threshold would be less cost-effective.

One can thus imagine people and governments reacting to differing “supply” curves of available health-care treatments. Many variables might affect the shape of this supply curve, including climate, demographics, nutrition, exercise, technology, and transportation. Each person and government might face different supply curves, and the shape of these supply curves might vary over time.

If one assumes that payers buy health care in a market, by the theory of revealed preferences, the equilibrium cost to save a year of a patient’s life would represent how much a marginal payer values that patient’s year of life.

The average of the cost-effectiveness ratios that publishers have published will be roughly related to CSYs. This is because publishers are most likely to publish cost-effectiveness ratios of very cost-effective treatments that many people have not considered. This would only hold on average: publishers might also publish studies of cost-ineffective treatments that many people purchase (which would bias CSYs upwards), and also, cost-effective treatments that many people already purchase (which would bias CSYs downards).

Although the average of the cost-effectiveness ratios that publishers have published might not precisely equal CSYs, I don’t know of any factor that would bias this estimate and that would also vary between countries. If there was a factor that would bias this estimate and that would also vary between countries, I might be slightly overestimating or underestimating differences in CSYs. However, one probably could not use such a factor to explain very large discrepancies in CSYs.

If a person or government maximizes the cost-effectiveness of additional spending, their health-care spending and cost-effectiveness threshold must be causally related. If the person or government spent more on healthcare, the implicit cost-effectiveness threshold they use would rise, because the payer would only fund additional treatments with a higher cost-effectiveness ratio than the previous threshold. Thus, the person or government’s healthcare spending and cost-effectiveness threshold must be causally related.

One can decompose per-capita health-care spending by sector. In reality, three overlapping groups of decision-makers simultaneously fund healthcare in a country: private individuals, governments, and external donors. Not all of these decision-makers necessarily maximize the cost-effectiveness of their spending.

The health-care spending of people on themselves could vary between countries for two reasons. First, on the “demand side”, of people have different wealths and incomes, and some cannot afford all health-care treatments. Then, on the “supply side”, different people have different health-care needs.

The health-care spending of governments on their own citizens would vary between countries for similar reasons. First, on the “demand side”, citizens in countries have different wealths and incomes. Second, on the “supply side”, citizens in countries have different health-care needs.

If all people and governments believed that all years of life matter equally, they would divert public and private spending and become “external donors” until the cost to save a year of life (CSY) was exactly equal for all people. People can become “external donors” by funding healthcare for people other than themselves. Governments can become “external donors” by funding healthcare for citizens of other nations. Consider how a person would behave if either they believed that all life mattered equally. They would not fund a health-care treatment for themself provided they could fund a more cost-effective treatment for someone else. There is one exception: the person who would receive the most cost-effective treatment would purchase that treatment for themself regardless. A parallel argument applies to governments.

Even if some people and governments did not behave as if all years of life mattered equally, with enough power, other people and governments could force them to do so. For example, if in some regions of the world, people and governments could not afford cost-effective treatments for themselves or their citizens, these people and governments could use power to force other people and countries to fund these treatments instead. For example, poor governments could vote in the United Nations (using “decision power”), and the United Nations could force rich countries to fund treatments in poor countries. After all, poor countries outnumber rich countries because wealth is concentrated. Also, poor governments could use global media to create public outcry (using “value power”). In converse, if rich people and governments do not behave as if all years of life matter equally, poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally.

In this paper, I will first check to see if CSYs do vary, and second, consider how much public and private spending people and governments could reallocate to close this gap. If I find that CSYs vary greatly, and that external donors are not helping to close the gap, I will thus validate the power-weighted social decision rule and conclude that poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally.

## Methods

You can download all of the code and data I used at <https://github.com/bramtayl/CSL>.

### CSYs

First, I checked to see if CSYs do vary between countries.

I examined differences in the cost to save a year of life between nations using the Tufts Medical Cost Effectiveness Analysis (CEA) Registry. This registry is a “comprehensive database of 8,056 cost-utility analyses on a wide variety of diseases and treatments published from 1976 to 2018” (*CEA Registry*, 2020). For each study, Tufts Medical reports one or more cost-effectiveness ratio in 2018 $ per QALY, and describes the target population, nearly always mentioning the nationality of participants. Because Tufts Medical does not report information about the exchange rates and measures of inflation they used, I cannot use different exchange rates or measures of inflation to readjust these figures. Economists have used the registry to study specific topics. For example, Chambers et al. used the registry to “compare the value of orphan and non-orphan drugs” (2020). However, no economist has ever used the registry to compare the cost to save a year of life between countries.

I obtained data by searching the CEA registry for the name of every country as listed in the CRAN countrycode package and collecting the first 100 results for each country. Tufts Medical returns 100 results per search for free, but Tufts Medical will only return more results if one pays $9000 per year for a license. Fortunately, Tufts Medical returns more than 100 results for only one country, the United States. Tufts Medical does return the most recent entries first, so if one assumes that CSYs are generally increasing or decreasing over time, this could bias the figure for the only one country: the United States. For each country, I took the geometric mean of these results to calculate the CSY. I used the geometric mean because these values are all positive and vary over orders of magnitude.

I have provided more details about how I processed this data in Appendix 1.

### Health-care spending by sector

Second, I divided health-care spending by sector. Economists at the Global Health Expenditures Database (GHED) (*Global Health Expenditures Database*, 2022) divided health-care spending into three broad sectors: domestic public, domestic government, and external. I’ve listed the full names GHED economists use for these three sectors in Table 1.

Table 1: Full names of sectors

| Sector | Full name |
| --- | --- |
| Domestic Private | Domestic Private Health Expenditure (PVT-D), in million current international $ (PPP) |
| Domestic Government | Domestic General Government Health Expenditure (GGHE-D), in million current international $ (PPP) |
| External | External Health Expenditure (EXT), in million current international $ (PPP) |

GHED economists used purchasing power parity to adjust these figures. This is convenient, because health-care treatments are often non-tradable goods, and thus, one can use purchasing power to measure the value of health-care more accurately than if one uses nominal exchange rates. I used data from 2018 because that is the most recent year for which GHED economists provided data for most countries. For each sector, I added the spending for all countries together. Then, I calculated each sector’s proportion of the total.

## Results

### CSYs

In general, although the CSY data is noisy, CSYs vary over 5 orders of magnitude. In Table 2, I have ranked the CSYs I calculated. For some countries for which few publishers have published a cost-effectiveness study, the values I calculated might not represent general trends. If one excludes countries for which the publishers have only published 1 study, the extreme values are New Zealand at $100,000 / QALY and Tanzania at $37 / QALY. This means that for the cost of saving 1 year of life in New Zealand, one could save roughly 2700 years of life in Tanzania.

Table 2: Geometric mean CSYs by country, ranked. Data is more reliable for countries that publishers have published a large number of studies for. For example, in New Zealand, the CSY is about $100,000 / QALY, while in Tanzania, the CSL is about $37 / QALY.

| Rank | Country | Number of studies | CSY, 2018 $/QALY |
| --- | --- | --- | --- |
| 1 | Venezuela | 1 | 130000 |
| 2 | New Zealand | 39 | 1e+05 |
| 3 | United States | 168 | 66930 |
| 4 | Iran | 5 | 66623 |
| 5 | Finland | 31 | 65349 |
| 6 | Serbia | 8 | 60131 |
| 7 | Sweden | 52 | 58376 |
| 8 | Norway | 31 | 57477 |
| 9 | Australia | 32 | 53802 |
| 10 | Lithuania | 3 | 50632 |
| 11 | Netherlands | 61 | 45693 |
| 12 | Hungary | 18 | 42505 |
| 13 | Saudi Arabia | 9 | 40078 |
| 14 | Belgium | 37 | 39890 |
| 15 | Singapore | 49 | 39049 |
| 16 | Israel | 29 | 39007 |
| 17 | Cyprus | 10 | 37887 |
| 18 | Japan | 24 | 33902 |
| 19 | Switzerland | 41 | 31780 |
| 20 | Algeria | 2 | 30033 |
| 21 | France | 31 | 29944 |
| 22 | Ireland | 22 | 28187 |
| 23 | Argentina | 8 | 26614 |
| 24 | Germany | 35 | 25873 |
| 25 | Colombia | 17 | 24854 |
| 26 | Canada | 64 | 24080 |
| 27 | Slovenia | 12 | 23228 |
| 28 | United Kingdom | 78 | 21726 |
| 29 | Albania | 2 | 21564 |
| 30 | Croatia | 2 | 21213 |
| 31 | Portugal | 27 | 20134 |
| 32 | Slovakia | 5 | 19993 |
| 33 | Austria | 24 | 19790 |
| 34 | Thailand | 62 | 19630 |
| 35 | South Korea | 45 | 19349 |
| 36 | Poland | 34 | 18552 |
| 37 | Colomnia | 1 | 18000 |
| 38 | Spain | 37 | 15064 |
| 39 | China | 69 | 13784 |
| 40 | Bolivia | 1 | 13000 |
| 41 | Turkey | 9 | 12374 |
| 42 | Denmark | 40 | 12248 |
| 43 | Egypt | 3 | 11817 |
| 44 | Bulgaria | 1 | 9100 |
| 45 | Italy | 55 | 8825 |
| 46 | Brazil | 30 | 7912 |
| 47 | Ethiopia | 1 | 7800 |
| 48 | Greece | 31 | 6742 |
| 49 | Mexico | 20 | 6675 |
| 50 | Malaysia | 9 | 6262 |
| 51 | Peru | 6 | 5691 |
| 52 | Rwanda | 1 | 5400 |
| 53 | Estonia | 3 | 5284 |
| 54 | Nigeria | 9 | 4005 |
| 55 | Oman | 1 | 2900 |
| 56 | Ukraine | 23 | 2856 |
| 57 | South Africa | 34 | 2524 |
| 58 | Indonesia | 18 | 2276 |
| 59 | Chile | 8 | 2164 |
| 60 | Romania | 4 | 1959 |
| 61 | Philippines | 11 | 1751 |
| 62 | Cambodia | 2 | 1549 |
| 63 | India | 36 | 1379 |
| 64 | Kenya | 3 | 1274 |
| 65 | Russia | 6 | 1111 |
| 66 | Lesotho | 1 | 1000 |
| 67 | Ghana | 1 | 900 |
| 68 | Montenegro | 1 | 690 |
| 69 | Vietnam | 6 | 471 |
| 70 | Uganda | 15 | 411 |
| 71 | Zimbabwe | 2 | 290 |
| 72 | Malawi | 5 | 261 |
| 73 | Latvia | 3 | 195 |
| 74 | Zambia | 12 | 187 |
| 75 | Pakistan | 3 | 150 |
| 76 | Tajikistan | 1 | 100 |
| 77 | Jordan | 1 | 82 |
| 78 | Bhutan | 2 | 40 |
| 79 | Tanzania | 2 | 37 |
| 80 | Iceland | 1 | 30 |
| 81 | Mozambique | 1 | 13 |
| 82 | Sierra Leone | 1 | 12 |
| 83 | Nepal | 1 | 5 |

No one has published any cost-effectiveness studies for many of the countries in Africa and Central Asia. I have logged and averaged CSYs by country, and mapped this data over an equal area projection, in Figure 1.

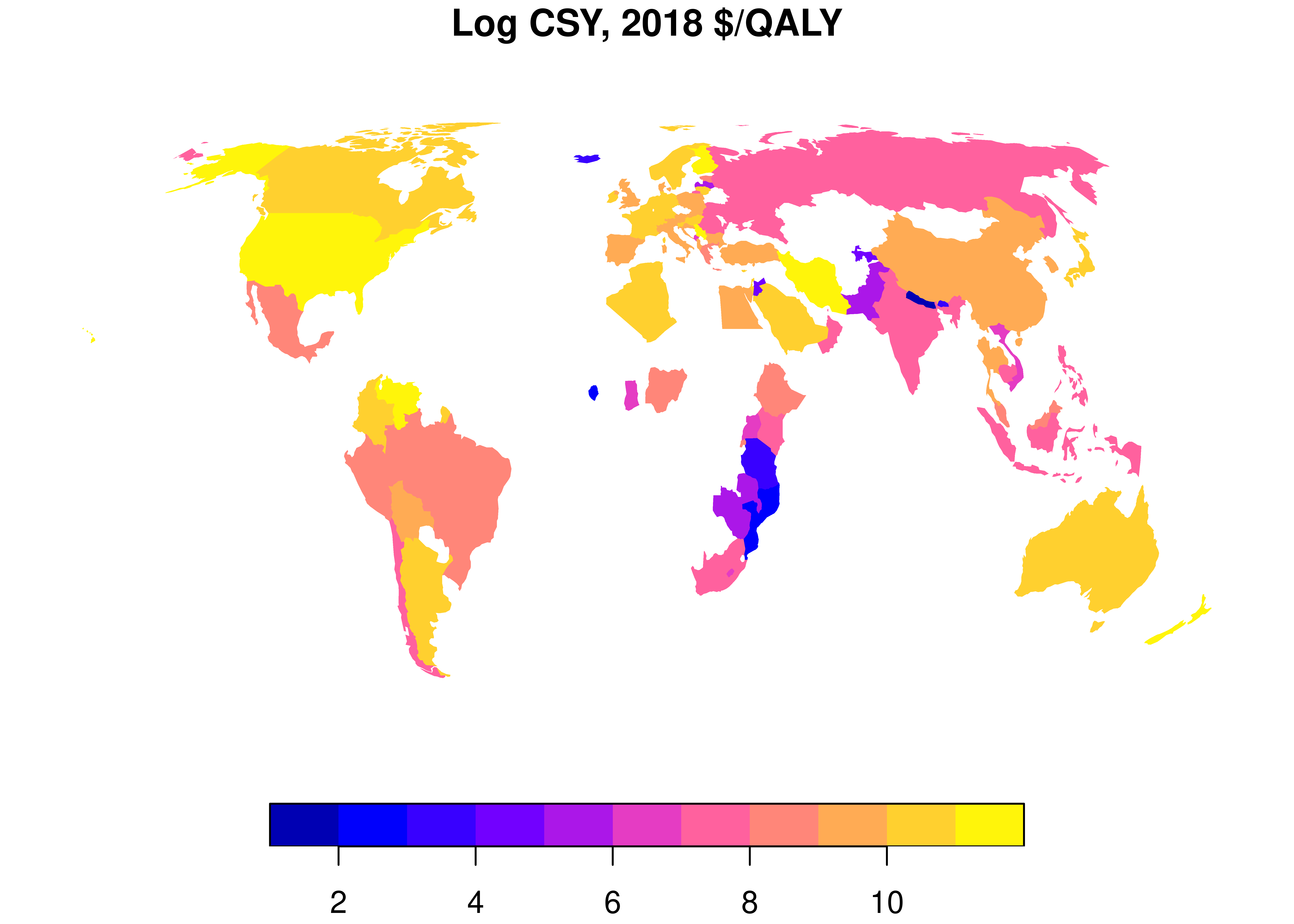


Figure 1: A map the cost to save a life (CSY), logged and averaged by country, over an equal area projection. No one has published a single public health cost-effectiveness study for many countries; these countries do not appear on the map.

Although the CSY data is noisy, CSYs vary over 5 orders of magnitude.

### Health-care spending by sector

People and governments could reallocate much of public and private spending to close the gaps in CSYs. In Table 3, I’ve calculated the share of total health expenditures by sector.

Table 3: Health-care spending by sector

| Sector | Proportion of global 2018 health expenditures, in current international $ (PPP) |
| --- | --- |
| Domestic government | 0.59 |
| Domestic private | 0.41 |
| External | 0.0039 |

In general, external health-care spending is negligible in proportion to public and private health-care spending, and accounts for only 0.39% of global health-care spending. Therefore, people and governments could reallocate their own public and private spending respectively to close the gaps in CSYs.

## Conclusion

In this paper, I showed that poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally. I found that CSYs vary over 5 orders of magnitude, and that people and governments could reallocate a lot of public and private spending to close the gaps in CSYs. Therefore, poor people and governments must not have the power to force rich people and governments to behave as if all years of life mattered equally.

# Appendix: further details about how I processed the CSY data

I used RSelenium to automate searching for countries and saving the results. Table 4 is the list of countries I searched for.

Table 4: List of countries I searched for

| Country |
| --- |
| Afghanistan |
| Åland Islands |
| Albania |
| Algeria |
| American Samoa |
| Andorra |
| Angola |
| Anguilla |
| Antarctica |
| Antigua & Barbuda |
| Argentina |
| Armenia |
| Aruba |
| Australia |
| Austria |
| Austria-Hungary |
| Azerbaijan |
| Baden |
| Bahamas |
| Bahrain |
| Bangladesh |
| Barbados |
| Bavaria |
| Belarus |
| Belgium |
| Belize |
| Benin |
| Bermuda |
| Bhutan |
| Bolivia |
| Bosnia & Herzegovina |
| Botswana |
| Bouvet Island |
| Brazil |
| British Indian Ocean Territory |
| British Virgin Islands |
| Brunei |
| Brunswick |
| Bulgaria |
| Burkina Faso |
| Burundi |
| Cambodia |
| Cameroon |
| Canada |
| Cape Verde |
| Caribbean Netherlands |
| Cayman Islands |
| Central African Republic |
| Chad |
| Channel Islands |
| Chile |
| China |
| Christmas Island |
| Cocos (Keeling) Islands |
| Colombia |
| Comoros |
| Congo - Brazzaville |
| Congo - Kinshasa |
| Cook Islands |
| Costa Rica |
| Côte d’Ivoire |
| Croatia |
| Cuba |
| Curaçao |
| Cyprus |
| Czechia |
| Czechoslovakia |
| Denmark |
| Djibouti |
| Dominica |
| Dominican Republic |
| Ecuador |
| Egypt |
| El Salvador |
| Equatorial Guinea |
| Eritrea |
| Estonia |
| Eswatini |
| Ethiopia |
| Falkland Islands |
| Faroe Islands |
| Fiji |
| Finland |
| France |
| French Guiana |
| French Polynesia |
| French Southern Territories |
| Gabon |
| Gambia |
| Georgia |
| German Democratic Republic |
| Germany |
| Ghana |
| Gibraltar |
| Greece |
| Greenland |
| Grenada |
| Guadeloupe |
| Guam |
| Guatemala |
| Guernsey |
| Guinea |
| Guinea-Bissau |
| Guyana |
| Haiti |
| Hamburg |
| Hanover |
| Heard & McDonald Islands |
| Hesse Electoral |
| Hesse Grand Ducal |
| Hesse-Darmstadt |
| Hesse-Kassel |
| Honduras |
| Hong Kong SAR China |
| Hungary |
| Iceland |
| India |
| Indonesia |
| Iran |
| Iraq |
| Ireland |
| Isle of Man |
| Israel |
| Italy |
| Jamaica |
| Japan |
| Jersey |
| Jordan |
| Kazakhstan |
| Kenya |
| Kiribati |
| Kosovo |
| Kuwait |
| Kyrgyzstan |
| Laos |
| Latvia |
| Lebanon |
| Lesotho |
| Liberia |
| Libya |
| Liechtenstein |
| Lithuania |
| Luxembourg |
| Macao SAR China |
| Madagascar |
| Malawi |
| Malaysia |
| Maldives |
| Mali |
| Malta |
| Marshall Islands |
| Martinique |
| Mauritania |
| Mauritius |
| Mayotte |
| Mecklenburg Schwerin |
| Mexico |
| Micronesia (Federated States of) |
| Modena |
| Moldova |
| Monaco |
| Mongolia |
| Montenegro |
| Montserrat |
| Morocco |
| Mozambique |
| Myanmar (Burma) |
| Namibia |
| Nassau |
| Nauru |
| Nepal |
| Netherlands |
| Netherlands Antilles |
| New Caledonia |
| New Zealand |
| Nicaragua |
| Niger |
| Nigeria |
| Niue |
| Norfolk Island |
| North Korea |
| North Macedonia |
| Northern Mariana Islands |
| Norway |
| Oldenburg |
| Oman |
| Orange Free State |
| Pakistan |
| Palau |
| Palestinian Territories |
| Panama |
| Papua New Guinea |
| Paraguay |
| Parma |
| Peru |
| Philippines |
| Piedmont-Sardinia |
| Pitcairn Islands |
| Poland |
| Portugal |
| Prussia |
| Puerto Rico |
| Qatar |
| Republic of Vietnam |
| Réunion |
| Romania |
| Russia |
| Rwanda |
| Saint Martin (French part) |
| Samoa |
| San Marino |
| São Tomé & Príncipe |
| Sardinia |
| Saudi Arabia |
| Saxe-Weimar-Eisenach |
| Saxony |
| Senegal |
| Serbia |
| Serbia and Montenegro |
| Seychelles |
| Sierra Leone |
| Singapore |
| Sint Maarten |
| Slovakia |
| Slovenia |
| Solomon Islands |
| Somalia |
| Somaliland |
| South Africa |
| South Georgia & South Sandwich Islands |
| South Korea |
| South Sudan |
| Spain |
| Sri Lanka |
| St. Barthélemy |
| St. Helena |
| St. Kitts & Nevis |
| St. Lucia |
| St. Pierre & Miquelon |
| St. Vincent & Grenadines |
| Sudan |
| Suriname |
| Svalbard & Jan Mayen |
| Sweden |
| Switzerland |
| Syria |
| Tajikistan |
| Tanzania |
| Thailand |
| Timor-Leste |
| Togo |
| Tokelau |
| Tonga |
| Trinidad & Tobago |
| Tunisia |
| Turkey |
| Turkmenistan |
| Turks & Caicos Islands |
| Tuscany |
| Tuvalu |
| Two Sicilies |
| U.S. Virgin Islands |
| Uganda |
| Ukraine |
| United Arab Emirates |
| United Arab Republic |
| United Kingdom |
| United Province CA |
| United States |
| United States Minor Outlying Islands (the) |
| Uruguay |
| Uzbekistan |
| Vanuatu |
| Vatican City |
| Venezuela |
| Vietnam |
| Wallis & Futuna |
| Western Sahara |
| Wuerttemburg |
| Würtemberg |
| Yemen |
| Yemen Arab Republic |
| Yemen People’s Republic |
| Yugoslavia |
| Zambia |
| Zanzibar |
| Zimbabwe |

After I downloaded the data from Tufts Medical, I matched each cost-effectiveness ratio to a country. To do so, I matched based on the “target population” field, in which Tufts Medical described the target population of the study. I matched based on country names, but also, demonyms and misspellings that I identified. Table 5 is the list of additional demonyms and misspellings I used. I put regex word boundaries around each search term so that I would not match based on parts of words.

Table 5: Additional aliases I used to match cost-effectiveness ratios to countries

| Alias | Country |
| --- | --- |
| Argentinian | Argentina |
| Australian | Australia |
| Austrian | Austria |
| Canadian | Canada |
| Taiwanese | China |
| Taiwan | China |
| colombia | Colomnia |
| Czech | Czechia |
| Domican Republic | Dominican Republic |
| Domnican Republic | Dominican Republic |
| estonia | Ethiopia |
| Finnish | Finland |
| French | France |
| Greek | Greece |
| Icelandic | Iceland |
| iran | Iran |
| Irish | Ireland |
| Israeli | Israel |
| Polish | Poland |
| Portugese | Portugal |
| Romanian | Romania |
| St. Petersburg | Russia |
| Saudia Arabia | Saudi Arabia |
| Serbian | Serbia |
| Slovenian | Slovenia |
| South African | South Africa |
| South Africans | South Africa |
| Korea | South Korea |
| Spanish | Spain |
| Swedish | Sweden |
| Chilean | Switzerland |
| Swiss | Switzerland |
| England | United Kingdom |
| UK | United Kingdom |
| New York City | United States |
| US | United States |
| U.S. | United States |
| Viet Nam | Vietnam |
| Zambian | Zambia |

I discarded cost-effectiveness ratios that matched more than one country (see Table 6). I also discarded ratios that matched no countries (see Table 7).

Table 6: Cost-effectiveness ratios which matched more than 1 country

| Target population |
| --- |
| Specific disease- chronic kidney disease; Age- Unknown; Gender- Both; Country- Australia; Other- waitlisted for a kidney transplant, Australia and New Zealand Dialysis and Transplant Registry. |
| Healthy; Age- 19 to 40 years, 41 to 64 years, >=65 years; Gender- Female; Country- United Kingdom, Ireland, Austria, Poland, Italy (Padua, Pisa), Spain, Denmark (Odense, Copenhagen), Belgium, and the Netherlands.; Other- Pregnant women with a pre-pregnancy body mass index (BMI) of >=29 kg/m2. |
| Healthy; Age- 0 to 18 years, 19 to 40 years, 41 to 64 years, >=65 years; Gender- Both; Country- United Kingdom; Other- Migrants from the Indian subcontinent, primarily Bangladesh, India and Pakistan. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Cape Verde. |
| Specific disease- traumatic brain injury; Age- 0 to 18 years, 19 to 40 years, 41 to 64 years, >=65 years; Gender- Both; Country- Finland, France, Germany, and Ireland. |
| Documented immigrants 18 years of age or older who entered the US from developing nations (China) int he year 2000 |
| Documented immigrants 18 years of age or older who enetered the US from developing nations (China) n the year 2000 |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Indonesia. |
| Specific disease- type 2 diabetes, obesity; Age- Adult; Gender- Both; Country- United Kingdom; Other- Includes Republic of Ireland, using insulin pre-operatively, follow-up appointment between 6 and 24 months post-operatively. |
| Specific disease- Sickle cell anaemia; Age- Unknown; Gender- Both; Country- Netherlands, England, Ireland, Canada. |
| Specific disease- Venous leg Ulcer; Age- Adult; Gender- Both; Country- England and Northern Ireland. |
| Specific disease- hiv; Age- 0 to 18 years; Gender- Both; Country- Zimbabwe, Uganda, Malawi, Kenya; Other- CD4 <100 cells/mm3. |
| Specific disease- hiv; Age- 0 to 18 years; Gender- Both; Country- Zimbabwe, Uganda, Malawi, Kenya; Other- CD4 <200 cells/mm3. |
| Specific disease- hiv; Age- 0 to 18 years; Gender- Both; Country- Zimbabwe, Uganda, Malawi, Kenya. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Morocco. |
| Healthy; Age- 19 to 40 years, 41 to 64 years, >=65 years; Gender- Male; Country- England; Netherlands; Norway; Portugal; Other- bmi >= 27 kg/m2. |
| Specific disease- traumatic brain injury; Age- 0 to 18 years, 19 to 40 years, 41 to 64 years, >=65 years; Gender- Both; Country- Australia, New Zealand. |
| Specific disease- traumatic brain injury; Age- 0 to 18 years, 19 to 40 years, 41 to 64 years, >=65 years; Gender- Both; Country- Australia/New Zealand, Europe, Saudi Arabia. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Pakistan. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Poland. |
| Specific disease- Secondary hyperparathyroidism; Age- Adult; Gender- Both; Country- Italy, Spain, Portugal, Switzerland, Czech Republic; Other- Hemodialysis patients. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Romania. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Somalia. |
| Specific disease- colorectal polyps; Age- Adult; Gender- Both; Country- United States; Other- High risk for delayed bleeding (Spanish Endoscopic Resection Group Delayed bleeding score >6). |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Suriname. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Syria. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Turkey. |
| Adults starting antiretroviral therapy in Uganda and Zimbabwe |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Italy. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from Vietnam. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from former Yugoslavia. |
| Healthy; Age- Unknown; Gender- Both; Country- Netherlands; Other- Migrants from China. |

Table 7: Cost-effectiveness ratios which matched no country

| Target population |
| --- |
| Specific disease- Obesity; Age- 41 to 64 years; Gender- Both; Country- . |
| Patients hospitalized for acute coronary event or cardiac procedure in Europe |
| Patients with recently found and clinically diagnosed epilepsy |
| Specific disease- Paroxysmal or persistent atrial fibrillation; Age- 41 to 64 years, >=65 years; Gender- Both; Country- . |
| Patients with advanced progressive pancreatic neuroendocrine tumors |
| COPD patients aged over 45 years |
| 65 year old males with no prior abdominal aortic aneurysm |
| Patients with a presenting diagnosis of septic shock to the emergency department |
| Outpatients or inpatients with newly diagnosed nonvalvular atrial fribrulation and no contraindications to warfarin therapy |
| Health care workers with percutaneous exposure to blood |
| Specific disease- Gastrointestinal distress; Age- Adult; Gender- Both; Country- ; Other- Gastrointestinal distress post-pelvic radiotherapy for cancer. |
| Patients aged 60-70 years with acute deep venous thrombosis (inpatients) |
| Patients aged 60-70 years with acute deep venous thrombosis (outpatients) |
| Generalized anxiety disorder patients |
| Patients with partial seizures (simple partial, complex partial, with or without secondary generalized tonic-clonic) not adequately controlled on at least one antiepileptic drug |
| Patients with neuropathic pain associated with peripheral neuropathy and postherpetic neuralgia |
| Specific disease- atrial fibrillation; Age-; Gender- Both; Country- . |
| Index cases only (aged 15-49 individuals) |
| Index cases only (aged 15-49 individuals) and their sexual partners |
| HIV infected mothers (to protect against transmission to child via breastfeeding) |
| HIV infected mothers (to protect against transmission to child via breastfeeding) with CD4 count >= 200 cells/mL |
| HIV-infected adults with crptococcal meningitis in resource-limited settings of sub-Saharan Africa |
| Women screened for cervical cancer from societal perspective |
| Women screened for cervical cancer from health care perspective |
| Specific disease- Pancreatic cancer; Age-; Gender- Both; Country- . |
| Patients with fibromyalgia aged 18-65 |

I only used cost-effectiveness ratios which were positive numbers. Thus, I discarded ratios that Tufts Medical described only as “cost-saving" or "dominated". I also discarded cost-effectiveness ratios that were 0 or negative, because such values are outside of the domain of cost-effectiveness ratios. I have no reason to believe that these processing steps biased the results.

1. Apologies to Graham Nash [↑](#footnote-ref-2)