

### **Understanding the evidence related to restrictions placed on weddings.**

The Government has continued to place additional restrictions on weddings beyond social distancing and limiting the activities allowed. In the new Tiers 1 and 2 this is a cap to 15 guests only (including the couple).

Equivalent settings (restaurants, pubs, places of worship, music events, conferences) are all being allowed to operate to social distancing capacities with any caps being in excess of 1000 people.

Other internal settings (gyms, education, workplaces) have also all been permitted to resume activities based on nothing less than social distancing capacities.

### **Realistic expectations of wedding sector at this difficult time**

The wedding sector is not seeking “unrestricted” weddings. It is simply seeking parity with other equivalent environments. It appreciates that the “evening elements” are not suitable at this present time and has accepted:

- No dancing or similar evening entertainment;
- No evening party and limitations of activities to effectively just the ceremony and sit down reception meal.

It also is not seeking guest numbers at this time beyond the social distance capacities of the venue, or even 50% of the capacity which would be less than restaurants and pubs are operating at.

It does not think there is zero risk of transmission at weddings and has implemented all the steps other hospitality venues have to deliver CoVid Secure venues. However in comparison to other hospitality venues, it should be noted that weddings:

- Are better placed to enforce distancing between households at sit down meals as households are clearly identified in advance and seating plans are accordingly set;
- Enjoy 100% track and trace capabilities as attendance is limited to the couples guest list;
- Are attended by a set of guests that have a significant vested interest in the health and well being of all attendees, and in particular any vulnerable guests.

### **Lack of evidence to support the Government’s position**

The ongoing question from the sector has been “What is the evidence to support the draconian and unparalleled Government stance on weddings in these new Tiers?”. The Government recently published its evidence in the form of its transmission risk in the hospitality sector paper, which pulled out weddings twice

- “Japan, China, South Korea, and Indonesia noted that their largest superspreading events originated from pubs, clubs, restaurants, gyms and wedding venues”
- “The largest clusters in Hong Kong were associated with transmission in bars and at a wedding dinner, both locations in which face masks were not worn”

The full analysis that follows shows that this first statement is a total fabrication of all the evidence presented in the referenced scientific papers. Weddings venues have **NOT** been identified in **ANY** of those countries. Secondly the Hong Kong cluster referred to was not primarily about a wedding dinner (with no social distancing in place) and in fact the scientific paper stated that any such associated transmission was not determined.

The only evidence that does exist comes from Northern Ireland, a culturally similar environment that ran socially distanced weddings from June until the recent lockdowns with no known outbreaks.

**We therefore ask that the Government provides further specific evidence to support the restrictions unfairly imposed on weddings, or immediately reassess the restrictions and grants it parity with the equivalent settings in each Tier.**

## **Full Analysis**

<https://www.gov.uk/government/publications/transmission-risk-in-the-hospitality-sector/transmission-risk-in-the-hospitality-sector>

"Data from epidemiological analysis of outbreaks ([SAGE](#) 63, [EMG/Nervtag](#) paper):

**Japan, China, South Korea, and Indonesia noted that their largest superspreading events originated from pubs, clubs, restaurants, gyms and wedding venues.** An analysis of 3,184 cases in Japan identified 61 case-clusters that were observed in healthcare and other care facilities, restaurants and bars, workplaces, and music events. **The largest clusters in Hong Kong were associated with transmission in bars and at a wedding dinner, both locations in which face masks were not worn.** At least 246 cases of coronavirus disease (COVID-19) have been linked to nightclubs in Seoul. A super-spreading event in Vietnam, including analysis using genomics, indicated 12 cases linked to transmission in a poorly ventilated bar, only four of whom had close contact with the index case."

### **Government Statement - Part 1:**

"Japan, China, South Korea, and Indonesia noted that their largest superspreading events originated from pubs, clubs, restaurants, gyms and wedding venues."

### **Paper by Paper Analysis - Part 1:**

**There is not one single piece of evidence or any individual event or outbreak across all 9 papers referenced in respect of these countries that is related to weddings or wedding venues.**

- Only Hong Kong provided evidence of transmission at a wedding dinner, which is dealt with separately below in Part 2.
- The full EMG/Nervtag paper provided the references to the scientific papers associated with the statements (Appendix A)
  - **Japan:** *Furuse Y, Sando E, Tsuchiya N, et al. Clusters of Coronavirus Disease in Communities, Japan, January-April 2020. Emerg Infect Dis 2020; 26(9).*  
[https://wwwnc.cdc.gov/eid/article/26/9/20-2272\\_article#tnF2](https://wwwnc.cdc.gov/eid/article/26/9/20-2272_article#tnF2)  
This paper lists all case cluster settings and **not one is a wedding venue** - see Appendix B
  - **South Korea:** *Kang CR, Lee JY, Park Y, et al. Coronavirus Disease Exposure and Spread from Nightclubs, South Korea. Emerg Infect Dis 2020; 26(10): 2499-501.*  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7510694/>  
Not only were all cases linked to nightclubs, **not even any secondary infections occurred in any wedding setting** - see Appendix C
  - **Indonesia:** *Hasan A, Susanto H, Kasim M, et al. Superspreading in Early Transmissions of COVID-19 in Indonesia. medRxiv 2020: 2020.06.28.20142133.*  
<https://europepmc.org/article/ppr/ppr181140>  
This is probably the most shocking of the use of all the scientific references. The non peer-reviewed paper outlined its methodology which was a mathematical look at the CoVid-19 data to establish the likelihood of links to superspreading events. **There was NO analysis of what the event environments were.** The recommendation of this paper was to highlight the mathematical risk of super spreading events and give some typical environments where they as authors could envisage the risk occurring - NOT that these were environments where transmission had occurred. " - see Appendix D.  
*"Our result clearly indicates that the transmission is overdispersed, even though it does not exclude the other possibilities. Therefore, close-interaction activities such as traditional markets, religious gathering, and wedding parties need to be adapted if not restricted as they can become transmission hot spots."*

The EMG/Nervtag paper **translated this to the statement** "Close-interaction activities such as traditional markets, religious gathering, and wedding parties contributed most to the spread in Indonesia.

- **China:** Lu J, Gu J, Li K, et al. COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020. *Emerg Infect Dis* 2020; 26(7): 1628-31.  
[https://wwwnc.cdc.gov/eid/article/26/7/20-0764\\_article](https://wwwnc.cdc.gov/eid/article/26/7/20-0764_article)  
This paper addressed an outbreak at a restaurant with air conditioning. **It was not related to a wedding.**
- **China:** Bi Q, Wu Y, Mei S, et al. Epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China: a retrospective cohort study. *The Lancet Infectious Diseases*.  
[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30287-5/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30287-5/fulltext)  
This paper looked at many demographic elements but in terms of environments only considered a "meal" or "travel". **No reference to weddings.**
- **China:** Qiu X, Nergiz AI, Maraolo AE, Bogoch II, Low N, Cevik M. Defining the role of asymptomatic SARS-CoV-2 transmission: a living systematic review. *medRxiv* 2020: 2020.09.01.20135194.  
<https://www.medrxiv.org/content/10.1101/2020.09.01.20135194v2.full-text>  
This paper looked at mainly at the role asymptomatic transmission played in both primary and secondary transmissions and referred to various environments anecdotally. **None of these were weddings.**
- **China:** Hu M, Lin H, Wang J, et al. Risk of Coronavirus Disease 2019 Transmission in Train Passengers: an Epidemiological and Modeling Study. *Clinical Infectious Diseases* 2020.  
<https://pubmed.ncbi.nlm.nih.gov/32726405/>  
This paper solely at transmission in train passengers. **Train usage is an uncommon method for travelling to weddings.**
- **Japan:** Nishiura H, Oshitani H, Kobayashi T, et al. Closed environments facilitate secondary transmission of coronavirus disease 2019 (COVID-19). *medRxiv* 2020: 2020.02.28.20029272.  
<https://www.medrxiv.org/content/10.1101/2020.02.28.20029272v2.full-text>  
This paper looked at key initial cluster cases in Japan. **None of these were a wedding.**
- **South Korea:** Jang S, Han SH, Rhee JY. Cluster of Coronavirus Disease Associated with Fitness Dance Classes, South Korea. *Emerg Infect Dis* 2020; 26(8): 1917-20.  
[https://wwwnc.cdc.gov/eid/article/26/8/20-0633\\_article](https://wwwnc.cdc.gov/eid/article/26/8/20-0633_article)  
This paper looked solely focused on a fitness dance class. **This was not related to weddings and no secondary transmissions at weddings was identified.**

**Government Statement - Part 2:**

"The largest clusters in Hong Kong were associated with transmission in bars and at a wedding dinner, both locations in which face masks were not worn."

**Paper by Paper Analysis - Part 2:**

Again this is a highly misleading statement when the scientific paper is read. As written it paints a picture of significant and unequivocal cluster originating at a wedding.

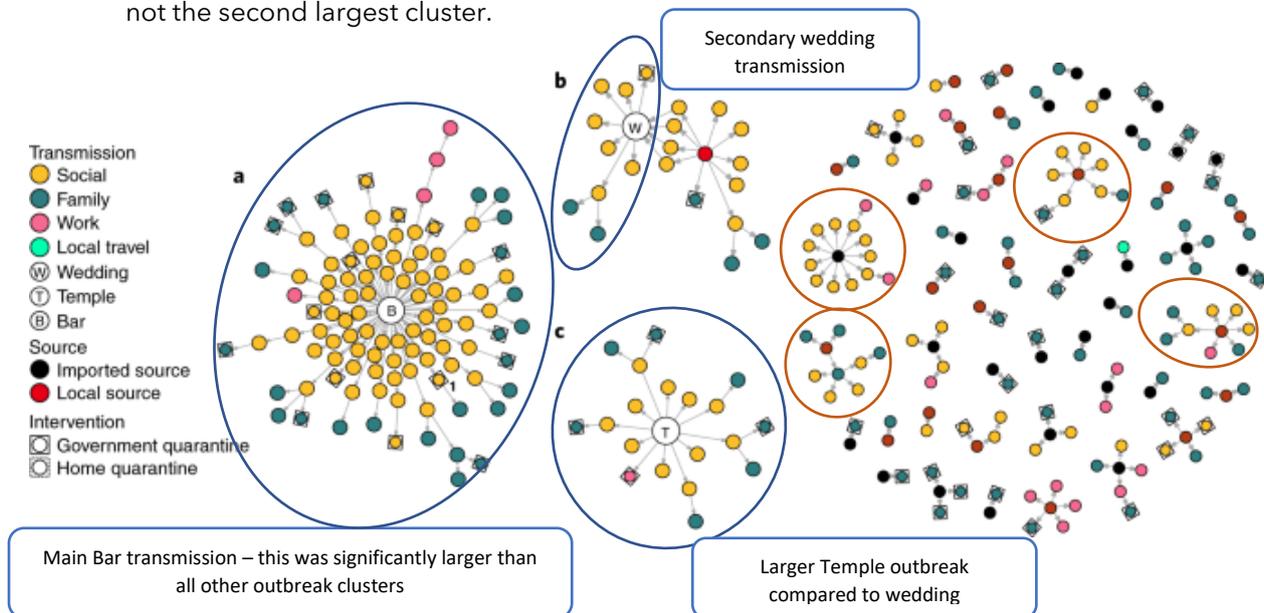
- **Hong Kong:** Jang S, Han SH, Rhee JY. Cluster of Coronavirus Disease Associated with Fitness Dance Classes, South Korea. *Emerg Infect Dis* 2020; 26(8): 1917-20. [https://wwwnc.cdc.gov/eid/article/26/8/20-0633\\_article](https://wwwnc.cdc.gov/eid/article/26/8/20-0633_article)

**The wedding was not the source of the cluster or the primary event. (see Appendix E)**

- The second largest cluster involved two events - a preceding social event that accounted 13 of the 22 cases and was clearly identified as the source of the cluster. This was not a wedding. 4 of the people infected at that social event subsequently attended a wedding.
- **The report stated that unlike at the preceding event, transmission between wedding attendees could NOT be determined.** Although it is correct to say that 7 additional infections were identified in those at the wedding subsequently with two tertiary family transmissions identified.

**The wedding was not the source of the second largest transmission**

- The "combined cluster" was fractionally above that of a temple (22 vs 19) although the wedding itself was both unproven as a source of transmission and at worst responsible for less than half the transmissions
- The diagrammatic representation of the transmissions in Hong Kong also highlights how the real issue was around the bars which had over 10 times the cases resulting from transmission.
- In fact the wedding itself was equivalent to other community transmissions. It was certainly not the second largest cluster.



**The wedding was happening without any restrictions in place**

- This was also before there was true awareness to the risks with no social distancing or face masks in operation.

## **Appendix A - EMG/Nervtag paper for Sage 23**

### **SARS-COV-2 TRANSMISSION ROUTES AND ENVIRONMENTS SAGE - 22 OCTOBER 2020**

#### **Hospitality and exposure to public spaces**

Poor ventilation and crowding have been suggested to be factors in numerous transmission clusters, including those in bars, churches, and night clubs, karaoke bars [22, 23]. By contrast, such events have rarely occurred outside, and then only in the context of high levels of crowding. Japan, China, South Korea, and Indonesia noted that their largest superspreading events originated from pubs, clubs, restaurants, gyms and wedding venues. An analysis of 3,184 cases in Japan identified 61 case-clusters that were observed in healthcare and other care facilities, restaurants and bars, workplaces, and music events [24]. The largest clusters in Hong Kong were associated with transmission in bars and at a wedding dinner, both locations in which face masks were not worn [23]. At least 246 cases of coronavirus disease (COVID-19) have been linked to nightclubs in Seoul [25]. Close-interaction activities such as traditional markets, religious gathering, and wedding parties contributed most to the spread in Indonesia [26]. A super-spreading event in Vietnam, including analysis using genomics, indicated 12 cases linked to transmission in a poorly ventilated bar, only four of whom had close contact with the index case [27].

There are several studies indicating that many infected individuals have a common setting of exposure such as indoor dining. An outbreak in an air-conditioned restaurant in Guangzhou, China, involved 3 family clusters [28]. In a report from the US found that those infected with SARS-CoV-2 without known close contact with a person with confirmed COVID-19, case-patients were more likely to report dining at a restaurant (aOR = 2.8, 95% CI = 1.9-4.3) or going to a bar/coffee shop (aOR = 3.9, 95% CI = 1.5-10.1) than were control participants [29]. In a study from China where 391 cases and 1,286 of their close contacts were followed up, the secondary attack rate was twofold higher if dining was involved [2]. According to a systematic review including papers published up to 3rd of July, the majority of pre-symptomatic transmission events involved dining in close proximity [30].

There is evidence that increased frequency of exposure to public spaces including shops, cinemas, places of worship and public transport is associated with increased risk of acquiring acute respiratory infections, suggesting a possible important role of casual contact in these settings. [31]. A detailed contact tracing study of train passengers that included 2,334 index cases and 72,093 close contacts found that risks were generally very low, and the secondary attack rate was higher for those in close proximity and with longer duration of shared travel [32]. In Japan, all clusters identified in a study were associated with close contact in indoor environments, including fitness gyms, a restaurant boat on a river, hospitals, and a snow festival where there were eating spaces in tents with minimal ventilation [33]. Sporting events including ice hockey and fitness classes have been cited in several other studies, with the higher aerosol generation due to aerobic activity highlighted as a potential risk [34, 35]. An outbreak investigation in South Korea showed transmission in high intensity dance classes at 12 locations, but not in lower intensity yoga classes or classes with a very low occupant density [35]. The role of ventilation has also been indicated in several epidemiological studies.

**Appendix B - EMG/Nervtag paper for Sage 23 Reference Paper 24: Clusters of Coronavirus Disease in Communities, Japan, January-April 2020**

[https://wwwnc.cdc.gov/eid/article/26/9/20-2272\\_article#tnF2](https://wwwnc.cdc.gov/eid/article/26/9/20-2272_article#tnF2)

"By investigating the epidemiologic links among cases, we identified 61 COVID-19 clusters in various communities. We observed clusters of COVID-19 cases from 18 (30%) healthcare facilities; 10 (16%) care facilities of other types, such as nursing homes and day care centers; 10 (16%) restaurants or bars; 8 (13%) workplaces; 7 (11%) music-related events, such as live music concerts, chorus group rehearsals, and karaoke parties; 5 (8%) gymnasiums; 2 (3%) ceremonial functions; and 1 (2%) transportation-related incident in an airplane. Most (39/61; 64%) clusters involved 5-10 cases (Figure 1, panel B). The largest cluster involved >100 cases in a hospital, including nosocomial infections and staff infections. The largest non-healthcare-related cluster we observed was among >30 persons who attended a live music concert, including performers, audience members, and event staff. Healthcare and care facilities accounted for >50% of clusters at epidemiologic weeks 11 and 14 (Figure 1, panel C)."

**Note: Not one case at a wedding venue.**

**Appendix C - EMG/Nervtag paper for Sage 23 Reference Paper 25: Coronavirus Disease Exposure and Spread from Nightclubs, South Korea**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7510694/>

"As of May 25, a total of 246 confirmed nightclub-associated cases had been reported; 96 (39%) of those were primary cases and 150 (61%) were secondary cases (Figure). The estimated attack rate among nightclub visitors was 1.74% (96/5,517). Of the total number of confirmed cases, 118 positive case-patients (47.9%) live in Seoul; among those, 67 (56.8%) were primary cases, 32 (27.1%) secondary cases, 7 (5.9%) tertiary cases, 4 (3.4%) quaternary cases, 4 (3.4%) fifth-order cases, and 4 (3.4%) sixth-order cases. Infections related to the nightclub outbreak continued to spread further in the community; in Seoul, COVID-19 cases related to the outbreak were identified in 9 different workplaces (several companies, the Army base, and a hospital) and 6 multiuse facilities (pubs, coin karaoke facilities, and a fitness center). In addition, we identified 7 cases of household transmission"

**Note: Not one case at a wedding venue.**

**Appendix D - EMG/Nervtag paper for Sage 23 Reference Paper 26: Superspreading in Early Transmissions of COVID-19 in Indonesia**

<https://europepmc.org/article/ppr/ppr181140>

"We estimate the basic reproduction number  $R_0$  and the overdispersion parameter  $K$  at two regions in Indonesia: Jakarta-Depok and Batam. Based on the first 1288 confirmed cases in both regions, we find a high degree of individual-level variation in the transmission. The basic reproduction number  $R_0$  is estimated at 6.79 and 2.47, while the overdispersion parameter  $K$  of a negative-binomial distribution is estimated at 0.06 and 0.2 for Jakarta-Depok and Batam, respectively. This suggests that superspreading events played a key role in the early stage of the outbreak, i.e., a small number of infected individuals are responsible for large amounts of COVID-19 transmission.

"We estimated the reproduction number  $R_0$  to be at 6.79 and 2.47, while the overdispersion parameter  $K$  of a negative binomial distribution is obtained at 0.06 and 0.2 for Jakarta-Depok and Batam, respectively (see Figure 2), suggesting that a small number of infected individuals are responsible for large amounts of the disease transmission. Indeed, between 10-15% of all infections were responsible for 80% of onward transmission events."

“The fact that Indonesia has a moderate number of positive cases, compared to other countries with roughly the same population size such as Russia, USA, and Brazil, can be caused by three reasons: a low number of tests, the success of Large-Scale Social Restrictions, and overdispersion of the COVID-19 transmission. Our result clearly indicates that the transmission is overdispersed, even though it does not exclude the other possibilities. Therefore, close-interaction activities such as traditional markets, religious gathering, and wedding parties need to be adapted if not restricted as they can become transmission hot spots. Effective response factors to reduce the transmission include aggressive implementation of non-pharmaceutical interventions such as rapid identification and isolation of cases. Furthermore, timeliness is critical to prevent or limit their extent since delay of diagnosis is the most common cause of superspreading clusters.”

*This paper then goes on to outline the method and complex mathematical algorithms used to establish whether there appeared a relationship to superspreader events.*

**Note: This paper did NOT look at the super spreader environments.**

**Appendix E - EMG/Nervtag paper for Sage 23 Reference Paper 23: Clustering and superspreading potential of SARS-CoV-2 infections in Hong Kong**

[https://wwwnc.cdc.gov/eid/article/26/8/20-0633\\_article](https://wwwnc.cdc.gov/eid/article/26/8/20-0633_article)

“The second-largest cluster comprised a total of 22 cases and was linked to two SSEs at a wedding and a preceding social event (Fig. 2b). Ten cases (SSE #2) resulted directly (and two indirectly) from the preceding social exposure (in total 13 cases including the source case); four of these subsequently attended the wedding. Transmission between wedding attendees could not be determined, but at least seven additional infections were confirmed among other guests (SSE #3). Two additional cases were identified among family members of an infected wedding guest. The third-largest cluster totaled 19 cases and was associated with attendance at a local temple, with 12 cases directly linked (SSE #4) to exposure at the temple (Fig. 2c). The seven remaining cases (n = 7/19) were linked via secondary family exposures. The most recent case confirmed in this cluster was a monk who worked at the temple and reported no symptoms before confirmation. It is probable, but not definitive, that given the other 11 primary cases reported attending the temple over multiple days, the monk was the source of some or all of the other 11 temple cases<sup>10</sup>. All remaining local and imported SARS-CoV-2 clusters in Hong Kong, including three additional SSEs (SSE #5-7), are shown in Fig. 2d. In total we directly observed two to four SSEs (given a superspreading threshold of 6-8 secondary cases; Methods) where the sources were identified, or four to seven SSEs if including SSEs without a determined source.”

