## Appendix

**Summary of a *PLOS Medicine* article (*journal.pmed.1001622*) by $\mathbf{CP_3}$**

$S_1$ Globally, suicide is amongst the leading causes of premature mortality; in 2010, it was the fifth leading cause of death in women and the sixth in men among individuals aged 15-49 y.

$S_2$ Time trends in suicide rates may be influenced by a number of factors including socio-economic changes, the prevalence of mental illness or distress, and certain types of media reporting; there is growing evidence that changes in the popularity and availability of lethal suicide methods could also have a marked impact on time trends in overall suicide rates.

$S_3$ Previous studies of method availability and suicide have mostly focused on the impact of restricting access to methods, such as detoxification of domestic gas, bans on sales of toxic pesticides and legal changes in firearms regulations.

$S_4$ In 1998-2000 there was a rapid rise in suicide by carbon monoxide poisoning from the inhalation of barbecue charcoal gas in Hong Kong and Taiwan.

$S_5$ Suicides by this method used to be very rare, but within 5 y charcoal burning became the second most common method of suicide in these two countries.

$S_6$ We used data from eight East/Southeast Asian countries Hong Kong, Taiwan, Japan, the Republic of Korea, Singapore, Malaysia, the Philippines, and Thailand to investigate time trends in charcoal-burning suicide across different countries and the association between changes in charcoal-burning suicide and overall suicide rates for the years 1995-2011.

$S_7$ We also examined sex - and age-specific time trends to identify the demographic groups showing the greatest increases in charcoal-burning suicide rates across different countries.

$S_8$ Specifically, the objectives of this analysis were to investigate (i) time trends and regional patterns of charcoal-burning suicide throughout East/Southeast Asia during the period 1995-2011 and (ii) whether any rises in use of this method were associated with increases in overall suicide rates.

$S_9$ Sex - and age-specific trends over time were also examined to identify the demographic groups showing the greatest increases in charcoal-burning suicide rates across different countries.

$S_{10}$ The World Health Organization Mortality Database contained suicide data for nine of countries countries, but only six had method-specific data available.

$S_{11}$ Data for the 3-y period 1995-1997 prior to 1998, when the first widely publicised suicide by charcoal burning occurred were used to assess the baseline rates.

$S_{12}$ There is no specific code for charcoal-burning suicide in the International Classification of Diseases.

$S_{13}$ We did not have access to data from other countries to investigate this further.

$S_{14}$ In joinpoint regression analysis, suicide time trends are characterised by contiguous linear segments and " join points " points at which trends change.

$S_{15}$ Crude rates for Singapore were modelled similarly, as age-specific suicide data were unavailable.

$S_{16}$ We calculated incidence rate ratios assuming a linear change in rates.

$S_{17}$ Charcoal-burning suicide rates increased in all countries over the study period, but the magnitude of the rise varied by country.

$S_{18}$ However, magnitude should be noted that these estimates are sensitive to baseline rates.

$S_{19}$ Similar declines in other methods of suicide in Hong Kong and Taiwan were also observed after 2003.

$S_{20}$ Combined numbers of charcoal-burning suicides for the five study countries reached a peak in 2009 (n = 6,759).

$S_{21}$ Similarly, in Taiwan, the rise in charcoal-burning suicide in 2000-2006 was related to an increase in overall suicide rate over the same period.

$S_{22}$ There was no evidence for an association of time trends in the rate of charcoal-burning suicide with changes in the overall suicide rate in Singapore.

$S_{23}$ In countries with a rise in the charcoal-burning suicide rate, the timing, scale, and sex/age pattern of the increase varied by country.

$S_{24}$ Our data showed that the increases in charcoal-burning suicide were associated with various levels of changes in overall suicide rates across the East/Southeast Asian countries studied.

$S_{25}$ In contrast , Singapore had a much smaller rise in charcoal-burning suicide than other countries did.

$S_{26}$ There are several limitations to this study.

$S_{27}$ Our main analyses included both suicides and deaths coded as undetermined intent, and findings were similar when data only for certified suicides were used.

$S_{28}$ Suicide estimates in countries five countries are considered to be reliable according to the rating scheme of the World Health Organization.

$S_{29}$ Suicide statistics are subject to under-reporting and misclassification in Malaysia, the Philippines, and Thailand, where the quality of suicide registration is not satisfactory.

$S_{30}$ In Taiwan, the rise and fall of charcoal-burning suicide did not seem to be associated with economic conditions.

$S_{31}$ Our results have several implications for international and regional suicide prevention strategies.

**Summary of a *PLOS Medicine* article (*journal.pmed.1001622*) by *Lead***

$S_1$ Globally, suicide is amongst the leading causes of premature mortality ; in 2010, it was the fifth leading cause of death in women and the sixth in men among individuals aged 1549 y.

$S_2$ Time trends in suicide rates may be influenced by a number of factors including socio-economic changes, the prevalence of mental illness or distress, and certain types of media reporting ; there is growing evidence that changes in the popularity and availability of lethal suicide methods could also have a marked impact on time trends in overall suicide rates.

$S_3$ Previous studies of method availability and suicide have mostly focused on the impact of restricting access to methods, such as detoxification of domestic gas, bans on sales of toxic pesticides and legal changes in firearms regulations.

$S_4$ However, many suicides using these methods had already occurred before the implementation of restrictions, highlighting the potential importance of surveillance for the emergence of new suicide methods at an early stage to enable public health action to prevent an increase of suicide by new methods.

$S_5$ In 1998-2000 there was a rapid rise in suicide by carbon monoxide poisoning from the inhalation of barbecue charcoal gas in Hong Kong and Taiwan.

$S_6$ Suicides by this method used to be very rare, but within 5 y charcoal burning became the second most common method of suicide in these two countries.

$S_7$ Although cases of charcoal-burning suicide have been reported in other neighbouring East/Southeast Asian countries such as China, Japan, Macao, Malaysia, Singapore, and the Republic of Korea, to the best of our knowledge, there has been no systematic investigation of regional patterns and time trends in the use of this method and the association between time trends in charcoal-burning suicide and overall suicide rates in affected countries.

$S_8$ We used data from eight East/Southeast Asian countries Hong Kong, Taiwan, Japan, the Republic of Korea, Singapore, Malaysia, the Philippines, and Thailand to investigate time trends in charcoal-burning suicide across different countries and the association between changes in charcoal-burning suicide and overall suicide rates for the years 1995-2011.

$S_9$ We also examined sex - and age-specific time trends to identify the demographic groups showing the greatest increases in charcoal-burning suicide rates across different countries.

$S_{10}$ Our overall aim was to establish what can be learned from the changing incidence of charcoal-burning suicide in this region to inform the prevention of the future emergence of novel suicide methods.

$S_{11}$ Specifically, the objectives of this analysis were to investigate (i) time trends and regional patterns of charcoal-burning suicide throughout EastSoutheast Asia during the period 1995-2011 and (ii) whether any rises in use of this method were associated with increases in overall suicide rates.

$S_{12}$ Sex - and age-specific trends over time were also examined to identify the demographic groups showing the greatest increases in charcoal-burning suicide rates across different countries.

$S_{13}$ The study used only aggregate secondary data that were available openly ; no identifiable personal data were used in the study.

$S_{14}$ Ethical approval was thus not required.

$S_{15}$ To investigate time trends in charcoal-burning suicide in EastSoutheast Asia we first systematically identified countries with data available in the World Health Organization WHO Mortality Database, which provides the most comprehensive standardised national mortality statistics for countries around the world.

$S_{16}$ Figure 1 shows a flow chart summarising how we identified data for the study countries.

$S_{17}$ In brief, we first identified 19 countries that were classified as in the EastSoutheast Asia region by the United Nations eight in East Asia and 11 in Southeast Asia.

$S_{18}$ The WHO Mortality Database contained suicide data for nine of these countries, but only six had method-specific data available.

$S_{19}$ We then extracted complete method-specific suicide data by sex, age 5-y bands, and year for Japan and the Republic of Korea for the period 19952011, and for the years available for Hong Kong 2001-2011, Malaysia 2000-2008, the Philippines 1995-2003, 2008, and Thailand 1995-2000, 2002-2006.

$S_{20}$ Data for the 3-y period (1995-1997) prior to 1998, when the first widely publicised suicide by charcoal burning occurred were used to assess the baseline rates.

$S_{21}$ We then supplemented the WHO data by extracting relevant suicide data from the national death registers for Hong Kong (19952011) and Taiwan (19952011), as well as from published mortality statistics for Singapore (19962011), although only sex- and method-specific, but not age-specific, data were available for Singapore.

**Summary of a *PLOS Medicine* article (*journal.pmed.1001622*) by *TextRank***

$S_1$ Some evidence of method substitution was found in Japanese males – the rise in charcoal-burning suicide was accompanied by a fall in suicide by other methods Figure 2.

$S_2$ There was no evidence for an association of time trends in the rate of charcoal-burning suicide with changes in the overall suicide rate in Singapore.

$S_3$ A rise in charcoal-burning suicides was first seen in Hong Kong 1999, followed by Singapore 2000, Taiwan 2001, Japan 2003, and the Republic of Korea 2008, although the evidence for a definite starting year for Singapore was limited because of relatively small suicide numbers.

$S_4$ The WHO Mortality Database also provided population data; when these were incomplete or unavailable, relevant data were extracted from the United Nations population database.

$S_5$ Suicide estimates in these five countries are considered to be reliable according to the rating scheme of the WHO.

$S_6$ Negative binomial regression models were used because there was evidence for over-dispersion in the Poisson regression analyses of the data.

$S_7$ Charcoal-burning suicide rates increased in all countries over the study period, but the magnitude of the rise varied by country.

$S_8$ There are several limitations to this study.

$S_9$ In contrast, the quality of suicide data for countries with incomplete time series Malaysia, the Philippines, and Thailand is thought to be relatively poor.

$S_{10}$ Annual rates of changes in charcoal-burning suicide rates did not differ by sex/age group in Taiwan and Hong Kong, whilst people aged 1524 y in Japan and people aged 25-64 y in the Republic of Korea tended to have the greatest rates of increase.

$S_{11}$ Malaysia, the Philippines, and Thailand also use different languages.

$S_{12}$ The economic recession, which led to an increased number of people troubled by debt problems, may have had some role in the increase in charcoal-burning suicide.

$S_{13}$ Although there was no indication of a marked rise in charcoal-burning suicide rate in these three countries, a very slight rise in Malaysia was observed the rate increased from 006 per 100,000 in 2000 to a peak of 030 per 100,000 in 2003.

$S_{14}$ Males aged 25-44 y tended to show the highest rates compared to other sex/age groups, except that Japanese males aged 4564 y had rates similar to those of males aged 25-44 y In contrast, females aged 65+ y tended to have the lowest rates, except in the Republic of Korea, where females aged 45-64 y had the lowest rates.

$S_{15}$ Furthermore, although economic slowdowns may be accompanied by rises in suicide, the impact is not likely to be method-specific ie, affecting only trends in charcoal-burning suicide but not suicide using other methods.

$S_{16}$ Third, we did not include data for some East/Southeast Asian countries where cases of charcoal-burning suicide were also reported recently, such as China and Macao; detailed method-specific data for suicide were unavailable for these countries.

$S_{17}$ Our results have several implications for international and regional suicide prevention strategies.

$S_{18}$ Time trends in suicide rates may be influenced by a number of factors including socio-economic changes, the prevalence of mental illness or distress, and certain types of media reporting; there is growing evidence that changes in the popularity and availability of lethal suicide methods could also have a marked impact on time trends in overall suicide rates.

$S_{19}$ In Hong Kong, charcoal-burning suicides emerged in 1998-1999, following the Asian economic crisis in 1997-1998, which was shown to have a strong impact on Hong Kong's economy and suicide patterns.

$S_{20}$ This may be related to the characteristics of the initial cases.

$S_{21}$ Similarly, in Taiwan, the rise in charcoal-burning suicide in 2000-2006 was related to an increase in overall suicide rate over the same period.

$S_{22}$ In the Republic of Korea, the increase in charcoal-burning suicide was quite recent and was not associated with a rise in the overall suicide rate, as the magnitude of increase was relatively small.

$S_{23}$ The sequence started by comparing the model with zero join points i.e., a straight line with no change in trend and that with one join point, and it ended when there was no statistical evidence that more joint points fit the data better or when reaching the maximum number of join points allowed.

$S_{24}$ The starting and peak years were identified in the joinpoint regression analyses and by visual inspection of the graphs of time trends in charcoal-burning suicide.