

# Spatial Patterns of Suicide Rate Change After the Outbreak of COVID-19 in Japan

2021-Fall NTU Spatiotemporal Data Visualization

To begin with

How do you **feel** when local  
outbreak of COVID-19 ?



衛生福利部疾病管制署

Taiwan Centers for Disease Control

EN



首頁

新聞稿

因應本土疫情持續嚴峻，指揮中心自即日起至5月28日止提升全國疫情警戒至第三級，各地同步加嚴、加大防疫限制，嚴守社區防線



發佈日期：2021-05-19

# Question

Do you think residents in “MANGA” (艋舺)

# Had the Same Feeling

with you and your neighbors ?

疫情 即時 政治 國際 兩岸 產經 證券 科技 生活 社會 地方

本土疫情單日增180例 43例集中萬華地區

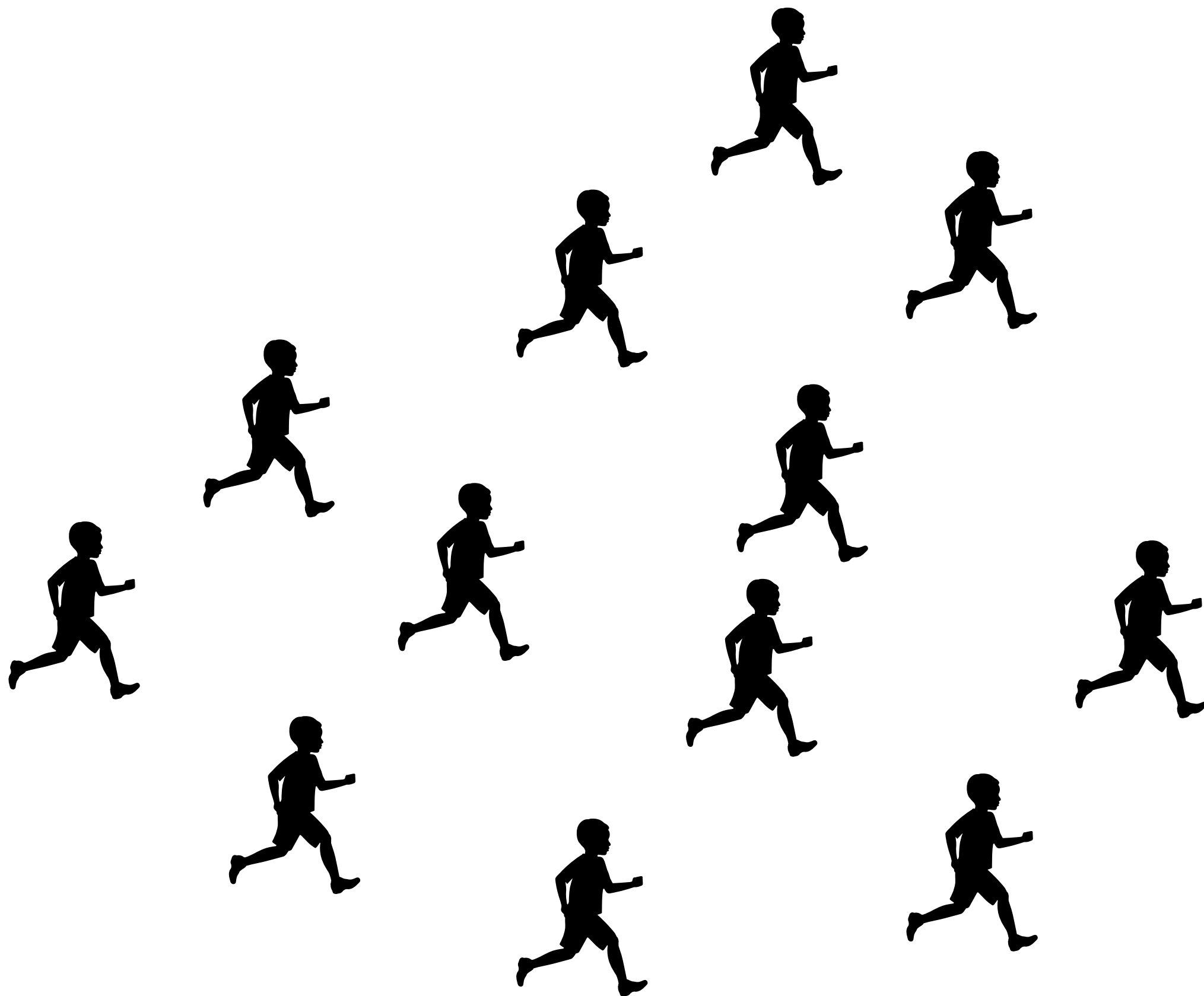
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# COVID-19 and Mental Health

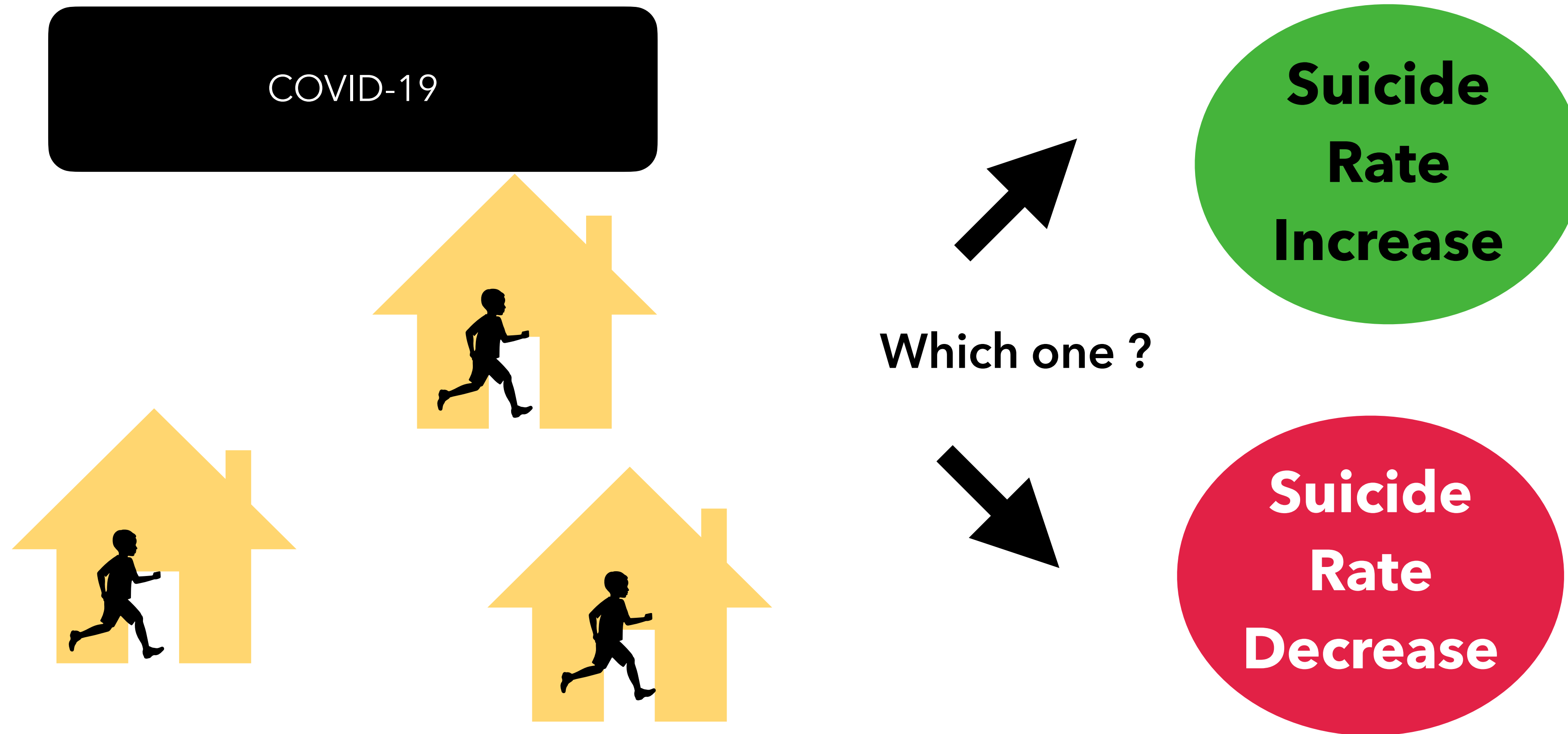
Suicide as an extreme mental unhealthy condition





# COVID-19 and Mental Health

Suicide as an extreme mental unhealthy condition



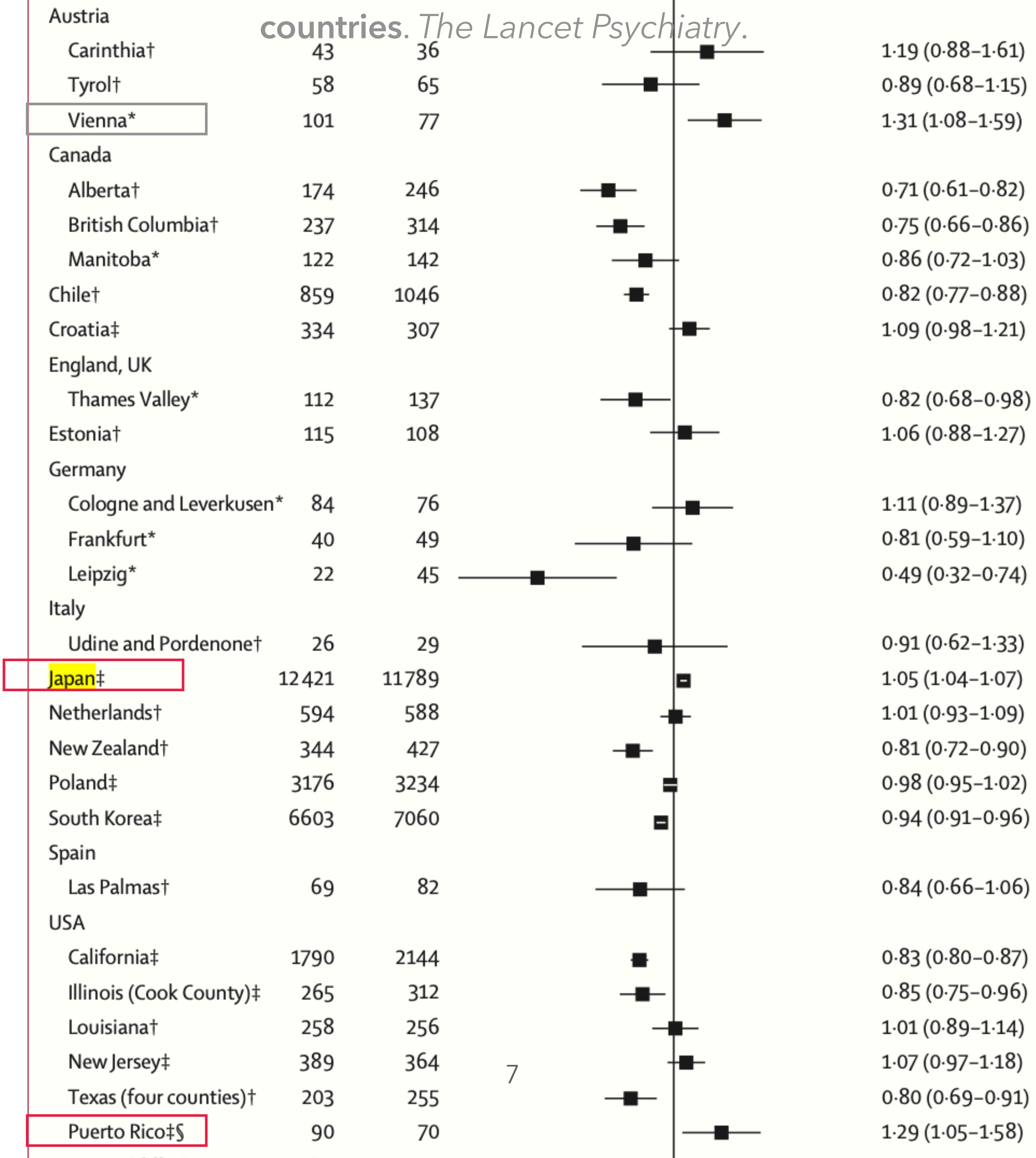
Zorteam et al., 2021 The Impact of Infectious Disease-Related Public Health Emergencies on Suicide, Suicidal Behavior, and Suicidal Thoughts. *Crisis* 0 (0):1-14

# Epidemics and Suicide Rate

Time	Epidemics	Place	Impact on suicide	Literatures
1889-1893	Russian influenza	the U.K.	Increase	Honigsbaum, M. (2010). <b>The great dread: Cultural and psychological impacts and responses to the "Russian" influenza in the United Kingdom, 1889-1893.</b> <i>Social History of Medicine</i> , 23(2),
1918-1920	Spanish Flu	the U.S.A.	Increase	Wasserman, I. M. <b>The impact of epidemic, war, prohibition and media on suicide: United States, 1910-1920.</b> <i>Suicide Life Threat. Behav.</i> 22, 240-254 (1992).
2003	SARAS	Hongkong	Increase	Yip, P. S. F., Cheung, Y. T., Chau, P. H. & Law, Y. W. <b>The impact of epidemic outbreak.</b> <i>Crisis</i> 31, 86-92 (2010). Also, Chan et al., 2006; Cheung et al., 2008
2003	SARAS	Taiwan	Increase (not significant)	Huang, C.-C., et al (2005). <b>Impact of severe acute respiratory syndrome (SARS) outbreaks on the use of emergency department medical resources.</b> <i>Journal of the Chinese Medical Association</i> , 68(6)
2016	Ebola	Conakry (Guinea)	Increase	Keita, M. M., et al(2017). <b>Depressive symptoms among survivors of Ebola virus disease in Conakry (Guinea): Preliminary results of the PostEboGui cohort.</b> <i>BMC Psychiatry</i> , 17(1)
2020-2021	COVID-19	World Pandemic	Varied	Mres, A., J., et al., 2021. <b>Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries.</b> <i>The Lancet Psychiatry</i> .

# COVID-19 and Suicide Rate

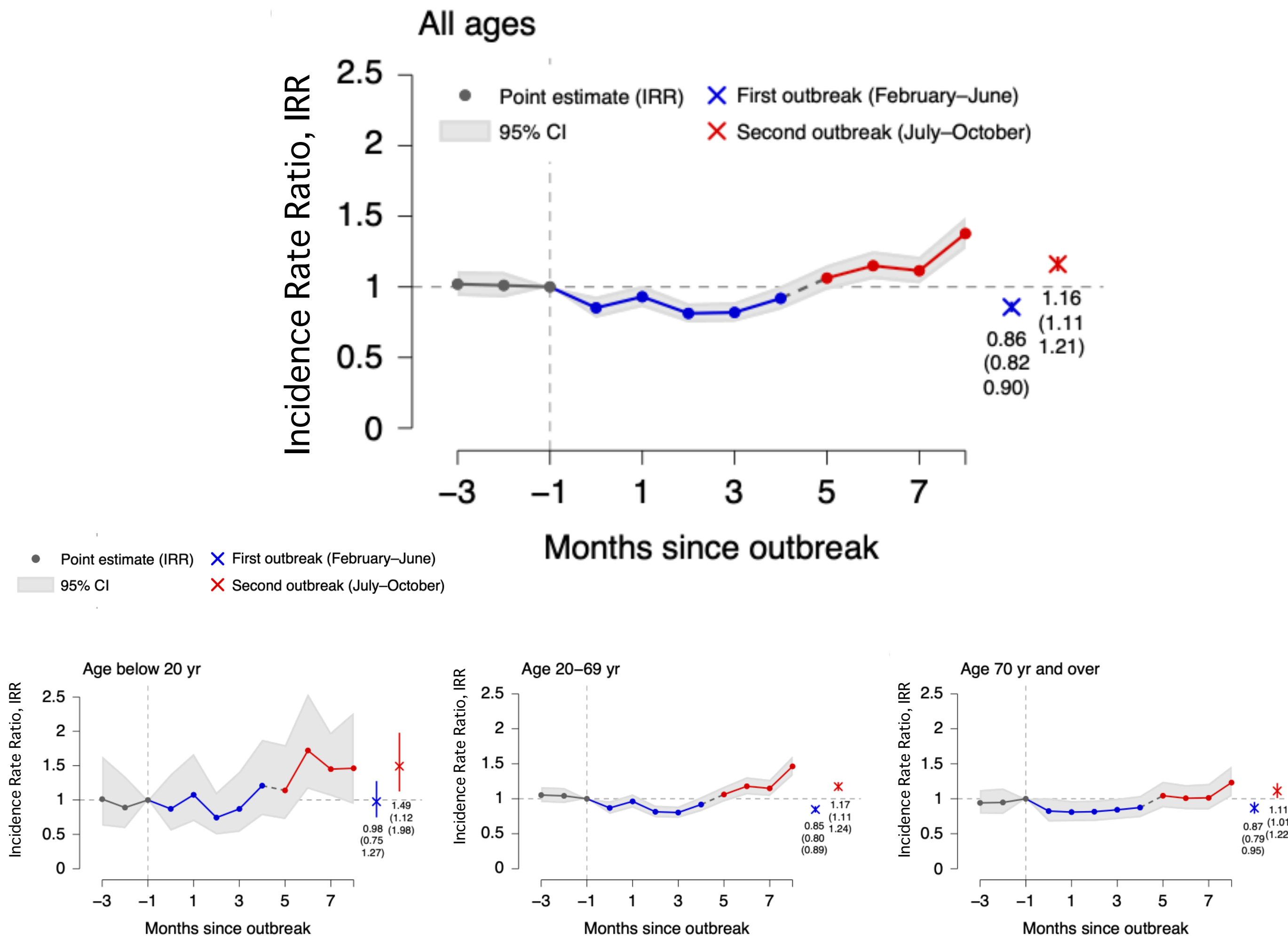
Mres, A., J., et al., 2021. Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. *The Lancet Psychiatry*.



- ① 21 countries (16 high-income and 5 upper-middle-income; only 10 are whole country),
- ② 2nd outbreak: April 1 to Oct 31, 2020 , Overall, no increase. 3 exception : Vienna, **Japan** and Puerto Rico.

# COVID-19 and Mental Health

Suicide as an extreme mental unhealthy condition





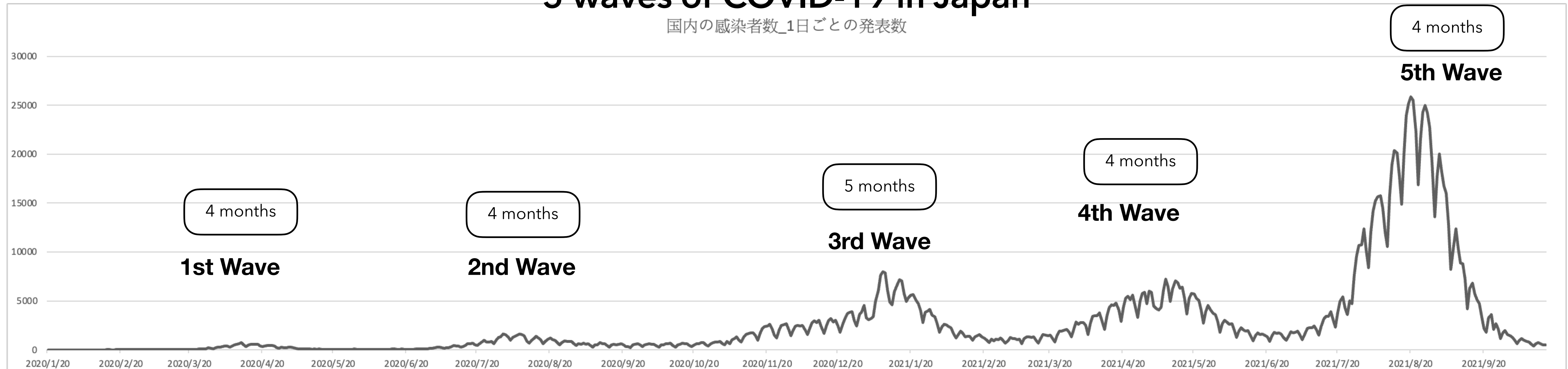
# Study Period

Study Period

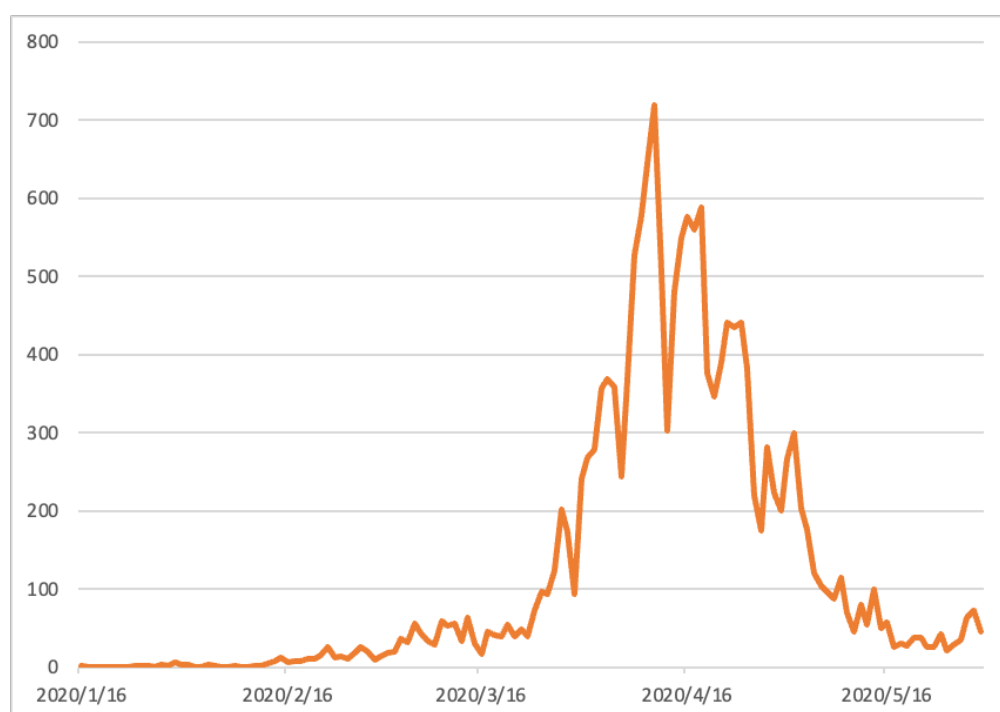
## 5 waves of COVID-19 in Japan

国内の感染者数\_1日ごとの発表数

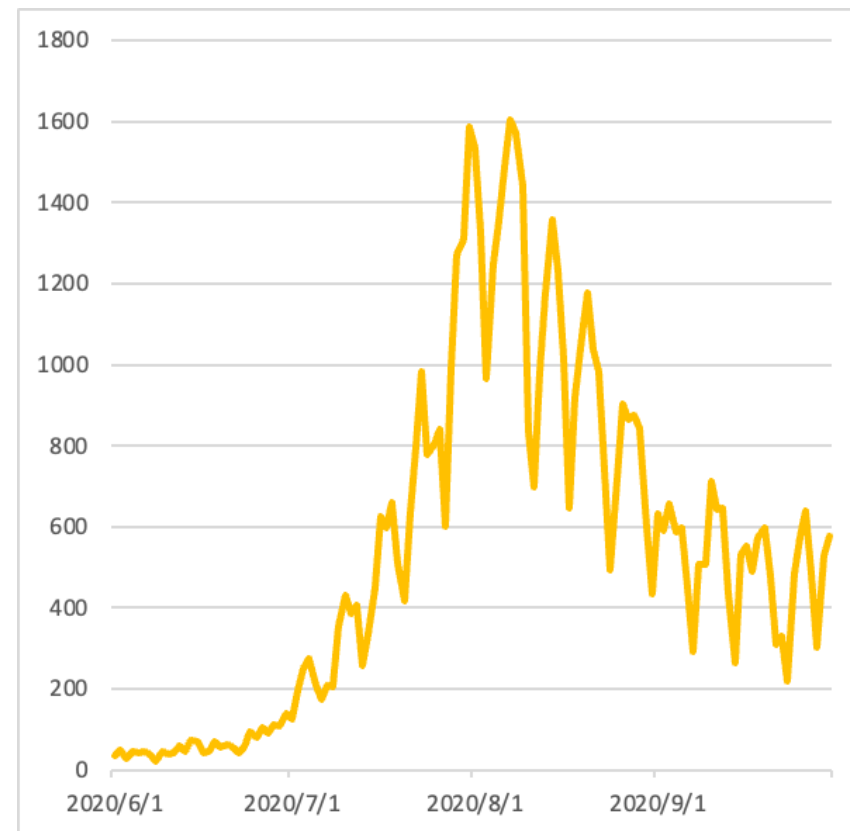
Source: NHK



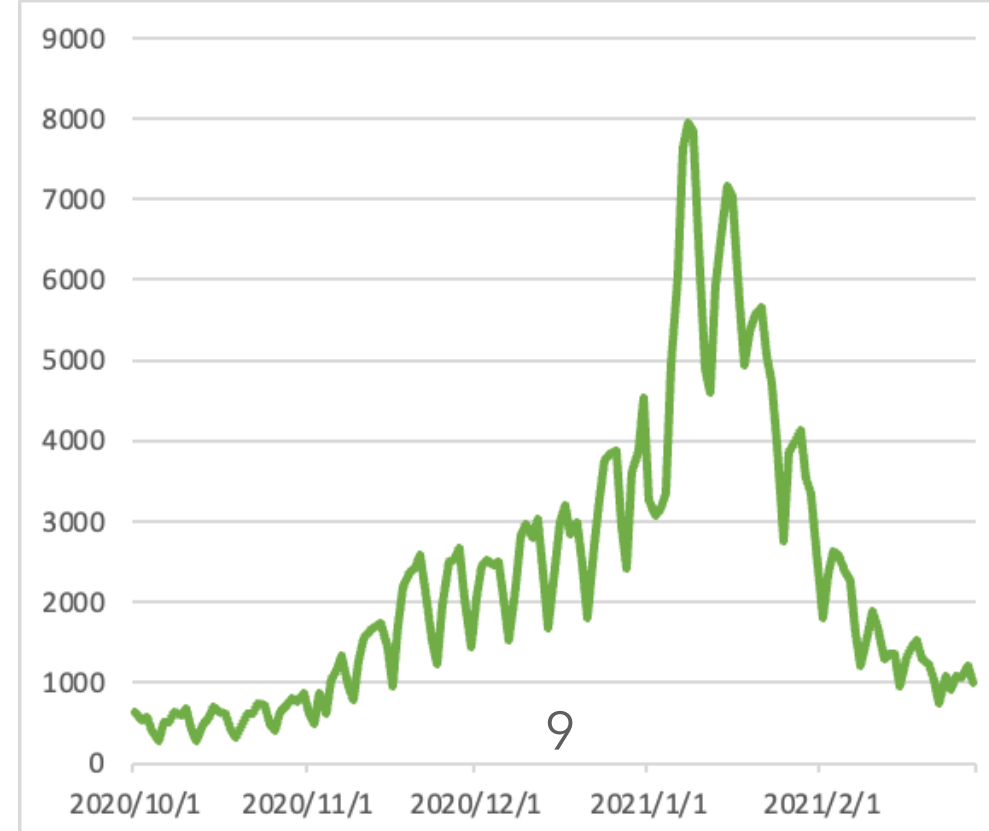
### 1st Wave (Feb-May, 2020)



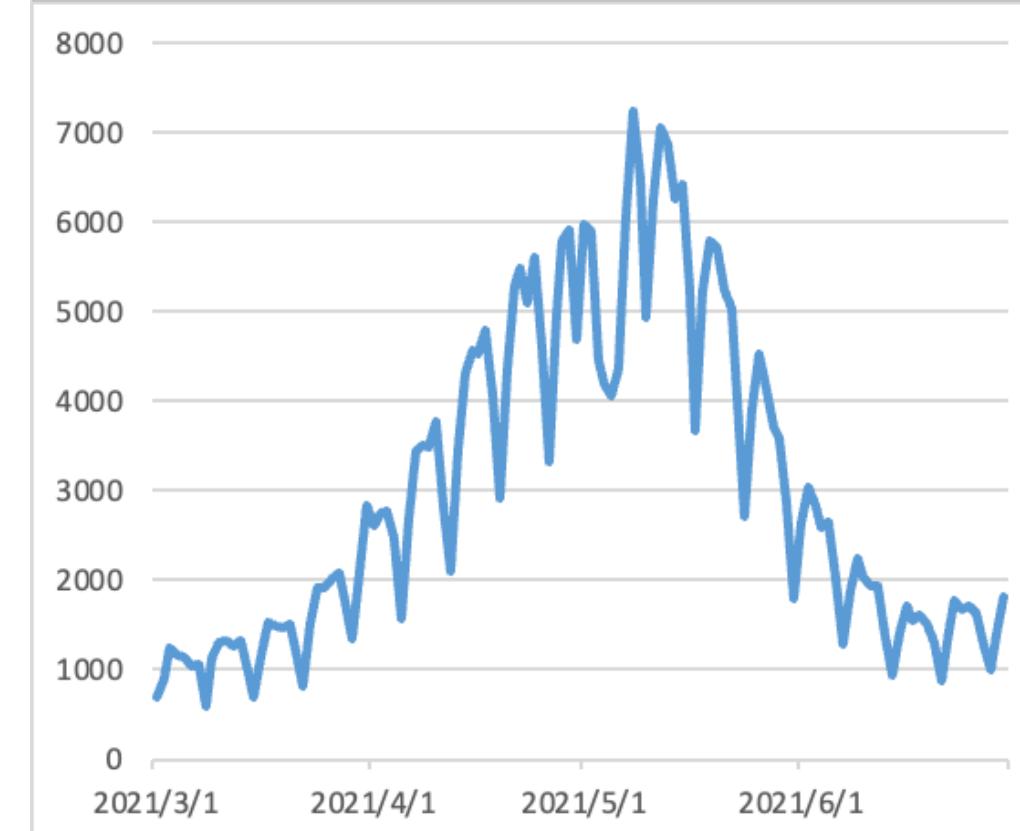
### 2nd Wave (June-Sep, 2020)



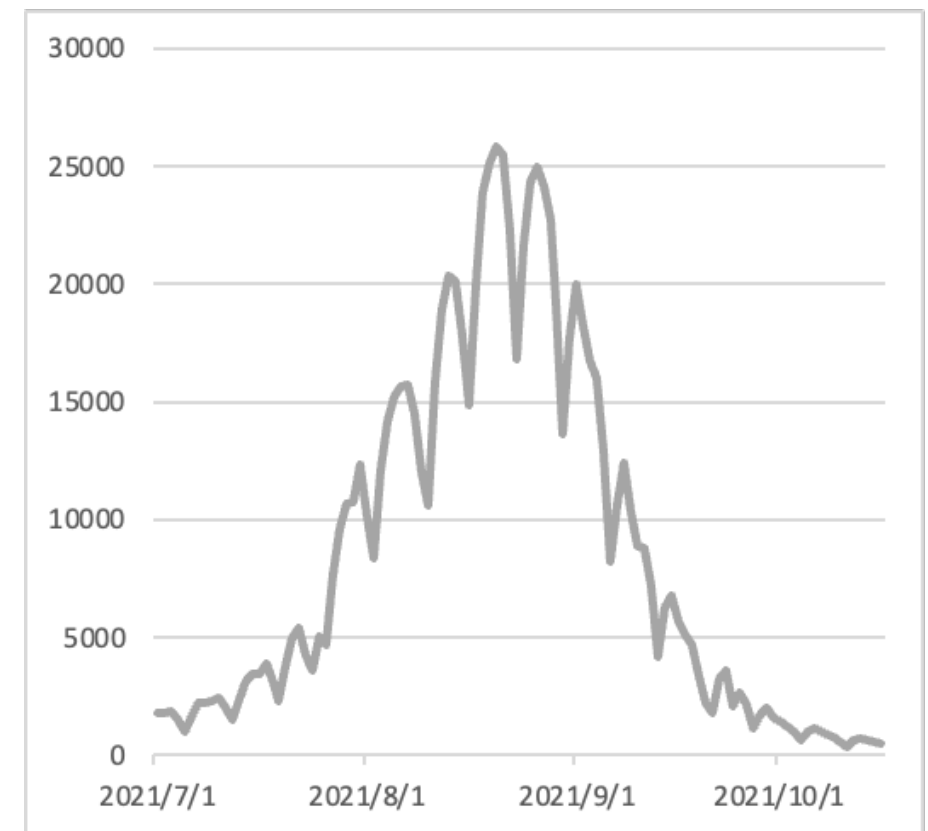
### 3rd Wave (Oct, 2020-Feb, 2021)



### 4th Wave (Mar-June, 2021)



### 5th Wave (July-Oct, 2021)



# To Answer the Questions

- ① Where do the COVID-19-induced (or reduced) suicide rate occur ?
- ② Is the 1st wave to the 5th wave the same ?
- ③ (if data allowed) Is it related to COVID-19 infected cases ?

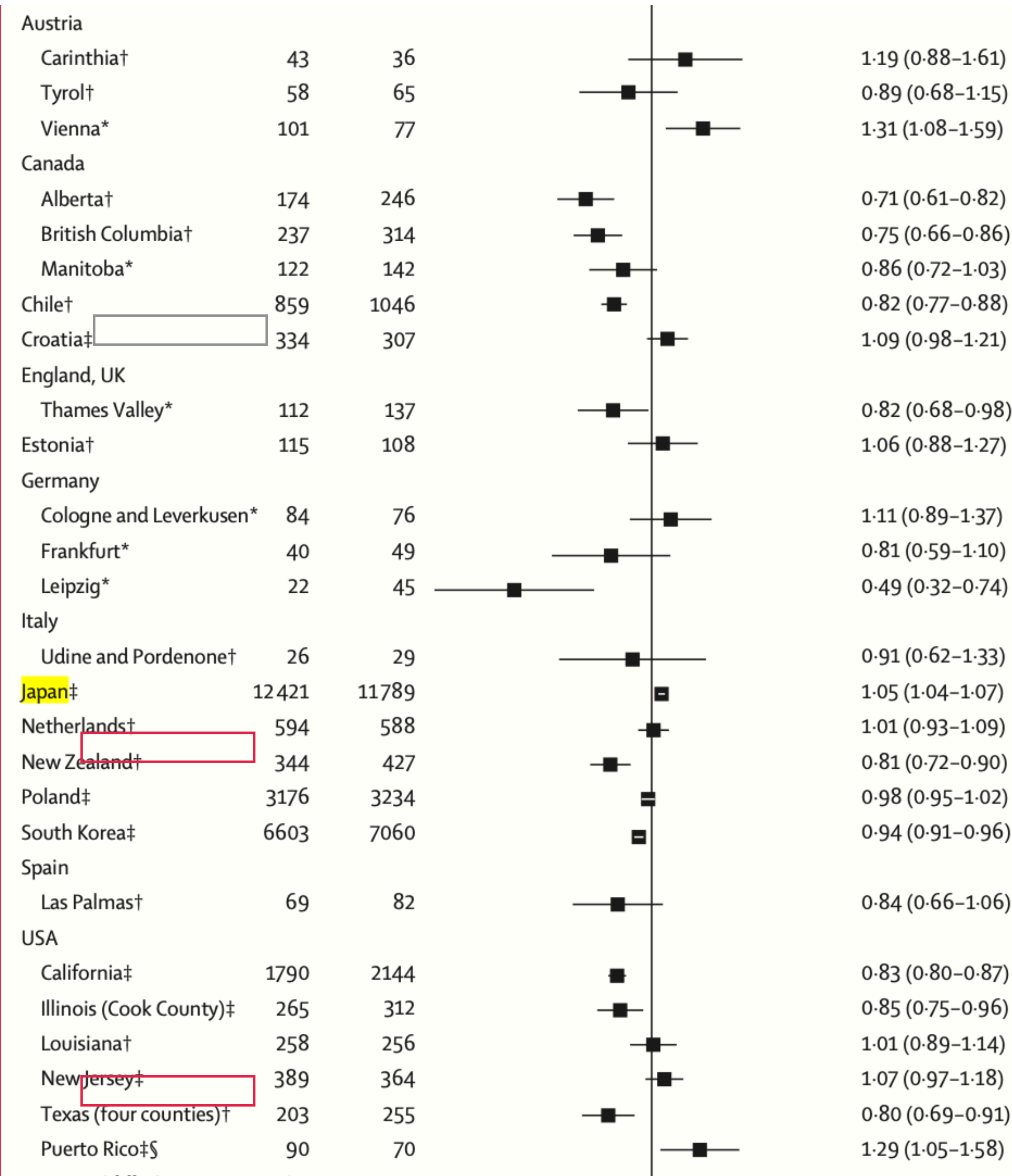
**Thank you for your attention**  
**The end**

# COVID-19 and Suicide Rate

Mres, A., J., et al., 2021. Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. *The Lancet Psychiatry*.

- ① Data from 21 countries (16 high-income and 5 upper-middle-income; only 10 are whole country),
- ② 1st outbreak : April 1 to July 31, 2020, No evidence of an increase in suicides relative to the expected number during the COVID-19 period in any country or area.
- ③ 2nd outbreak: April 1 to Oct 31, 2020 , Overall, no increase. 3 exception : Vienna, **Japan** and Puerto Rico.
- ④ Japan as neighbor county of Taiwan, which share Asia population properties, which may be Taiwan’s reference. Accordingly, I choose Japan as study field.

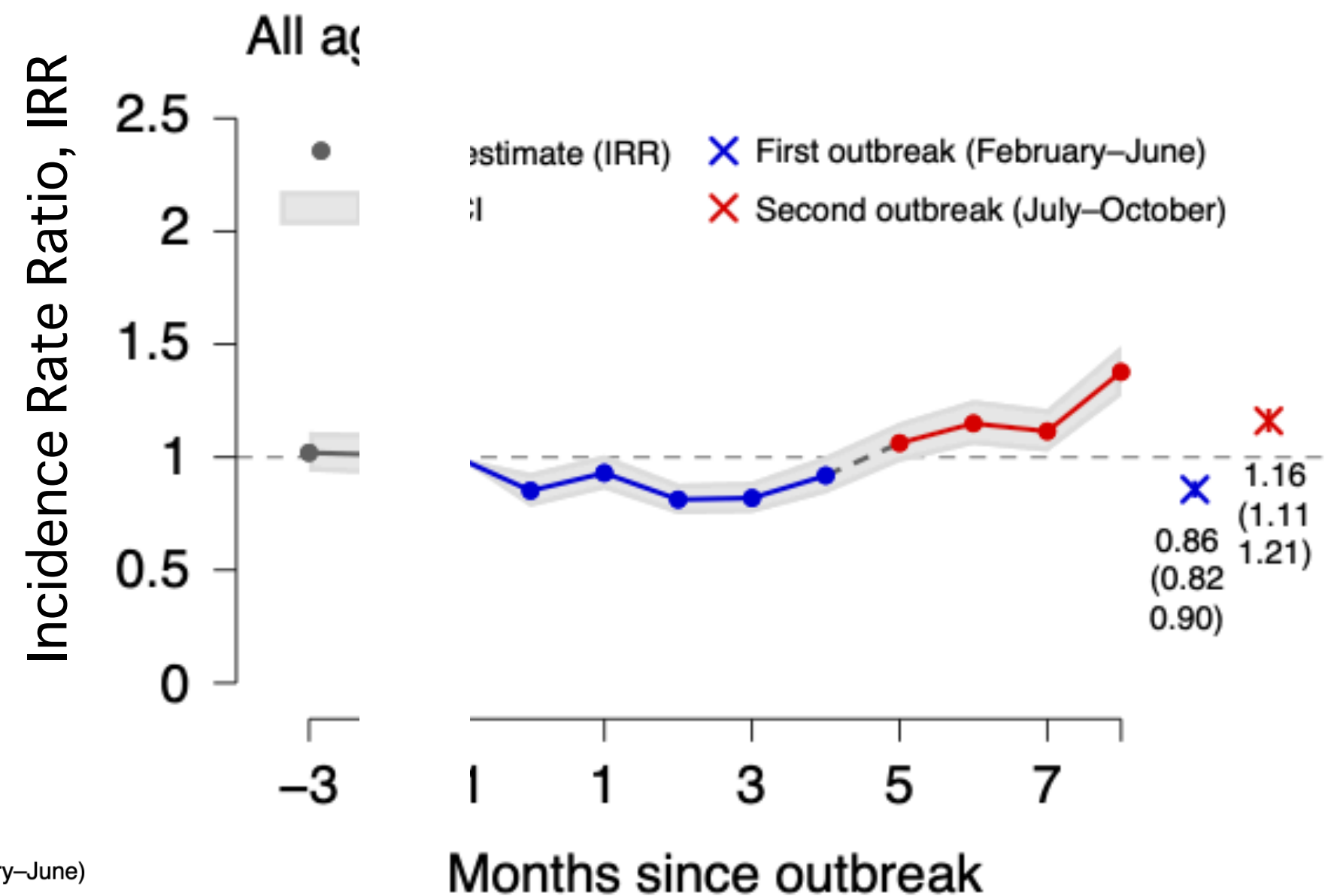
Observed and expected numbers of suicides in COVID-19 period based on trends in pre-COVID-19 period by country or area





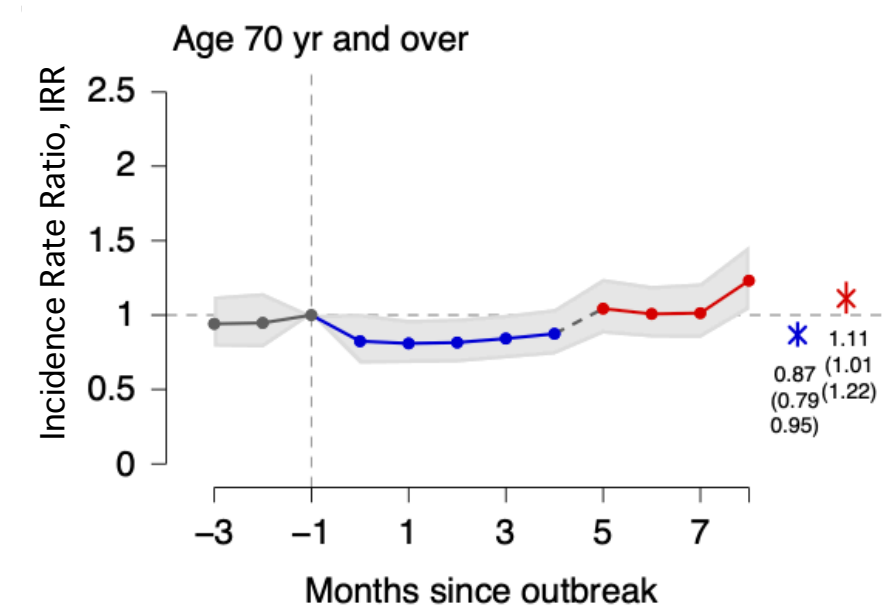
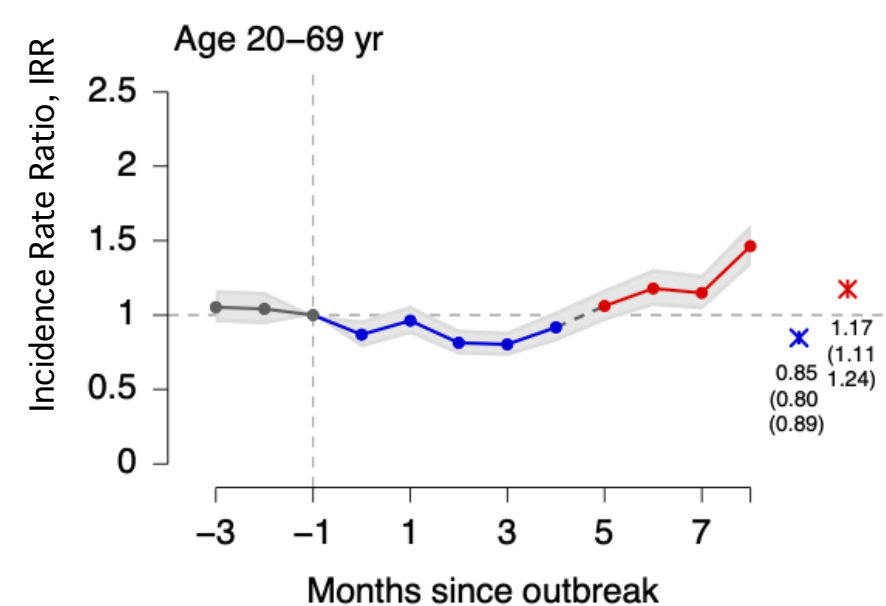
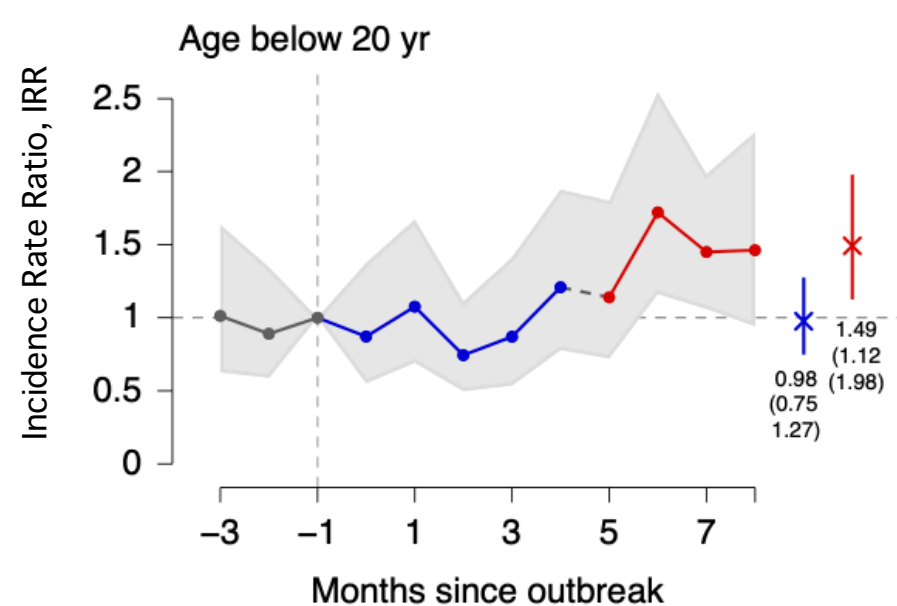
# COVID-19 and Mental Health

## Suicide as an extreme mental unhealthy condition



① Change in Suicide rate (compared with the same season in previous years)

② At 1st outbreak, declined by 14% (incidence rate ratios (IRR) = 0.86, 95% confidence interval (CI) 0.82 to 0.90)



③ At 2nd outbreak, the suicide rate increased by 16% (IRR=1.16, 95% CI 1.11 to 1.21) during the second outbreak.