THE HIGH COURT

COMMERCIAL

[2024] IEHC 550

[Record No. 2021/1485P]

BETWEEN

MARLIN APARTMENTS LIMITED TRADING AS MARLIN HOTEL

DUBLIN

PLAINTIFF

AND

ALLIANZ PLC

DEFENDANT

JUDGMENT of Mr. Justice Denis McDonald delivered on 19th September 2024.

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Introduction

1. In these proceedings, the plaintiff seeks to be indemnified by the defendant insurer in respect of losses alleged to have been sustained by it as a consequence of the restrictions imposed on the normal operation of its premises in the wake of the COVID-19 pandemic. The plaintiff is the operator of the Marlin Hotel at 11 Bow Lane East, St. Stephen's Green, Dublin. The hotel premises includes two restaurants called *"Canteen Ireland"* and *"Marlin Bar & Grill"*, together with a co-working area, a coffee dock, a public bar and a gymnasium. The hotel has 300 bedrooms.

2. The plaintiff had an insurance policy with the defendant during the relevant periods for which it paid an annual premium of €80.339.66. While there are a number of provisions of the policy that will require to be considered in due course, there are two extensions of cover under the policy which are relied upon by the plaintiff in these proceedings. The first relevant provision is Extension 6. It provides cover for business interruption resulting from the occurrence of a notifiable disease at the hotel premises which causes a *"competent authority"* to impose restrictions on the use of the hotel premises. Extension 6 is the main focus of the case made by the plaintiff. It is an essential element of the cover available under Extension 6 that there should be an occurrence of the disease *"at the premises"*. This is in contrast to some other policies available in the marketplace that responded where the disease occurred within a specified radial distance from the insured premises. The second relevant provision is Extension 7 which provides cover for business interruption caused by damage by an

insured peril to other premises within a 1.5 kilometre radius of the hotel. The case made in respect of Extension 7 was not pressed strongly by the plaintiff at the hearing. There was no evidence of damage to other premises within that radius..

3. In due course, it will be necessary to consider the terms of the policy in more detail but, at this point, it is sufficient to record the provisions of the two extensions in issue:-

(a) Extension 6 provides as follows:-

> *"**Notifiable Disease***
>
> *The insurance by this Policy shall subject to all the Exclusions and Conditions of the Policy (except insofar as they may be hereby expressly varied) and the special conditions set out below extend to include loss resulting from interruption or interference with the Business carried on by the insured at the premises in consequence of:*
>
> *1(a) any occurrence of a Notifiable Disease (as defined below) at the Premises or attributable to food or drink supplied from the Premises …*
>
> *2. the discovery of vermin or pests at the Premises*
>
> *3. any accident causing defect in drains … at the Premises which causes restrictions on the use of the premises on the order or advice of the competent authority.*
>
> *4. any occurrence of murder or suicide at the Premises.*
>
> ***Special Conditions***
>
> *1. Notifiable Disease shall mean illness sustained by any*

person resulting from

(a) food or drink poisoning or

(b) any human infectious or human contagious disease (excluding Acquired Immune Deficiency Syndrome (AIDS)) an outbreak of which the competent authority had stipulated as shall be notified to them.

2. For the purposes of this memorandum: Indemnity Period shall mean the period during which the results of the Business shall be affected in consequence of the occurrence, discovery or accident, beginning… with the date from which the restrictions on the Premises are applied… and ending not later than the Maximum Indemnity Period thereafter. Maximum Indemnity Period shall mean 3 months. Premises shall only mean those locations stated in the Premises definition on; in the event that the policy includes an extension which deems loss, destruction or damage at other locations to be an incident such extension shall not apply to this memorandum. ...

4. The Company shall only be liable for the loss arising at those Premises which are directly affected by the occurrence discovery or accident.

The liability of the company shall not exceed €250,000

in respect of any one occurrence or €250,000 in any one Period of Insurance"

(b) Extension 7 provides as follows:-

"7. ***Prevention of Access***

Loss as insured by this Section resulting from interruption of or interference with the Business in consequence of damage by an insured Defined Peril to property as undernoted shall be deemed to be loss resulting from damage to property used by the Insured at the Premises provided that after the application all other terms Conditions and provisions of the policy the liability under this Extension in respect of any one occurrence or in any period of insurance shall not exceed €250,000. Property in the immediate vicinity (meaning within 1.5 kilometres) of the Premises destruction of or damage to which shall prevent or hinder the use of the Premises or access thereto whether the premises or property of the insured therein shall be damaged or not."

4. Virtually all of the debate in this case revolved around Extension 6 rather than Extension 7. Other than very brief references to it in the plaintiff's opening written submissions, the latter did not feature in the arguments made on behalf of the plaintiff at the hearing. It was also clarified in the course of the hearing that, at this point, I am not being asked to determine whether the plaintiff's claimed losses have been caused by either of the perils insured under these extensions. That is a matter which the parties were agreed can be addressed at a later time in the event that the plaintiff succeeds on the issues decided by this judgment. It was clarified that the parties solely

wished the Court to consider, at this stage, whether the perils identified in Extensions 6 and 7 have been triggered. That exercise does not involve any consideration of whether the plaintiff's claimed losses have been proximately caused by either of those perils. There is, however, an issue of causation in so far as the Extension 6 is concerned. The Court will be required to consider whether any occurrence of COVID-19 at the hotel caused restrictions on the use of the premises on the order of the Government. In this context, the parties were agreed that the words *"which causes restrictions on the use of the premises on the order or in advice of the competent authority"* which appear immediately after the third peril identified in the opening paragraph of Extension 6 apply not only to that peril but also to the peril specified in paras. 1 and 2. It will also be necessary to determine, as a matter of fact, whether, for the purposes of Extension 6, there has been an occurrence of COVID-19 at the premises during two of three relevant periods of restrictions imposed on the operation of the hotel. That is an issue which occupied a substantial part of the hearing and which also takes up much space in this judgment. That is because there is no direct evidence that anyone was on the hotel premises during either of those periods who was either diagnosed with COVID-19 or was exhibiting symptoms of the disease. As will be seen from the agreed facts described below, it is agreed that there was an occurrence of COVID-19 at the hotel during the last of the three periods in issue but the defendant maintains that this was not causative of the restrictions put in place at that time..

The agreed facts

5. For the purposes of the determination of the issue identified above, the parties have agreed a number of facts. These have been set out in a statement of agreed facts. However, notwithstanding this measure of agreement between the parties, there was,

nonetheless, significant controversy in the course of the hearing in relation to the attempted reliance by the plaintiff on expert evidence. In that context, the plaintiff sought to rely on the evidence of Professor Patrick Mallon but the admissibility of his evidence is challenged by the defendant. I will deal with that controversy presently. Before doing so, it may be of assistance to first set out the facts that have been agreed.

6. The parties are agreed that the plaintiff is a company established in Ireland carrying on the hotel business described above. They are also agreed that the defendant is a non-life insurance undertaking regulated by the Central Bank of Ireland and authorised to carry on non-life insurance business in Ireland. Chapter 2 of the Central Bank's consumer protection code applied to the dealings between the parties. In the course of June and July 2019, Marsh Ireland, acting on the plaintiff's behalf, approached the defendant with a view to providing insurance for the plaintiff's business and premises. This resulted in the issuance of policy number CO BMR 7989369 for the period 13th August 2019 to 12th August 2020 for a premium of €80,339.66 (not including the 5% government levy). This is the first relevant policy for present purposes. A subsequent policy (referred to as *"the second policy"*) issued in respect of the period 13th August 2020 to 21st August 2021. The terms of the second policy were materially identical to the first policy in so far as the issues in dispute in these proceedings are concerned.

7. The statement of agreed facts addresses in considerable detail the measures taken by the Government to address the COVID-19 pandemic. Very properly, the statement identifies each of the statutory instruments made. However, I do not believe that it is necessary to identify those here. If the terms of any of these instruments are relevant to the issues I have to decide, I will return to them in more detail at a later

point in this judgment. For the moment, it is sufficient to record what the parties have agreed as to the effect of these instruments and the duration of their application.

8. On 20th February 2020, COVID-19 was made a notifiable disease for the purposes of the Infectious Diseases Regulations 1981. On 12th March 2020, the Taoiseach, on advice from the National Public Health Emergency Team (*"NPHET"*) announced the closure of all schools, colleges and childcare facilities until 29th March 2020. On 15th March 2020 the Taoiseach called on all public houses and bars (including hotel bars) to close from that evening until 29th March 2020. From 15th March 2020 the public bar at the Marlin Hotel was closed to non-hotel guests. On 20th March 2020, the Health Act 1947 was amended by the Health (Preservation & Protection & Other Emergency Measures in the Public Interest) Act 2020 (*"the 2020 Act"*). The 2020 Act empowered the Minister for Health to introduce Regulations designed to combat the spread of COVID-19. On 24th March 2020, the Taoiseach announced that all cafés and restaurants were to limit their supply to take away food and delivery and all hotels were to limit occupancy to essential non-social non-tourist reasons. On 27th March 2020, the Government requested that people should stay at home or keep within a 2-kilometre radial distance of their homes, subject to a number of limited exceptions. On 29th March 2020, the Marlin Hotel closed to paying guests. On the same day, the hotel also closed the restaurant and the bar. In the ensuing period, the hotel did not sell take-away coffees, drink or food as there was no demand for this at its city centre location.

9. On 7th April 2020, the Minister for Health issued an order by which the entire country was declared an area where there was known or thought to be sustained human transmission of COVID-19 (*"the 2020 Order"*). On 7th April 2020, with effect from 8th April 2020, the Minister for Health issued further Covid-19 Regulations

2020 (*"the Restrictions Regulations"*). The Restrictions Regulations provided in Regulation 4(1) that a person *"shall not leave his or her place of residence without reasonable excuse"*. This restricted the ability of the plaintiff to carry on its business and prevented its customers from accessing its premises. The Restrictions Regulations were to remain in force until 12th April 2020. However, on 10th April 2020, the Restrictions Regulations were extended to 5th May 2020. On 2nd May 2020, the restrictions Regulations were extended further to 18th May 2020. On 17th May 2020, they were extended to 8th June 2020. On the latter date, the Restrictions Regulations were revoked and replaced by new Restrictions Regulations (*"the new Restrictions Regulations"*). The new Restrictions Regulations extended the duration of the restrictions on the opening of public houses and bars until 29th June 2020. On 13th June 2020, with effect from 15th June 2020, the new Restrictions Regulations were amended and all retail outlets were permitted to open.

10. On 26th June 2020 the new Restrictions Regulations were revoked by further Regulations (*"the No. 3 Regulations"*). and, from 29th June 2020, the restrictions on most businesses, including pubs and bars serving substantial meals, were eased. Pubs serving substantial meals became known as *"dry pubs".* Those that did not serve such meals were known as *"wet pubs".* The latter were required to remain closed save for takeaway services.[1] The Marlin Hotel reopened for paying hotel guests soon after 29th June 2020. The restaurants and bar at the hotel operated in accordance with the prevailing rules from 29th June 2020.

11. On 18th July 2020, the operation of the No. 3 Regulations was extended to 10th August 2020. On 20th July 2020 the emergency period was extended until 1st August

[1] For completeness, it should be noted that these details in relation to wet and dry pubs do not appear in the statement of agreed facts. I have inserted them here in order to explain what is described in para. 13 below (which is taken from the statement of agreed facts). The details in relation to such pubs are addressed in a number of judgments dealing with COVID-19 business interruption insurance claims.

2020. On 8th August 2020 heightened temporary restrictions were imposed until 23rd August 2020 in County Kildare, County Laois and County Offaly because of COVID-19. On 9th August 2020, the operation of the No. 3 Regulations was extended to 31st August 2020.

12. On 12th August 2020, the plaintiff, through its broker, Marsh, provided written notice to the defendant of its desire to claim under the first policy *"for interruption to their business as a result of Covid-19"*. On 20th August 2020, the defendant acknowledged receipt of the plaintiff's claim under the first policy and asked the plaintiff to provide details of the occurrence of COVID-19 at the hotel.

13. On 22nd August 2020, restrictions were removed in Counties Laois and Offaly and the restrictions in County Kildare were until midnight on Sunday, 6th September 2020. On 31st August 2020, the No. 3 Regulations were revoked by yet another set of Regulations (*"the No. 4 Regulations"*). The No. 4 Regulations took a similar approach to public houses as the No. 3 Regulations, but Regulation 11 of the No. 4 Regulations also introduced an early closing time for public houses of 11.30pm. Regulation 13 of the No. 4 Regulations imposed other obligations on the operators of dry pubs, such as the requirement to keep the contact details of those dining on their premises. Nevertheless, dry pubs were entitled to allow members of the public on to their premises, while wet pubs could only provide takeaway services.

14. On 31st August 2020, the restrictions imposed in County Kildare were revoked. On 13th September 2020, the No. 4 Regulations were extended in their operation until 16th September 2020. On 16th September 2020, certain additional restrictions were imposed in County Dublin on the holding of events and on private gatherings. These continued until 5th October 2020. No change was made to the existing restrictions on

pubs. On the same date, the effect of the No. 4 Regulations was extended until 5th October 2020.

15. From 19th September 2020, the Marlin Hotel remained open for essential workers in line with the No. 4 Regulations. However, it was closed to members of the general public. On 19th September 2020, the No. 4 Regulations were revoked and replaced by a new set of regulations (*"the No. 5 Regulations"*). The No. 5 Regulations introduced limits on the numbers of people attending indoor and outdoor events. For County Dublin, the No. 5 Regulations provided for further restrictions on such events and further restrictions with regard to access by the public to businesses and services. They also provided for restrictions on travel into and out of County Dublin. The No. 5 Regulations remained in operation until 10th October 2020.

16. Further restrictions were imposed during the course of September 2020. On 6th October 2020, mandates were imposed on the wearing of face coverings in certain premises and businesses. On 6th October 2020 mandates were also imposed on the wearing of face coverings on public transport. On 9th October 2020, the No. 5 Regulations were revoked and replaced by new measures (*"the No. 6 Regulations"*). The No. 6 Regulations imposed restrictions on the movement of members of the public. Limits were also placed on numbers attending social events and gatherings. On 17th October 2020, the No. 6 Regulations were revoked with effect from 20th October 2020 and replaced by further measures (*"the No. 7 Regulations"*).

17. On 20th October 2020, certain provisions of the Criminal Justice Act were extended. On 21st October 2020, the No. 7 Regulations were revoked and replaced by the No. 8 Regulations. On 21st October 2020, some further criminal justice provisions were extended. On 30th November 2020, the No. 8 Regulations were revoked and replaced by the No. 9 Regulations. Under the No. 9 Regulations, hospitality

businesses were permitted to reopen from 4th December 2020, albeit that certain restrictions remained in place. The Marlin Hotel reopened to the general public on 4th December 2020. In the meantime, on 1st December 2020, the plaintiff's solicitors responded to the request for information from the defendant of 20th August 2020. However, on 11th December 2020, the defendant declined the plaintiff's claim.

18. The hotel manager tested positive for COVID-19 on 23rd December 2020. He had not left the hotel building during the preceding fortnight. On 27th December 2020, a staff member tested positive for COVID-19. A further staff member tested positive for Covid-19 on 28th December 2020. In the meantime, on 23rd December 2020, level 5 restrictions[2] were imposed with effect from 24th December 2020. Public houses and restaurants were required to close from 3.00pm on 24th December 2020. I will refer to these measures as *"the Amendment Regulations"*. The Amendment Regulations prohibited, among other things, public house on-trade for guests from 3.00pm on 24th December 2020 and restricted the ability of hotels to remain open to customers on a phased basis. It allowed existing patrons to continue their stay until 26th December 2020 but, thereafter, limited hotel accommodation to certain categories of persons including essential workers. In addition, wedding parties (as defined) were permitted within certain limits.

19. The Marlin Hotel closed to paying guests on 24th December 2020 subject to the limited exceptions provided for in the Amendment Regulations. On 30th December 2020, the No. 9 Regulations were revoked and replaced by the No. 10 Regulations. The No. 10 Regulations provided, *inter alia*, that only essential workers were allowed to stay in a hotel; that any wedding group was limited to six persons and

[2] Level 5 restrictions are not explained in detail in the statement of facts but they included requirements to close all non-essential services and retail operations (other than click and collect). There were also restrictions on family and social gatherings, numbers attending weddings and funerals, domestic travel arrangements and places of work with all but essential workers being required to work from home.

that alcoholic drink could only be sold for takeaway sales. On 29th January 2021, the restrictions in the No. 10 Regulations were extended from 31st January 2021 to 5th March 2021. On 5th March 2021, the No. 10 Regulations were extended further to 5th April 2021. On 2nd April 2021, they were extended to 4th May 21. However, on 10th April 21, the No. 10 Regulations were revoked and replaced from 19th April 2021 by new regulations which I will refer to as *"the 2021 Regulations*". The 2021 Regulations provided for temporary restrictions on access by the public to a range of businesses including a prohibition on hotels accepting guests for social, recreational, cultural or tourist purposes. The 2021 Regulations also imposed certain restrictions on travel. They remained in operation until 4th May 2021. On 9th May 2021, they were revoked and replaced by a new set of measures which I will call *"the 2021 Amendment Regulations"*). The 2021 Amendment Regulations provided for temporary restrictions on a range of indoor and outdoor events, including, *inter alia*, a prohibition on hotels accepting guests for social recreational cultural or tourist purposes. The 2021 Amendment Regulations remained in operation until 2nd June 2021.

20. Subsequent to the enactment of the 2021 Amendment Regulations, two further staff members tested positive for Covid-19. The first tested positive on 20th November 2021 and a second tested positive on 21st December 2021. The statement of agreed facts concludes at this point. As mentioned earlier, the plaintiff also seeks to establish further facts through the evidence of Professor Mallon. That evidence seems to me to be solely relevant to Extension 6. The issues which arise in relation to Extension 6 are complex. For that reason, I turn next to the case made under Extension 7.

Extension 7

21. The issue which arises in respect of Extension 7 can be disposed of relatively briefly. The plaintiff's case in respect of Extension 7 was not the subject of any detailed submission from its counsel. The question which falls to be determined in the context of Extension 7 is whether the peril identified in that extension was triggered. For this purpose, it is essential to have regard to the terms of Extension 7[3]. It provides cover in respect of loss sustained as a consequence of the interruption of or interference with the business of the hotel in consequence of damage by an insured peril to property *"as under noted"*. The property which is *"under noted"* is property within a radius of 1.5 km of the hotel which suffers either destruction or damage such as to prevent or hinder the use of the hotel premises or access to it whether or not the premises or property of the plaintiff is damaged. Although not identical to the relevant insuring clause discussed in *Coach House Catering Limited v. Frost Insurance Limited* [2022] IEHC 306, there is an obvious parallel between the terms of Extension 7 of the Allianz policy and the prevention of access clause considered in *Coach House*:

> *"Property in the vicinity of the Premises destruction of or damage to which shall prevent or hinder the use of the Premises or access thereto whether the Premises or property of the Insured therein shall be damaged or not but excluding damage of or damage to property or any public utility from which the Insured obtained supplies or services."*

22. In *Coach House*, the plaintiff sought, at a very late stage in the proceedings, to rely upon the clause quoted above. The plaintiff argued that damage to property could comprise contamination of property with a virus such as COVID-19. The plaintiff

[3] The full terms of Extension 7 are set out in para. 3 above.

relied, in this context, on the decision of Mance J.(as he then was) in *Losinjska Plovidba v. Transco Overseas Limited* [1995] 2 Lloyds Rep. 395. In that case, there was a leakage from a drum of hydrochloric acid shipped on board the plaintiff's ship in the course of a voyage from England to Libya. This required decontaminating works to the ship. The plaintiff sued the cargo owner for damage to the ship. However, the defendant argued that, in circumstances where the ship had been successfully decontaminated, the plaintiff had no cause of action save in respect of the cost of decontamination works. The defendants applied to dismiss the proceedings on that basis. However, Mance J. rejected the application on the basis that, before the ship could work as normal, specialist decontamination work was required to neutralise the acid. On that basis, he came to the conclusion that the ship should be regarded as having suffered damage by reason of the contamination. In *Coach House*, I took the view that, in contrast to *Transco,* there was no evidence that any property in the vicinity of the insured premises had been contaminated by COVID-19. In that context, I indicated that I would have been prepared to accept (at least for the sake of argument) that property might be affected by COVID-19 to the extent that, for example, its causative pathogen, the SARS-CoV-2 virus is detected on surfaces in premises. Likewise, I was prepared to accept that such premises might have to be decontaminated in order to rid them of the virus. I posed the hypothetical example of a situation where the causative pathogen of a highly infectious and deadly disease was found on premises adjacent to the insured premises such that the health authorities decide, as a precaution, to close all properties in its vicinity (including the insured premises). I indicated that I could see, in such circumstances, that a prevention of access clause (of the type quoted above) could be triggered. However, I indicated that, for the clause to be triggered, it would be necessary to show:-

(a) that some nearby property was infected with the causative pathogen of COVID-19; and

(b) that, as a consequence of that infection, access to or use of the insured premises by the plaintiff was prevented or hindered.

23. No argument has been addressed to me by the plaintiff in these proceedings to suggest that the approach taken by me in *Coach House* was erroneous. Nor was any additional argument made to me that might suggest that a different view should be taken. Crucially, there is nothing in the evidence in this case to show that either of the conditions mentioned above have been satisfied. No evidence whatever has been given in relation to any nearby premises. Likewise, there is nothing in the agreed statement of facts that could be said to support the case made under Extension 7. There is simply no evidence at all to show that the closure of the Marlin Hotel was required in response to any *"infection"* of any premises in the vicinity of the hotel. In these circumstances, I have come to the conclusion that there is no basis to suggest that Extension 7 has been triggered in this case. I therefore reject the plaintiff's claim insofar as it is based upon Extension 7.

Extension 6

24. The terms of Extension 6 have already been quoted in para. 3 above. For the extension to be triggered, the plaintiff must show that there was an interruption of or interference with its hotel business in consequence of the occurrence of a notifiable disease *"at the premises"* which caused the use of the hotel to be restricted on the order or advice of a competent authority. Working backwards, that requires the plaintiff to prove, on the balance of probabilities, (a) that the use of its premises was restricted on the order or advice of a competent authority and (b) that the order or advice in question was proximately caused by a case of COVID-19 at the hotel

premises. In order to get off the ground on the latter issue, the plaintiff must first prove, again on the balance of probabilities, that there was a case of COVID-19 at the hotel. Virtually all of the expert evidence was directed to whether there was an occurrence (or the likelihood of an occurrence) of COVID-19 at the hotel in any of the periods leading up to the Government imposed closures. Critically, there was no direct evidence of any case of COVID-19 on the hotel premises leading up to any of the periods of closure in issue other than the case of the hotel manager who the parties agreed had tested positive for COVID-19 on 23rd December 2020. That occurred on the same day as the Amendment Regulations were enacted imposing the third period of relevant restrictions commencing at 3.00 p.m. on 24th December 2020. It is true that there were two further cases not long after – as evidenced by the agreed fact that one staff member tested positive on 27th December 2020 and another on 28th December 2020[4]. However, both of those positive tests arose after the Amendment Regulations were enacted such that it may be difficult to suggest that they could have caused the Government to enact the Amendment Regulations which had been put in place on 23rd December 2020.

25. Insofar as Extension 6 is concerned, there are three relevant periods of closure[5] of the hotel premises namely: 29th March 2020 until 29th June 2020; 19th September 2020[6] to 3rd December 2020[7]; and 24th December 2020 extending into

[4] It is also true that two staff members tested positive in November and December 2021. However, those events occurred subsequent to the third closure period and after the expiry of the second policy.
[5] While I have, for the sake of simplicity, used the word *"closure",* a full closure was not always imposed. For part of the periods in question, the hotel was subject to restrictions on use rather than complete closure.
[6] As noted in the agreed statement of facts, the hotel closed to all except essential workers from 19th September 2020.
[7] Again, as noted in the agreed statement of facts, the hotel was permitted to reopen – and did reopen – from 4th December 2020.

2021[8]. These periods should not be confused with the three periods discussed in the experts' evidence. The latter periods all relate to the run up to the three periods of closure. The focus on the latter periods was driven by the need for the plaintiff to produce evidence to prove that there was a case of COVID-19 at the hotel premises prior to any of the restrictions on use of the hotel imposed by the Government. As noted above, without such evidence, the plaintiff would be unable to prove that the restrictions on use were proximately caused by an *"occurrence"* of COVID-19 *"at the Premises".*

The evidence of Professor Patrick Mallon

26. In support of its case that there was an occurrence of COVID-19 at the hotel in the periods leading up to each of the three periods of closure, the plaintiff called Professor Mallon as an expert witness. Professor Mallon is a professor of microbial diseases at University College Dublin. He is also a consultant in infectious diseases at St. Vincent's University Hospital Dublin and is a member of several Government advisory groups. He trained in clinical infectious diseases, epidemiology and laboratory research at the National Centre for HIV Epidemiology and Clinical Research in Sydney, Australia and he has over 20 years' experience in clinical, epidemiological and laboratory research in infectious diseases. He explained that he was retained to provide an expert opinion to address the following:-

(a) The data available on incidents of COVID-19 in the vicinity of the Marlin Hotel during three specific periods of time leading up to the closures of the premises at the instruction of the Chief Medical Officer[9]

[8] The agreed statement of facts records that the hotel closed to paying guests on 24 December 2020 subject to the limited exceptions permitted under the various regulations in force up to June 2021.

[9] The reference to the Chief Medical Officer is taken directly from the text of Professor Mallon's report. It should be noted that no closure in fact took place by direction of the Chief Medical Officer. It is clear from other cases dealing with business interruption claims arising from the COVID-19

due to the threat from COVID-19. The first such period runs from 1st February 2020 to 15th March 2020 (when the Government issued the first instruction to public houses to close), the second from 1st August 2020 to 19th September 2020 and the third from 25th November 2020 to 24th December 2020;

(b) He was then asked to consider in what way the data in relation to incidence of COVID-19 might be adjusted to *"make it more relevant"* to the clientele who attended the Marlin Hotel during the three periods in question. He was instructed to focus on those aged 18-60 years of age being the normal range of age of clientele staying at or visiting the hotel;

(c) He was then asked to consider how this incidence of COVID-19 could be used to assess the likelihood of a case of COVID-19 occurring at the premises and how many cases would be expected to have been at the Marlin Hotel during each of the three periods in question. The reference here to *"likelihood"* should be noted. It will be seen, presently, that, later in the course of his evidence, Professor Mallon went so far as to suggest that his evidence demonstrated that there were occurrences of COVID-19 at the premises during the periods he examined.

27. The defendant objects to Professor Mallon's evidence on the grounds that it is said to be inadmissible. That objection is put forward on two principal grounds. First, it is suggested that, by concentrating on the likelihood of a case of COVID-19 arising

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pandemic that, while the Government may have acted on the advice of the Chief Medical Officer, any decision to impose restrictions was a Government decision or one made by the Minister for Health.

at the hotel, Professor Mallon addressed himself to an issue which does not arise in the proceedings. The defendant maintains that, under Extension 6, the plaintiff must prove, among other things, an occurrence of COVID-19 at the hotel. It argues that, in order to prove such an occurrence, the plaintiff is required to prove that, at a specific time, a particular person suffered from COVID-19 while on the hotel premises. The defendant submits that an expert's opinion that it is likely that an unspecified case occurred at the hotel at an unspecified time during a period of several weeks is fundamentally inadequate to meet the well-established meaning of an occurrence. Secondly, the defendant contends that Professor Mallon has failed to put forward any supporting materials to substantiate the views expressed by him either in his report or in his oral evidence.

28. I will address the defendant's objections to in due course. Before doing so, I believe it is important to set out the nature of the evidence which Professor Mallon and the other experts gave. Professor Mallon commenced his evidence by drawing attention to the location of the Marlin Hotel in the city centre. He expressed the view that a high-density location such as Dublin city centre is going to be at the higher end rather than the lower end of transmission of a disease such as COVID-19. In his report, Professor Mallon stated that, prior to March 2020, there was no endemic COVID-19 in Ireland. Cases which arose in Ireland at that time predominately had their origin abroad. He identified that 49% of the cases in Ireland during March 2020 originated in people coming to Ireland from Italy, Austria, France and China. He said that these were countries where there were already established COVID-19 *"waves of infection"*. He also drew attention to the fact that, during the first of the three periods examined by him (*"period 1"*) running from 1st February 2020 to 15th March 2020), 113 guests at the Marlin Hotel came from those four countries and that this

represented 15.8% of the clientele of the hotel during that period. In the context of period 1, it will be necessary to keep in mind that a significant element of the period occurred prior to 20th February 2020 which, as noted in the agreed facts recorded in para. 8 above, is the date when COVID-19 was declared to be a notifiable disease. The cover available under the Extension 6 in respect of disease is confined to notifiable diseases. Thus, while Professor Mallon did not advert to this, it is clear that, even if proven, not every occurrence of COVID-19 in period 1 would be capable of attracting cover under the policy.

29. Professor Mallon also emphasised that, during period 1, there was insufficient testing capacity within Ireland to accurately determine all cases of COVID-19. He said that, for that reason, the use of test positivity data during this period is likely to give rise to a large degree of uncertainty. The epidemiological data available during period one of was evolving. COVID-19 was relatively new. He expressed the view that it was likely that a significant number of cases of COVID-19 were not detected by testing during this period. For that reason, confirmed cases of COVID-19 were not reported to the Health Protection Surveillance Centre (*"HPSC"*). On that basis, Professor Mallon expressed the opinion that it is probable that any estimate of the likelihood of a case of COVID-19 in the Marlin Hotel during period 1 would significantly underestimate the true risk of incidents of COVID-19 either at the hotel or in the vicinity of the hotel. However, Professor Mallon suggested that, by using the methodology of *"back calculating"*, a reasonable estimate could be made of the position based on the data available in respect of later periods. Professor Mallon explained that back calculating was a recognised methodology which he said is quite often used within epidemiological studies. In due course, it will be necessary to examine what Professor Mallon said about back calculating in more detail.

30. In the case of the second of the periods considered by him – running from 1st August 2020 to 19th September 2020 (*"period 2"*) – Professor Mallon said that, in the summer of 2020, the rates of COVID-19 within Ireland were quite low. He stressed that, at that time, Ireland was coming out of a lockdown period. His evidence was that, when one looked at the viral genomes that were coming into Ireland, most of them could be traced back to events arising from travel from the United Kingdom. According to Professor Mallon, a large proportion of guests at the hotel during period 2 were either from the United Kingdom or Ireland. On that basis, he suggested that they were from *"the area where these viruses were originating and seeding into the country".*[10] In those circumstances, his view was that the hotel should be treated as being at the higher end of transmission risk because the guests staying at the hotel were from regions where there was an established second wave of infection.

31. In the case of the third of the periods considered by him – running from 25th November 2020 to 24th December 2020 (*"period 3"*) – Professor Mallon explained that there was an increase in infections driven by the alpha variant. At that stage, an established national surveillance system was in place. He said that it was very evident that the alpha variant was the predominant virus during period 3. Again, it originated in the United Kingdom and was transmitted through travel from the United Kingdom to Ireland. On the basis of the hotel data supplied to him, he said that a high proportion of the residents at the hotel during period 3 were from either the United Kingdom or Ireland. He, therefore, once again, expressed the view that the hotel should be placed at the higher end of a likelihood of a risk of occurrence.

32. In his report, Professor Mallon also drew attention to the fact that, in period 3, there was a confirmed case of COVID-19 occurring in a resident of the hotel. I take

[10] See Day 1, p.47

this to be a reference to the hotel manager mentioned in the statement of agreed facts. According to Professor Mallon, the manager had been living in the hotel from June 2020 to January 2021. In the statement of agreed facts, the parties agreed that the manager tested positive on 23rd December 2020 and that he had not left the hotel in the preceding fortnight. Professor Mallon said that the positive result arose from a test conducted on 22nd December 2020. In his report, Professor Mallon expressed the view that, given the increased transmissibility of the alpha variant, it is *"most likely"* that this individual contracted the infection from a close contact within the hotel. For this to have occurred, Professor Mallon said that either a guest or some other staff member at the hotel would have to have been infected whilst on the premises. In addition to this confirmed case, Professor Mallon suggested that there were also reports of two other staff members of the Marlin Hotel testing positive for COVID-19 *"during this period"* but, as noted above, the agreed facts are that these positive tests results postdated the enactment of the No. 9 Regulations and occurred after period 3.

33. Based on epidemiological data (i.e. diagnoses) available from the HPSC, Professor Mallon said that it is possible to calculate the background incidence of COVID-19 within the Dublin area and to *"further refine this incidence based on the age groups of individuals most likely to frequent the Marlin Hotel (assumed to be the age group 18- 60 years old)"*. In taking that age group, Professor Mallon was acting in accordance with the instructions he received from the plaintiff's solicitors to focus on those aged 18 to 60. It was suggested that this was the relevant age range of guests staying at the hotel.

34. In his report, Professor Mallon, expressed the opinion that, once this age and geographical-specific incidence is estimated, it is then possible to estimate the likely[11] number of individuals with COVID-19 infection at the Marlin Hotel in the weeks leading up to the dates of closure by comparing incidence rates with estimated number of individuals at the premises. While the professor used the words *"comparing ... with",* it seems to me that what he did was to apply the incidence rate (with some adjustments as described in the table below) to the numbers of guest nights at the hotel during each of periods 1, 2 and 3. As will be seen, the validity of this approach is disputed by the expert witnesses called by the defendant namely Professor Mary Horgan and Dr. Mark Roe. They say that the data used by Professor Mallon is designed for the purposes of health surveillance at a community level and is not designed to be applied to specific premises.

35. For the purpose of illustrating the approach taken by him, Professor Mallon produced a table (described in his report as Table 1). In this table, Professor Mallon summarised most of the steps involved in the process used by him to estimate the number of individuals with a COVID-19 infection at the premises over each of his three time periods. This table is reproduced below:-

Table 1. Estimated number of individuals with SARS-CoV-2 infection at the premises over defined periods of time.

Time period	Time period 1 March 2020	Time period 2 September 2020	Time period 3 December 2020
Dates of interest	Feb 1st to March 15th 2020	August 1st to Sept 19th 2020	Nov 25th to Dec 24th 2020
Dates of closure of	29th March 2020	19th September 2020	24th December 2020

[11] Again, Professor Mallon expressly used the word *"likely"* in his report.

premises			
COVID-19 case data [12] Total COVID-19 cases in Dublin: Total cases in 18-60 in Dublin:[13]	 1,233 864	 3,095** 2145	 3,256** 2094
Estimated cumulative incidence of COVID-19 infection in those aged 18-60 in Dublin area for period specified	91.5/100,000	245.3/100,000	239/100,000
Proportion of cases within 18-60 age group	70.1%	69.4%	64.3%
Expected risk ratio of COVID-19 infection in 18-60 age group adjusted for population[14]	1.27	1.22	0.97
Expected age-adjusted, cumulative incidence of	116.2/100,000 or	299.3/100,000 or	232/100,000 or

[12] Data derived from Health Protection Surveillance Centre (HPSC) Epidemiology reports https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casesinireland/achive/dailyepidemiologyofcovid-19inirelandreports2020/december2020/ (accessed September 18th 2020).

**For time period 2, data is derived from HPSC reports covering the time period August 2nd to September 19th 2020 and for period 3, data is derived from HPSC reports covering the time period 25th November 2020 to 21st December 2020.

[13] Estimated assuming 70% of the 15-24 age group would be >18 years old and 60% of the 15-24 age group would be <60 years old).

[14] Risk ratio estimated using population of people in County Dublin aged 18-60 (census 2016, assuming 70% of the 15-24 age group would be >18 years old and 60% of the 15-24 age group would be <60 years old). Total population of 1,347,359 with 874,571 estimated to be aged 18-60.

COVID-19 within the 18-60 age group in Dublin area for the period	1.16/1,000	2.99/1,000	2.32/1,000
Total estimated number of guests in period: Dates: Total guest nights: Number of countries of origin: Number (%) of guests from countries with known outbreaks of COVID-19	 Feb 1st[15] to Mar 15th 2020 3,456 1529 guest of known country of origin (714 from outside UK/Ireland) representing 39 different countries. 113 (15.8%) from Italy, France, Austria and China.	 Aug 1st to Sep 19th 2020 3,327 2650 guest of known country of origin representing 38 countries. 86% were from either UK or Ireland.	 Dec 1st to Dec 24th 2020 2,741 2118 guests of known country of origin representing 27 countries. 94% were from either UK or Ireland
Expected incident cases among persons (guests/staff) at the	4.01 cases	9.95 cases	6.36 cases

[15] In the course of his evidence, Professor Mallon acknowledged that the reference to 1st February should read 1st March in so far as the number of guest nights is concerned. See Day 2, pp. 63-64.

premises during the specified periods.[16]			

36. In the course of his direct evidence, Professor Mallon commenced his explanation of Table 1 by looking at the final column which addresses period 3. He explained that, in the case of period 3, he compared two HPSC reports. He said that he was able to extract from those reports the total number of COVID-19 cases in Dublin, namely 3,256 in that period. He then adjusted that number for population data using the census in order to estimate the total number of cases within the 18-60 year age range. Using the 2016 census, he estimated that the total population of the Dublin metropolitan area was 1,347,359 during period 3. He also estimated that, of that total population, 874,571 were within the 18-60 age range. Professor Mallon explained that he *"picked"* the Dublin metropolitan area because:-

> *"when you actually look to try and establish risk, and you're looking at a scenario that's within the City Centre, I can't say with any certainty that everyone within that area actually resides in that area or stays in that area. It would be an area where there would be a lot of mobility. We already know from the hotel that you have a lot of people who aren't even fro*[m] *Dublin attending the hotel. So, I think there's a level of uncertainty with just focusing on an LEA and I think you're more likely to capture the true risk by focusing on arguably a larger area but something that I think would be geographically and movement wise probably more appropriate to reality."*

37. On a percentage basis, Professor Mallon estimated that the proportion of cases within the 18-60 age group in the Dublin metropolitan area was 64.3%. He suggested

[16] Calculated by multiplying the age-adjusted, 14-day incidence/1,000 in the 18-60 age group in the Dublin area by the number of guests/staff at the premises during the specified time period.

that this gives rise to a *"risk ratio"* of 0.97. In the course of Day 1 of the hearing, I asked him to explain how the figure of 0.97 is arrived at. In response, he referred me to a footnote to Table 1 in his report which is replicated in footnote 14 above. He then said that the total population within County Dublin was 1,347,359 and that he had estimated that 874,571 would be within the 18-60 age band. On that basis, he indicated that, once one does that adjustment, one gets a risk ratio of 0.97 within that population as against the rest of the population. I indicated to him that I still did not understand how, mathematically, the figure of 0.97 is arrived at[17]. Professor Mallon then explained that what he had done (although this is not set out in his table) is that he carried out a similar exercise in respect of those under the age of eighteen in the Dublin area and those above the age of 60 to that which he carried out in respect of the 18-60 age group in his calculation of 239 cases per 100,000 in period 3. He said that he looked at the incidence of COVID-19 within those age groups and that gave him an incidence rate. When one compares those incidence rates against the incidence rate for the 18-60 age group, it will produce a ratio which I understand is the 0.97 ratio given in Table 1. However, he did not provide any figures for the relevant rates of infection of those over 60 or under 18 during period 3. For that reason, I do not have sufficient information to assess the underlying arithmetic.

38. Professor Mallon went on to say that, if the ratio is below 1, the incidence in the 18-60 year age range is lower than in the other age ranges. Professor Mallon then applied the risk factor to the incidence of COVID-19 (namely 239 cases per 100,000) to produce the expected adjusted cumulative incidence of COVID-19 within the 18-60 age group in the Dublin area for period 3. This gave him a rate of 232 cases per 100,000 or 2.32 cases per 1,000. He then applied that figure of 2.32 per 1,000 to the

[17] 874,471 falls far short of 97% of 1,347,359.

total number of guest nights spent by guests at the hotel in the period from 1st December 2020 to 24th December 2020. According to Professor Mallon, based on the information provided to him by the hotel, there were 2,741 guest nights during that period. In the course of his direct examination. Professor Mallon explained that he took guest nights rather than the total number of guests because each night is an individual risk and his exercise was an assessment of the risk of someone infected with COVID-19 staying at the hotel. The infection could happen during any one of the nights of a guest's stay. When one applies the rate of 2.23 per 1,000 to the figure of 2,741 guest nights during that period, one arrives at a figure of 6.36 cases which, in Professor Mallon's table, is described as the *"Expected incident cases among persons (guests/staff) at the premises…"*.

39. Professor Mallon then explained that the same methodology was used in the case of period 2 which ultimately produced a figure of 9.95 cases in that period. Professor Mallon drew attention to the fact that there was a diagnosed case within period 3 and he suggested that the likelihood of an occurrence within period 2 was no different from period 3. Professor Mallon also suggested that the likelihood of an occurrence within period 1 was no different from period 3. However, he later made clear that the column of Table 1 dealing with period 1 can be ignored. He said that the lack of testing in period 1 made the data used in that column unreliable. He therefore proposed that a different approach was required in calculating the likelihood of an occurrence within period 1 based on the data available from the HPSC in relation to influenza-like illness.

40. In respect of period 1, Professor Mallon emphasised that there was very little capacity to test for COVID-19 during that period. He also emphasised that the testing criteria at that stage were quite restrictive. There was only limited access to the test. In

order to be tested, one had to have an influenza-like illness and also to have returned from a country of origin where there was an established COVID-19 pandemic. On that basis, he expressed the view that the use of public health reports based on testing data alone would result in a significant underestimate of the true likelihood of a case of COVID-19 occurring at the hotel during that period. Accordingly, Professor Mallon accepted that the calculation in Table 1 in respect of period 1 was unreliable. He stressed that the table was based on reported positivity rates of COVID-19 from public health records. Because of the lack of testing capacity during period 1, those reports were, in his view, *"wildly inaccurate"*. In those circumstances, he suggested that the data released by the HPSC on a weekly basis in relation to rates of influenza-like illness can be used as a surrogate measure in order to estimate the likely number of infections at the Marlin Hotel during period 1. Professor Mallon prepared a Figure derived from the HPSC weekly reports of influenza-like illness which ran from week 40 of 2019 to week 20 of 2021[18]. It shows significant peaks in such illness in the period running from week 47 of 2019 to week 3 of 2020 and again from week 12 of 2020 to week 15 of 2020. There is a lower number of peaks in the period from week 33 of 2020 to week 43 of 2020 and there is another sharp peak beginning in week 48 of 2020 and running into week 5 of 2021. By far the highest peak is in the period from week 12 of 2020 to week 15 of 2020. Professor Mallon said that influenza-like illness *"skyrocketed"* in week 12 of 2020. I reproduce the Figure as contained in the HPSC report below[19]:

[18] This is the report for the end of week 5 2021.

[19] For technical reasons, I am unable to successfully replicate the version of this Figure in Professor Mallon's report but I believe that the only difference between Professor Mallon's Figure and the original HPSC Figure is the inclusion by him of the words "Wave 1", "Wave 2" and "Wave 3" respectively under the peaks shown between weeks 12 and 15 of 2020, weeks 33 to 43 of 2020 and weeks 48 of 2020 to week 5 of 2021.

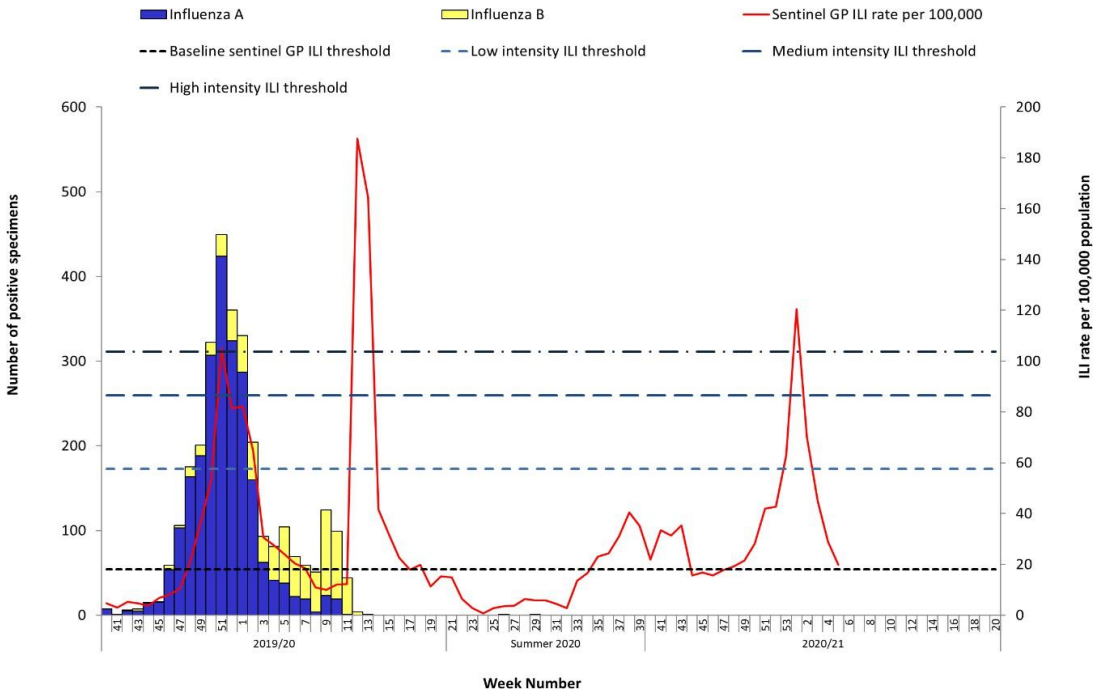

Figure 1: Sentinel GP Influenza-like illness (ILI) consultation rates per 100,000 population, baseline ILI threshold, medium and high intensity ILI thresholds and number of positive influenza A and B specimens tested by the NVRL, by influenza week and season. *Source: ICGP and NVRL*[20]

41. Professor Mallon explained that week 11 of 2020 equates to the week ending 15th March 2020. In other words, it is the week which equates to the last week of period 1 as shown in Professor Mallon's Table 1. Professor Mallon then drew attention to the fact that, subsequently, in week 12, one sees a very large spike in influenza-like illness rates which continues up to week 15 following which the number of reported influenza-like illness cases drops back to the baseline[21] shown on the graph. The baseline (which has been established by the HPSC) represents the background rate of people presenting to general practitioners with influenza-like illness in periods where there is no significant outbreak. Professor Mallon also drew attention to the week 12 report of the HPSC in which it was indicated that the sharp increase at week 12 was likely driven by COVID-19. As will be seen in due course,

[20] This text appears directly under the Figure in the HPSC report
[21] The base line is 20 cases of influenza-like illness per 100,000 of population. It is shown as a broken horizonal line starting at the midway point between 0 and 100 on the y axis of the Figure.

the defendant's experts did not dispute that this sharp increase in influenza-like illness was likely to have been driven by COVID-19. That said, it is also important to keep in mind that no evidence has been tendered to establish that, during this period, any member of staff – or any guest visiting the hotel – had reported suffering from influenza-like illness. This is so, notwithstanding the evidence that 15.8% of guests at the hotel during this period came from Italy, Austria, France and China which Professor Mallon identified as areas of the world in which there were significant outbreaks of COVID-19 at this time.

42. In the course of his direct evidence, it was put to Professor Mallon that the defendant's medical expert, Professor Mary Horgan, had drawn attention, in her report, to the fact that, in week 11 (which was the concluding week of period 1 in Professor Mallon's table), the rate of reporting of influenza-like illness was lower than the baseline rate established by the HPSC. Professor Mallon rejected Professor Horgan's view in the following terms:-

> *"So, when you establish backtracking, Judge, the backtracking has to include time lag. If I'm resident in the Marlin Hotel … and I acquire COVID-19, it's going to be between three and five days before I develop symptoms. Following the development of symptoms, it's probably going to be another ten days before I will present to hospital with severe COVID-19. So, when you backtrack you need to ensure that the time period that you backtrack from is appropriate in terms of the lag of the natural history of the disease to give you an accurate indication.*
>
> *So, to say in Week 11 that because there was no influenza-like illness, that there was no COVID-19 transmission really doesn't make sense biologically, because*

most of the people in Week 11 who were transmitting and acquiring COVID-19 would not have developed symptoms for at least another three to five years (sic)[22]*. Which would mean you'd be looking at those symptoms occurring within Week 12. The data from the Health Protection Surveillance Centre clearly show in Week 12 that the influenza-like illness rates skyrocketed, you can see, to the highest point of the whole COVID-19 pandemic. The influenza-like illness rates skyrocketed in Week 12.*

The Health Protection Surveillance Centre themselves report that this increase in influenza-like illness rate in Week 12 was due to COVID-19. The only place that those COVID-19 infections could have arose from was three to five days previously, which would have been Week 11.

So, to say that there's low transmission in Week 11, in my view is biologically implausible because otherwise where would all of the symptoms in Week 12 have arisen from?"[23]

43. In short, Professor Mallon maintained that the view taken by Professor Horgan did not account for the timeline between catching an infection, on the one hand, and developing symptoms, on the other. Given the very sharp rise in cases in week 12 of 2020, Professor Mallon suggested that it is:-

"hard not to say that there was not widespread community transmission of COVID-19 during Week 11. It's not reflected in the testing statistics because the testing statistics were not sufficient to pick that up. But these other established

[22] The reference to three to five years appears to be an obvious slip. It seems clear that Professor Mallon intended to refer to days rather than years.
[23] Day 1 pp. 67-68

epidemiological surveillance data were able to pick this up in a biologically relevant timeline."

44. Professor Mallon also drew attention to the data available in relation to the number of hospitalisations and deaths due to COVID-19. In particular, he drew attention to the report prepared by the HPSC on 29th March 2020 for NPHET which provides data up to midnight on Friday, 27th March 2020. Professor Mallon noted that this is exactly twelve days after 15th March 2020. He expressed the view that one would not expect to see patients admitted to hospital until approximately twelve days after infection. As at 27th March 2020, a total of 564 patients had been admitted to hospital and 77 had been admitted to ICU. In addition, there had been 43 deaths. Professor Mallon said that, when one adds the total number admitted to ICU, the total number of deaths and the total number hospitalised, these represent people who would have been infected *"most likely back in Week 11"* when one takes into account the *"natural history"* of COVID-19. It should be noted, however, that Professor Horgan later gave evidence that, during this first wave of COVID-19 infections, a very cautious approach was taken such that the threshold for admission to hospital was low. It should also be noted that there is no evidence about where these hospitalised patients were infected. It is not known for, instance, whether all of the patients admissions to hospital or to ICU were present in Ireland in week 11 of 2020. Some of those patients may have been infected abroad.

45. In circumstances where there was insufficient testing in respect of period 1 (as shown in Professor Mallon's Table 1), Professor Mallon suggested that it was appropriate to compare the extent of influenza-like illness in period 1 against the recorded incidents of COVID-19 in period 3. On the basis of the influenza-like illness Figure produced by the HPSC, Professor Mallon estimated that the burden of

infection during period 1 was approximately 1.3 times the burden of infection in period 3. He made this estimation by reference to the area under the curve for both of the periods in question. In this context, Professor Mallon explained that the *"area under the curve"* is the area shown in the HPSC Figure beneath the large spike of infection commencing in week 12 of 2020 and continuing into week 15 before returning to the baseline in week 17 of 2020 (in respect of the first wave of infection) and the similar area under the outline of the spike of infection in the third wave of infection commencing at approximately week 48 of 2020 ending on week 5 of 2021. By assigning a denomination of 1 for the area under the curve in period 3, Professor Mallon estimated that the area under the curve in respect of period 1 was 1.34 times larger. Professor Mallon then used the figure of 1.34 as a *"correction factor"*. He applied this correction factor to the expected age-adjusted cumulative incidence of COVID-19 within the 18-60 age group in the Dublin area for period 3 (i.e. 2.32 cases per 1,000 population) to derive the incidence of COVID-19 within the same age group in the same area for period 1. If one applies that factor, the result would be 3.11 cases per 1,000 of population. On the basis that there were 3,456 guest nights in the Marlin Hotel between 1st March 2020 and 15th March 2020[24], Professor Mallon estimated that 10.74 cases of COVID-19 would likely have occurred at the hotel during that period. Professor Mallon put this figure forward in place of the figure of 4.01 cases identified in his table. Again, this calculation of 10.74 cases involves applying Professor Mallon's estimation of the rate within the community as a whole in the greater Dublin area to the number of guest nights at the hotel. Secondly, in applying the *"area under the curve correction factor"* of 1.34, Professor Mallon was utilising a factor that he

[24] See footnote 15 above. Although period 1 extended from 1st February 2020 to 15th March 2020, Professor Mallon clarified that the figure of 3,456 guest nights related to the period between 1st and 15th March 2020

derived from the entire duration of the *"spike"* which ran from week 12 up to and including week 15 notwithstanding that it was only the first week of that period that was relevant to his thesis.

46. As outlined previously, Professor Mallon also suggested that, during the course of period 1, there was *"a lot of people"* from other countries coming into Ireland staying at the Marlin Hotel and that this factor would have pushed the risk of a case at the hotel towards the higher end of his estimates. In addition, there was freedom of movement around Dublin which he suggested would, again, have pushed the risk of transmission to a *"much higher level"* during period 1 than during either period 2 or period 3 when there were restrictions on normal societal activities.

47. In the course of his direct evidence, Professor Mallon also dealt with some of the views expressed by Professor Horgan and by Dr. Mark Roe, the experts called on behalf of the defendant. In a joint report outlining why they disagreed with Professor Mallon, they had expressed the view that population measures should not be used for the purposes of estimating the likelihood of cases at a particular premises. Their view was that the aim of population measures is to inform interventions to protect and treat communities rather than residents of a premises *"with varying and relatively lower numbers of people such as hotels"*. They referred in this context to a World Health Organisation (*"WHO"*) paper dealing with the objectives of public health surveillance for COVID-19. Professor Mallon acknowledged that the WHO document is concerned with surveillance and that it does not deal with the use of population-based data to construct models to estimate the risk of an occurrence. But Professor Mallon posed the question that *"if we don't use this data, how else are we supposed to provide these estimates in the absence of a defined case of COVID-19 actually having*

been reported to the HPSC from a resident of the hotel or the surrounding area?"[25]. Professor Mallon also criticised the approach taken by Dr. Roe and Professor Horgan by reference to the confidence intervals applicable to the data plotted by them in their joint report. I will address that element of Professor Malon's evidence when I come to consider the evidence given by Dr. Mark Roe on behalf of the defendant.

48. In concluding his direct evidence, Professor Mallon said that his overall impression is that the likelihood of an occurrence within period 2 and period 1 was no different from period 3 in which there was an established diagnosed occurrence. He stressed that the opportunity to identify an occurrence during period 1 *"wasn't there"* and he said that he was not surprised that there was no diagnosed occurrence in either period 1 or period 2. He said that one could argue that the opportunity to identify an occurrence in period 2 may not have been the same as period 3 because of the *"different dynamics"* of the wave coming into the country *"from a summer where there really was no COVID-19"*. His concluding observation was that all of the characteristics within each of the three periods would *"seem to be very similar"*. Yet, as noted in para. 46 above, he had previously said that the risk of infection in period 1 was much higher than in the two subsequent periods when restrictions were in place on normal societal activities.

49. Under cross-examination, Professor Mallon acknowledged that his estimate of cases at the hotel is based on the total duration of each period. He conceded that it is not an estimate of the number of cases that would be expected on any given day or at any given time on any given day. He accordingly accepted that his estimate was not linked to any specific time within any of his three periods. In the case of period 2, it was put to Professor Mallon that, based on the information provided to him by the

[25] Day 1 pp 86-87

plaintiff for the purposes of preparation of his report, he knew that there were 20 to 25 staff employed at the hotel during that period. In addition, there were contractors, stock-takers, delivery drivers and other suppliers entering the hotel. He acknowledged that an effort had been made on the part of the plaintiff to establish whether anyone was detected with COVID-19 in the August-September 2020 period to see if there had been a confirmed case of COVID-19 and none was reported. On that basis, it was put to Professor Mallon that this was a *"fairly stark distinguishing feature"* between period 2 and period 3. Professor Mallon accepted that there was a testing regime available in respect of both periods and he also acknowledged that no case had been detected in period 2.

50. Professor Mallon was asked to explain why he chose the 18-60 age group in circumstances where this did not coincide with any of the age groups reported by the HPSC. Professor Mallon accepted that the HPSC provided data in respect of the 15-24 year age bracket and then every ten years thereafter. However, Professor Mallon indicated that he had been asked to consider the 18-60 age group rather than the 15-65 age group in circumstances where he was instructed that this age-range was more likely than others to frequent the hotel. On that basis, he had to re-format the data to fit within the 18-60 age range. Professor Mallon acknowledged that the solicitors for the plaintiff had instructed him to proceed on the basis of an age range of 18-60. He also acknowledged that the three periods used by him had all been chosen by the solicitors for the plaintiff. He further accepted that, if he had taken the 15-64 age bracket, it would not have been necessary to make the adjustment in relation to risk ratio discussed above.

51. Insofar as Professor Mallon's table refers to the country of origin of guests, Professor Mallon clarified, under cross-examination, that the country of origin of

guests was not used in his calculation of the estimated number of cases at the hotel in any one of the three periods addressed in the table. In those circumstances, he was asked why the information appears in the table. His response was that it provides an *"interpretive context in terms of what the output is providing"*. Professor Mallon also accepted under cross-examination that he was uncertain whether the numbers provided in relation to guest nights was solely in respect of guests or whether it represented a combination of guests and staff. It was put to him that this was a significant issue. If, for example, there were 30 members of staff staying on the premises, that would equate, on the basis of a 40-day period, to 1,200 *"guest nights"*. In this context, it should be noted that, subsequently, on re-examination of Professor Mallon, counsel for the plaintiff clarified that the figures which had been provided to Professor Mallon were solely in respect of guests and did not include staff. On that basis, it was agreed that the reference to *"staff"* in the final box in the table should be excised.

52. With regard to period 1, it was put to Professor Mallon by counsel for the defendant that his *"area under the curve"* calculation suggests that the rate of infection in the period of the spike beginning in week 12 of 2020 would equate to 3,343 case per 100,000 people. Professor Mallon did not dispute this. It was then put to him that this would equate to more than 150,000 infections in the total population of the State (which was suggested to be approximately 5,000,000). Professor Mallon responded that this is what the HPSC data on influenza-like illness would suggest. It was then put to Professor Mallon that this was totally inconsistent with the figures for the total number of COVID-19 cases by the end of 2020. According to the HPSC reports, the total number of confirmed cases up to midnight on 21st December 2020 was 81,000. Professor Mallon acknowledged that this is so but he maintained that it

was entirely plausible that the total number of infections during the first wave of the pandemic was significantly higher than in subsequent waves. He also reiterated his view that the data in respect of period 1 is not accurate and, therefore, the total case load is under-reported. Professor Mallon also stressed that the figure of 150,000 would relate to the entire of wave 1 which extended beyond Professor Mallon's period 1 (as recorded in the table above). Wave 1 extended up to week 16 which ran up to 19th April 2020.

53. Professor Mallon rejected the suggestion that the purpose of his exercise was to estimate the likelihood of a risk that there was a case of COVID-19 at the Marlin Hotel. He maintained that the purpose of his exercise was to estimate the number of occurrences at the Marlin Hotel. He was asked whether he was using the word *"occurrence"* because that is the word used in the policy, but his response was that *"Occurrences can be used interchangeably with cases, depending on what your interpretation is"*.

54. Prior to the hearing, it had been agreed between the experts that there is a higher potential for transmission of COVID-19 in higher population density areas but they also agreed that, in Ireland, other factors had contributed to transmission that resulted in the highest incidence rates occurring at times during the course of the pandemic waves at locations outside Dublin. Under cross-examination, this was put to Professor Mallon in the context of his reliance on the view expressed by Professor Lewis[26] that there was a higher degree of transmission in areas of greater population densities. Professor Mallon acknowledged that, at times during the pandemic, other factors contributed to higher prevalence rates in areas of the State that had less dense

[26] In his report, Professor Mallon had cited the paper by Professor Lewis published in *Nature* entitled *"Superspreading drives the COVID pandemic – and could help to tame it"*

populations than Dublin. However, he maintained that this does not mean that the observations of Professor Lewis are incorrect.

55. It was also put to Professor Mallon that population level estimates should not be used for assessment of risk in individual premises. Professor Mallon accepted that it is inappropriate to use population level surveillance figures if one wishes to survey a premises but he maintained that this does not mean that population level data cannot be used to estimate the number of cases in a sub-population *"albeit that it is an estimation"*. Professor Mallon was then asked to direct the court to literature in the field which suggests that population level estimates can be used to assess an individual premises. Professor Mallon responded: *"I could -- at present, I can't pull up a publication offhand. There would be -- I would imagine there are a number of publications that have done this. If the Court wished to give me leave to provide such evidence, I'd be happy to seek it out and do so."*[27] It was then put to Professor Mallon that he plainly had not studied any such materials before putting his proposition forward to the court. Professor Mallon nonetheless sought to maintain that, in the absence of other data, the principle of using publicly available data to estimate the number of cases would be a *"conventional approach"*. He said that he could find no evidence to say, within the documentation that was provided by Professor Horgan and Dr. Roe, that it is inappropriate to do so.

56. While he did not cite any published medical authority for his approach, Professor Mallon continued to express his disagreement with the views of Dr. Roe and Professor Horgan in relation to the use of population estimates. In their reports, they had indicated that the use of population estimates would not be appropriate in the particular context of the hotel where the numbers of residents at the hotel ranged from

[27] See Day 2, p. 30.

18 guests per day to 549[28] guests per day. Professor Mallon stated that his *"fundamental objection"* to the views expressed by Dr. Roe and Professor Horgan in that context was *"that in some way there is a cut-off above or below which it is appropriate to use population estimates for the purposes that have been used"*.

57. Professor Mallon also confirmed under cross-examination that he remained of the view stated in the joint report of the expert witnesses to the effect that factors such as variations in travel origins, period duration, incidence of confirmed infection in Dublin, and the number of guests staying at the hotel each day are *"too influential to ignore when interpreting the estimated expected number of cases in hotel guests"*. Counsel for the defendant put the following statement in the joint report of Professor Horgan and Dr. Roe of 15 May 2023 to Professor Mallon:-

> *"These figures far exceed the number of occupants staying in the hotel in the three periods, which range from 4 to 298 per day. Therefore, it is not best practice to extrapolate a trend found within population level data and expect it accurately reflects events within a particular premises. At such smaller levels, trends in COVID-19 are best understood through outbreak or source investigations using methods such as contact tracing."*

58. However, Professor Mallon again expressed the view that the last sentence in the passage quoted is something that would be done if one wished to carry out active surveillance at a premises and he made the point that such active surveillance was not in place during period 1.

59. It was also put to Professor Mallon that his approach erroneously assumed that the incidence of infection is similar throughout Dublin and that both the number of

[28] It appears that there may have been one occasion on 29 February 2020 when 549 guests were present in the hotel but a lesser range was cited in the reports of Dr. Roe and Professor Horgan. See the extract from their joint report quoted in para. 57 below. In any event, as noted in footnote 15 above, Professor Mallon did not take guest nights prior to 1st March 2020 into account in respect of period 1.

guests in the hotel and the local incidence of infection remained static throughout the entire time period. Professor Mallon responded to say that the cumulative incidence of infection is a static number; that it cannot move because it represents the total number of reported infections.

60. It was pointed out to Professor Mallon that, in his report, he had referred to *"the vicinity of the hotel"* and he was asked to clarify what he meant by this. He confirmed that his calculations were based solely on the data relating to hotel occupancy and that they did not take into account any cases that may have arisen in the surrounding areas. However, he maintained that, if account was to be taken of the surrounding area, this would only serve to increase the likely number of cases as one would, in those circumstances, be dealing with more people. Nonetheless, based on the approach taken in his report, he accepted that he was wrong to refer, from time to time, to the vicinity of the hotel and he confirmed that the court could disregard references to the *"vicinity of the hotel"* in his report. On the other hand, Professor Mallon also made the case, in the course of his cross-examination, that, if he were to take account of the country of origin of guests at the hotel, this would increase the likelihood of having a case of COVID-19 at the hotel[29].

61. At the end of Professor Mallon's cross-examination, he was asked about his estimate of ten cases in period 3. It was put to him that, in contrast to periods 1 and 2, there was actually a confirmed case in period 3. It was put to him that he was merely theorising that there were nine others. His response was: *"That is the assertion, that there would be expected ten cases. We know that one was confirmed."* He also said

[29] It should be noted that, although Professor Mallon referred in Table 1 to the percentage of hotel guests from countries with known outbreaks of COVID-19, he clarified in his evidence that he had not taken their origin into account in the calculations made in Table 1 as to the estimated number of cases of COVID-19 at the hotel.

that the only way to establish the accurate number of cases within the hotel would be to undertake active surveillance which he said was not undertaken. He added:-

> *"So it's not really, I think, beyond the realms of possibility that there were unreported potentially detected cases within the guests or staff of the Marlin Hotel during the periods, because there was no active surveillance in place within the Marlin Hotel."*

62. On re-examination, Professor Mallon was asked whether he wished to further clarify the issue in relation to a number of likely infections during the first wave of the pandemic in 2020. It should be recalled, in this context, that it had been put to Professor Mallon that there must have been upwards of 150,000 cases of COVID-19 on the basis of his hypothesis. In response, Professor Mallon drew attention to the HPSC report of 4th August 2020 (which provides details of cases of COVID-19 notified in Ireland up to midnight on 2nd August 2020). Professor Mallon explained that this was a cumulative report dealing with all of the cases which had reported during the first wave and that it extended up to the start of the second wave. He again reiterated that, during June and July 2020, the rates of COVID-19 were extremely low and he expressed the view that the data contained in the HPSC report in terms of hospitalisations and deaths largely reflects the outcome of the first wave. His evidence was as follows:-

> *"Now, it was the assertion earlier that my data would suggest that there would be upwards of 150,000 cases of COVID-19 occurring during Period 1 and there was assertion as to whether that was a realistic probability or not. However, when you look at the report for 4th August and you scroll down to the fifth line, which lists the total number of deaths among confirmed cases, it's 1,506. Below that there's the case fatality issue. Now, the case fatality ratio is the number of*

deaths as a proportion of the number of confirmed cases. And that case fatality ratio, you can see here, is 5.75.

The established literature of COVID-19 at that time was that the case fatality ratio internationally was in or just above 1%. So, if Ireland had a total number of deaths of 1,506, an appropriate backtracking in terms of the expected number of true cases that would have eventually led to that number of deaths would make you arrive at a number not far off 150,000.

So I think that this data really supports that the backtracking in the measures and what we discussed in terms of the expected number of cases for Period 1 could well have been in excess of 100,000 and even up to 150,000, based on what we know about the pathogenesis and expected mortality arising from COVID-19 in an unvaccinated population, which is exactly what this data represents."[30]

63. At the conclusion of his re-examination, I asked Professor Mallon to clarify what he said about the international rate of deaths being about 1%. I asked him whether this was 1% of confirmed cases. Professor Mallon seemed to be unsure of the position. He stated that his understanding was that it is 1% of confirmed cases but that there *"would be a level of uncertainty about how WHO estimate the confirmed cases"*. He said that he thought they might also include surrogates. Professor Mallon said that he would investigate the issue and come back to the court with an answer.

64. Professor Mallon returned to the witness box on Day 3 of the hearing for that purpose. On this occasion, Professor Mallon referred to a scientific briefing issued by

[30] Day 2, pp. 56-57

the WHO on 4th August 2020 entitled *"Estimating mortality from Covid-19"*. It was explained on p.1 of the document that it was intended to help countries estimate the case fatality rate (*"CFR"*). Professor Mallon drew attention to the statement on p.2 of the document that reliable CFRs can generally be obtained at the end of an outbreak, after all cases have been resolved (the affected individuals having either died or recovered). The document stated that the calculation may not *"hold"* in an ongoing epidemic because it makes two assumptions namely that the likelihood of detecting cases and deaths is consistent over the course of the outbreak and that all detected cases have resolved (either in death or recovery). It was also pointed out in the document that, early in an outbreak, surveillance tends to focus more on systematic patients who need care such that milder and asymptomatic cases are less likely to be detected, leading to an overestimation of CFR. This overestimation may decrease as the level of testing and active case finding increase. Insofar as the second assumption is concerned, the document points out that, during an ongoing epidemic, some of the active cases already detected may subsequently die, leading to underestimation of CFR estimated before their death. This effect is accentuated in fast-growing epidemics (for example during the exponential growth phase of COVID-19).

65. Professor Mallon also stressed that, in the document, WHO had noted that there can be a lot of variation from country to country and region to region in respect of CFRs. In that context, he referred to a paper by Alimohamadi and other experts entitled *"Case fatality rate of Covid-19: A Systematic Review and Meta-Analysis"*. This was prepared by a number of experts based in Iran and Ethiopia. Professor Mallon explained that the authors had reviewed all available studies that were published relating to COVID-19 in 2020. They then tried to standardise the data in one large data set. They then estimated the CFR on that large data set. The authors

refer to this as a pooled CFR. The authors stated that the pooled CFR of COVID-19 in general population was 1%. In hospitalised patients, the pooled CFR was greater namely 13%. The article relied on studies available from China, Italy, Spain, South Korea, the United States, Japan, Hong Kong and Singapore. There were also two *"world"* samples, the first with a sample size of 96,580 and the second with a sample size of 337,570. However, the vast majority of the other sample sizes were quite small. For example, in the case of the sample sizes for three studies relating to the USA, Canada, Europe and Japan, the sample size ranged from 19 to 54. Nonetheless, Professor Mallon stated that these studies were peer reviewed and that he believed that the 1% rate is a reliable rate.

66. Under further cross-examination, it was put to Professor Mallon that the HPSC weekly report on the epidemiology of Covid-19 for Week 52 of 2020 (*i.e.* the week of 20th December to 26th December 2020) shows that the CFR in Ireland was 2.27%. It was put to Professor Mallon that, based on such a CFR and the number of cases *"under the curve"* of the order of 150,000 to 160,000 cases in the period from week 12 to week 17 of 2020) the number of deaths in Ireland would be much higher. In response, Professor Mallon said that he had not put forward the suggestion that there were 150,000 cases; that this was an extrapolation suggested to him by counsel for the defendant. Nevertheless, Professor Mallon maintained that a CFR of 1% would support a figure of 150,000. He also suggested that, as outlined in the WHO document discussed above, the CFR should only be established at the end of an outbreak. Counsel for the defendant suggested to him that he was attempting to *"cling"* to a theory that would produce a result of more than one suspected case at the hotel. It was drawn to his attention that, in the instructions issued to him by the plaintiff's solicitors, it was expressly stated that, if the number of persons at the present with

COVID-19 in each of the periods was greater than one, the *"argument is very persuasive"* but that if the number is nearer to one *"we may expect push back from the defendant"*.

The evidence of Professor Mary Horgan

67. Professor Horgan is a consultant in infectious diseases with over 30 years of experience. She is a former Dean of the School of Medicine in University College Cork. She was a member of several national committees on the public health response to COVID-19 including NPHET. She also has frontline experience in diagnosing and treating patients admitted to hospital with infectious diseases (including COVID-19 since March 2020) and she is familiar with all aspects of COVID-19 and the consequences of the infection on human health.

68. In her report, she focused on each of the same three time periods as Professor Mallon had done in his report. She noted the way in which Professor Mallon had, in his report, focused on the age range 18-60 which does not align to the age bands reported by the HPSC for COVID-19. Because of the lack of alignment, Professor Horgan expressed the view that this required assumptions on the part of Professor Mallon on the numbers of population between 15-17 years inclusive and 55-60 years inclusive. Professor Horgan suggested that caution should be used in interpreting ages outside the nationally reported age bands.

69. Professor Horgan disagreed with Professor Mallon's view that community data can be used to estimate the likelihood of an infection with COVID-19 at a specific premises. Professor Horgan said that one would not usually extrapolate whether cases might have arisen at a particular premises from community-wide data. She expressed the view that it is very difficult to use community data to analyse the likelihood of a case of an individual with COVID-19 being present at a premises.

70. In her report, Professor Horgan also disagreed with Professor Mallon in relation to his suggestion that population density led to increased incidence of COVID-19. She stressed that Professor Mallon had relied on a report from Professor Lewis who had, in turn, relied on the US experience. In contrast, Professor Horgan said that, in Ireland, it was areas with lower population density (primarily the border counties) which had the highest incidence of infection (higher than that reported in Dublin). She also noted that the counties most affected changed over the course of 2020 indicating that each wave of the pandemic was not homogenous and she expressed the view that any comparison between the three periods should take this into consideration. Based on data available from the HPSC, during wave 1, Counties Cavan, Dublin and Monaghan had the highest incidence rates per 100,000 population. However, in wave 2, this changed to Counties Cavan, Donegal and Meath, and, in wave 3, it changed to Counties Monaghan, Louth and Limerick.

71. Professor Horgan also drew attention to the fact that the first endemic case of COVID-19 in Ireland was identified on 29th February 2020 and reported on 2nd March 2020. According to Professor Horgan, the number of cases reported in weeks 10 and 11 of 2020 was very low at 143 (of which 53 were in Dublin). Professor Horgan agreed that the number of reported cases was likely to be an underestimate but she disagreed with Professor Mallon that this meant that there was a significant underestimation of the true likelihood of a case occurring in the vicinity of the hotel during period 1.

72. Professor Horgan agreed with Professor Mallon that rates of influenza-like illness constitute a surrogate measure for estimating the population burden of COVID-19 in Ireland in respect of the first wave of COVID-19. Professor Horgan confirmed that, in the period after 15 March 2020 beginning at week 12, there was an upsurge in

reporting of influenza-like illness in Ireland and she agreed with Professor Mallon that this is related to COVID-19. However, Professor Horgan did not agree with Professor Mallon that there was likely to be a large number of undetected cases in Ireland up to 15th March 2020. Professor Horgan expressed the view that, up to the end of Professor Mallon's period 1 (i.e. up to 15th March 2020), reports of influenza-like illness, hospitalisations and ICU admissions remained low. This is consistent with the plotting of the data on reports of influenza-like illness as shown in the HPSC Figure reproduced in para. 40 above. In her view, this was so in Ireland, in Dublin and in the vicinity of the hotel at that time. In those circumstances, she believed that there was a very low likelihood of a case at the hotel in period 1.

73. Professor Horgan agreed with Professor Mallon that there is a time lag between infection with the SARS-CoV-2 virus and the development of symptoms of COVID-19 disease. She agreed that it is therefore necessary to look at the week following 15th March 2020 (namely week 12 of 2020 running from 16th to 23rd March) in order to estimate the incidence of COVID-19 in the week ending 15th March. On that basis, Professor Horgan agreed that the data in relation to week 12 of 2020 may serve, to a large extent, as a measure of the number of persons infected in the preceding week.

74. In light of Professor Mallon's evidence, Professor Horgan explained that she was asked to look at the HSPC data in respect of week 11 of 2020, namely the week ending 15th March 2020 and the subsequent week (week 12), ending 22nd March. As noted above, this was in circumstances where the HPSC data shows that there was a spike of influenza-like infections which commenced in week 12 and continued for a number of weeks thereafter. Based on the HPSC reports, Professor Horgan explained that, for week 11, the rate of influenza-like infection was 12 cases per 100,000 of the population while, in the following week, it was 184 cases per 100,000 of the

population. Professor Horgan said that, based on a rate of 184 cases per 100,000, the total number of cases of influenza-like illness in week 12, on a nationwide basis, would be of the order of *"just under 10,000"*. This was a very rough estimate given by Professor Horgan in the course of her direct evidence. By my calculation, the correct number would be somewhat less than that, namely 9,200 cases. Professor Horgan also confirmed that not all of those cases would have been infected in the previous week. This is because the incubation period is three to five days. Accordingly, a proportion of the cases in week 12 would have arisen from infections which occurred in the first two to four days of that week. Against that backdrop, Professor Horgan was asked whether, in light of the fact that *"10,000 people"* exhibited influenza-like illness in the country in week 12, this changed her view in relation to the likelihood of a case of COVID-19 at the Marlin Hotel in the preceding period. Professor Horgan confirmed that it did not. She remained of the view that there was a low likelihood of a COVID-19 case at the Marlin Hotel. She explained her view in the following terms:-

> *"I'm doing the maths here. So, you've got a little less than 10,000 cases in 5 million in the entire country. So, Dublin is about, you know, a third of the population, so 1.347 million. So, you'd be bringing that down to approximately, you know, 3,000/3,500 in the whole city of Dublin. And that's an odds of about 1 to 500 chance."* [31]

75. Professor Horgan stressed that, in periods 2 and 3, there was both a testing regime in place and a contract tracing regime in place. With specific reference to period 2, Professor Horgan suggested that, if there had been a case at the hotel during

[31] See Day 4, p. 14. That is a very approximate estimation of the chance. By my calculation, the chance is in a range of 1 in 385 to 1 in 450.

that period, she would expect it to have shown up as part of the COVID-19 Contact Management Programme. Professor Horgan explained that this programme had over 800 dedicated specialists by the end of the summer of 2020. She stressed that testing was available. It was free. In the event that there was a positive case, the job of the Contact Management Programme was to identify that case, those that were in contact with it and to advise appropriate isolation and testing of those individuals. Professor Horgan also drew attention to the fact that there were travel restrictions introduced by the Government to contain the spread of infection and guidelines were published on what was regarded as essential overseas travel. It was recommended at the time that inbound travellers restrict their movement for fourteen days after arrival. On 6th August 2020, the Government issued advice that Irish people should holiday at home. Based on HPSC reports, Professor Horgan stated that only 2% of cases, during the course of the second wave, were travel-related. On that basis, she expressed the view that there was a very low likelihood of an overseas traveller at the hotel with COVID-19 during period 2.

76. Under cross-examination, Professor Horgan accepted that, if she had not been specifically asked to address the period up to 15th March 2020, she would have considered the data relating to influenza-like illness in week 12. Counsel for the plaintiff, very properly, acknowledged that the periods had been *"picked…up to a particular date"*[32]. He nonetheless put it to Professor Horgan that, by confining her report in respect of period 1 up to week 11, that did not present the full picture. Professor Horgan accepted this. Consistent with her direct evidence, she replied that infectious diseases have incubation periods and that one would look at trends over a

[32] See p. 21 of Day 4. This was a reference to the specific instructions given to Professor Mallon to consider the three periods described in para. 26(a) above.

period of time. She further explained that, for that reason, when she was informed that, in his oral evidence, Professor Mallon had himself gone beyond week 11, she had *"no problem"* looking at the data in respect of influenza-like illness in the following week *"which would extend into beyond the incubation period to the time that you'd symptoms"*.

77. In the course of his cross-examination of Professor Horgan, counsel for the plaintiff relied on HPSC epidemiology reports in respect of COVID-19 for week 52 of 2020 and week 4 of 2021 in order to identify the total number of confirmed cases of COVID-19 at either end of the third wave of COVID-19. The report for week 52 of 2020 recorded that the total number of confirmed cases of COVID-19 by that time was 86,129, while the total number of confirmed cases had grown to 196,491 by the end of week 4 of 2021. On that basis, counsel put it to Professor Horgan that there had been an increase of 110,362 confirmed cases in the period between week 52 of 2020 and week 4 of 2021 and that, accordingly, the estimate given by Professor Mallon in respect of period 1 (of 150,000 cases) was not surprising. However, Professor Horgan did not accept that period 3 and period 1 were comparable in that way. She said:-

> *"Can I say there's one big difference between what you've shown me here and Period 1, and that's the Kent variant, which is the Alpha variant, which was much more infectious. So, not only had you the mixing at Christmas, as your Honour said, but you had the Kent variant, which was first reported in late December, but retrospectively, when they looked at it, it was there in early November. And that was a key driver of the increased widespread community*

infection in that period of time. And in my opinion, that's why it's hard to compare and use data - and I'm not a statistician."[33]

78. It was also put to Professor Horgan that, at a level of principle, the more humans there are per square kilometre, the greater the chance of transmission of an infectious disease such as COVID-19. Professor Horgan accepted that this was so but she stressed that higher density of population was not the only factor. She also stressed that human behaviour was important.

79. In relation to the first wave of infections, Professor Horgan did not agree the level of hospital admissions was a reliable indicator of the extent of COVID-19. Her evidence was that a cautious approach was taken at the start of the epidemic which saw a greater number of hospital admissions. She said:-

"...I think it is important; the admissions in mid to late March, it was a time of uncertainty, we didn't know how to treat people, we didn't know how to -- who needed to come in, who didn't need to come in, who needed to go into ICU or who didn't. So, there was a low threshold for admitting people. And you can see that when you look at the percentages of hospital admissions to the end of Week 13, which is the end of March 2020, 29th, where there was about 28% of people admitted to hospital, when the subsequent national average was 6%. So, what we were doing at the time was being really cautious, bringing people in, because we just couldn't predict the direction of the disease in a particular individual. So the numbers were higher there if you compare them to the rest of the pandemic, because of uncertainty."[34]

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[33] See pp. 39-40 of Day 4.
[34] See Day 4, p. 49.

80. Professor Horgan contrasted the approach taken during the first wave with that taken during the second wave. For example, the HSPC data in respect of the week ending 2nd August 2020 showed that there were only eleven admissions to hospital in that week. Professor Horgan explained that, during period 2, there was more knowledge about COVID-19 and admissions to hospital were usually only made where a patient had severe symptoms.

81. In relation to period 3, Professor Horgan accepted, under cross-examination, that the staff member (who received a positive test result on 23rd December 2020) could have been infected up to fourteen days previously. Professor Horgan noted that the individual concerned did not leave the premises *"so the conclusion was that he acquired it on the premises"*. Professor Horgan also confirmed that she was aware that there were two subsequent staff members who tested positive on 27th December 2020 but she indicated that her understanding was that they lived in the community and did not reside at the hotel. Her understanding to that effect was not challenged by counsel for the plaintiff. In the course of her cross-examination. Professor Horgan also accepted that there was significant socialising in the pre-Christmas period in 2020 which gave rise to concern on the part of NPHET and the health authorities. During Professor Horgan's cross-examination, counsel for the defendant interjected to confirm that the parties were agreed that the socialising in the pre-Christmas period was *"the problem"*[35]. In addition, Professor Horgan agreed that the lockdowns occurred because of concerns about the number of occurrences in the community. As a member of NPHET, Professor Horgan was particularly well qualified to give that evidence.

[35] See Day 4, p.38

The evidence of Dr. Mark Roe

82. Dr. Mark Roe also gave evidence on behalf of the defendant. Dr. Roe has a doctorate in health surveillance. The main focus of his work is on the design of health surveillance systems and the completion of epidemiology studies, post-doctoral training in public health and investigating COVID-19 super-spreading events, mainly in workplace outbreaks. He has over 40 published research papers on these topics and he has also lectured on the topics of research methods and statistics, epidemiology, and healthcare innovation to undergraduate and postgraduate students at University College Dublin (both in the School of Public Health, Physiotherapy and Sports Science and in the School of Medicine).

83. Dr. Roe was asked to consider the data available on the incidence of COVID-19 in the vicinity of the Marlin Hotel during the three time periods addressed in Professor Mallon's report. Dr. Roe prepared a number of reports. His first report was prepared on 18th February 2023. He was also the joint author (together with Professor Horgan) of the subsequent report of 15th May 2023 in which Professor Horgan and Dr. Roe set out the reasons why they disagreed with Professor Mallon on a number of points in his report. The three points of disagreement in question were:-

(a) In period 1, Dr. Roe and Professor Horgan were of the view that there not widespread community transmission. It is important in this context to bear in mind that period 1 is not the same as wave 1. It runs solely from 1st February 2020 to 15th March 2020[36]. As the HPSC Figure reproduced in para. 40 shows, wave 1 extended well beyond 15th March 2020;

[36] As noted in footnote 15 above, although period 1 was stated to commence on 1st February 20202, Professor Mallon's calculations in respect of that period were based on guest nights between 1st March 2020 and 15th March 2020.

(b) Dr. Roe and Professor Horgan also expressed the view that population level estimates should not be used for assessment of risk in individual premises where the number of residents staying at the premises ranged from 18-549[37] per day. I believe it is fair to say that this represents a fundamental point of disagreement between the experts. It must be kept in mind, in this context, that the basis for Professor Mallon's model or approach (as summarised in his Table 1[38]) is the application of community or population level estimates to the much smaller cohort of guests[39] at the hotel during the periods in issue;

(c) They further expressed the opinion that the likelihood of a case among hotel guests was low based on the estimated incidence rate data.

84. In the joint report of 15th May 2023, Dr. Roe also updated the incidence rates for Dublin and for Ireland. He explained that, in his first report, he had originally missed a period of 24 hours and that this required to be corrected. In addition, the data supplied by the plaintiff relating to the number of guests in the hotel on any individual night during each period had proved to be unreliable for the purposes of the first report. In those circumstances, further information was requested from the hotel and Dr. Roe updated the analysis in the May report.

85. As outlined in his first report, Dr. Roe was asked to provide an expert opinion to address two specific questions:-

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[37] As noted in footnote 26 above, there was at least one occasion in period 1 when 549 guests stayed at the hotel but that was on 29th February 2020. As indicated in footnote 36 above, the number of guests staying at the hotel on 29th February were not factored into Professor Mallon's calculations for period 1.

[38] i.e. the table reproduced in para. 35 above.

[39] Professor Mallon used guest nights for this purpose.

(a) What data is available on the incidence of COVID-19 in the vicinity of the Marlin Hotel during the three specific time periods addressed by Professor Mallon?

(b) In what way can this incidence data be adjusted to make it more relevant to the clientele who attended the hotel during those periods? In this context, Dr. Roe was asked to focus on those aged 18-60 years.

86. In his report, Dr. Roe confirmed that he had relied on HPSC data in respect of the 15-64 age band. He also focused on the local electoral areas surrounding the Marlin Hotel which he listed as North Inner City, Southeast Inner City (in which the hotel is located), Southwest Inner City, Pembroke and Kimmage-Rathmines. He explained that he took this course in circumstances where he wanted to get as close to the hotel as possible. In relation to the data in respect of these local electoral areas, Dr. Roe said that he relied on Central Statistics Office (*"CSO"*) data which provided the number of people per age and the number of people living in households of a given size in each local electoral area including those in the vicinity of the Marlin Hotel. However, it later emerged, during the cross-examination of Dr. Roe, that his data, while focused on the five local electoral areas described above, was an estimate derived from the data for the Dublin region as a whole which he then applied to each of the local electoral areas on a proportionate basis according to their population.

87. Dr. Roe said that he also looked at data relating to the population of each county in Ireland based on the 2016 census and HPSC data on the number of confirmed cases of COVID-19 in each county. He explained that this data was reported on a daily basis from 27th February 2020. In addition, he considered data on COVID-19 tests completed in Ireland and he cross-checked this against the HPSC reports. It should be

noted that, in the course of his cross-examination on Day 2 of the hearing, Professor Mallon said that he had no criticism of the use of any of this material.

88. In the course of his direct evidence, Dr. Roe was asked to explain why he is of the view that population level estimates should not be used for assessment of risk in individual premises. In response, he stressed that the core intention of the HPSC database was population level surveillance. The objective is to monitor changes in epidemiological patterns across an entire country or perhaps a geographical region such as Dublin City, for example. Typically, data calculated on a broad population basis in this way is used to forecast how many incidents of breast cancer or strokes might be expected in a year based on the recorded population level data of previous years. Dr. Roe explained that it is not best practice to seek to extrapolate a trend found within population level data and expect that it accurately reflects events within a particular premises. He stressed that the incidence rates for COVID-19 were cases per 1,000 to 100,000 head of population which far exceeds the number of occupants staying at the hotel across the three periods in question. He expanded on this at later points in his evidence.

89. Nonetheless, Dr. Roe carried out an exercise mirrored on that carried out by Professor Mallon as recorded in Professor Mallon's Table 1, albeit focused on the data relating to the local electoral areas described above. Dr. Roe acknowledged that it was a personal choice as to whether one used the Dublin metropolitan region as a whole (as Professor Mallon had sought to do) or the five local electoral areas closest to the hotel. One point to note about the local electoral areas in question is that (as recorded on p. 5 of Dr. Roe's first report) people living in these five areas are 1.84 times more likely to be living in one-person households than people living in the rest of Dublin. Dr. Roe said that this runs contrary to the common generalisation that,

because population density is higher in cities, everyone living in one must be living in relatively more crowded conditions. In the context of the COVID-19 pandemic, this reduces the number of people in the vicinity of the hotel living with someone who could infect them. According to Dr. Roe, the net effect of this is that fewer people in the nearby community are likely to be infected and/or infectious. He also said that it is reasonable to suggest that this dynamic would be increasingly strong during periods when additional public health measures restricted gatherings between households.

90. In carrying out the exercise mirrored on that undertaken by Professor Mallon, Dr. Roe produced a table in his first report showing the estimated incidence for the cohort of persons aged between 15-64 living in the five local electoral areas in the vicinity of the hotel during each of the three periods. This table was in the following form:

	Period 1: 1 Feb 2020 to 15 Mar 2020	**Period 2: 1 Aug 2020 to 19 Sept 2020**	**Period 3: 25 Nov to 24 Dec 2020**
Incidence for All 15-64 y in Ireland Per 100,000 Persons	4.5	173.4	310.0
Number of Laboratory Confirmed Cases in Dublin for All Ages	67	3,101	4,368
Incidence Rate Ratio for All Ages: Dublin Relative to the Rest of Ireland	1.1	2.1	1.3
Estimated Incidence for 15-64 y in Dublin Per 100,000 Persons	5.5	485.8	420.1
Estimated Number of Cases in People Aged 15-64 y Living in the Five LEAs in Vicinity of Hotel	13	571	804
Estimated Number of Guests Based on Guest Nights During the Period	7,180 (Avg = 163)	1,898 (Avg = 38)	1,543 (Avg = 51)
Estimated Number of Guests Cases in Guests Aged 15-64 y	1 (rounded from 0.38)	9 (rounded from 8.93)	7 (rounded from 6.28)

91. As will be seen from this table, by adjusting for the number of guests reportedly in the hotel during those periods, this resulted in one case in period 1 (rounded up from 0.38), nine cases in period 2 (rounded from 8.93) and seven cases in period 3

(rounded up from 6.28). However, Dr. Roe stressed that these figures overlook the variations that were known to have occurred in incidence of infection in Ireland, the incidence of infection in people aged 15-64 years, the duration of the periods in question and the number of guests in the hotel. He also stressed that these factors are too influential to ignore. This was something that each of the experts had agreed in their joint report dated 5th May 2023, following a meeting on 24th March 2023.

92. In his direct evidence, Dr. Roe emphasised that this approach does not take account of all of the varying factors that affect the likely incidence of infection occurring:-

> *"I think, again, the caveat being we're talking about an infectious disease here, particularly one that's evolving quite fast, so you wouldn't really want to group people into entire ... long periods that last ... 30 days or 45 days, whatever the case might be, because you make so many assumptions there in terms of how the trajectory of the transmission has taken place from day-to-day within that period, how many people were actually possibly exposed in the hotel during the period and you also assume that the same people were in the hotel on the same day that the rates happened to be highest, when we know in some cases when you look into certain data sets you see that's actually not the case. So, in them ways it can be quite misleading."*

93. Dr. Roe also expressed the view, in the course of his direct evidence, that it is difficult to stand over the output of such an approach. He said that the factors (such as the variation in the infection rate within a region and the number of people exposed in the hotel on any given night) are:-

> *"essentially what will determine how many possible cases you could have there. And when you overlook them or ignore them, it's very hard to basically stand*

over the output of that equation and say that that accurately reflects what you could expect to have taken place in them premises."

94. Dr. Roe also sought to estimate the number of people within the age bands 15-64 expected to be infected in the surrounding area of the hotel (which I understand to be the five local electoral areas previously discussed) on a rolling fourteen-day basis. This was to take account of variations that are known to have occurred in the incidence of infection over extended periods of time. At a later point in his evidence, Dr. Roe explained how he approached the calculation of a rolling fourteen day incidence rate. He said that this is the rate at which new events occurred in a population during the preceding period of fourteen days. This metric is calculated in the same way as any other incidence rate save that it is updated to account for the number of cases identified within fourteen days from the date on which the metric is calculated. Thus, for example, if, on day 23 of a 28 day period, there have been nineteen cases reported in Dublin during the preceding 14 day period, the rate for that 14 day period can be calculated by dividing the numerator 19 by the denominator (namely the population of Dublin 1,347,359) which gives a figure of 0.00014 which, when multiplied by 100,000, provides a rate of 1.4 cases per 100,000 population over the previous 14 days. In this context, period 1 (as defined by Professor Mallon) was roughly 44 days in duration, period 2 was roughly 50 days in duration and period 3 was roughly 29 days in duration).

95. In his first report, Dr. Roe produced a graph which shows a variation in the number of infections in the surrounding area. In period 1, this ranges from a minimum of zero to a maximum of six over the course of that period. I reproduce the graph

below:

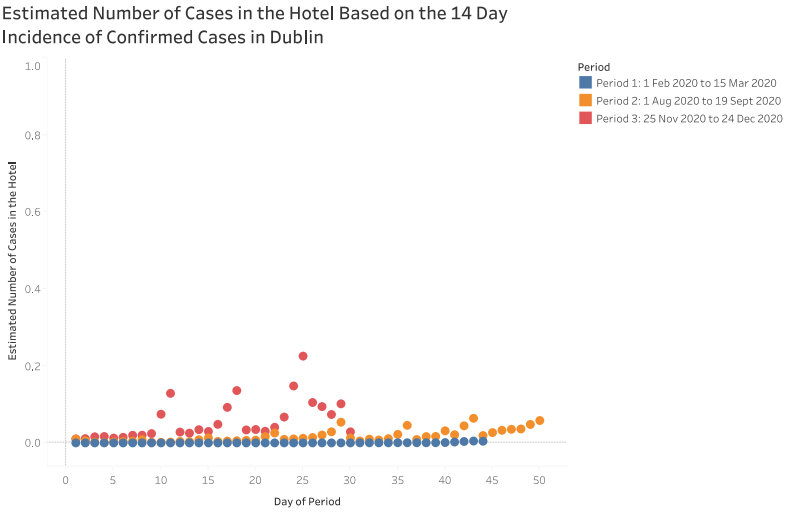
14 Day Expected Number of Confirmed Cases in Persons Aged 15-64 y: Surrounding Area

Includes:
- North Inner City
- South West Inner City
- South East Inner City
- Pembroke
- Kimmage-Rathmines

	Min	5th Percentile	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile	95th Percentile	Max
Period 1: 1 Feb 2020 to 15 Mar 2020	0	0	0	0	1	1	4	5	6
Period 2: 1 Aug 2020 to 19 Sept 2020	12	13	14	16	52	77	118	133	154
Period 3: 25 Nov 2020 to 24 Dec 2020	95	95	96	98	109	121	183	213	249

96. As will be seen from the graph, the median figure was one infection in period 1 in the *"surrounding area"*. However, Dr. Roe said that, when one looked at the complete range, there was a 75% likelihood that, on any day during period 1, fewer than one confirmed case would have been expected over the course of the previous 14 days. This increased to 77 cases for period 2 and 121 cases for period 3. In period 2, the number of cases in the surrounding area ranged from a minimum of 12 to a maximum of 154 (again based on a rolling fourteen-day period). The median number of cases was 52. In the case of period 3, the estimates range from a minimum of 95 cases to a maximum of 249 cases. The median for period 3 was 109 cases. However, Dr. Roe expressed the view that, even in the case of period 3, the likelihood of infection was low based on a total population of 96,482 people in which the maximum number of expected cases was no more than 249 in any prior period of 14 days .

97. In his first report, based on the data then available in relation to the number of guests staying at the hotel, Dr. Roe concluded that the highest estimated number of cases in the hotel peaked at 0.2 cases in period 3. He illustrated this by reference to the following Figure:



98. Dr. Roe noted that the maximum value on the y axis is 1.0 which would indicate a single case. However, the highest estimated number of cases in the hotel peaked at 0.2 in period 3. Dr. Roe expressed the view that this Figure shows the limitation of applying population-level data to small samples. He said that it would be normal practice to round up the expected cases to the nearest whole number but that, given the low figure (with a maximum of 0.2 of one case), he was reluctant to use rounding up here.

99. Dr. Roe also produced a further report in conjunction with Professor Horgan – namely the report of 15th May 2023. Before turning to that report, it is important to note that, following the delivery of the initial reports from Dr. Roe and Professor Horgan on behalf of the defendants, a meeting took place between the experts on 5th May 2023. At that meeting, the following was agreed:-

(a) There was insufficient testing capacity in period 1;

(b) All model estimates are based on assumptions;

(c) In period 1, both sides' estimated incidence rates were calculated over time periods that were not exactly those directed (Dr. Roe calculated up to midnight on 15th March 2020 and therefore missed 24 hours and

Professor Mallon calculated until midnight of 20th March 2020 (an additional four days);

(d) As a result, the agreed total number of reported cases in Dublin at the end of 15th March 2020 was 126;

(e) The general principles of higher potential for transmission of the SARS-CoV-2 virus in higher population density areas was agreed but, in the case of Ireland, other factors also contributed to transmission that resulted in the highest incidence rates occurring at times during the pandemic waves outside Dublin;

(f) In period 3, there was a confirmed case of COVID-19 on the premises;

(g) The data on influenza-like illness rates have been interpreted differently by both parties in how they relate to period 1;

(h) None of the experts was aware of any cases of COVID-19 having been identified at the hotel during period 2;

(i) Factors such as variations in travel origins, period duration, incidence of confirmed infection in Dublin, and the number of guests staying in the hotel each day, are too influential to ignore when interpreting the estimated expected number of cases in hotel guests.

100. As noted in para. 83 above, there were three areas of disagreement. Professor Mallon did not agree with Professor Hogan and Dr. Roe that community transmission of COVID-19 was not widespread in period 1. He also disagreed with their view that population level estimates should not be used for assessment of risk in individual premises with residents ranging from 18-545 per day. Professor Mallon further disagreed with their view that the likelihood of a case among hotel guests was low.

101. Following the meeting between the experts, Professor Horgan and Dr. Roe prepared the joint report of 15th May 2023 in which they addressed their reasons for disagreeing with Professor Mallon in relation to these three points. As noted above, they disagreed with Professor Mallon that there was widespread community transmission during the course of period 1. However, subsequent to their joint report, Professor Mallon gave new evidence in relation to period 1 which had not been put forward in his report – namely his evidence as to *"back calculating"* on the basis of the HPSC data in relation to the incidence of influenza-like illness. Against that backdrop, Dr. Roe was asked by counsel for the defendant whether he agreed with Professor Mallon's view that, in the course of the first wave, there could have been something of the order of 150,000-160,000 people infected with COVID-19 . Dr. Roe disagreed. His evidence was:-

> *"I think you would've seen a lot more people in hospital and in ICU. I don't think the best available data that we have from the HPSC supports that. I'm also aware that there's the assumption of the 1% case fatality rate, which means 1% of our confirmed cases are expected to die during that period. And I'm also aware that it was said that, on the basis that there were in the region of 1,600 deaths at that time, that might actually indicate that that figure is accurate. I would disagree with that. Because at the end of Period 1 on 15th March, we had had two confirmed deaths. If that is true and we use the same rationale, you would expect around in the region of 200 cases, which is actually in the region of what we had confirmed in the country nationally at the time. And we all accept that testing capacity wasn't exactly where we would like it to be in that period.*

I think also Ireland, in the first wave, is quite different from other countries. And this has been acknowledged by HIQA, by the HSE, by the HPSC, that the bulk of our deaths, 60% to be precise, in Wave 1 were concentrated in nursing homes, which weren't actually open to communities at the time. So it's a very unique element of our transmission dynamics in Ireland that we had a very high proportion of cases in healthcare workers - and that's not just because they were prioritised for testing - but we also saw it in hospitals and we saw it in nursing home facilities as well."[40]

102. Insofar as the second area of disagreement is concerned (i.e. in relation to use of population level estimates to assess risk in individual premises), I have already summarised Dr. Roe's direct evidence in para. 88 above. As explained in para. 109 below, this was amplified further at a later point in his evidence.

103. In his direct evidence, Dr Roe was also asked to address the third area of disagreement (namely Professor's Mallon's disagreement with Professor Horgan and Dr. Roe that there was only a low likelihood of a case among hotel guests). In this context, Dr. Roe referred to an updated Table 1 (which was included in the joint report of 15th May and which now replaces the table reproduced in para. 90 above). This table updates a number of aspects of the previous table and also includes, for the first time, a new entry comprising an estimate of the median number of cases among hotel guests during any 14 day interval in periods 1 to 3. He also referred to a new Figure 1 which is reproduced in para. 109 below. Dr. Roe suggested that this material (in particular Figure 1) showed that, when one examines the position over 14 day rolling periods, the likelihood of a case among guests at the hotel was low until one

[40] See Day 2, pp. 121-122.

approaches the end of period 3 when, he suggested, cases could be expected. The updated Table 1 took the following form:

Table 1: Estimating the expected number of COVID-19 cases among hotel guests based on incidence of confirmed infection

	Period 1 1 Feb to 15 Mar 2020	Period 2 1 Aug to 19 Sept 2020	Period 3 25 Nov to 24 Dec 2020
Incidence of Infection in Ireland for All Ages (Excluding Dublin)	4.8 per 100,000	112.4 per 100,000	278.1 per 100,000
Incidence of Infection in Dublin for All Ages	9.4 per 100,000	235.7 per 100,000	349.7 per 100,000
Incidence Rate Ratio: Dublin Relative to the Rest of Ireland for All Ages	1.94	2.10	1.26
Incidence of Infection for 15-64 y Per 100,000 in Ireland	7.1 per 100,000	178.1 per 100,000	343.7 per 100,000
Estimated Incidence of Infection for 15-64 y Per 100,000 in Dublin	13.7 per 100,000	373.5 per 100,000	432.1 per 100,000
Estimated Cases in Five LEAs in Vicinity of Hotel in People Aged 15-64 y	24 (rounded from 23.18)	585 (rounded from 584.15)	867 (rounded from 866.75)
Total Individual Guests Checking in to Hotel (≥0 nights)	5966	2599	2250
Estimated Cases in Guests Based on Aged 15-64 y Incidence	1 (rounded from 0.79)	10 (rounded from 9.40)	10 (rounded from 9.41)
Median (Interquartile range) Estimated Cases in Guests in Prior 14-Days Based on Dublin Incidence	0.00 (0.00 to 0.01)	0.31 (0.08 to 0.46)	0.57 (0.10 to 1.33)

104. The table takes account of the additional data that had been supplied by the plaintiff since Dr. Roe's first report. Save for the last line of this table, it does not take the 14-day rolling periods into account. Dr. Roe explained in his direct evidence that the calculations made in the table essentially repeat the method used by Professor Mallon (the validity of which is contested by Dr. Roe and Professor Horgan) where the periods are taken in their totality and an assumption is made that there is no breakdown in the number of guests on a daily basis and no variation of the incidence rate within the surrounding county on any particular day. However, unlike Professor Mallon, it first estimates the number of cases in the five local electoral areas mentioned above, rather than the Dublin metropolitan area as a whole, before estimating the number of cases in guests. It is also based on the cohort of people in those local electoral areas, aged between 15-64, rather than those in the 18-60 age band. Based on a total number of guests of 5,966 in period 1, the estimated number of

cases in period 1[41] was one (rounded from 0.79), the estimated number of cases in period 2 was 10 (rounded from 9.40) and the estimated number of cases in period 3 was also 10 (rounded from 9.41).

105. Dr. Roe provided a more detailed explanation of the approach taken in his Table 1 on Day 3 of the trial. Dr. Roe explained that the first metric that requires to be calculated is the incidence rate. He drew attention to the fact that this is defined by WHO as the rate at which new events occur in a population. In order to calculate that metric, two pieces of information are required. The first is the number of events that occur within a defined period of time and the second is the number of people in the population at risk of experiencing that event during the same period. The former becomes the numerator in the calculation while the latter becomes the denominator. By dividing the numerator by the denominator, it is possible to establish the rate at which new events occur in a population. This number is then multiplied by a stated figure to standardise the incidence rate to a given population size. In Dr. Roe's exercise, the given population size was taken to be a population of 100,000. This is how the incidence rates have been calculated. To take period 1 as an example, the number of new cases in Dublin was 126.[42] The population at risk in Dublin in period 1 was 1,347,359. If one divides the numerator (126) by the denominator of 1,347,359, the result is 0.000094. When that is multiplied by 100,000, one gets a figure of 9.4 cases per 100,000 persons. This can be represented as follows:

[41] My understanding is that this is the total number of guests for the whole of period 1 as originally defined commencing on 1st February 2020. However, as noted in footnote 15 above, Professor Mallon clarified that, in making his calculation for period 1, he had, in fact confined the guest nights to those which occurred in the period from 1st March 2020 to the end of period 1.

[42] As I understand it, this was the number of confirmed cases in Dublin. For the reasons previously explained, the number of actual cases is likely to have been higher due to the scarcity of testing equipment at the time.

$$\left(\frac{126}{1{,}347{,}359}\right) \times 100{,}000$$

$$= \left(0.000094\right) \times 100{,}000$$

$$= 9.4 \text{ cases per } 100{,}000 \text{ persons}$$

106. Individual incidence rates can be calculated for different groupings of persons. Dr. Roe posited the following hypothetical example under which a researcher calculates the incidence of COVID-19 for two different groups namely Group 1 (with an incidence rate of 2,000 per 100,000 population) and Group 2 (with an incidence rate of 500 cases per 100,000 population). If one divides the incidence rate for Group 1 by the incidence rate for Group 2, the incidence rate ratio is 4. In other words, the incidence rate is four times higher for Group 1 than it is for Group 2. [43] On the other hand, if the incidence ratio had been calculated at 1.00, this would have indicated that there is no difference between the groups (i.e. the incidence of COVID-19 would be the same for both populations).

107. Dr. Roe explained that, for the purposes of his Table 1, he wished to see how the incidence rate of COVID-19 in Dublin compared to the rest of the national population outside Dublin. He therefore calculated the incidence rate of infection in Ireland for all ages (excluding Dublin). He then compared the incidence of infection in Dublin for all ages. In period 1, the incidence rate for Ireland excluding Dublin was 4.8 per 100,000 while in Dublin, it was 9.4 per 100,000[44]. This gave an incidence rate

[43] Dr. Roe explained that, usually, the numerator is the incidence rate for the group most of interest while the dominator is the group against which the numerator is to be compared.
[44] These are shown in the first and second lines of Table 1 in column 1 dealing with period 1.

ratio (Dublin relative to the rest of Ireland for all ages) of 1.94[45]. Similarly, in the case of period 2, the incidence rate for Ireland (excluding Dublin) was 112.4 cases per 100,000 population while the incidence rate in Dublin for all ages was 235.7 per 100,000. This gave an incidence rate ratio of 2.10. This reduced to 1.26 in period 3 in circumstances where the incidence rate for Ireland (excluding Dublin) at that time was 278.1 cases per 100,000 while for Dublin it was 349.7 cases per 100,000 population.

108. He explained that it was then necessary to calculate the incidence rate for 15-64 year olds in Dublin. That information was not available from the HSPC but they did have the incidence rate for that age bracket across Ireland as a whole. For example, in period 2, it was 178.10 per 100,000. In order to apply that to Dublin, he then multiplied that by the incidence rate ratio as between Dublin and the rest of Ireland which was 2.10 in period 2. That provided an estimate of the incidence rate for 15-64 year olds per 100,000 population in Dublin which, as shown in Table 1, was 373.50 per 100,000 in period 2. In turn, he then had to apply that to the five local electoral areas. In order to make that calculation, he divided the estimated incidence of infection for 15-64 year olds per 100,000 in Dublin by 100,000 (because that was the standardised unit used) and he then multiplied that by the population for that age group within the five local electoral areas which was 96,842. That produces a rate of infection of 361.70 cases per 100,000. When that rate is applied to the total population of hotel guests for period 2 – namely 2,599 guests – this produces a result of 9.40 which, as shown in the last line of Table 1, is then rounded up to 10 guests.[46]

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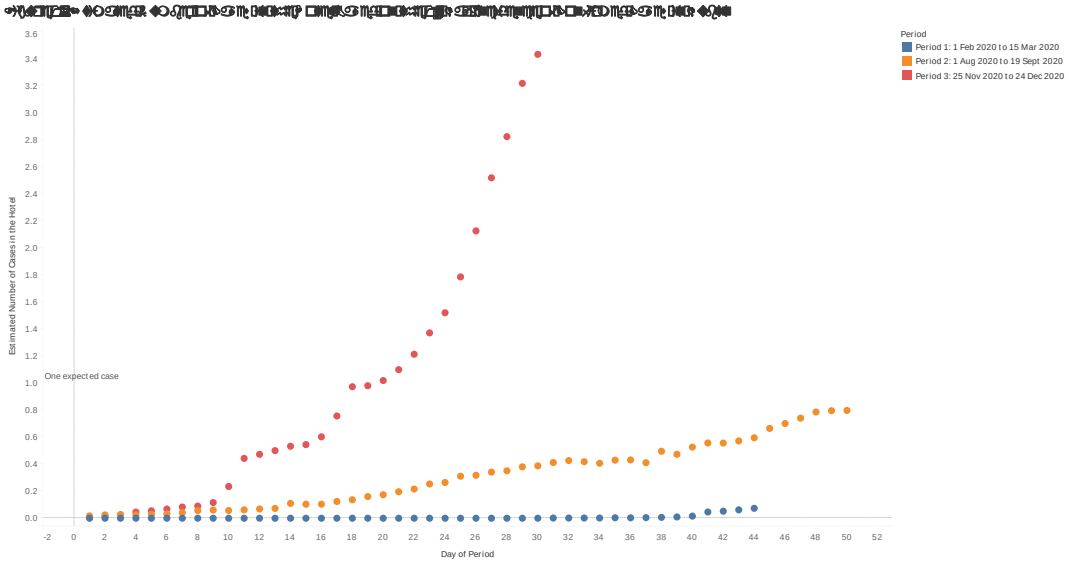
[45] This is shown in the third line of Table 1 in column 1 dealing with period 1.

[46] It should be noted that, on Day 3 (pp 22-23), Dr. Roe applied a different multiplier of 373.5 per 100,000 in order to calculate the number of cases at the hotel using this method. That would produce a slightly higher result of 9.70 cases but that does not affect the ultimate result of 10 cases produced by this method. In taking that approach, Dr. Roe appears to have ignored the step of factoring in the five local areas used by him. It should also be noted that neither calculation explains the figure of 585 cases shown in line 6, column 2, of his Table 1.

109. Dr. Roe stressed that it is important to keep in mind that the figure of 9.40 is derived when one assumes that the number of guests in the hotel and the infection rate do not change within the whole of period 2. As was the case with the first version of this table, Dr. Roe expressed the view that the approach taken in Table 1 (based at it is on the approach taken by Professor Mallon) is unsatisfactory. In his view, even if population estimates could be applied to individual premises, it would be necessary to take account of factors such as variations in travel origins, period duration, incidence of confirmed infection in Dublin, and the number of guests staying at the hotel each day. For that reason, Dr. Roe again carried out a second calculation taking into account the number of individual guests in the hotel over the course of fourteen-day rolling periods as well as the relevant fourteen-day incidence of infection of people living in Dublin. While that methodology did not assist in so far as origin of guests is concerned, it assisted to some extent in addressing the variations in the rate of incidence of disease. Approaching the matter in this way, he estimated that the median number of cases among hotel guests during any fourteen-day interval periods was 0 in period 1, 0.31 in period 2 and 0.57 in period 3. These are set out in the last line of Dr. Roe's Table 1 above. On that basis, he suggested that in both periods 1 and 2, a case of COVID-19 would not be expected at the hotel while, in period 3, a case would be expected[47]. He also produced a Figure (*"Figure 1"*) which showed a progressive increase towards the end of each period in question, peaking at 0.07 cases in period 1, 0.80 cases in period 2 and 3.43 cases in period 3. Dr. Roe's Figure 1 is in the following form[48]:

[47] Again, it must be kept in mind that Dr. Roe does not accept that it is appropriate to apply population estimates to individual premises. The reference to a case being expected should be read subject to that important qualification.

[48] Unfortunately, there were technical problems reproducing this Figure here. The words across the top of the Figure have become garbled in the reproduction which follows. They should read: *"**Figure 1:***



110. As noted above, Dr. Roe expressed the opinion that this Figure demonstrates that the likelihood of a case among guests at the hotel was low until one approaches the end of period 3, when, he suggested, cases could be expected. However, as I read the Figure, it suggests that, based on the incidence of COVID-19 in Dublin, one case at the hotel was likely from approximately Day 18 of period 3 (which is just over the half-way point in that time period).

111. When it came to his cross-examination by counsel for the plaintiff, it was put to Dr. Roe that his approach was erroneous and it was suggested to him that this is demonstrated by the confidence intervals relating to the data plotted in Dr. Roe's Figure reproduced in para. 109 above. At this point, I should explain that, during the course of Professor Mallon's evidence, he had criticised Dr. Roe's Figure[49] on the basis that the joint report gave no details of the applicable confidence intervals. He also criticised it on the basis that the confidence intervals (which had been supplied later) undermined the accuracy of the data plotted in the Figure. At this point, I should

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Estimated Number of Cases in the Hotel Based on the 14 Day Incidence of Confirmed Cases in Dublin".

[49] As replicated in para. 109 above.

explain that, as I understand it, confidence intervals, as used in statistics, refer to the probability that a population parameter will fall between a set of values for a certain proportion of time. Thus, for example, if a statistical model generates an estimate of 10.00 with a 95% confidence interval of 9.50 to 10.50, this means that one can be 95% confident that the true value falls within that range. The absence of confidence intervals was raised by the plaintiff's solicitors in the course of pre-trial correspondence. In response, three tables were provided by Dr. Roe in advance of the hearing which give 95% confidence intervals for the data originally presented in Figure 1 above. These confidence intervals are reproduced in the Schedule of Confidence Intervals attached to this judgment. As will be seen from the Schedule, a table has been provided for each of the three periods addressed by the experts. Each table is broken down into days. For each day of each period, an estimate is given of the *"expected COVID-19 cases among hotel guests based on 14-Day (i) incidence in Dublin and (ii) total individual number of guests".* Alongside each such estimate, the lower limit 95% confidence interval is given together with the upper limit 95% confidence interval.

112. In the course of his direct evidence, Professor Mallon had drawn attention to a number of features of these tables. In the first place, Professor Mallon highlighted that Figure 1 showed that, in the case of period 2, the upper limit of the 95% confidence interval was consistently above 1 from Day 21 up to up to the end of that period on Day 50. By Day 50, it had increased to 2.55. He said that this undermined the suggestion made by Dr. Roe and Professor Hogan that the estimated risk of a case occurring during period 2 was less than one. Secondly, Professor Mallon expressed the view that the data relating to confidence intervals showed a very great variability. For example, the table shows that, on Day 30 of period 3, the lower limit 95%

confidence interval was 0 while the upper limit was 7.06. According to Professor Mallon, this suggested that the data is not robust. He said that, if the data was of good quality, there would only be a narrow difference between the upper and lower limits of the confidence intervals. For example, if the estimate of cases was 3.4 with a confidence interval ranging from 3.1 to 3.5, one could be confident that the estimate is probably correct.

113. Thirdly, Professor Mallon drew attention to the confidence intervals shown for Day 30 in period 2. The table suggests that there was an estimated 0.39 COVID-19 cases among hotel guests on that day but Professor Mallon highlighted that the lower limit 95% confidence interval on that day was 0, while the upper limit was 1.61. Professor Mallon said that the latter is higher than the lower limit of 0 in respect of period 3. In those circumstances, he said the confidence intervals for periods 2 and 3 *"overlap"*. He explained that this means that *"when you map out those confidence intervals, they cross each other. So, if they cross each other, then statistically you can't really say that they're different."* I asked Professor Mallon to explain the consequence of this. Professor Mallon responded as follows:-

> "*If the confidence intervals were truly separate, then you could say reliably that the data points are statistically different. And you can make the assumption that Period 2 is indeed different from Period 3. But once you get so much variability around the estimate and once you get confidence intervals that cross, it's really not appropriate then to derive an assumption that one thing is different from another. Statistically, it's not appropriate. And that is the issue that I have with this graph in its entirety, Judge, is that when you actually explore the data that goes into making the graph, there's so much variability around the estimates that no meaningful conclusions should really be drawn statistically from it.*

MR. JUSTICE McDONALD: And you say that that is so even though the upper limit is quite different for day 30 in both cases?

THE WITNESS: The rules are set by statistics. And if confidence intervals overlap, you should not assume that one thing is different from another. MR. JUSTICE McDONALD: Even though the upper limit in each case is quite different?

THE WITNESS: Doesn't matter.

MR. JUSTICE McDONALD: Doesn't matter?

THE WITNESS: In fact the upper limit being so high is a reflection of how variable the data is."

114. Professor Mallon was then asked by counsel for the plaintiff whether, on the basis that there was more robust data available in relation to period 3, the variability should reduce rather than increase. Professor Mallon responded:-

"A. No, because the variability within the model is driven by the number of observations in the population you're dealing with. So, what you're really dealing with here are greater variability is more likely to do with the number of guests in the hotel during those nights in Period 3 because I think the background incidence rates that are used to calculate this are then corrected for the number of people in the rate. The background incidence rates for Period 2 and Period 3 should be fairly reliable, but the big difference between Period 2 and Period 3 is probably the number of people in the hotel.

Q. Well --

A. And that introduces your uncertainty. And this graph is a compilation of uncertainty, in my view. And you shouldn't really be deriving conclusions from data that contains so much uncertainty."

115. In addition to supplying the tables of confidence intervals described above, Dr. Roe also provided confidence intervals for Table 1 of the joint report of 15th May 2023 authored by him in conjunction with Professor Horgan (i.e. the table reproduced in para. 103 above. The revised version of Table 1 (now containing confidence intervals) is reproduced below:

	Period 1 1 Feb 2020 to 15 Mar 2020	**Period 2 1 Aug 2020 to 19 Sept 2020**	**Period 3 25 Nov to 24 Dec 2020**
Confirmed Cases in Ireland for All Ages	291	7,012	14,207
Confirmed Cases in Dublin for All Ages	126	3,175	4,711
Incidence of Infection in Ireland for All Ages (Excluding Dublin) Per 100,000 Persons	4.8 (4.1 - 5.6)	112.4 (108.8 - 115.9)	278.1 (272.5 - 283.7)
Incidence of Infection in Dublin for All Ages Per 100,000 Persons	9.4 (7.7 - 11.00)	235.6 (227.5 - 243.8)	349.7 (339.7 - 359.6)
Incidence Rate Ratio: Dublin Relative to the Rest of Ireland for All Ages	1.94 (1.62 - 2.32)	2.10 (2.02 - 2.17)	1.26 (1.22 - 1.29)
Incidence of Infection for 15-64 y Per 100,000 in Ireland	7.1 (6.2 - 8.0)	178.1 (173.4 - 182.8)	343.7 (337.2 - 350.2)
Estimated Incidence of Infection for 15-64 y Per 100,000 in Dublin	13.7 (11.5 - 16.5)	373.5 (359.8 - 386.5)	432.1 (419.3 - 443.3)
Population: Five LEAs in Vicinity of Hotel in People of All Ages	247,893		
Population: Five LEAs in Vicinity of Hotel in People Aged 15-64 y	96,842		
Estimated Cases in Five LEAs in Vicinity of Hotel in People of All Ages	23.18 (13.75 - 32.62)	584.15 (536.78 - 631.52)	866.75 (809.05 - 924.45)
Estimated Cases in Five LEAs in Vicinity of Hotel in People Aged 15-64 y	13.28 (6.14 - 20.43)	361.70 (324.42 - 398.97)	418.44 (378.35 - 458.53)
Total Guests Checking in to Hotel (≥0 nights)	5966	2599	2250
Estimated Cases in Guests Based on Aged 15-64 y Incidence	0.79 (0.00 - 2.54)	9.40 (3.39 - 15.41)	9.41 (3.40 - 15.43)
Median (Interquartile range) Estimated Cases in Guests in Prior 14-Days Based on Dublin Incidence	0.00 (0.00 to 0.01)	0.31 (0.08 to 0.46)	0.57 (0.10 to 1.33)

116. Professor Mallon had a number of observations on the additional information given in relation to confidence intervals provided by Dr. Roe in respect of the above revised Table. He highlighted that, in period 2, there was an estimate of 9.40 guests infected with COVID-19 with 95% confidence intervals ranging from 3.39 to 15.41. Professor Mallon noted that the estimate for period 3 was virtually identical, namely

9.41 guests infected with a 95% confidence interval ranging from 3.40 to 15.43. On that basis, Professor Mallon maintained that:-

> *"Now, what that means is that, if I were to run that estimate, 95% of the time I'm going to get at least 3, but anywhere up to 15 cases occurring within Period 2 and Period 3. So, I can say with confidence, Judge, that the estimated number of cases in Period 2 and Period 3 is above 1. The estimate is that it's going to be 9. But worst case scenario of my estimate is still that there's going to be 3.39 or 3.4, depending on Period 2 and Period 3."*

117. In contrast to his concerns about the high level of statistical variability in respect of Figure 1 in the joint report of 15th May 2023, Professor Mallon suggested that Table 1 in the same report shows consistency as between period 2 and period 3 with 95% confidence intervals and estimates of infections which are almost identical and which Professor Mallon suggested was further evidence that *"there really is very little difference that you can demonstrate between the two periods"*.

118. Against the backdrop of the views expressed by Professor Mallon, Dr. Roe was cross-examined about the confidence intervals shown in the Schedule of Confidence Intervals below. He acknowledged that the lower limit of 0 (which was given in respect of each day of each of the three periods, was generated by his model). Dr. Roe explained that, for that figure to change, there would have to be more cases or more guests. Dr. Roe agreed with counsel for the plaintiff that *"the bigger the number, the less the confidence intervals are spread"*. Conversely, the smaller the number, the more variation happens. With regard to the spread from 0 to 7.06. on Day 30 of period 3, it was put to Dr. Roe that one, accordingly, has to be *"somewhat circumspect"* in respect of the level of confidence that one can put on Figure 1 in the joint report of 15th May. Dr. Roe responded as follows:-

"Correct. I think you definitely have to factor it in. We know that by the definition of the 95% confidence interval, we are 95% confident that somewhere between that range, probably the true estimate likely lies. But I think what's really important to note – again this comes back, this is just one of the by-products of applying a population level metric using 100,000 to a premises - that premises' population number is always going to be small, you are never ever going to get a tight case number on that that probably doesn't range wider than 1 or 2 or 3, because it's just simply too small."[50]

119. Dr. Roe did not accept Professor's Mallon's criticism about overlapping confidence intervals. Dr. Roe expressed the view that one would expect confidence intervals to overlap from day to day because one would not expect a massive increase as between any individual 24-hour period and the next. It was put to him that the confidence intervals should not overlap between one period and another but Dr. Roe said that he could see no reason why they could not overlap within two different periods.

120. It was then suggested to Dr. Roe that it was clear from Professor Mallon's evidence that, where the confidence intervals overlap as between two groups, one could not say that one group is significantly different to another. Dr. Roe accepted this. It was also suggested to him that this was so because there was *"too much uncertainty"* and again Dr. Roe accepted this. However, he qualified his answer by highlighting that this would arise where the same metric is being compared as between two individual groups. However, where one is comparing the same metric in one group at two different periods, there could well be an overlap *"because we're talking about the rate of the same health problem in the same population".*

[50] See Day 2 p 132

121. Before leaving the topic of confidence intervals, it should be noted that, at the conclusion of his evidence, I asked Dr. Roe a number of questions in relation to this aspect of his evidence. In the first place, I asked him to explain why it is to be expected that the intervals will overlap when looking at periods from one day to the next. Dr. Roe responded to say that, with a fairly transmissible virus, one would expect an overlap in confidence intervals to arise in circumstances where the confidence intervals relate to the calculation of numbers of infections within rolling 14-day periods. The only difference between the 14-day period commencing today and the 14-day period commencing tomorrow should be the passage of 24 hours and any change in the number of cases based on those that have been confirmed in the latest 24 hour period. The overlap is the overlap in range between one day and the next. By way of example, on Day 19 of period 3, the range was 0.00 to 2.92. The range on Day 20 was 0.00 to 3.00. Thus, the range on Day 20 covers the entire range that was seen on Day 19. There is a similar result when one compares the range on Day 20 with that on Day 21 in the same period. On Day 21, the lower interval was zero and the upper interval was 3.15. Similarly, on Day 22, the lower interval was zero and the upper interval was 3.37.

122. Turning to other topics addressed in Dr. Roe's cross-examination, it was suggested to him by counsel for the plaintiff that he should have taken into account the origin of guests staying at the hotel. Dr. Roe rejected this as impracticable on the basis of the available information. He explained that, even if he had known the origin of the guests, there was no information available to explain when they left their country of origin or what the incidence rate in that country may have been at that time. He said that it would have been an enormous task to try to gather such information. However, while Dr. Roe argued that it was not practicable to take

account of origin in his reports, it must be kept in mind that, as outlined in para. 99(i) above, all of the experts were agreed that factors such as travel origin should be taken into account. As further noted in para. 109 above, this was also separately highlighted by Dr. Roe as a reason for rejecting Professor Mallon's calculations (which, while referring to origin, did not actually take origin into account).

123. It was also put to Dr. Roe that it was appropriate to construct a model based on the age bands used by Professor Mallon, namely the 18-60 year age band. Dr. Roe had two answers to this:-

(a) First, he said that such an exercise is not going to accurately establish whether or not there was a case in the premises during any of the three periods in issue:-

> *"because for the fundamental reason, regardless of what age group you're using it's still coming from a population-wide perspective and you're trying to assume that down and assume it mirrors the population within the premises just at the relative scale. That's the fundamental assumption that's the killer for me, to be honest."*

(b) Second, he suggested that, in any event, the 15-64 year old age band had the best available data and that, if one seeks to apply that to the 18-60 year age band, this involves a process of estimation which exposes the process to error.

124. Dr. Roe accepted that the hotel is located in an area in which there is a *"lot of mobility"*. But it was put to him that, by focusing on the population of the local electoral areas considered by him, he failed to take account of this factor. In particular it was put to him that he was assuming that nobody outside these local electoral areas

visited or passed the hotel. Dr. Roe accepted that his approach assumed that *"whoever passed the door of the place were either staying there ... or were resident in the LEAs, correct."* While Dr. Roe accepted that this was a potential criticism of the selection of the local electoral areas over the metropolitan area, he nonetheless suggested that, because his approach factors in a Dublin county-wide incidence of infection, it would "*it would be the same level of infection you would expect across the entire county at that time".*

125. Having been tested with regard to the approach taken by him in relation to his Table 1, Dr. Roe was also cross examined about Figure 1 (as replicated in para. 109 above) and the use of 1.0 as the threshold for incidence of COVID-19. Dr. Roe did not accept this. He said he had used this threshold for illustrative purposes. But Dr. Roe accepted that it was not in any guidelines and that he had simply picked that figure. It was put to him that it was likewise not an accepted practice by any of the health authorities. His response was that the practice of estimating cases in individual premises would not be an acceptable practice to a health authority. In turn, counsel for the plaintiff expressly accepted that this was so.

126. Counsel also accepted (in the course of cross-examination of Dr. Roe) that the data collected by the HPSC was for a different purpose namely to make assessments as to what is going on within the community. Unsurprisingly, Dr. Roe agreed with this proposition. Counsel then put it to Dr. Roe that there is no methodology to identify what is happening at a particular location *"other than on-site surveillance"* and, again, Dr. Roe agreed. It was then put to Dr. Roe that *"those calculations done by NPHET"* are sent to the government in order to give the government an understanding as to the likely occurrence of disease in the community. Dr. Roe agreed with that proposition. He was later asked why the Government restrictions in March

2020 were imposed. Dr. Roe said that there were probably a combination of factors including the detection of an initial number of cases within the jurisdiction, the uncertainty surrounding the outcome of those cases, and the potential evolution into more widespread community transmission. He was then asked whether the increase in influenza-like illness formed part of it. Dr. Roe said he was not aware if that was so. Counsel for the plaintiff then asked whether, in the case of period 2 and period 3 occurrences of COVID-19 played a part in the government decision. Dr. Roe indicated that he imagined that they had. I have to say that I cannot see how Dr. Roe could be considered to be an appropriate witness with which to explore the reasons for Government action. Dr. Roe did not purport to have any expertise or experience in this area. He was not a member of NPHET or any like body.

127. Dr. Roe was also asked whether the approach taken by Professor Mallon in looking at the area under the curve in the graph showing the incidence of influenza-like illness was a recognised and accepted method of calculating numbers. Dr. Roe responded as follows:

> *"When it comes to kind of, what would you call them, epi-curves or epidemiological curves where we're tracking the number of cases over a set period of time, to be honest, I haven't actually seen it that often. I actually can't remember a single case coming to mind straightaway. Generally, what we would do is we would actually want the data file that was used to generate that graph, which would indicate on each date during the period of interest how many cases were actually confirmed for -- no matter what the health problem was."*

128. Dr. Roe said that he was not familiar with the methodology, that he had never done it himself and was not in a position to give an opinion on it. He was then asked

whether there was anything inherently wrong with that approach but again Dr. Roe said he was not familiar with it.

129. Based on a comparison of the HPSC weekly epidemiology reports for week 52 of 2020 (i.e. the week ending 26th December 2020) and week 4 of 2021 (the week ending 30th January 2021) it was put to Dr. Roe, that there were 110,362 COVID-19 cases in period 3. As noted previously, this calculation was made by comparing the total number of confirmed cases as of the end of week 52 namely 86,129 against the total number of confirmed cases by the end of week 4 of 2021 namely 196,491. The difference between those figures is 110,362 and it was suggested to Dr. Roe that this roughly equates to the number of cases in period 3. It was then put to him that, when one looks at the graph showing peaks of influenza-like illness in respect of the three waves of COVID-19 during 2020 and the earlier part of 2021, the area of the peak in the first wave is roughly 1.34 times the size of the area under the peak in respect of the third wave. On that basis, it was suggested to Dr. Roe that the number of cases of COVID-19 during the course of the first wave was not out of line with the data in respect of the third wave. Again, however, Dr. Roe reiterated that he was not familiar with the approach taken by Professor Mallon. It was nonetheless put to Dr. Roe that if one multiplies 110,362 by 1.34, this produces a figure of 147,885 and it was suggested that it was not *"so extraordinary"* that the numbers of COVID-19 cases in the first wave would be of the order suggested by Professor Mallon. Dr. Roe continued to maintain that he was not familiar with the approach of taking the area under the curve. In addition, he did not believe that the two periods were comparable.

130. Counsel for the plaintiff suggested to Dr. Roe that there were *"substantial amounts of the virus, even in the context of a short period of time coming up to December 2020, substantial amounts of the virus in circulation in the community and*

that it came on pretty quickly". Dr. Roe acknowledged that this was so and he was then asked why it could not have come on just as quickly before week 12 of 2020. Dr. Roe replied:

> *"Well, I'm no expert on the variance of circulation but I do recall at that particular period, that's the emergence of a new variant that was much more transmissible. And, also, the social restrictions measures at the time had been eased, there was a lot of talk about people travelling back into the country for the Christmas period. That's probably how that variant was actually introduced here in the first place. So, it's a more transmissible virus that you're dealing with so it's going to lead with more cases relatively speaking."*

131. Counsel for the plaintiff then suggested that, in January and February 2020, the population was not exercising the same level of caution that became common by November 2020. Dr. Roe agreed with this proposition. It was then put to Dr. Roe that, based on the evidence of the influenza-like illness graph, the figure of 150,000 wasn't *"as ridiculous as is sought to be suggested".* Dr. Roe replied:

> *"Again, I kind of recall that the second piece of evidence that related to that 160,000 case figure was the case fatality ratio at the time which was used almost to back up that 1% of the -- 1% of the 160,000 cases would be around 1,600 deaths that matched in the region of around what we had at the time. Following that logic, you would also apply that at the very start of what we would define Period 1 for the purposes of this case, which were 1st February 2020 to 15th March 2020. We had two deaths at that point, 100 times the two deaths brings it up to just around 200 cases, which was pretty much in line with what had been confirmed as our COVID-19 cases at the time. I think all the experts are in agreement, the testing capacity wasn't where it was at*

that time. So, you know, you can point to individual standalone pieces of data and that is the job in these sort of scenarios, you're trying to paint a picture of what best you think might reflect what took place at the time. But, ultimately, there's contradictory pieces of evidence there based on the case fatality rate, the ILI data, where we know the bulk of our deaths occurred. Yeah, so, I kind of see what you mean but I wouldn't be -- it's not a train of thought I would follow. I might differ with Prof. Mallon on that."

132. It was also put to Dr. Roe by counsel for the plaintiff that the approach taken by Professor Mallon (using overall data for the entire of each of periods 1, 2 and 3) was as valid as the approach taken by Dr. Roe in looking at rolling 14-Day periods. Dr. Roe rejected that suggestion. He maintained that Professor Mallon's approach does not address the dynamic nature of the underlying subject-matter such as the variations in numbers of guests staying in the hotel and the variations which occurred in the level of infection rates within the country from time to time. It was then suggested to Dr. Roe that Professor Mallon had compensated for that by using guest nights rather than the number of guests staying at the hotel on any particular day. Dr. Roe expressed the view that this would not have altered the final estimation. While it might account for variations within guests, the other *"piece of the equation"* is the variation in the infection rate which he maintained had been overlooked in Professor Mallon's approach.

The challenge to the admissibility of Professor Mallon's evidence

133. As noted in para. 27 above, the defendant contends that Professor Mallon's evidence is inadmissible. It bases that contention on two grounds. First, it maintains that Professor Mallon's report is directed to the wrong issue – namely that in, seeking to show the likelihood of an unspecified case occurring at the hotel at an unspecified

time during the periods covered in his report, Professor Mallon is unable to show that there was any *"occurrence"* of COVID-19 at the hotel within the classic meaning of that term. The defendant relies in that context on the observations of Lords Hamblen and Leggatt of the U.K. Supreme Court in their joint judgment in the leading U.K. authority on COVID-19 business interruption claims namely *Financial Conduct Authority v. Arch Insurance* [2021] A.C. 649 (*"the FCA case"*). At p. 696, they said that the word *"occurrence"* should be given the same meaning as the word *"event"* as that word is understood under insurance law. They said: *"The word 'occurrence', on the other hand, like its synonym 'event' has a widely recognised meaning in insurance law which accords with its ordinary meaning as '**something which happens at a particular time, at a particular place, in a particular way.**'"*[51] The defendant submits that Extension 6, very clearly, requires the insured to prove that there was an occurrence of a notifiable disease at the hotel at a particular time and that Professor Mallon's model plainly does not produce a result which satisfies this test. His model cannot pinpoint any case of COVID-19 at the hotel to a particular date or time within any of the three periods which he was instructed to consider.[52]

134. Secondly, the defendant submits that, in respect of both periods 1 and 2, Professor Mallon's report is not subtended by any evidence that any particular person in fact sustained a COVID-19 infection at the hotel. In those circumstances, the defendant maintains that the position is governed by the principles articulated by Sanfey J. in *Harrrington v. Harrington* [2020] IEHC 72 where the Court addressed a situation where experts had referred, in their reports, to certain disputed matters which

[51] Emphasis added.

[52] It is true that, in the case of the hotel manager, there is an admitted infection of COVID-19 at the hotel on 23rd December 2020 (i.e. at a particular time) but the evidence of that case arises independently of Professor Mallon's model.

had not been the subject of factual evidence at the trial. The defendant relied in particular on what Sanfey J. had said, at para. 16:

> *"I should say that the parties presented no oral evidence other than that given by their respective experts. Any factual matters adverted to by the experts in relation to the running of the company's affairs were therefore hearsay. While experts are of course permitted to refer to a range of evidence which would otherwise constitute hearsay and be inadmissible, I pointed out that I would not be able to resolve any conflicts of fact to which the experts had referred but in respect of which they were not in a position to give first-hand evidence. A particular difficulty in this regard was the contention of Mr. Clarkin that the respondent was so integral to the company's affairs that he was effectively irreplaceable, a factor which, if true, must necessarily lower the value of the company considerably in the eyes of any prospective purchaser. While it was common case that the respondent was involved in the day-to-day operations of the company and that the applicant was not, I made the point to counsel that no evidence as to the management structure had been presented to the court, and that I was therefore not in a position to come to any conclusion about the indispensability or otherwise of the respondent to the company".*

135. In further support of this second ground, the defendant also submits that Professor Mallon has failed to identify any supporting materials to establish that his model is based on any established scientific authority. In this context, it will be recalled that, as noted in para. 55 above, Professor Mallon was unable to identify any literature in the field which suggests that population level estimates can be used to assess whether there has been an occurrence of a disease at an individual premises. Furthermore, none of the five papers cited in his report addressed the statistical basis

for his approach. In support of this element of the defendant's submission, counsel for the defendant referred to the observations of Collins J. in the Court of Appeal in *Duffy v. McGee* [2022] IECA 254 where he said, at para. 19:

> *"To properly perform its function, the court must be able to understand and engage with the evidence, which in turn requires that experts should sufficiently explain their opinions and the basis for them. Their entitlement to express such opinions 'is predicated upon also informing the court of the factors which make up their opinion and supplying to the court the elements of knowledge which their long study and experience has furnished to them whereby they have formed that opinion so that, in those circumstances, the court may be enabled to take a different view': Flynn v Bus Éireann [2012] IEHC 398, per Charleton J at para 9. It follows that the expert witness must 'provide material on which a court can form its own conclusions on relevant issues' (Pora v The Queen [2016] 1 Cr App R 3, at para 24). Mere assertion or 'bare ipse dixit' on the part of the expert witness is, accordingly, 'worthless': Kennedy v Cordia (Services) LLP [2016] UKSC 6, [2016] 1 WLR 597, at para 48."*

136. In response, the plaintiff relied on a number of matters. Counsel for the plaintiff noted that Professor Mallon has already given somewhat similar evidence in another COVID-19 claim namely *Premier Dale Ltd. v. Arachas Corporate Brokers Ltd.* [2022] IEHC 178 (*"Premier Dale"*). That is certainly true. However, the insurer in that case did not go so far as to object to the admissibility of Professor Mallon's evidence. There was no need to do so because his evidence, even if accepted, did not go so far as to prove that there had been a manifestation of COVID-19 at the hotel

premises in issue in that case.[53] The terms of the relevant extension in *Premier Dale* required that the premises would be subject to closure or restrictions imposed as a result of a notifiable disease *"manifesting itself at the premises."* I took the view in that case that the concept of manifestation of a notifiable disease required that the disease should, in some way, be detected or revealed at the premises. There was no such evidence in *Premier Dale* and Professor Mallon's approach did not plug the gap. In those circumstances, I do not believe that the decision is of any assistance to the plaintiff in this case. The plaintiff, nonetheless, seeks to rely on an observation made by me in para. 103 of the judgment in *Premier Dale*, where I said:

> *"The problem from the plaintiff's perspective is that undiagnosed or asymptomatic people attending the Premises cannot be said to be manifesting the disease. Extension 6(A) requires manifestation which, as previously explained, involves some element of revealing or making evident.* ***The approach taken by Prof. Mallon, as summarised in Table 1 of his report shows, at most, that there may have been an occurrence of COVID-19 at the Premises. However, as the passage from the judgment of the Divisional Court in the FCA case (quoted in para. 49 above) illustrates, occurrence is different to manifestation. A disease can occur without any manifestation at all.*** *Indeed, that has been one of the principal reasons why COVID-19 has been so successful in terms of its transmissibility. The fact that an infected person can pass on the virus before any symptoms become manifest or before a positive test has been a major factor in its transmission".*[54]

[53] That case was concerned with the Devlin Hotel in Ranelagh, Dublin 6.
[54] The plaintiff places particular reliance on the passage highlighted in bold.

137. That passage must be read in context. It is not a finding that Professor Mallon's evidence established that there were occurrences of COVID-19 at the Devlin Hotel even though there was no manifestation of disease at the time. *Premier Dale* was not concerned with the meaning of *"occurrence".* That was not the word used in the RSA policy. The observation by me was plainly *obiter.* Moreover, it was made in quite qualified terms – i.e. that Professor Mallon's approach showed *"**at most** that there **may** have been an occurrence of COVID-19"*[55] at the Devlin Hotel. I therefore do not accept that the observation can be treated as some form of judicial approval of the approach taken by Professor Mallon or as an acceptance that his approach can be used to demonstrate an occurrence of COVID-19 at a particular premises. That said, for reasons which I will address later in this judgment, I accept that, as found by the Divisional Court, at first instance in the *FCA* case, there can be an occurrence of disease even though it has never been formally diagnosed. As the Divisional Court said in para. 93 of its judgment: *"a disease … occurs when the illness is sustained by the person, which we consider means, in simple terms, that they are suffering from it, not that they have been diagnosed with it."* This is an important point of distinction between an insurance policy that provides cover in respect of an *"occurrence"* of disease and one which provides cover where a disease has become *"manifest".*

138. Next, the plaintiff sought to rely, by analogy, on the guidance given by the Financial Conduct Authority in the United Kingdom (*"the FCA"*) following the outcome of the *FCA* case[56]. Crucially, that guidance does not address an *"at the premises"* clause. It is concerned with clauses which require policyholders to prove the presence of COVID-19 within a particular area around their premises. The guidance specifically

[55] Emphasis added.
[56] *"Final guidance: Business interruption insurance test case – proving the presence of coronavirus (COVID-19)"* published on 3rd March 2021

states that it is relevant to (a) clauses which require the presence of disease within a particular distance, zone or radius from the insured premises, (b) clauses which require the presence of the disease within a vicinity or area such as to make it reasonable to expect that the policyholder would be impacted and (c) clauses which require the occurrence of a notifiable disease without specifying the particular vicinity or area within which the disease needs to occur. It also explicitly states that the guidance *"was not designed for proving the presence of COVID-19 for other types of policy wording but may be of assistance in some circumstances".* For that reason, it must be treated with caution for present purposes.

139. The FCA guidance addresses a number of possible methodologies that, it suggests, could be used by a policyholder to prove that COVID-19 had occurred within the relevant policy area (*"RPA"*) applicable under an individual policy. Unsurprisingly, it identifies, in the first place, that the policyholder might rely on specific evidence of cases of COVID-19 within the relevant RPA such as: evidence of a positive test for COVID-19 or evidence that a staff member, guest or customer had tested positive or evidence from a local GP surgery as to whether they had a patient who tested positive or who displayed COVID-19 symptoms during the relevant period. The guidance then identifies a number of potential alternative methodologies based on National Health Service (*"NHS"*) or Office of National Statistics (*"ONS"*) data on deaths from COVID-19 or on reported cases of COVID-19 as published by the United Kingdom Government. This guidance is consistent with the terms of the declarations granted by the U.K. Supreme Court at paras. 8.2 (b) and 8.2 (c) of its order issued on 13th July 2021 in the *FCA* case. It is clear from the guidance document that the NHS data on deaths was available on a daily basis in respect of each individual NHS trust (which assisted in proving the location of the cases for the

purposes of the relevant RPA). Similarly, the ONS data was available on a weekly basis by reference to local authority and health board areas (which, again, was of assistance in proving the location of cases for the purposes of the relevant RPA). In addition, the reported cases of COVID-19 were published on a daily basis. These were broken down by reference to the national picture for each jurisdiction within the United Kingdom and by reference to each region, county, metropolitan district and borough and also some smaller administrative areas. The picture available from the data is not dissimilar to that available in Ireland from the HPSC data which was utilised by all of the experts in this case. Such data is of assistance in mapping the presence of COVID-19 at particular times in particular areas. One can readily see how it would be of assistance, for example, in the case of clauses which require a policyholder to prove that there had been a case of COVID-19 within a specified radial distance from the insured premises. But the data does not provide premises specific information in relation to the presence of COVID-19 on individual premises.

140. However, the plaintiff, in its written submissions in relation to the admissibility of Professor Mallon's evidence, places some emphasis on one further methodology suggested in the FCA guidance – namely that addressed in chapter 8. In that chapter, the FCA draws attention to the finding made by the Divisional Court in the *FCA* case that, in light of the restrictions on access to testing at that time, the true number of cases of COVID-19 in the United Kingdom in March 2020 was likely to be *"much higher"* than the number of reported cases at that time. The FCA stated that, in densely populated areas such as London, this was unlikely to be a problem especially in cases where the relevant RPA was a radius of 25 miles. However, it was more likely to give rise to problems of proof for policyholders in rural areas where there may have been insufficient deaths or reported cases to prove the occurrence of

COVID-19 in the relevant RPA. The FCA noted that the Divisional Court had indicated that an *"undercounting analysis"* could potentially be used in such circumstances[57]. The order of the U.K. Supreme Court is to the same effect. In para. 8.2 (f) of that order, the Supreme Court declared that:

> *"given the likely true number of cases of COVID-19 in the UK in March 2020 was much higher than that shown in the Reported Cases, an undercounting analysis – albeit absolute precision is not required to discharge the burden of proof – to demonstrate the likely number of actual cases of COVID-19 in the relevant policy area."*

141. The order of the U.K. Supreme Court does not spell out what kind of undercounting analysis might suffice but the published FCA guidance specifically referred policyholders to two epidemiological modelling reports which it suggested could be used: one produced by Imperial College and the other produced by Cambridge University in conjunction with Public Health England (*"PHE"*). The FCA then explained that the Imperial College report provided estimates of the likely true number of infections in March 2020 in the United Kingdom (among other countries) and that it had been published, following peer-review, in *Nature*, the well-known scientific journal. The FCA provided policyholders with a link to the data presented in the Imperial College report which enabled policyholders to identify the estimated number of cases on specific dates in a particular LTLA. This is an acronym for a Lower Tier Local Authority which the guidance states includes county districts, metropolitan districts and London boroughs. The data is therefore very specific to localised areas and is also date specific. But, again, it is plainly not premises specific.

[57] It should be noted that, in circumstances where it did not hear expert evidence on the issue, the Divisional Court declined to provide detailed guidance on what kind of undercounting analysis might be used.

An example is given of the data available for Guilford in Surrey for 21 March 2020. It gives a value of 198.1 cases on that day which was stated to be the best estimate of the number of cases. The relevant 90% confidence intervals were given; the lower being 93.2 and the upper being 348.6. The FCA does not, however, explain the scientific basis used by Imperial College for arriving at these figures. Nor has any evidence or explanation been forthcoming in this case which describes the approach taken either by Imperial College or by Cambridge University/PHE. It is suggested in the plaintiff's written submissions that both of these approaches were accepted by the insurer defendants in the *FCA* case and that, in contradistinction to that position, the defendant in these proceedings is *"seeking to …reject as inadmissible the type of evidence the eight insurers in the FCA Test case accepted and conceded could in principle be sufficient to satisfy the burden of proof on the part of the policyholder and which this Court in Premier Dale considered on its merits".* I cannot accept that submission for a number of reasons:

(a) In the first place, as noted above, I have heard no evidence at all about the approaches taken either by Imperial College or Cambridge University/PHE. I therefore have no means to assess whether there is any equivalence between either of those approaches and that taken by Professor Mallon. Notably, he has not cited either approach in his report or in his evidence;

(b) Second, there is nothing in the material placed in evidence or argument before me to suggest that the approaches taken in the United Kingdom can be applied to a specific premises as opposed to a geographical area such as an RPA;

(c) Third, there is an obvious difference between Professor Mallon's approach and that taken by Imperial College. As noted earlier, Professor Mallon has

sought to estimate the likelihood of a case based on the numbers of cases per 100,000 in Dublin over time periods than ran for several weeks. In contrast, the Imperial College approach provides a daily estimate for each LTLA. One can therefore assess likelihood of a case within any individual LTLA by reference to specific dates. That is not possible using Professor Mallon's approach;

(d) Fourth, for the reasons already explained, the decision in *Premier Dale* does not amount to some form of judicial approval of Professor Mallon's methodology;

(e) Fifth, it is somewhat misleading to suggest that the insurers in the *FCA* case accepted either of the approaches cited by the FCA. In fact, the FCA guidance makes clear that, although the insurers accepted that *"insureds can seek to rely on the ... reports",* the insurers did not accept the reliability of the reports and had sought a ruling that policyholders should be required to prove that any undercounting methodologies on which they sought to rely were *"reliable"*. The FCA noted that the Divisional Court did not make such a ruling but it appears that this was because the Court did not hear any expert evidence on the issue. This emerges from para. 578 of the judgment where the Court[58] said:

> *"In the present case, however, the methodologies proposed have not been put forward for any such substantive scrutiny. The question cannot be decided simply by reference to the fact that the reports are from suitably qualified institutions, for example. The introduction of a*

[58] Having contrasted the state of the evidence with that available in *Equitas Ltd. v. R & Q Reinsurance Co. (UK) Ltd.* [2010] 2 All ER (Comm) 855

> *'rebuttable presumption' also does not assist. The burden of proof remains with the insured. The insurer can challenge the evidence put forward by the insured in order to dispute that the burden has been discharged. If it does not do so, then it is much more likely that the court will find that the burden has been discharged."*

142. It is true that the insurers in the *FCA* case accepted that absolute precision is not required. It also appears to be the case that, although the mechanics of the methodology are not spelt out in its guidance, the FCA envisages that back calculating methodologies can be used where there are limitations on the evidence available from public health sources. To that extent, the FCA guidance provides some support for the principle that back calculation can be used in circumstances where the publicly available reports of disease are known to be incomplete. However, back calculation was used by Professor Mallon primarily in the context of period 1 in circumstances where he conceded that the information shown in his Table 1 in respect of that period is not reliable. He did not use back calculation in respect of either period 2 or period 3.

143. The plaintiff also seeks to draw a parallel between the approach taken by Professor Mallon and that taken by an expert actuary in *Equitas Ltd. v. R & Q Reinsurance Co. (UK) Ltd.* [2010] 2 All ER (Comm) 855 (*"Equitas"*). That was a complex case arising from two sets of very large insurance claims. The first set arose from pollution caused by the grounding of the *"Exxon Valdez"* in 1989. Exxon was hit with a large number of claims following that incident. The second set arose following the Iraqi invasion of Kuwait. Huge losses were suffered by Kuwait Airways Corp (*"KAC"*) and British Airways *("BA"*) as a consequence of damage inflicted on parked aircraft by the invading Iraqi forces. These events gave rise to both insurance

claims and reinsurance claims. In due course, all of these claims entered the London Market Excess of Loss (LMX) spiral, which is a complicated intertwining network of mutual reinsurance. It subsequently emerged that the KAC and BA claims had been wrongly aggregated, and that irrecoverable losses had been included within the Exxon Valdez claims. The market suspended the settling of the claims. The plaintiff was an assignee of the rights of Lloyd's syndicates under various contracts of retrocessional excess of loss reinsurance written by the defendants in respect of the KAC/BA and Exxon Valdez losses. The plaintiff, in a test case, brought claims seeking to recover under 26 reinsurance contracts, 14 of which were said to be tainted by the erroneous KAC/BA aggregation and 12 by the initial market allowance of irrecoverable Exxon Valdez losses. All the contracts incorporated Joint Excess Loss Committee Clauses (the *"JELC clauses"*), which provided, inter alia: *"It is a condition precedent to liability under this contract that settlement by the reassured shall be in accordance with the terms and conditions of the original policies or contracts"*. It was common ground that many of the reinsurance contracts also incorporated a *"follow the settlements"* clause which provided: *"All loss settlements by the reassured … shall be binding upon the reinsurers … providing such settlements are within the terms and conditions of the original policies and/or contracts … and the terms of this reinsurance."* The plaintiff contended that its recoverable losses were capable of being proved on the balance of probabilities through the use of actuarial modelling which involved allowing appropriate discounts to strip out the wrongly aggregated or irrecoverable elements leaving a minimum recoverable amount properly due. The defendant argued, inter alia, that on the true construction of the JELC clause and the settlements clause, the plaintiff was not entitled, as a matter of law, to recover anything unless it could prove, contract by contract, loss at each underlying level of

the LMX spiral. The defendant submitted that, as a matter of principle, the claimant could not rely on actuarial models, but had to replicate the spiral without the introduction of the wrongly aggregated and irrecoverable elements. It was common ground that the plaintiff did not have sufficient information to do that but the defendant argued that the losses therefore must lie as they fall. The defendant's contention was rejected by Gross J. In doing so, Gross J. first drew attention to the effect[59] of a settlements clause in the form quoted above namely that, in the context of a chain of reinsurance arrangements such as those in issue in *Equitas*, it binds the reinsurer to follow the settlement of an underlying claim by the inwards reinsured provided that the loss falls within the cover of the inwards reinsurance policy and also within the cover created by the reinsurance written by the defendant. He then considered whether, in order to show that the risk fell within the reinsurance, it was necessary for the plaintiff to recreate the spiral and show where the loss arose under each of the intermediate or underlying contracts. He concluded that it was not necessary to do so. Instead, in accordance with the test laid down in *Hill v. Mercantile and General Reinsurance Co. plc* [1996] 1 WLR 1239, the focus should be on the position of the syndicates whose claims had been assigned to the plaintiff. Gross J. held that the reference to the *"the original policies or contracts"* in the JELC clause must be read as referring to the inwards reinsurance contracts written by the syndicates rather than the original insurance policies written by the insurers of KAC, BA and Exxon. Once the claims of the syndicates were shown to fall within the ambit of the reinsurance, the focus turned to questions of quantum. There was no objection in principle to the plaintiff seeking to recover a minimum amount provided that

[59] In this context, Gross J. cited the decision of the House of Lords in *Hill v. Mercantile and General Reinsurance Co. plc* [1996] 1 WLR 1239. See p. 870 of the report in *Equitas* as further explained by Gross J. at pp. 872-873

minimum was established on the balance of probabilities; the effect of this approach was that the plaintiff must forego any attempt to recover additional sums. He also held that, once liability was established, the extent of losses need not be proved with scientific exactitude. While there might be factual situations where it was possible and appropriate to recreate the layers of the LMX spiral, a claimant was free to put forward a different method of calculation of loss. But a claimant was not bound to prove a loss at each underlying level in the chain – something of which a claimant will ordinarily have no or no more than limited knowledge. Having so held, Gross J. went on to consider whether the actuarial model proposed by the plaintiff permitted conclusions to be drawn with confidence to the requisite standard of proof as to the recoverable losses for each syndicate. After rigorous examination of the extensive expert evidence on both sides, he concluded that the input of the model was based on *"voluminous actual data directly relevant to the syndicates"* and that the model provided a reasonable representation of the relevant features of the LMX spiral *"for the purposes which matter"* namely the degree of mixing of the KAC/BA or Exxon losses in a spiral player's ultimate net loss (*"UNL"*) and the effect of stripping out the irrecoverable elements from a spiral player's UNL. At p. 883, Gross J. said:

> *"I am satisfied that the modelled output does permit conclusions to be drawn with confidence as to the recoverable losses for each syndicate. In short, the models, which started with real (or actual) data finish with answers which are representative of the actual position".*

144. In those circumstances, the plaintiff succeeded in its claim even though it was unable to replicate every element of the spiral. It should be noted that, in the *FCA* case, the FCA had sought to rely on *Equitas* in support of a claim that the Imperial College and/or the Cambridge/PHE methodologies could be used by policyholders to

prove occurrences of COVID-19 within the relevant RPA. The FCA contended that *"the COVID-19 pandemic is an analogous situation to the losses in the LMX spiral, because the true number of cases in a particular area at a particular time can never be known. Therefore, a model or methodology should be available to the insureds to discharge the burden of proof as to prevalence"*. The FCA submitted that the type of evidence it proposed to use was relevant, publicly available, had been relied on by the Government, and in the case of the undercounting ratios, had been prepared by suitably qualified institutions. It was argued that this put it in a better position than *Equitas* which had procured its own actuarial model. However, those submissions were made in the specific context of the clauses in issue in the *FCA* case to assist policyholders in establishing that cases of COVID-19 had occurred in specific geographical areas such as a radii of 1 to 25 miles around an insured premises or in *"the vicinity"* of insured premises. No case was made that they could be applied to cases alleged to have occurred on the insured premises. It should also be recalled that, as noted in para. 138 above, the FCA, in its subsequent guidance on the outcome of the proceedings, expressly stated that the guidance was not designed for other types of policy. In any event, as previously explained in para. 141(e) above, the Divisional Court did not ultimately reach any concluded view on the issue.

145. Save in one respect (identified in para. 146 below), I am of the view that the decision in *Equitas* is of limited relevance for present purposes. The case was largely concerned with the legal effect of clauses commonly found in reinsurance contracts. I am not convinced that the approach taken in the specific context of reinsurance can be readily applied in other contexts. It also has to be said that the use of actuarial models is not uncommon in settling reinsurance claims. For example, actuarial models are frequently used in the context of the liquidation of reinsurance companies where there

is often a need to put an actuarial value on claims to allow the liquidation to be completed in early course. The liquidation of a reinsurance company could become very prolonged if the liquidator were to wait until all claims have been reported and valued. An actuarial valuation was also the approach taken in *Re: Colonia Reinsurance Ltd.* [2005] 1 I.R. 297 in the context of a solvent scheme of arrangement in respect of a reinsurer whose business was in run-off and there was a desire to bring the business to an end without having to wait until all claims had crystallised. Moreover, *Equitas* cannot be treated as authority for the proposition that a model can always be adopted as a means of proof. The particular actuarial model used in *Equitas* was closely interrogated by Gross J. and it is clear from his judgment that he was satisfied that the output of the model provided a reasonable representation of the features of the LMX spiral in so far as those features were relevant to the syndicates' claims.

146. All of that said, the decision in *Equitas* illustrates that there are occasions when a model may be an acceptable form of evidence at least where it is shown that (a) the model is based on sound data; (b) the model provides a reasonable representation of the real world position; and (c) the modelled output permits conclusions to be drawn with confidence.

147. In my view, a more relevant authority – in the context of the admissibility of expert evidence – is the decision of the Supreme Court in *Jordan v. Minister for Children & Youth Affairs* [2015] 4 I.R. 232 (*"Jordan"*) on which the plaintiff also relies. That case concerned a challenge to the outcome of the referendum on an amendment to Article 42.5 of the Constitution on the grounds that the result of the referendum was materially affected by conduct on the part of the Government which breached the principles established in the earlier decision of the Supreme Court in

McCrystal v. Minister for Children [2012] 2 I.R. 726. The latter decision was delivered in the course of the referendum campaign and it made clear that the Government could not spend public money on referendum material promoting a particular outcome. Prior to the decision in *McCrystal*, the Government had published a pamphlet and other material advocating the proposed amendment. The plaintiff complained that the outcome of the referendum had been materially affected by the one-sided information distributed by the Government advocating in favour of the amendment. In the course of the hearing before the High Court evidence was given by experts on both sides including a number of political scientists. In the course of their evidence, some of these experts relied on a post referendum survey which had been undertaken by the Referendum Commission for purposes unconnected with the case. The survey was designed to test how the information published by the Commission had been received by voters and it did not take account of any other sources of information or other factors such as the political allegiances of voters. The High Court held that there was insufficient evidence to establish what influence the material published by the Government might have had on the electorate. That outcome in the High Court was upheld by the Supreme Court. Four lengthy judgments were given most of which are not material for present purposes. However, in his judgment, Clarke J.[60] provides valuable guidance in relation to the admissibility of expert evidence and the approach which a court should take in relation to survey evidence. In the latter context, the plaintiff in these proceedings seeks to make the case that there is a parallel to be drawn between survey evidence and Professor Mallon's model. I am not convinced that there is any such parallel. No survey was undertaken as part of Professor Mallon's approach. Nor did he rely in his evidence on any survey.

[60] As he then was

Nonetheless, it seems to me that the judgment of Clarke J. provides very valuable guidance to me as to the approach I should take in dealing with the expert evidence before the court.

148. At p. 333 of the report in *Jordan*, Clarke J. explained that survey evidence is admissible where the court is satisfied that the evidence can have a bearing on the factual decisions to be made. Any legitimate questions that may arise in relation to the survey methodology or the conclusions to be drawn from it go to the weight of the evidence. Clarke J. explained:

> *"But in that regard it does not seem to me that survey evidence is any different to any other form of forensic or experimental evidence. The circumstances in which forensic evidence was obtained or maintained, the methodology used in its collection or analysis, the scientific basis for its interpretation and the expert views as to what can be gleaned from the relevant information are all matters which may, to a greater or lesser extent, be the subject of debate in any case in which expert evidence based on an analysis of physical or other materials may be of assistance in reaching a conclusion on the facts."*

149. Clarke J. stressed that the precise factual question which the court has to address can have a significant bearing on the extent to which any legitimate criticism of the survey methodology might undermine or devalue the views expressed by an expert. At p. 334, he illustrated that proposition as follows:

> *"If, for example, a court was required to be satisfied that there was more than a 50% likelihood that a particular state of affairs persisted, then it might well be necessary to conduct a very rigorous statistical analysis to ascertain whether that threshold had been reached. It might, in that context, be necessary to resolve debateable questions over the precise statistical methodology which should be adopted. Questions concerning the extent to*

which the raw data was appropriate or sufficient to allow a sufficiently rigorous analysis to be conducted might also loom large. As in all other cases, the question of the onus of proof may, where the evidence is sparse, prove to be decisive. A legitimate criticism as to the methodology adopted might lead to a finding that the party on whom the onus of proof rested had failed to discharge that onus."

150. Those observations have some resonance in this case where the plaintiff bears the burden of proving, on the balance of probabilities, that there was, *inter alia*, an occurrence of COVID-19 during a period of cover at the Marlin Hotel. While I think Clarke J.'s reference to numerical probability was made for purely illustrative purposes[61], it is essential to keep in mind that the plaintiff must satisfy the court that it is more probable than not that there was at least one occurrence of COVID-19 during each of the three periods canvassed by Professor Mallon[62].

151. Another relevant feature of the judgment of Clarke J. is his recognition that evidence may have some value even if it falls far short of the ideal. It is always necessary for the court to evaluate the evidence placed before it and form a view as to its reliability and utility. At pp. 334-335, he said:

*"**[280]** That leads to the last point. Much of the criticism which was to be found in the evidence of Professor Marsh as directed towards the evidence presented on behalf of Ms. Jordan was concerned with the ideal conditions in which one might structure survey evidence and data in order to reach conclusions on the materiality of the unconstitutional Government expenditure*

[61] There has been some debate in the case law as to whether a numerical approach to probability is correct – at least in so far as past events are concerned. See, for example, the approach taken by the Court of Appeal of England & Wales in *Re: A (Children) (Care Proceedings: Burden of Proof)* [2018] EWCA Civ 1718

[62] As previously noted, in the case of period 1, it must also be shown that the relevant occurrence (if any) happened after 20th February 2020 when COVID-19 was made a notifiable disease.

which occurred in this case. But it must be recalled that every day, in all sorts of cases, and in relation to all sorts of evidence, courts are called on to do the best they can with the evidence which happens to be available. Doubtless it would make the determination of liability in motor accident cases a lot easier, and rarely controversial, if the circumstances of all accidents were clearly caught on CCTV. Doubtless an unfortunate but explained gap in the records of events may make it much harder to assess business conduct or professional activity which may be the subject of litigation. Very many other examples could be given. But in the messy world of real litigation, courts rarely have the luxury of having available to them evidence obtained in what might be called the real world equivalent of laboratory conditions. But courts are nonetheless required to do the best they can in assessing such evidence as may be available. Of course, it remains the case that it is open to a defendant to assert that the plaintiff has just not put forward sufficient evidence to discharge the onus of proof. Survey data and its analysis are potentially as subject to that type of criticism as any other type of evidence. It may be said that it just falls so far short of the kind of materials on which any sort of safe conclusion could be reached so that the party presenting the evidence in question has failed to meet the onus of proof. But the fact that the evidence falls a long way short of the ideal which might be put in place, in advance, by experienced professionals in the social sciences, does not mean that the evidence may not, nonetheless, be sufficient, in an appropriate case, to discharge the onus of proof.

[281] *That question, in the context of survey data and analysis, is no different to that which arises in the context of any other kind of evidence. The question*

is not whether there might, theoretically, have been better evidence. There almost always will. The question is whether there is enough."

152. While Clarke J. made those observations in the specific context of the expert witnesses who gave evidence in that case, they plainly apply equally here. I must therefore examine the evidence before the court and consider whether there is enough in it to satisfy me, on the balance of probabilities, that there was an occurrence of COVID-19 at the hotel in each of Professor Mallon's three periods. That is not the only matter that the plaintiff must prove, but it is an essential element of the plaintiff's case and it is the relevant issue in the context of Professor Mallon's evidence.

153. Accordingly, it would not be right to make a pre-emptive finding that Professor Mallon's evidence is inadmissible. Instead, I must carefully consider his evidence and that of the other experts in order to assess its utility and force and I must then make such findings as are appropriate on the basis of the evidence. In doing so, I will, of course, keep in mind the defendant's contention that, by concentrating in his report on the likelihood of a case arising at the hotel, Professor Mallon addressed himself to the wrong question. I will also keep in mind the defendant's contention that Professor Mallon failed to put forward any supporting scientific materials to substantiate the views expressed by him.

154. Before attempting to make those findings of fact, there are two issues of law which must first be addressed – namely what is the meaning to be given to the word *"occurrence"* and what is meant by the words *"at the Premises"* ?

What is the meaning to be given to the word *"occurrence"* in Extension 6 of the policy?

155. As the Supreme Court has made clear in *Analog Devices v. Zurich Insurance* [2005] 1 I.R. 274 (*"Analog"*) and in *Law Society of Ireland v. Motor Insurers Bureau*

of Ireland [2017] IESC 31 (*"the Law Society case"*), written contracts (including insurance policies) must be construed objectively. The subjective intention of the parties is not an admissible aid to their interpretation. Instead, the court approaches the process of interpretation of the contract by placing itself in the shoes of a reasonable person in the position of the parties at the time the contract was made and that person is deemed to be aware of the relevant factual and legal background at that time. In essence, the court tries to work out what the words of the contract would mean to a person in that position, i.e. a person armed with knowledge of the factual and legal background. This has been described by Clarke J. in the *Law Society* case as the *"text in context approach".* Furthermore, an individual provision of a contract must be read in the context of the contract as a whole. In addition, subject to anything in the context or in the terms of the contract as a whole which might suggest otherwise, the words used in the contract are to be given their natural and ordinary meaning. It is also necessary to keep in mind the warning of O'Donnell J.[63] in the *Law Society* case that it is wrong to approach the process of interpretation *"through the lens of the dispute which has arisen".* Prior negotiations and subsequent events likewise provide no guide. The *Analog* decision also reaffirms that, where a provision of an insurance policy is ambiguous, the provision is to be construed *contra proferentem.* The policy here is a standard form policy issued by the defendant. Thus, in the event of ambiguity, the meaning most favourable to the plaintiff is to be adopted.

156. Having regard to the principles summarised above, it is clear that the word *"occurrence"* cannot be read in isolation. It must be read in the context of Extension

[63] As he then was

6 as a whole. It is used in Extension 6 both in the context of an *"occurrence of a Notifiable Disease"* and in the context of an *"occurrence of murder or suicide"* at the premises. It is also used in the definition of the Indemnity Period set out in para. 2 of the special conditions to Extension 6 where it is described as the period during which the business of the insured *"shall be affected in consequence of the occurrence, discovery or accident, beginning ... with the date from which the restrictions on the Premises are applied…".*

157. The word *"occurrence"* is a word in common use. It is not a word which has some special or technical meaning. As the above principles make clear, in the absence of some indication to the contrary, the words of a contract are to be given their ordinary and natural meaning. Synonyms of the word *"occurrence"* include *"happening", "event"* and *"incident".* There is nothing in the language of Extension 6 or in the language of the policy as a whole to suggest that a reasonable person in the position of the parties would think that the word has some different meaning. Nor is there anything in the factual background to suggest that some other meaning should be given to the word. It makes commercial sense that a hotelier[64] would seek to be insured against a closure of a hotel premises as a consequence of something occurring at the premises (such as a case of a notifiable disease or a murder or a suicide) which leads a competent authority to order or advise the closure of the premises. There is accordingly no reason to depart from the natural and ordinary meaning of the word.

158. Counsel for the plaintiff placed some emphasis on the difference between the use of the word *"occurrence"* in the Allianz policy and the use of the word *"manifesting"* in the RSA policy considered in *Premier Dale.* He submitted that, in

[64] For completeness, it should be noted that the policy is not designed for hotels *per se* but the fact that the insured property is a hotel is, nonetheless, a relevant aspect of the factual backdrop against which the policy is to be construed.

contrast to the requirement in the latter policy that the disease should have become manifest in some way, disease could occur without ever becoming manifest. That seems to me to be correct. There is significant support for this approach in the judgment of the the Divisional Court in the *FCA* case in relation to the *"RSA 3"* policy which provided cover in respect of business interruption caused by the occurrence of a notifiable disease. As noted in para. 137 above, the Divisional Court took the view that there was an occurrence of disease when it is sustained by a person and that this is so whether or not there was a diagnosis of disease. At para. 93 of the judgment, the Divisional Court said:

> *"The FCA's case is that there will have been an occurrence of the disease whenever or wherever a person had contracted COVID-19 such that it was diagnosable, whether or not it had been verified by diagnosis, and whether it was symptomatic. RSA's pleaded case is that nothing less than an actual diagnosis of COVID-19 would be sufficient to establish any relevant 'occurrence'. We consider that there will have been an 'occurrence' of COVID-19 within an area when at least one person who was infected with COVID-19 was in the relevant area. We do not consider that it is necessary for there to have been an 'occurrence' of the disease that the case should have been diagnosed. The definition of Notifiable Disease is in relevant part 'illness sustained by any person resulting from … any human infectious or human contagious disease…' Such a Disease thus 'occurs' when the illness is "sustained" by a person, which we consider means, in simple terms, that they are suffering from it, not that they have been diagnosed with it. This fits in with the other parts of the Extension. For example, in sub-clause a(i) of Extension vii, if there were cases of food poisoning at the premises, which led*

to business interruption, but it took some time for it to be diagnosed that this was due to a Notifiable Disease, we would consider that the Notifiable Disease had "occurred" when there were the first cases of food poisoning, and that the 'occurrence' was not postponed until there was diagnosis."

159. I agree with the reasoning of the Divisional Court. The policy here does not require that there should be a manifestation of disease. It requires that there should be an occurrence of a disease. At the time the policy was put in place, notifiable diseases were known to exist which were asymptomatic. Hepatitis C is an obvious example about which there was considerable publicity following the case taken by the late Brigid McCole and the subsequent establishment of a Tribunal of Enquiry. It therefore seems to me that a person in the position of the parties would have understood, at the time the policy was put in place that a notifiable disease could occur even without any outward manifestation. However, the occurrence would still require to be proved. While the majority in the U K. Supreme Court did not question the approach taken by the Divisional Court on this issue, they did raise the issue of proof. Lords Hamblen and Leggatt said at p. 693:

"... in order for illness resulting from Covid-19 to be 'sustained by any person' within the meaning of the 'Notifiable Disease' definition, the court below found that it is not necessary for the person concerned to have been diagnosed as having the disease or to have manifested symptoms of illness: it is sufficient that the person should in fact have contracted the disease, whether or not the disease is symptomatic or has been diagnosed. ***The manifestation***

> ***of symptoms and the making of a diagnosis are therefore relevant only to questions of proof.*** *There is no challenge to that finding."*[65]

160. In the course of his submissions, I pointed out to counsel that Lords Hamblen and Leggatt appear to have taken the view that manifestation of symptoms or a diagnosis of disease might well be relevant when it comes to proving an occurrence of disease. Counsel submitted in response that, if the plaintiff has to prove the existence of a person with symptoms or to prove a diagnosis of disease, this would be tantamount to restricting cover to cases of COVID-19 which had become manifest. He maintained that the defendant, here, had chosen not to make manifestation a condition of cover and that it would therefore be wrong to give the defendant the benefit of a *"manifestation"* clause even though it had not stipulated for that standard in its policy. He also referred to the lack of availability of testing in period 1 which made it particularly difficult to prove the occurrence of a case of COVID-19 during that period. Counsel for the plaintiff also urged that effect has to be given to Extension 6 and he relied, in that context on the observations of the Full Court of the Federal Court of Australia in *LCA Marrickville Pty Ltd. v. Swiss Re.* [2022] FCAFC 17 (*"Marrickville"*) at para. 165 to the following effect:

> *"In the context of business interruption insurance, the ease with which an insured may establish matters relevant to its claim for indemnity may influence questions of construction.* ***The purpose of business interruption insurance is to inject additional funds into a going concern to maintain it as a going concern and, in that respect, to return it to an operational state as soon as possible****: Arbory Group Ltd v West Craven Insurance Services (A Firm) [2007] Lloyd's Rep IR 491 [48] – [50]; Adelaide (SA) Pools & Spa*

[65] My emphasis.

> *Manufacturing and Installation Pty Ltd v Westcourt General Insurance Brokers Pty Ltd (No 2) [2021] SASC123 [990].* ***That being so, a construction which advances the purpose of the cover is to be preferred to one that hinders it****. …"*[66]

161. Counsel for the plaintiff also noted that the approach taken in that paragraph had been accepted by Butcher J. in England in *Stonegate Pub Company v. MS Amlin* [2022] EWHC 2548 (Comm) at para. 98. Counsel placed particular reliance on the passages quoted above and contended that the plaintiff could not be confined to diagnosed or symptomatic cases because that would not give effect to the wide meaning to be given to the word *"occurrence"* as found by the Divisional Court. In circumstances where Extension 6 uses the language of *"occurrence"* rather than *"manifestation",* I accept that the plaintiff cannot be confined to diagnosed or symptomatic cases but that does not mean that the plaintiff is relieved from the need to prove such a case and I can see nothing in *Marrickville* which suggests otherwise. The relevant principle on which counsel relied is addressed to interpretation rather than proof. There is also an additional hurdle facing the plaintiff in proving that an undiagnosed case of disease occurred. This stems from the need to identify when such a case occurred. In this context, counsel for the defendant relied on the classic meaning attributed to the word *"occurrence"* by Lords Hamblen and Leggatt in the U.K. Supreme Court in the *FCA* case which I have previously described in para. 133 above. They reaffirmed Lord Mustill's formulation of the meaning to be given to the word *"event"* which he outlined in *Axa Reinsurance (UK) plc v. Field* [1996] 1 WLR 1026 at p. 1035. In para. 67 on p. 696, Lords Hamblen and Leggatt said:

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[66] Emphasis added

> *"The word 'occurrence', on the other hand, like its synonym 'event', has a widely recognised meaning in insurance law which accords with its ordinary meaning as 'something which happens at a particular time, at a particular place, in a particular way': see Axa Reinsurance (UK) plc v Field [1996] 1 WLR 1026, 1035 (Lord Mustill); Kuwait Airways Corpn v Kuwait Insurance Co SAK [1996] 1 Lloyd's Rep 664, 683—686 (and the discussion in that case of the Dawson's Field Award); Mann v Lexington Insurance Co[2001] 1 Lloyd's Rep 1 (CA)".*

162. In reliance on Lord Mustill's formulation, counsel for the defendant argued that the word *"occurrence"* in Extension 6 should plainly be construed in the same way and that this meant that, for the plaintiff to prove an occurrence of COVID-19, it would be necessary to establish a specific case occurring on a specific date at the hotel. It was also submitted that this meant that the approach taken by Professor Mallon (on instruction) to look at periods of time running to several weeks – rather than specific dates – was erroneous. But counsel for the plaintiff contended that *"at a particular time"* should not be construed so narrowly. He argued that it extended to a longer timeframe than a specific hour or a specific date. In this context, it is important to keep in mind what was said by Lords Hamblen and Leggatt in the immediately following paragraph on the same page. It appears from para. 68 that the language of the RSA 3 policy was central to their view that an occurrence must be linked to a specific date and could not extend beyond that date. In para. 68, they referred to the fact that the definition of the indemnity period in that policy was stated to begin on the date of the occurrence. Thus, for the policy to work, the relevant event constituting the occurrence had to happen on a specific date. In para 68, they said:

> *"That the term 'occurrence' where it appears in the disease clause in RSA 3 refers to something happening at a particular time is in any case confirmed by the definition of the 'Indemnity Period' ... as the period during which the results of the business 'shall be affected in consequence of the occurrence' beginning, in the case of the relevant sub-clause (a)(iii), with 'the date of the occurrence' and ending not later than three months thereafter. It is implicit in this definition that an 'occurrence' is something that happens on a particular date and not something capable of extending over more than one date."*

163. In contrast, in the case of the Allianz policy in issue here, the indemnity period is defined differently. It is true that, in the case of murder or suicide, the period is stated to begin *"with the date of the occurrence"* but, in the case of the other perils insured under Extension 6 (including business interruption caused in consequence of Government measures arising from the occurrence of a notifiable disease), the period starts from the *"date when the restrictions on the Premises are applied…".* That seems to me to be a significant point of distinction between the RSA 3 policy addressed by Lords Hamblen and Leggatt in the *FCA* case and the Allianz policy in issue here. In the case of the latter, there is no reason why an event constituting the sustaining of COVID-19 should not be capable of extending beyond one particular date. That is particularly so in the case of an infectious disease – such as COVID-19 – which is capable of being asymptomatic. A positive test for COVID-19 on a particular date does not mean that the patient had not sustained the disease on an earlier date. Given what is known about incubation periods and duration of disease, a doctor could, however, provide a fairly reliable estimate of the dates during which the disease is likely to have been sustained. In other words, it would be possible to identify a date range rather than one specific date. As discussed in para. 178 below, in the case of

COVID-19, that date range appears to be a relatively narrow one. In such circumstances and in light of the fact that the policy purports to provide cover for such a disease, it seems to me that a reasonable person in the position of the parties would understand that an *"occurrence"* of such a disease would be capable of happening within such a date range and that the word would not be understood as being confined solely to a happening on one specific date. In my view, that is the way in which *"occurrence"* should be construed in Extension 6 in so far as it relates to notifiable diseases.

164. It does not follow that dates can be ignored. Lord Mustill's formulation of the meaning of the word *"event"* given in *Axa Reinsurance v. Field* has already been accepted and applied in an insurance context in Ireland in *Hyper Trust Ltd. v. FBD Insurance plc* [2021] IEHC 78 (*"Hyper Trust No. 1"*) and in *Brushfield Ltd. v. Arachas Corporate Brokers Ltd.* [2021] IEHC 263 (*"Brushfield"*). While the terms of the policies in issue in those proceedings are not identical to the Allianz policy here, the policy terms are not so dissimilar to suggest that a different approach should be taken in this case. In addition, the background circumstances are very similar. Thus, although I do not believe that the policy here requires an *"occurrence"* to be completed within the course of a single identified date, I am of the view that it is necessary to pinpoint an *"occurrence"* to a date or time range which can be identified with sufficient specificity. But, that does not mean that there is no limit to the duration of that date range; there may come a point where the date range is so long or so indefinite in duration as to be more properly characterised as a state of affairs rather than an occurrence. The natural and ordinary meaning of *"occurrence"* must always be kept in mind. One might, for example, describe an event lasting several days –

such as the Easter Rising 1916 – as an occurrence but one would be a lot less likely to so describe World War 1 or World War 2.

165. Counsel for the plaintiff sought to go further. He submitted that the Court should adopt the approach suggested by Lord Briggs (who wrote the minority judgment in the *FCA* case) and take an even broader meaning of the word *"occurrence".* In particular, he submitted that I should follow the approach suggested by Lord Briggs in para. 323 (at p. 757) where he said:

> *"I would not be confident that the hypothetical reader would necessarily attribute the case by case specificity to the word 'occurrence' or its synonyms given to it by the majority. Depending upon context, the word 'occurrence' can properly be applied to happenings which do not take place at a single specified time, in a particular way and at a particular location. Thus a hurricane, a storm or a flood may properly be described as an occurrence even though each may take place over a substantial period of time, and over an area which changes over time. It is not in my view an inappropriate word to use about a pandemic disease as a whole, although I accept that it may be a pointer of some weight to an individual case analysis".*

166. I have no difficulty in accepting that a hurricane or a flood could properly be regarded as an occurrence in the context of an insurance policy notwithstanding that it may take place over a period of time and over an area which changes over time. Every word in an insurance policy must be read in context. If a policy provides cover in respect of an *"occurrence"* of hurricanes or floods then, naturally, it follows that the word *"occurrence"* must be given a meaning appropriate to those specific contexts. However, that does not seem to me to assist the plaintiff here where, subject to a number of other criteria, Extension 6 provides cover in respect of *"any occurrence of*

*a Notifiable Disease … **at the premises** …"*[67]. I address the meaning of the words *"at the premises"* below but, in my view, when those words are read together, it is clear that the hypothetical reasonable person would not understand *"occurrence"* in the unbounded way suggested by Lord Briggs. The policy makes very clear that the occurrence must be at the premises and there is nothing in the language used to suggest that the word *"occurrence"* should not be construed in any different way to the word *"event"* which would ordinarily be regarded as something that happens in a particular way over a defined time period within an identified date range of relatively short duration. As previously noted, I accept that, in the case of the Allianz policy, there is no requirement to show that the *"occurrence"* was complete within the space of a single date. In that context, there is a significant difference between the terms of the Allianz policy and the terms of the RSA 3 policy discussed by Lords Hamblen and Leggatt in the *FCA* case. As I have already explained, the RSA 3 policy defined the indemnity period by reference to the date of the occurrence. For that reason, the occurrence had to take place within the confines of a specific date and not go beyond that date.

167. It was also argued by counsel for the plaintiff on Day 4 of the hearing that, in the absence of evidence of a positive test or symptoms of the disease, there will be an *"occurrence"* of COVID-19 if statistically *"you can show that on the balance of probabilities there was somebody in the hotel, because the area, the whole area had a prevalence … and … you can show in all likelihood there was somebody in this premises because of its nature and its business … its location"*. He urged that the *"statistical evidence … brings it … to the last step to say that comes within 'occurrence at the premises.'"* Counsel clearly had in mind the evidence of Professor

[67] My emphasis

Mallon in that context. I will need to evaluate his evidence (in combination with the agreed facts) before I can reach any conclusion as to whether it is sufficient to prove, on the balance of probabilities, that there were any *"occurrences"* of COVID-19 at the premises. That evaluation begins at para. 183 below.

168. On Day 5 of the hearing, counsel for the plaintiff also sought to rely on the decision of Jacobs J. in *London International Exhibition Centre plc v. Royal & Sun Alliance Insurance plc* [2023] EWHC 1481 (Comm) (*"the Excel case"*)[68] which, coincidentally, was delivered on Day 4 of the hearing of these proceedings. The judgment of Jacobs J. addressed six sets of proceedings in which a number of common preliminary issues arose principally in relation to the proper construction of a number of policy wordings all of which had one feature in common: they all referred to an *"occurrence"* (or some analogous word) *"at the Premises".*

169. In particular, counsel for the plaintiff relied on the answer given by Jacobs J. to one of the preliminary issues which arose in the sixth set of proceedings before him (*"the Pizza Express case"*). That issue raised a question as to what an insured must prove to establish an occurrence of a notifiable disease at the insured's premises. In para. 363 of his judgment, Jacobs J. expressly rejected the insurers' case that the insured must prove that a person was present on the premises who was diagnosed as having been infected with COVID-19 at that time[69] and/or the case of COVID-19 was reported or otherwise known to the relevant authorities who imposed or recommended

[68] Notwithstanding the first plaintiff's name, this is the shorthand name by which this case is generally known. In his judgment, Jacobs J. explains that the first plaintiff is the owner of a large exhibition centre and venue space in the east of London which is commonly called the *"Excel Centre".*

[69] The insurers accepted that the diagnosis could be made at the time of the visit or prior to or subsequent to the visit.

the restriction on use of the premises[70]. Instead, Jacobs J. accepted the case made on behalf of the insured that it is sufficient to prove that *"the relevant order or advice of the relevant government restricting the use of the Premises was introduced in response to cases of COVID-19 in the relevant territory as a whole (whether known or unknown), which included at least one case of COVID-19 at the Premises in the relevant territory, which case occurred after COVID-19 became a Notifiable Human Disease and by the date of such order or advice".* Counsel submitted that this is directly in point and that the *"statistical evidence"* is sufficient to prove that there were persons present at the hotel who could have been diagnosed and that this was accordingly sufficient to prove the necessary *"occurrence".*

170. In so far as I can see, there is no significant discussion in the judgment of Jacobs J. in relation to this element of his finding – at least in so far as proof of *"occurrence"* is concerned[71]. However, it appears from para. 350 of the judgment that, in reaching his view in relation to proof of occurrences, Jacobs J. had in mind para. 5 of the declarations made by the U.K. Supreme Court in the *FCA* case which he quoted as follows:

> *"Subject to paragraph 7A below, there was COVID-19, and COVID-19 was 'sustained' or 'occurred' within a given radius of the premises in Argenta1, Hiscox4 (hybrid), QBE2-3 and RSA3, wherever a person or persons contracted COVID-19 so that it could be diagnosed, whether or not it was verified by medical testing or a medical professional and/or formally confirmed or reported to the PHE and whether or not it was symptomatic, and*

[70] It is only the former that is relevant for present purposes; the latter is concerned with causation and I will return to it when I come presently to deal with causation (in so far as it arises at this stage of the proceedings).

[71] On the other hand, there is extensive discussion in relation to the other aspect of this finding namely the question as to whether the specific occurrences at the premises were reported to the relevant authorities prior to any decision imposing closure of the business or restrictions on the business.

was/were within that radius of the premises at a time when they could still be diagnosed as having COVID-19".

171. However, that paragraph of the Supreme Court Order does not explain how an insured can seek to prove the existence of such an undiagnosed and asymptomatic case. As appears from the extract from their judgment quoted in para. 159 above, Lords Hamblen and Leggatt, in their judgment, did not dissent from the view taken by the Divisional Court in relation to such cases but they added that the *"manifestation of symptoms and the making of a diagnosis are therefore relevant only to questions of proof".* Neither their judgment nor the judgment of Jacobs J. assist in understanding how an insured could prove an occurrence in the absence of evidence of a person with symptoms or a diagnosis. For the reasons previously discussed, the Divisional Court did not address the question of mode of proof. In the *Excel* case, it was unnecessary to do so. In para. 114 of the judgment of Jacobs J., it is recorded that, in the *Pizza Express* case, the insured and insurers agreed, for the purposes of the preliminary issue, that at least one person visited the premises who was infected with COVID-19 at the time of the visit (whether or not it was symptomatic at that time); that the case was never diagnosed by a medical professional or by medical testing; and/or that case was not reported to or otherwise known to the relevant authorities prior to the decision to close or restrict the business. Crucially, save in respect of period 3, there is no equivalent agreement in this case. In seeking to prove occurrences of COVID-19 at the hotel, the plaintiff is therefore thrown back on its reliance on Professor Mallon's evidence at least in so far as periods 1 and 2 are concerned. For that reason, it will be necessary, as I have previously outlined, to carefully review the expert evidence in combination with the agreed facts. But, before doing so, I must first examine what is

meant by the words *"at the Premises".* Those words also constitute a crucial element of Extension 6 and the word *"occurrence"* must be read in conjunction with them.

What meaning is to be given to the words *"at the Premises"* in Extension 6

172. The words *"at the Premises"* are straightforward everyday language that should not require detailed analysis. They seem to me to be self-explanatory. The terms of Extension 6 plainly require that there should be an occurrence of a notifiable disease at the hotel premises. Extension 6 is therefore to be contrasted with cases (such as *Hyper Trust No. 1*) where the relevant clause provided cover in respect of a closure order made in response to cases of disease within a radial distance of 25 miles from the insured premises. The effect of an *"at the premises"* clause was also not considered in the *FCA* case. However, counsel for the plaintiff argued that there is no difference in principle between *"radius"* cases and *"at the premises"* cases save that the area in issue in the latter is significantly smaller.

173. In support of his submission, counsel for the plaintiff relied heavily on the decision of Jacobs J. in the *Excel* case. Jacobs J. accepted that there is a parallel between such an *"at the premises"* clause and the radius clauses addressed by the U.K. Supreme Court in the *FCA* case. In para. 187 he said:

> "*In this sense, therefore, there is a clear geographical link between a radius clause and an 'at the premises' clause. The radius of the former starts at the centre of the premises themselves, and therefore provides cover in respect of occurrences therein, but also the perils insured extend to those which are outside thereby making it potentially easier for the policyholder to establish the existence of a covered peril. The latter also starts at the centre of the premises, but stops at their perimeter."*

174. Those observations clearly support the plaintiff's case that an *"at the premises"* clause is to be treated in the same way as a radius clause but, crucially for present purposes, they do not, in any way, alleviate the requirement to prove an occurrence on the site of the insured premises. The observations also seem to me to be principally concerned with whether the causation analysis adopted in the *FCA* case in relation to radius clauses can properly be applied to *"at the premises"* clauses. This is an issue which I address later. In the meantime, it is sufficient to note that, like the insurers in *Excel,* the defendant here contends that Extension 6 is concerned with localised cover; it is not intended (so it is said) to apply unless the closure or restriction was imposed to deal specifically with an occurrence at the insured premises. The defendant argues that it is not intended to respond where the relevant closure or restriction is imposed as a consequence of a nationwide outbreak.

175. I can see nothing in the observations of Jacobs J (quoted in para. 174 above) which suggest that a more expansive meaning should be given to the words *"at the Premises".* On the contrary, they are consistent with the natural and ordinary meaning of those words. It is clear from Jacobs J.'s observations that he accepted that the insured must prove that there was at least one case within the perimeter of the insured premises. That is consistent with the cases on radius clauses. It is clear from *Hyper Trust No. 1* and from the *FCA* case that, in the absence of proof of at least one case within the relevant radius, the insured cannot succeed. The same is true in this case having regard to the ordinary meaning of the plain and simple words *"at the Premises".* It follows that, in accordance with the words of Extension 6, the plaintiffs here must prove, on the balance of probabilities, that there was a case of COVID-19

within the perimeter of the hotel during any of the three periods in issue[72]. That is the issue to which I now turn. As noted previously, the plaintiff's case does not get off the ground without evidence of such a case. In the event that such an occurrence is proved, it will also be necessary to consider whether it caused the relevant restrictions imposed on the plaintiff's business by a competent authority.

Does the evidence before the Court demonstrate, on the balance of probabilities, that there was an occurrence of COVID-19 at the Marlin Hotel during any of the three periods in issue?

176. It is important to bear in mind that, in considering this issue, I am not involved in assessing the chance that there may have been a case of COVID-19 at the hotel during any relevant period. There are circumstances where it is appropriate for a court to make such an assessment. It is well settled, for example, that, in a procurement case, the court can seek to measure damages for a disappointed candidate on the basis of the candidate's loss of a chance to participate in a framework contract. The courts are also sometimes called upon to assess the chance of something happening in the future. But that is not the position here. I am concerned with what may or may not have occurred in the past and my task is to assess whether it has been established, on the balance of probabilities, that there was an occurrence of COVID-19 at the Marlin Hotel during any of the three periods in issue. I must decide whether the evidence is sufficient to show that there was such an occurrence.

Period 3

177. I start with period 3. The position in respect of period 3 is more straightforward than in the case of either period 1 or period 2. As outlined in the

[72] As noted earlier, in the case of period 1, the plaintiff would also need to prove that the COVID-19 case arose after 20th February 2020 (which was the date on which COVID-19 was declared to be a notifiable disease).

agreed statement of facts, it is agreed by the parties that the hotel manager tested positive for COVID-19 on 23rd December 2020. However, in the course of his evidence, Professor Mallon said that the manager had undergone the test on the previous day and no objection was taken by the defendant to that evidence. In the course of his closing submissions, counsel for the defendant accepted that, because this was a HSE test, the result was reported to the HSE on either 22nd or 23rd December[73]. However, counsel for the defendant argued that there was no evidence that this *"occurrence"* was, in any sense, causative of the Government restrictions imposed by the Amendment Regulations enacted on 23rd December 2020. He submitted that there was no evidence that this positive result was known to the Government at the time the Amendment Regulations were enacted. On Day 5, he emphasised that none of the supporting material leading up to the enactment of the Regulations had been put in evidence or opened to the Court. However, on Day 6, he conceded that the HPSC report of 23rd December 2020 had been put in evidence but he made the point that the report only contained details of the number of confirmed cases notified in the State up to midnight on 21st December. On that basis, he submitted that the infection of the manager could not have been a causative occurrence.

178. That submission of counsel for the defendant primarily relates to causation. One of the issues which arises in that context is whether undiagnosed cases of COVID-19 (which were by their nature unknown to the Government) can be said to have been causative of the restrictions. The parties take diametrically opposed positions on that issue. I will address issues of causation later but, in the meantime, I must make the necessary findings of fact as to whether there were any cases at the

[73] See Day 6 p. 75

hotel. In my view, the evidence establishes that the manager must have been infected with COVID-19 before 21st December 2020. That seems to me to follow from the expert evidence before the Court. In that context, there was no disagreement between Professor Mallon and Professor Horgan that the incubation period for COVID-19 was between three and five days. It follows that, if he was tested on 22nd December 2020 the hotel manager must have been infected at the latest by 19th December 2020. On the basis of the expert evidence, it is improbable that he was infected any later than that. Of course, he could have been infected earlier than that date but, in the absence of any evidence as to any symptoms or the duration of such symptoms, one could not form any view as to the probability of the precise date when it first occurred save that the evidence establishes that it is unlikely to have been more than 5 to 14 days before the test. Given the evidence about the incubation period being between 3 and 5 days, the infection may well have occurred within the 3 to 5-day period before the test but, based on other evidence, it is possible that it could have been up to 14 days before the test. In this context, Dr. Roe identified in his report that a patient with COVID-19 could remain infectious for a period of 12.8 days[74]. That means that a patient might still be infectious on Day 13. It would seem to follow that such a patient would also test positive if still infectious on Day 13. Dr. Roe also referred to technical guidance published by the WHO in June 2020 which advised an isolation period of 14 days for confirmed cases. That was why he looked at rolling periods of 14 days. A 14-day period was also accepted by Professor Horgan as the period within which the manager could have been infected[75]. Thus, it is reasonable to conclude that, at the outside, the hotel manager must have been infected within a period of between 3 and 14 days prior

[74] In that context, he cited a paper by Park & Ors. :*"Determining the communicable period of SARS-CoV-2: a rapid review of the literature March to September 2020".*
[75] See Day 4 p. 55

to 22nd December 2020. But, it seems to me to be more likely that the infection occurred within the earlier part of that period. The 14-day period mentioned by Professor Horgan (and reflected in the WHO guidance) appears to be, very much, the outer limit.

179. It must also be recalled that it is an agreed fact that the manager did not leave the hotel during the fortnight preceding 23rd December 2020. That fortnight stretches back to 9th December 2020. It can therefore be inferred, as a matter of probability, that the manager must have been infected by someone within the hotel during that period. While there is an outside possibility that he could have been infected on 8th December 2020 (i.e. being the 14th day before he was tested on 22nd December 2020), that seems to me to be unlikely given Dr. Roe's evidence about a 12.8 day period. It is more likely that he was infected within 13 days prior to the test on 22nd December. I believe that it is reasonable to conclude in those circumstances that it is more probable than not that the hotel manager was infected after 8th December 2020 (i.e. during the fortnight during which it is agreed that he did not leave the hotel). That means that there must have been at least one other *"occurrence"* of COVID-19 at the hotel during the fortnight before 23rd December 2020. In this regard, it seems to me that the Divisional Court in the *FCA* case was correct in the meaning which it attributed to the word *"occurrence"* in the context of a notifiable disease. The relevant passage in the Divisional Court's judgment is quoted in para. 158 above. In summary, the Divisional Court took the view that there was an occurrence of COVID-19 within an area when at least one person who was infected with the disease was present in that area whether or not the disease had been diagnosed and whether or not the infected person was showing any symptoms of the disease. That meaning is plainly capable of being applied whether the area (within which the infected person was present) constitutes a

particular property or a wider area measured by a specific radial distance from that property. That meaning is consistent not only with the ordinary meaning of *"occurrence"* when used in conjunction with a disease but also with the known features of COVID-19 which can be sustained by a person without any outward manifestation of the disease. This was confirmed by the expert medical evidence. Here, the policy did not require that there should be a *"manifestation";* merely that there should be an occurrence. An undiagnosed and asymptomatic case of this kind (i.e. one which can be pinpointed to a period of between 3 and 14 days from a specific date) also seems to me to satisfy Lord Mustill's formulation of the meaning of *"event".* Such a case is *"something which happens …"* (i.e. a case of COVID-19) *"at a particular time…"* (i.e. the 10-day period between 9th December 2020[76] and 19th December 2020[77]) *"at a particular place…"* (i.e. the Marlin Hotel) *"in a particular way"* (i.e. by an infected person being present within the perimeter of the hotel).

180. I have therefore come to the conclusion that, in addition to the manager, there was at least one person infected with COVID-19 at the hotel in period 3 and that this happened at some point between 9th and 20th December 2020. For the reasons outlined above, I am of the view that this amounted to an occurrence of a notifiable disease within the meaning of Extension 6. However, there is no evidence that the infected person was ever symptomatic or diagnosed and there is also no evidence that its existence was known to the HPSC, the HSE or the Government prior to the decision to enact the Amendment Regulations on 23rd December 2020.

181. As agreed between the parties, there were two other staff members at the hotel who tested positive for COVID-19, one on 27th and the other on 28th December 2020.

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[76] i.e. 14 days prior to 23rd December 2020

[77] i.e. three days prior to the test carried out on 22nd December 2020, three days being the lower limit of the duration of the incubation period.

Both of those dates fell more than three days after the end of period 3. Having regard to the medical evidence about the duration of the incubation period, it cannot be said that those infections occurred, as a matter of probability, before the decision of the Government to enact the Amendment Regulations. Moreover, there is no evidence about the movements of the staff members concerned. It is not an agreed fact that they were confined to the hotel prior to their tests. In those circumstances, I do not believe that there is a sufficient basis to conclude, on the balance of probabilities, that they must have been infected with COVID-19 at the hotel during period 3.

182. In light of the finding I have made in relation to period 3, the plaintiff does not need to rely on Professor Mallon's approach in relation to that period. However, it remains necessary for me to examine and assess his approach in so far as periods 1 and 2 are concerned. In so far as the plaintiff may seek to rely on Professor Mallon's approach in relation to period 3, my findings in relation to his approach in respect of period 2 should be taken to apply equally to period 3.

Period 2

183. I turn next to period 2. No evidence has been tendered that any staff member or guest was diagnosed with COVID-19 during period 2 or that any staff member or guest had exhibited any symptoms of the disease during the period. Thus, in respect of this period, the plaintiff is wholly reliant on Professor Mallon's model. For completeness, it should be noted that the plaintiff also seeks to rely on the similarity between the results generated by this model for period 2 and the results for the same period generated by the model created by Dr. Roe. However, that argument can be readily discounted. In this context, it will be recalled that, for period 2, Professor Mallon's model estimated that 9.95 individuals infected with COVID-19 were present at the hotel at some point during that 44-day period. Using a similar (but not

absolutely identical process) Dr. Roe's model estimated that 9.40 infected individuals were present at the hotel at some point during the same period. But, in my view, the fact that both models generated a similar result for the same period does not add any weight to the validity (or otherwise) of Professor Mallon's model. In the first place, it is unsurprising that the results should be similar. Ultimately, both processes involved a similar calculation based on relatively similar underlying data[78]. Secondly, and more importantly, both Dr. Roe and Professor Horgan made clear in their evidence that Dr. Roe's model had simply followed the approach taken by Professor Mallon (with some modifications) and that they did not believe that it is a valid approach. They fundamentally disagreed with Professor Mallon in relation to whether community level estimates could be used to assess risk in individual premises. They also criticised other aspects of Professor Mallon's approach (which I address further below). In the circumstances, I cannot accept that the plaintiff's arguments in favour of Professor Mallon's approach gain any support from the similarity that exists between the results of both models in respect of period 2.

184. In considering Professor Mallon's approach, I reiterate what I said, in para. 176 above, about the nature of my task. I must decide whether the evidence is sufficient to show, on the balance of probabilities, that there was an occurrence of COVID-19 at the hotel during period 2. I am dealing with past events and, accordingly, it is not sufficient to consider whether there was a chance that there may have been a case of COVID-19 at the hotel during this period. For the plaintiff to succeed on this issue, the plaintiff must prove that there was an occurrence of the disease at the premises.

[78] It is true that the age bands used were not precisely the same but they were very similar. It is also true that Dr. Roe used surrounding local electoral areas rather than the greater Dublin area. However, it emerged in the course of Dr. Roe's evidence that he had based his estimates on the data for the greater Dublin area i.e. the data which Professor Mallon had used.

185. I must also keep in mind the principles which emerge from the case law discussed in paras. 134 to 153 above. It is clear from the guidance given by Clarke J. in *Jordan* that, even where other forms of evidence might be preferable, the plaintiff will, nonetheless, succeed if the evidence is enough to discharge the onus of proof. It is also clear from the approach taken by the courts of England & Wales in *Equitas* and in the *FCA* case that absolute precision is not required. As Clarke J. observed in *Jordan*, the fact that the evidence falls a long way short of the ideal, does not mean that the evidence may not be sufficient to discharge the onus of proof. It further emerges from the approach taken by the Supreme Court in *Jordan* that alternative or indirect methods of proof may be used so long as the method is sufficient to allow a safe conclusion to be drawn. In the context of statistical evidence, Clarke J. warned that: *"Questions concerning the extent to which the raw data was appropriate or sufficient to allow a sufficiently rigorous analysis to be conducted might also loom large".*[79] Similarly, as the decision of Gross J. in *Equitas* suggests, a model, may, in an appropriate case, be an acceptable form of evidence at least where it is shown that the model is based on sound data sufficient to provide a reasonable representation of the real world position and that the model is sufficiently reliable to allow conclusions to be drawn with confidence. The test applied in *Equitas* appears to me to be consistent with the principles which emerge from *Jordan* save that it might be more appropriate to frame the last part of the test by reference to the balance of probabilities rather than *"confidence"*.

186. In circumstances where the plaintiff seeks to prove the fact of an occurrence of COVID-19 at the hotel through expert evidence, it is also necessary to keep in mind what was said by Collins J. in the Court of Appeal in *Duffy v. McGee* that an expert

[79] See para. 149 above for the full passage from which this quotation is taken.

witness should provide material on which a court can form its own conclusions in relation to the subject of the expert evidence. As Collins J. emphasised, mere assertion or *"bare ipse dixit"* is worthless. That is an issue that loomed large in the defendant's submissions in relation to the admissibility of Professor Mallon's evidence.

187. The defendant has highlighted that Professor Mallon has identified no scientific material whatsoever to support his approach in applying population level estimates to individual premises. As noted in para. 55 above, Professor Mallon appeared to be unaware whether any such material existed. He said that he *"would imagine"* that such material might exist and that he would be happy to seek it out, if required. That strongly suggests that he had made no attempt, prior to giving evidence, to study whether his approach had ever been used elsewhere for the same or a similar purpose. This is so notwithstanding the fact that, in para. 4.1 of his report delivered well in advance of the trial, Dr. Roe had specifically highlighted a WHO paper which indicated that the intended use of epidemiological data of the kind used by Professor Mallon was to monitor changes, at a population level, in epidemiological patterns, trends in morbidity and mortality, the burden of disease on health case capacity, changes in circulating variants and infections in high risk groups or settings. Dr. Roe had also expressed the view that it was not best practice to extrapolate a trend found within population level data and expect that it accurately reflects events within a particular premises and that, at such smaller levels, one should undertake specific source investigations using methods such as contact tracing. Furthermore, as noted at paras. 83 and 100 above, both Professor Horgan and Dr. Roe had again raised this issue at the meeting of experts. It was therefore very clear in advance of the trial that this would be a major issue in relation to the acceptability of Professor Mallon's model. This makes it all the more surprising that Professor Mallon did not appear to

have even looked for supporting material before he came to give his evidence. For that reason, the observations of Collins J. in *Duffy v. McGee* quoted in para. 135 above are particularly relevant.

188. While I have decided that it would be wrong to go so far as to hold that the evidence is inadmissible on this ground, the fact that Professor Mallon was unable to identify such literature goes to the weight to be given to his evidence. Can the Court be satisfied that such evidence, unsupported by scientific literature or precedent, is sufficient to permit a conclusion to be drawn, on the balance of probability, that there was at least one occurrence of COVID-19 at the hotel during period 2? That is a question that I must keep in mind in examining the evidence put forward by Professor Mallon.

189. On the other hand, I must also keep in mind that there is a first time for everything. As counsel for the plaintiff said, in the course of his closing submissions, *"the absence of it having been adopted in another case, or another jurisdiction or in another context isn't fatal to it being accepted and relied upon by the Court."* He argued that it would set the bar too high for the Court to require *"there to have been scientific literature showing that this is a methodology that is generally accepted for some other purpose or this purpose."* I accept that this is so but, as I have already indicated, the lack of supporting scientific literature goes to the weight of Professor Mallon's evidence and makes it all the more important that the plaintiff should be able to demonstrate that the methodology put forward by Professor Mallon is based on sound data sufficient to provide a reasonable representation of the real world position and that the methodology is sufficient to allow conclusions to be drawn in the plaintiff's favour on the balance of probabilities.

190. The problem for the plaintiff is that, quite apart from the lack of scientific evidence to support Professor Mallon's approach, there are also a number of issues which arise in relation to the reliability of the approach taken by him. In the first place, no scientific basis has been put forward for the time period chosen – namely the 50-day period running from 1st August 2020 to 19th September 2020. Professor Mallon acknowledged that he had simply been instructed to look at that period by the plaintiff's solicitors. The end date for that period is self-explanatory but the start date is not. As noted in para. 15 above, the end date is the date when the No. 5 Regulations took effect. It is also the date when the hotel closed to all but essential workers. But the basis for the start date of 1st August 2020 has not been explained. That start date is so far in advance of the enactment of the No. 5 Regulations as to raise a significant question on causation. Could it plausibly be said that a case on Day 1 (or indeed Day 10) of that 50-day period caused the imposition of restrictions on 19th September 2020? Given the normal lifespan of the disease (as discussed in para. 178 above), it seems to me to be inherently unlikely to have done so. Furthermore, that time period takes no account of the variations in the dynamics of the pandemic which occurred from time to time within the period. This is in contradistinction to the date-specific local information available under the Imperial College methodology (as identified in para. 141 above. As noted in para. 99(i) above, the experts were agreed that one of the factors that is too influential to ignore is the *"incidence of confirmed infection in Dublin".* The rate of incidence in Dublin was not a constant throughout period 2; it varied extensively from time to time; yet Professor Mallon's proposed method takes no account of this. It is therefore not possible to say that the model makes a reasonable effort to mirror the real world position. In contrast, as described in paras. 109 to 110 above, when Dr. Roe broke the period down into 14 day rolling periods

(which comes somewhat closer to the real world position), this resulted in a much lower chance of there being an occurrence of COVID-19 at the hotel during period 2. That said, Dr. Roe's variation of the method is also based on the application of population level estimates to the number of guests and it therefore shares many of the difficulties outlined below.

191. Secondly, the methodology proposed by Professor Mallon is not capable of pinpointing when cases are likely to have occurred within that 50-day period. Professor Mallon acknowledged that this was so[80]. In my view, it is something of a stretch to suggest that a reasonable person in the position of the parties would understand the word *"occurrence"* to embrace such a lengthy period. As previously discussed, the word *"occurrence"* involves something which happens at a particular time, at a particular place and in a particular way. It would not be usual to consider a 50 day period as falling within the rubric of a *"particular time".* As noted in para. 164 above, there comes a point where a date range is so long that it is more properly characterised as a state of affairs rather than an occurrence. In the context of the ordinary meaning of the word occurrence, there seems to me to be a significant difference between a 50-day time period and the 10-day period identified in para. 179 above in the context of period 3.

192. Thirdly, in addition to the lack of any scientific support, there is no sufficient evidential basis for seeking to apply population level estimates based on the greater Dublin area to the specific situation of the hotel. Unlike the position in *Premier Dale*[81] (where there was evidence of the extent to which the hotel was used by local residents) there is no evidence at all as to the extent (if any) to which the hotel's

[80] See para. 49 above.
[81] See para. 89 of the judgment in *Premier Dale.*

guests or patrons in period 2 were drawn from Dublin. Professor Mallon's Table 1[82] merely records that 86% of the guests in period 2 were from the United Kingdom or from Ireland. That tells us nothing about how many came from Dublin. This raises an obvious issue as to how the estimates for the Dublin area can be used as a proxy for the likely rates of infection within the hotel. Notably, each of the experts had agreed, at their joint meeting, that factors such as variations in travel origin are too influential to ignore when interpreting the estimates expected number of cases in hotel guests. Despite the reference in his Table 1 to the origin of some of the guests at the hotel, Professor Mallon acknowledged that his method does not take any account of guests' origin. Notwithstanding this acknowledgement on the part of the plaintiff's expert, it was put to Dr. Roe in the course of his cross-examination by counsel for the plaintiff that, in carrying out his exercise, he should have taken the origin of guests into account. In his direct evidence, Dr. Roe had clearly stated that origin was an important factor but, in response to the question put to him, in the course of cross-examination, he clarified that, on the basis of the information available, it would be impracticable to seek to take the origin of guests into account. As noted in para. 122 above, he said that, even if information had been forthcoming as to the origin of individual guests, there was no information available to explain when they left their country of origin or what the incidence rate in that country may have been at that time. While this may explain why a model of the kind proposed by Professor Mallon is not capable of taking the origin of guests into account, it also exposes a further significant problem with the model – namely the fact that it does not take into account a factor (i.e. the origin of guests) which all of the experts agree is *"too influential to ignore"*. Instead, it effectively treats all guests as originating in the Dublin area notwithstanding that

[82] i.e. the table replicated in para. 35 above.

there is no evidence at all as to the proportion of guests (if any) at the hotel in period 2 who came from that area. For this reason, while the underlying data in respect of the numbers infected in the 18-60 age band can be accepted as reasonably accurate[83], it is not possible to conclude that the model is a reasonable representation of the real world position. While I would be prepared to assume that many of the staff live in the greater Dublin area, the fact remains that the staff account for only a part of the people present at the hotel such that the use of Dublin-centric data is necessarily incomplete and cannot be said to be a reasonable representation of the full position. In any event, Professor Mallon's model does not take account of the staff. It is based purely on guests[84]. The non-inclusion of staff is difficult to fathom. Presumably, they were present throughout period 2 and were interacting with guests, such that they were exposed to all of the risks of infection that were brought into the hotel by the guests. As employees of the plaintiff, they were also a readily available source of information about their movements, their socialising and their symptoms (if any).

193. Fourthly, in addition to the issue of principle that arises in attempting to apply incidence rates in the greater Dublin area to a population who may have their origin elsewhere, there is also a problem in seeking to apply incidence rates derived from a large population to a much smaller cohort namely the number of guests at the hotel. This is a point that was emphasised by Dr. Roe on a number of occasions in the course of his evidence. In this regard, it is necessary to recall that Professor Mallon

[83] As the notes to Professor Mallon's Table 1 make clear, the total number of cases for period 2 in the greater Dublin area is based on HPSC data which was then adjusted by Professor Mallon to estimate the total number of cases within the 18-60 age band. While this involved some level of estimation by Professor Mallon, there is no reason to think that it is not a reasonably accurate estimation.

[84] Although the final line of Professor Mallon's Table 1 refers to *"guests/staff",* it was confirmed that the exercise conducted by him had been conducted solely on the basis of guest nights and it was agreed that the reference to *"staff"* should be excised. See para. 51 above.

had criticised Dr. Roe's Figure 1[85] on the basis (*inter alia*) that the relevant daily confidence intervals for the estimated number of cases at the hotel showed too much variability. Professor Mallon suggested that this demonstrated that the underlying data was not robust. He said that, if the data was of good quality, there would only be a narrow difference between the upper and lower limits. As outlined in para. 118 above, this view was, in turn, put to Dr. Roe, in the course of cross-examination. His explanation was that *"this is just one of the by-products of applying a population level metric using 100,000 to a premises – that premises' population is always going to be small, you are never ever going to get a tight case number on that that probably doesn't range wider than 1 or 2 or 2, because it's just simply too small".* This aspect of Dr. Roe's evidence was not seriously challenged by the plaintiff. On the contrary, as noted in para. 118 above, it was actually put to Dr. Roe by counsel for the plaintiff that the *"bigger the number the less the confidence intervals are spread".* While that exchange arose in respect of Dr. Roe's Figure 1 rather than Professor Mallon's model, the key point is that Figure 1 involved the application of the incidence rate for Dublin to the relatively small number of guests at the hotel (albeit that Dr. Roe's methodology involved looking at the incidence rate over 14 day rolling periods and the number of hotel guests present during those periods). There is accordingly an obvious parallel between both approaches. It therefore seems to me that this aspect of Dr. Roe's evidence underscores the difficulty that arises in seeking to apply estimates based on large populations to a much smaller cohort and to raise further doubt as to the reliability of such an approach.

194. Fifthly, I do not believe that I can ignore the fact that, unlike period 3, there is no evidence at all that anyone present at the hotel during period 2 (whether as a patron

[85] i.e. the figure replicated in para. 109 above.

or a staff member or as a supplier) tested positive for COVID-19 or was exhibiting any influenza-like symptoms during this period. As noted in para. 49 above, Professor Mallon acknowledged under cross-examination that an effort had been made on the plaintiff's part to establish whether anyone was detected with COVID-19 in the course of period 2 and none was reported. Professor Mallon also acknowledged that there was a testing regime in place during this period. Furthermore, as noted in para. 75 above, Professor Horgan explained that, in addition to the testing regime, there was also a contact management programme in place, at this time, under which, following a positive test, the close contacts of a tested individual were notified where the test was positive. The existence of the testing regime and the contact management programme meant that even asymptomatic cases could be identified. It cannot therefore be said that there was some impediment in period 2 making it difficult for a policyholder such as the plaintiff to provide proof of the occurrence of COVID-19. The fact that there is no evidence that a staff member tested positive or had influenza-like symptoms or was identified as a close contact of an infected person is very significant. After all, the staff would have been present in the hotel several days a week during this 50-day (i.e. 7-week) period. Many of them would have been interacting on a face-to-face basis with guests. Presumably, many of them lived in the greater Dublin area. Accordingly, in addition to the risk of infection from guests they also were exposed to the same risk that everyone else faced in Dublin in going about their lives, albeit subject to all of the restrictions in place at that time. As I observed in *Premier Dale,* a staff member who tested positive or was displaying symptoms would very likely wish to report that to an employer in order to protect co-workers and guests. In addition, had a guest taken ill or tested positive during this time, it is likely that this would have come to the attention of the front desk in order to ensure that appropriate isolation conditions

could be put in place. Against that backdrop, it is striking that the plaintiff has not produced any evidence suggesting that any of its staff members (or guests) were infected or were displaying symptoms during this 7-week period. To my mind, this strongly suggests that there was no case at the hotel at this time. This is, perhaps, not such a surprise given the extent of the restrictions that were in place at the time and, also, given that the rate of infection in Dublin appears not to have been as high in period 2 as it was in period 3. This is confirmed by a consideration of the information contained in Professor Mallon's Table 1 (reproduced in para. 35 above). According to the table, there were a total of 2,145 cases in the 18-60 age band in the Dublin area over the course of the 50 days comprising period 2 while there were 2,094 cases in the same cohort over the course of the 30 days in period 3. Taking a very crude approach[86], that translates into 42.9 cases a day in period 2 but this increases by more than 50% in period 3 to 69.8 cases per day.

195. It is true, of course, that there is a possibility that there might have been an asymptomatic – but infected – person present on the hotel premises during period 2 who the plaintiff would not have been able to identify. That cannot be ruled out but there is only the chance that such a person was present. There is no evidence that any such person was present. As noted earlier, counsel for the plaintiff argued that the Allianz policy does not require that the disease should manifest itself and he submitted that, given that the disease can be asymptomatic, the defendant cannot require that there be an outward manifestation of disease. That is true but it does not relieve the plaintiff of the need to prove the existence of such a case on the balance of

[86] I appreciate that this ignores the fact that the incidence of infection varied from day to day within each period but, in circumstances where Professor Mallon's model takes no account of the variations in daily or weekly rates, this is the best I can do. Having regard to figures given in the Table for the total number of infections in each period and the respective durations of these periods, it appears to be clear that the burden of infection was higher in period 3 than it was in period 2.

probabilities. For the reasons outlined above, there are too many difficulties with Professor Mallon's unsupported and non-peer reviewed model to allow me to conclude, on the balance, of probabilities that it produces a result that is reasonably reflective of the real world position at the hotel. In reaching this conclusion, I cannot accept the submission made by counsel for the plaintiff that this renders illusory the cover available under extension 6. For the reasons already canvassed in para. 194 above, there are many ways in which cases of COVID-19 at the hotel could have been identified, if, in truth, they had occurred. Even asymptomatic cases were capable of being identified as a consequence of the contact tracing regime described by Professor Mallon which was in operation during this period. For example, any staff member who was a close contact of a person who received a positive test could have been tested under that regime and the presence of COVID-19 could have been detected even if the staff member was showing no symptoms. Cover cannot therefore be said to be illusory. In my view, counsel for the plaintiff, in making this submission, has done precisely what O'Donnell J.[87] warned against in the *MIBI* case. Counsel has sought to construe the policy through the prism of the dispute between the parties.

196. For all of the reasons outlined in paras. 183 to 195 above, I have come to the conclusion that the plaintiff has failed to prove, on the balance of probabilities, that there was a case of COVID-19 at the hotel during period 2. In my view, Professor Mallon's model is not based on sufficiently sound data relevant to the hotel premises. The model cannot be said to be a reasonable representation of the real world position at the hotel and the outputs of the model are not sufficiently robust to allow a conclusion to be drawn on the balance of probabilities that there was a case of COVID-19 at the hotel during period 2.

[87] As he then was.

Period 1

197. Although period 1 is addressed in Professor Mallon's Table 1, he made it clear during the course of the hearing that he no longer placed reliance on this aspect of the Table. He did so in circumstances where there was very limited availability of testing during this initial period of the pandemic. Instead, he sought to rely on the HPSC data in respect of influenza-like illness which, in his view, demonstrated that the level of COVID-19 infections during this period was far higher than has been reported by the HPSC. There was no dispute between the experts that there was insufficient testing during period 1. As noted in para. 99 above, that is reflected in the points of agreement reached by the experts following their pre-trial meeting. In the course of her oral evidence, Professor Horgan also readily accepted that, for the purposes of period 2, influenza-like illness could be used as a surrogate for COVID-19.

198. The next point to note about period 1 is that, although the period runs from 1st February to 15th March 2020[88], the debate in the case has centred solely on the last week of that period which coincided with week 11 as shown on the HPSC Figure replicated in para. 40 above. This was on the basis that at least some of those reporting influenza-like symptoms in week 12 of 2020 were, in all likelihood, infected in the course of week 11 and did not exhibit symptoms until later. This is consistent with the evidence that the incubation period between infection with COVID-19 and the development of symptoms is usually between 3 and 5 days. Thus, anyone infected in the last 3 to 5 days of week 11 could well be part of the spike seen in week 12.

199. It is also important to keep in mind that period 1 is not the same as the first wave of COVID-19 which the experts were agreed covered the first spike of

[88] As noted in footnote 15 above, although period 1 is stated to commence on 1st February 2020, Professor Mallon clarified that the number of guest nights used in his calculations in respect of period 1 were those between 1st March 2020 and 15th March 2020.

influenza-like illness as displayed in the HPSC Figure shown in para. 40 above. That wave extended from week 12 of 2020 up to and including week 15 with the rate of infection dropping back to the baseline figure in week 17. Week 12 ended on 22nd March 2020 while week 15 ended on 12th April 2020.

200. The revised methodology suggested by Professor Mallon for period 1 is summarised in para. 45 above. Essentially, what Professor Mallon did was to compare the *"area under the curve"* (i.e. the area under the spike shown in the HSPC Figure reproduced in para. 40 above for weeks 12 to 15 of 2020) which coincides with the first wave of COVID-19 with the area under the curve coinciding with the third wave (i.e. the area under the spike shown in the same Figure beginning in week 48 of 2020). According to his calculations, the area under the curve in respect of the first wave is 1.34 times the area under the curve in respect of the third wave. Professor Mallon then used the figure of 1.34 as a *"correction factor"*. He applied this correction factor to the expected age-adjusted cumulative incidence of COVID-19 within the 18-60 age group in the Dublin area for period 3 (i.e. 2.32 cases per 1,000 population) to derive the incidence of COVID-19 within the same age group in the same area for period 1. If one applies that factor, the result would be 3.11 cases per 1,000 of population. On the basis that there were 3,456 guest nights in the Marlin Hotel during period 1, Professor Mallon estimated that 10.74 cases of COVID-19 would likely have occurred at the hotel during that period. Professor Mallon put this figure forward in place of the figure of 4.01 cases identified in his Table 1.

201. This methodology gives rise to a number of difficulties. Like the model used in respect of period 2, it again involves the application of population level estimates to individual premises for which no scientific support has been offered other than the personal opinion of Professor Mallon. As noted in para. 47 above, when he was

pressed on the issue, his response was to ask rhetorically *"if we don't use this data, how else are we supposed to provide these estimates in the absence of a defined case of COVID-19 actually having been reported to the HPSC from a resident of the hotel or the surrounding area?"*[89]. However, that begs a number of questions. In the first place, it falls far short of an objective justification of Professor Mallon's approach. It does not explain in any way how population level figures can reliably be applied to individual premises. No scientific principles are identified in support of his approach. In these circumstances, the observations of Collins J. in *Duffy v. McGee* are plainly relevant. Secondly, his remark demonstrates a misunderstanding on his part as to what is required to be proved by the plaintiff for the purposes of Extension 6. A case in the surrounding area would not be sufficient to come within Extension 6 which requires a case *"at the premises"*. Furthermore, in terms of proving the existence of a case of COVID-19 at the premises, it does not matter whether the case was or was not reported to the HPSC[90]. Notwithstanding the absence of available testing during period 1, there were ways in which the plaintiff could have sought to prove a case at the hotel (if any such case existed). A case of influenza-like illness in a staff member or a guest is an obvious example. It is striking that no such evidence has been tendered. As an employer, the plaintiff must surely have records of sick leave taken by staff including the reasons for such leave. As a hotelier, it would not be surprising if a guest fell ill that this would become known to it. It is a common experience for a hotel guest who falls ill to enquire of the reception or front desk as to the availability of a local doctor. The plaintiff was therefore not without the means to obtain evidence of a suspected case of COVID-19 at the hotel during period 1.

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[89] Day 1, pp. 86-87

[90] Such reporting may, of course, be relevant to the issue of causation but that is a separate question. Professor Mallon's evidence was directed at whether there was or was not a case at the hotel.

202. The methodology also suffers from some of the same problems that I have already identified in respect of period 2. The approach involves the application of Dublin based estimates of COVID-19 cases to a hotel in the absence of any evidence as to the extent to which the hotel guests were drawn from that area. The approach also fails[91] to take any account of the actual origin of the guests notwithstanding that all the experts were agreed that origin is a factor that is too important to ignore. In addition it suffers from the same problems as I have previously identified in para. 193 above in respect of period 2.

203. Furthermore, in taking a total of 3,456 guest nights for period 1. Professor Mallon has failed to take into account that some of these guest nights predated week 11 of 2020. As noted in footnote 15 above, the total of 3,456 guest nights relates to the period from 1st March 2020 to 15th March 2020. That period takes week 10 of 2020 into account as well as the last day of week 9. On the basis of Professor Mallon's evidence, the hotel guests to be taken into account (assuming for the sake of argument that it is appropriate to apply population level estimates to the number of guests) should be confined to those who stayed at the hotel in week 11. Professor Mallon has not identified any factual basis to suggest that earlier weeks in 2020 are relevant for this purpose. He has focused on week 11 for the purposes of this element of his evidence. The HPSC Figure replicated in para. 40 suggests that Influenza A and Influenza B account for the cases in earlier weeks of 2020.

204. A further difficulty arises because, in applying the *"area under the curve correction factor"* of 1.34, Professor Mallon has utilised a factor that he derived from the entire duration of the first wave of COVID-19 which ran up to 12 April 2020 (i.e.

[91] As noted in para. 51 above, Professor Mallon acknowledged that the origin of guests was not used in his calculations.

the end of week 15 of 2020). As noted above, the only relevant week is week 12 which ended on 22nd March 2020. Thus, even if the *"area under the curve"* is a valid approach (and Professor Mallon did not produce any scientific literature to support it), it is plainly wrong to take the whole of the area under the curve in respect of wave 1 into account.

205. Professor Mallon also sought to support this element of his thesis by reference to the number of hospitalised patients suffering from COVID-19. As noted in para. 44 above, he suggested on the strength of the HPSC reports that, as at 27th March 2020, a total of 564 patients had been admitted to hospital and 77 admitted to ICU. He also noted that there has been 43 deaths. He suggested that there was generally a time lag of 12 days between the date of infection and the date of hospitalisation and he drew attention to the fact that 27th March 2020 is exactly 12 days since the end of week 11. However, as noted in para. 79 above, Professor Horgan did not agree that the level of hospital admissions was a reliable indicator of the extent of COVID-19 during the first wave of infections. She explained that March 2020 was a time of great uncertainty, and hence considerable caution, about the progress of the disease and there was a low threshold for admissions to hospital. In my view, Professor Horgan is plainly right about that. She contrasted the approach taken in wave 1 to that taken in subsequent waves when admissions to hospital were usually only made where a patient had severe symptoms. She highlighted, that for example, the HPSC data showed that there were only 11 admissions to hospital in the week ending 2nd August 2020.

206. In the course of his cross-examination of Professor Horgan, counsel for the plaintiff sought to support Professor Mallon's thesis in relation to period 1 by reference to the HPSC data for the third wave. Counsel drew Professor Horgan's

attention to the fact that, between week 52 of 2020 and the end of week 4 of 2021, the number of confirmed COVID-19 cases had increased by 110,362. Professor Horgan accepted this but, as noted in para. 77 above, Professor Horgan emphasised in response that, in addition to the extensive socialising that had taken place in the pre-Christmas period in 2020, the variant circulating during period 3 (known variously as the *Kent* or *Alpha* variant) was much more infectious than previous strains. On that basis, she cautioned that it is *"hard"* to compare data between these two periods. I agree with this view. It was not contested that the variant in period 3 was much more infectious. It was also not contested that, as a consequence of the easing of restrictions in early December 2020, there had been significant socialising in the pre-Christmas period in 2020. In those circumstances, I do not believe that the data for the third wave can provide a reliable guide to the likely level of infection within Ireland during the first wave. As noted in para. 31 above, Professor Mallon had himself drawn attention to the increase in infection in period 3 due to the alpha variant. In the course of his cross-examination on Day 1, he did not dispute that the alpha variant was *"rampant"* during period 3 and he added that there was a rapid rise in cases during this time.[92]

207. Professor Mallon sought to further support his assessment of the extent of COVID-19 infections in Ireland in the course of the first wave by reference to the HPSC data in respect of deaths from COVID-19. As outlined in para. 62 above, he highlighted that a total of 1,506 deaths from confirmed cases of COVID-19 had occurred by 4th August 2020 and that the case fatality ratio was 5.75% which was significantly higher than the ratio internationally which he said was 1%. On that basis, he suggested that it would not be surprising that the true figure for COVID-19

[92] See Day 1, p. 135

infections in the first wave was of the order of 150,000 notwithstanding that this greatly surpasses the total number of 81,217 confirmed cases up to 21st December 2020 (as recorded in the HPSC report of 23rd December 2023). However, as discussed in para. 64 above, the case fatality rate in the early part of a pandemic tends to be an overestimate where there are (as there were during the first wave) constraints on the availability of testing. In those circumstances, I believe that the case fatality rate of 5.75 identified by Professor Mallon should be treated with caution and cannot be treated as a reliable indicator of the extent of the disease.

208. Moreover, for the reasons which I have previously outlined, I believe that it is wrong in the context of period 1 to look at the entire of the first wave. It is only the first week of the first wave (i.e. week 12 of 2020) which is relevant. For that reason, the evidence given by Professor Horgan on Day 4 of the hearing is very helpful. As outlined in para. 74 above, she looked at the HPSC reports for week 11 and week 12 of 2020. She noted that the rate of influenza-like illness reported in week 11 was 12 cases per 100,000 while in week 12, it had increased to 184 per 100,000. Those figures reflect the nationwide picture. Based on the latter rate, she made a rough calculation that this equates to a total number of just under 10,000 cases of influenza-like illness in the State as a whole. As I understand it, this is on the basis of a population of 5 million people. As noted in para. 74 above, I think the correct figure is closer to 9,200 but, even taking the higher figure of 10,000, this should be reduced by two thirds to approximate to the population of Dublin (which Professor Horgan said roughly equates to one third of the national population). That produces a total number of cases in Dublin for week 12 of about 3,333 cases. Taking the population of Dublin

at 1.347 million[93], Professor Horgan estimated that this gave rise to *"an odds of about 1 in 500 chance".* That is obviously a very rough estimate of the chance that a person in Dublin would be infected with COVID-19 in week 12. It makes no adjustment for the 18-60 or 15-64 age-bands. It is based on very rounded figures for the national and Dublin populations. As recorded in footnote 29 above, by my calculation, the odds are slightly narrower ranging from 1 in 385 to 1 in 450. On the other hand, Professor Horgan's rough calculation does not take account of the fact that a proportion of cases in week 12 would not have been infected in week 11. It also does not take account of the fact that some of the people exhibiting influenza-like symptoms in week 12 were not suffering from COVID-19 but from influenza or from some other respiratory illness. Nor does it take account of any regional variations in the rate of infection as between one county and another. Those factors suggest that further adjustments would need to be made. However, I do not believe that it is necessary for present purposes to try to be any more accurate. What is clear is that, whether the odds are 1 in 385 or 1 in 500, the chance that someone at the hotel would be infected with COVID-19 during week 11 is low even on the basis of Professor Mallon's approach of applying population level estimates to individual premises. This supports the view expressed by Professor Horgan and Dr. Roe that the likelihood of a case among hotel guests was low. It also very substantially undermines the case sought to be made by the plaintiff that, as a matter of probability, there were occurrences of COVID-19 at the hotel during period 1. If there was only a low chance of an infected person being at the hotel, it must follow that, in the absence of any other evidence to establish the existence of such an occurrence, the likelihood of a case at the hotel was truly low.

[93] Again, this is a rough estimate.

209. For all of these reasons, I am of the view that the plaintiff has failed to prove, on the balance of probabilities, that there was any case of COVID-19 at the hotel during period 1.

The additional issues that arise in the wake of the finding in respect of period 3

210. For the reasons explained above, I have found that there were, at least, two occurrences of COVID-19 at the hotel during period 3, albeit that there is no evidence that one of them was ever symptomatic or diagnosed and there is no evidence that either case was known to the Government or the Minister for Health prior to the enactment of the Amendment Regulations on 23rd December 2020. However, that is not the only hurdle that the plaintiff must overcome in order to bring its claim within the ambit of Extension 6. The occurrence of a notifiable disease at the hotel is only one element of what must be proved. There are a number of other issues (both of interpretation and causation) which arise and to which I now turn.

Is Extension 6 limited to *"localised"* cases of COVID-19 at the hotel?

211. As noted previously, the defendant has argued that Extension 6 is intended to provide localised cover arising out of measures taken by the authorities in response to premises-specific incidents which occur at the hotel rather than in response to nationwide outbreaks.

212. In making his argument that Extension 6 is a premises-specific clause and that it provides *"localised"* cover, counsel for the defendant placed significant reliance on the use of the words *"at the premises"* in Extension 6. He submitted that Extension 6 is not intended to respond to a national outbreak of disease. In support of that proposition, he contrasted the provisions of Extension 6 with those of Extension 7. While the latter was concerned with damage to the insured's business arising from events which occur outside the perimeter of the insured premises, the former was

confined to events which occur *"at the premises".* Like counsel for the insurers in the *Excel* case, counsel for the defendant argued that, in this respect, there is a significant difference between a radius clause (such as the clauses considered in *Hyper Trust No. 1* and in the *FCA* case) and an *"at the premises"* clause. By its nature, a radius clause envisages that the relevant occurrences will take place outside the insured premises. However, while a radius clause envisages that there will be cover for events which occur outside the premises, he argued that an *"at the premises"* requires the events to occur within the boundary of the insured premises.

213. I fully accept that it is an integral element of the cover provided by Extension 6 that the occurrence of a notifiable disease must take place within the boundary of the insured premises but the question remains whether cover can be said to be confined to circumstances where there is a premises-specific occurrence. In other words, was it intended by Extension 6 that it would not apply where, in placing restrictions on the operation of hotels, the competent authority was responding to nationwide occurrences of a notifiable disease?

214. In support of his argument that cover is confined to premises-specific occurrences, counsel for the defendant referred to a number of previous decisions dealing with COVID-19 claims including *Hyper Trust No. 1, Brushfield* and *Premier Dale.* He highlighted that *Hyper Trust No. 1* was concerned with a 25-mile radius clause. On the facts, that radius took in most of the greater Dublin area within which a significant proportion of the national population resides. That was an important factor underlying my conclusion that the clause in issue in that case was not confined to closures following an outbreak of disease within the 25 mile radius and not beyond

that radius. Counsel suggested that there was no basis to apply the same rationale[94] here. I agree that this element of the *Hyper Trust No. 1* rationale does not apply here. However, that was not the sole basis of my decision on that issue in that case. I also highlighted that there was nothing in the terms of the clause in issue which made clear that it was intended to apply solely in cases where the outbreak of disease occurred within the specified local area and that it would have been a very simple matter for the insurer to expressly so provide if that had been the intention of the clause.

215. Counsel for the defendant also sought to rely on what I said in *Brushfield* in relation to a clause which provided cover for business interruption arising from *"the closing of the … premises by order of the public authority as a result of a defect in the drains or other sanitary arrangements at the premises".* In that case, a rather adventurous argument was made by counsel for the insured that an inability to maintain effective social distancing on the premises constituted a defect in the sanitary arrangements at the insured premises. I formed the view that the clause was inapplicable but I nonetheless, on an *obiter* basis, addressed a question posed to me by the parties as to whether the clause was triggered solely by a premises-specific order of a public authority. In that context, I placed some emphasis on the use of the words *"at the premises"* and at pp. 80-81, I said:

> *"… it seems to me, from a consideration of the language used in para. 5 as a whole, that it is designed to deal with a closure of the Clarence Hotel specifically rather than with a closure of hotel premises throughout the country as part of a general measure closing hotels or bars. The language of para. 5 of the MSDE clause is specific to the premises. It refers to an order of the public authority closing the whole or part of the premises 'as a result of a*

[94] See paras. 143 to 147 of the judgment in *Hyper Trust No. 1.*

*defect in the drains or other sanitary arrangements **at the premises**' (emphasis added). Those words 'at the premises' are also to be found in paras. 2 and 3 of the MSDE clause where they are clearly used in a premises specific sense. The inclusion of the words 'at the premises' strongly suggest to me that the relevant closure must be prompted by a specific defect in the drains or other sanitary arrangements at the premises in question and not as a consequence of concerns about the way in which public bars or hotels are run generally or their ability to contribute to the spread of COVID-19. In turn, it seems to me to follow that the order of the public authority envisaged by para. 5 is an order directed at the particular defect found at the premises. This suggests that the order will be a premises specific one."*

216. I am not persuaded that this rationale can be applied to Extension 6. While I accept that meaning must, of course, be given to the words *"at the Premises"* in Extension 6, the Extension – unlike the clause addressed in that extract from the judgment in *Brushfield* – expressly extends to notifiable diseases which, by their nature are capable of being present over a wide area. In contrast, the focus of the language used in the relevant clause in *Brushfield* was directed to the closure of the insured premises as a consequence of a defect in the drains or sanitary arrangements at the premises. One would have to strain the language of the clause in *Brushfield* in order to extend it to circumstances where a countrywide closure order would be made. It is very difficult to imagine any circumstances in which a countrywide closure order would be made in respect of defects in drains or sanitary arrangements.

217. Counsel for the defendant sought to rely on a further aspect of *Brushfield* in which I addressed the meaning of a denial of access clause which provided cover where access to the insured premises is restricted or hindered for more than 24 hours

"arising directly from … the actions taken by the police or any other statutory body in response to a danger or disturbance at [the insured premises] *or within a 1 mile radius".* For reasons which are summarised on pp. 94-95 of the judgment, I came to the conclusion that the reference to *"danger or disturbance"* in that clause was not intended to extend to a pandemic which had nationwide effects. A different view has subsequently been taken of such a clause by Cockerill J. in England & Wales in *Corbin & King Ltd. v. AXA Insurance* [2022] EWHC 409 (Comm.). I do not believe that it is necessary to spend time on my reasons for taking this view of the clause in *Brushfield.* Those reasons were informed by the language of that clause which focused on actions taken by the police or other statutory body in response to a danger or disturbance within a narrowly defined area. The language of that clause was quite different to Extension 6 of the Allianz policy. Unlike Extension 6, the clause did not make any express reference to a notifiable disease. Given the differences between the language of both clauses, I can see no sufficient basis on which to draw any parallel between the them.

218. In contrast, the decision of Jacobs J. in the *Excel* case is directly in point. In that case[95], the clauses in issue were all variations of an *"at the premises"* theme. Jacobs J. rejected the insurers' arguments that the localised nature of the insured peril meant that the clauses did not respond where the interruption to the insured's business was caused by nationwide outbreaks. In doing so, he stressed, at para. 179, that the policyholders accepted that the policy was highly localised in nature and that it only

[95] The decision of Jacobs J. was subsequently appealed but I was not been asked to defer this judgment pending the result of the appeal. I note, in any event, that, on 6th September 2024, the Court of Appeal of England & Wales has dismissed the appeal. See *London International Exhibition Centre plc v. Allianz Insurance plc* [2024] EWCA Civ. 1026. Since that judgment postdates the hearing of this case and since I was not asked to defer this judgment pending the determination of the appeal, I have not taken the judgment into account other than to note that the appeal was dismissed. Had the Court of Appeal allowed the appeal, it might have been necessary to hear further argument on it.

applied where there was an occurrence on the insured premises. Later, in para. 211, he came to the conclusion, after careful consideration of the judgments of the Divisional Court and the U.K. Supreme Court in the *FCA* case, that the Supreme Court's approach in relation to causation in respect of radius clauses applies equally to *"at the premises"* clauses. It should be recalled that, in its judgment in the *FCA* case, the U.K. Supreme Court had expressly rejected the insurers' case (put forward in reliance on the nationwide spread of the disease) that the radius clauses were only intended to respond where the relevant cases of disease occurred solely within the relevant radii. The Court took the view that it would be contrary to the commercial intent of the clause to treat uninsured cases of a notifiable disease occurring outside the territorial scope of the clause as depriving the policyholder of cover in respect of cases which arose within the territorial scope of the clause[96]. Essentially, Jacobs J. applied the same reasoning to an *"at the premises"* clause.

219. Counsel for the defendant criticised the approach taken by Jacobs J. He contended that, in his reasoning, Jacobs J. had confused issues of causation and interpretation. I do not believe that this criticism is justified. It is true that there is some reference to issues of causation in the course of dealing with the proper construction of the clauses. But that is understandable in circumstances where, in seeking the meaning of a contractual provision, one needs to consider how a reasonable person in the position of the parties would understand the clause is intended to operate. There is accordingly an interpretative exercise to be undertaken in relation to causation.

220. In my view, the approach taken by Jacobs J. is correct. It seems to me that the rationale for his approach can be briefly described. It is largely based on the fact that

[96] See paras. 194 to 195 of the judgment of Lords Hamblen & Leggatt

clauses such as Extension 6 are designed to provide cover in respect of occurrences of a notifiable disease[97] and that, by its nature, a notifiable disease may be present at the same time in many different premises. In para. 195, Jacobs J. referred to the manner in which the Divisional Court in the *FCA* case had highlighted that notifiable diseases include some highly contagious diseases which are capable of spreading widely. In para. 197, he also noted what the majority in the U.K. Supreme Court had said, in para. 94 of their judgment, that parties to such policies would know that some infectious diseases can spread rapidly, widely and unpredictably and that it was obvious that *"an outbreak of an infectious disease may not be confined to a specific locality or to a circular area delineated by a radius of 25 miles around a policyholder's premises."* At para. 199, Jacobs J. expressed the view that the same considerations are equally applicable to policies providing cover for occurrences of such a disease within a particular premises. As he said: *"The diseases covered are the same, and so are their potential to be widespread and to call for a response which is not solely responsive to cases within the radius or the premises."* That seems to me to be an entirely valid point. A highly infectious disease is well capable of occurring in multiple locations. That is particularly so in the case of premises such as hotels or public houses where guests tend to congregate in bars and other public areas. It would not be surprising to find that an occurrence of a highly contagious disease in one bar or hotel would also be replicated in other similar premises. This must be taken to form part of the relevant factual backdrop against which Extension 6 falls to be interpreted. In my opinion, a reasonable person in the position of the parties would readily appreciate that, unlike a murder or a suicide, a highly infectious disease (as many

[97] That is not in any way to overlook the fact that, in a hybrid clause of this kind, it is necessary to show not only the occurrence of the disease but also that the occurrence caused the measure that led to the interference with the insured's business. The occurrence of the disease is nonetheless a crucial element of the peril.

notifiable diseases are) is well capable of occurring simultaneously both at the insured premises and at many points outside that premises. Against that important element of the factual background, I do not believe that such a person would form the view that cover was confined to cases where the restrictions were imposed solely in response to a case of such a disease at the insured premises itself. As in the case of the FBD policy in issue in *Hyper Trust No. 1*, it would have been a very simple matter for the defendant, had this been the intention of the Extension, to expressly state in the wording of Extension 6 that cover is confined to circumstances where the Government order causing the interruption of business results **solely** from cases of disease at the insured premises or applies **solely** to the premises. No such language appears in Extension 6,

221. In para. 204 of his judgment, Jacobs J. drew a further parallel with the radius clauses considered in the *FCA* case. He highlighted that the U.K. Supreme Court had explained that the function of the radius clause was simply to define the geographical area in which the insured peril must occur. He added that a policyholder who has purchased cover for occurrences within a 25 mile radius will obviously find it easier to prove an occurrence than a policyholder whose coverage is only for occurrences at the insured premises. Nonetheless, the purpose of the geographical delineation is the same in both cases – namely to draw a line as to where this aspect of the peril (i.e. the occurrence of a notifiable disease) must occur. That seems to me to be plainly correct. It is what the language of Extension 6 envisages. In my view, it would be understood in that way by a reasonable person in the position of the parties. The clause requires (a) an interruption or interference with the insured's business at the premises (b) in consequence of any occurrence of a notifiable disease at the premises (c) which causes restrictions on the use of the premises (d) on the order or advice of a competent

authority. Once the insured proves each individual element of this peril (including the causation issue discussed in more detail below) the insurer has agreed to provide cover. In my view, the defendant's submissions on the meaning of Extension 6 constitute an attempt to re-write the clause. In substance, in advancing the *"localised nature of the peril"* argument, the defendant is seeking to set up the existence of cases outside the premises as a basis for disapplying cover even where an insured proves each element of the peril. I fully appreciate that, when it comes to causation, it may be difficult for the insured to prove that an unreported or unknown occurrence at the insured premises was the proximate cause of the relevant Government measures but that goes to causation; it is not relevant to the meaning or intendment of the Extension. In my view, when one looks at the constituent elements of the peril as set out in straightforward terms in Extension 6, a reasonable person in the position of the parties would understand that cover is available once each of those elements has been proved.

Can it be said that an undiagnosed or asymptomatic case of COVID-19 at the hotel caused the Government imposed restrictions on the use of the hotel? If so, is that within the ambit of what was contemplated by Extension 6?

222. These questions raise issues of causation and interpretation. I must consider whether it has been demonstrated by the plaintiff that the two cases of COVID-19 at the hotel in period 3 caused the decision to impose restrictions on 23rd December 2020 even though there is no evidence that the cases were known to the Government or the Minister for Health. That is plainly an issue of causation. I must also consider whether that situation is one which can be said to be within the ambit of what was contemplated by Extension 6. That is an issue of interpretation.

223. While it might be more conventional to address the issue of interpretation first, I propose to first examine the issue of causation. That issue arises in circumstances where there is no material before the Court to show that the diagnosed case of the hotel manager was known to the Minister or the Government at the time the Amendment Regulations were enacted on 23rd December 2020 and where there is equally no evidence that the case of the person who infected the manager at the hotel was known. As previously outlined, the HPSC report of 23rd December 2020 only records confirmed cases reported up to midnight on 21st December. The plaintiff is therefore driven to relying on the fact that the manager had plainly been infected prior to 21st December 2020 and on the fact that there must have been at least one other occurrence of COVID-19 (albeit undiagnosed) at the hotel in the period between 9th December 2020 and 19th December 2020[98]. The defendant contends that there is no evidence that the decision of the Government or the Minister for Health to impose restrictions was prompted in any way by cases of COVID-19 of which the Government was unaware.

224. It must be acknowledged that, at first sight, it is counterintuitive to suggest that an undiagnosed case of COVID-19 at the Marlin Hotel could be said to be the proximate cause of a Government decision to restrict hotel operations in the State. In this context, it is well established that, in the absence of something in the language of the policy that suggests a contrary meaning, the use of the word *"cause"* (or similar words) denotes proximate cause. According to the case law, proximate cause does not mean the cause nearest in time. Instead, it means the cause which is proximate in efficiency. It is often explained as the real or effective or dominant cause.

[98] See the findings of fact that I have made in paras. 178 to 179 above.

225. Here, Extension 6 refers to *"any occurrence of a Notifiable Disease ... which* ***causes*** *restrictions on the use of the Premises ..."*[99]. Thus, the language of Extension 6 suggests that the plaintiff here must show that the occurrence of COVID-19 at the hotel was the real or dominant cause of the restrictions imposed by the Government on the use of the hotel. The question arises as to how the Government could have been prompted to enact Regulations on 23rd December 2020 as a consequence of a case of COVID-19 that had not been reported.

226. In the *Excel* case, Jacobs J. concluded that the Government decision in issue in that case was made in response to both the known and unknown cases of COVID-19. However, it is clear from para. 240 of his judgment that he made that finding in light of what was said in the underlying minutes of the Scientific Advisory Group for Emergencies (*"SAGE"*) which I understand played a very similar role in the United Kingdom to that played by NPHET in Ireland. Jacobs J. identified that there was nothing in the SAGE minutes to suggest that the recommendation made to the United Kingdom Government was motivated solely by reported cases of COVID-19. He also noted that the minutes had formed part of the agreed facts in the *FCA* case.

227. However, there is no equivalent material available to me in this case in respect of period 3. There was NPHET material available in *Hyper Trust No. 1* but that case was concerned with earlier Government decisions to close bars. It was not concerned with the decision made in December 2020. Besides, the insurer in that case had accepted that there had been cases of COVID-19 within the relevant radii in issue such that it was unnecessary to consider whether, in making its decisions, the Government had also taken unknown cases into account.

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[99] Emphasis added.

228. There was some debate on Day 1 of the hearing of these proceedings in relation to whether the letters of advice written by the Chief Medical Officer (*"CMO"*) should be admitted into evidence. These were the letters sent by the CMO to the Government recording NPHET's advice. However, counsel for the plaintiff ultimately decided not to press for their admission[100]. In the circumstances, I cannot have regard to such material.

229. There is, nonetheless, some valuable material available which assists in understanding what prompted the Government to take action with effect from 3.00 p.m. on 24th December 2020. The Amendment Regulations[101] described in para. 18 above contain very important recitals. These state that, in enacting the Regulations, the Minister for Health had regard to: *"the immediate, exceptional and manifest risk posed to human life by the spread of Covid-19 and to the matters specified in subsection (2) of section 31A".* That recital should be read with the other matters specified in s. 31A(2) of the 1947 Act (as amended) which provides as follows:

> *"(i) the fact that a national emergency has arisen of such character that there is an immediate and manifest risk to human life and public health as a consequence of which it is expedient in the public interest that extraordinary measures should be taken to safeguard human life and public health;*
>
> *(ii) the fact that a declaration of Public Health Emergency of International Concern was made by the World Health Organisation in respect of Covid-19 and that Covid-19 was duly declared by that Organisation to be a pandemic;*
>
> *(iii) the fact that Covid-19 poses significant risks to human life and public health by virtue of its potential for incidence of mortality;*

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[100] See Day 1, p.121

[101] These are the Health Act 1947 (Section 31A – Temporary Restrictions) (COVID-19) (No. 9) (Amendment) (No. 2) Regulations 2020 (S.I. 695 of 2020).

(iv) the policies and objectives of the Government to take such protective measures as are practicable to vindicate the life and bodily integrity of citizens against a public health risk;

(v) the need to act expeditiously in order to prevent, limit, minimise or slow the spread of Covid-19;

(vi) the resources of the health services, including the number of health care workers available at a given time, the capacity of the workers to undertake measures, to test persons for Covid-19 and to provide care and treatment to persons infected with Covid-19, the necessity to take such measures as are appropriate to protect health care workers from infection from Covid-19, and the capacity of hospitals or other institutions to accommodate and facilitate the provision of care and treatment to infected persons;

(vii) the resources, including the financial resources, of the State;

(viii) the advice of the Chief Medical Officer of the Department of Health"

230. Although general in nature, this material assists in understanding the concerns that prompted the enactment of the Amendment Regulations in December 2020. As the recitals make clear, the Minister for Health plainly had formed the view that, as of 23rd December 2020, COVID-19 had been spreading. The recital makes specific reference to that spread. The recital also makes clear that the Minister had formed the view that the extent of the spread of COVID-19 was such that there was an immediate, exceptional and manifest risk to human life and public health. In addition, having regard to the reference to s. 31A(2), the Minister was plainly satisfied that there was a national emergency of such a character that required extraordinary measures to be taken to safeguard human life and public health. That national emergency was caused by the extent of the spread of COVID-19.

231. While the letters of advice from the CMO do not form part of the evidence before the Court, at least two relevant HPSC reports are in evidence namely the report of 4th August 2020 (which was the subject of cross-examination and re-examination of Professor Mallon on Day 2 of the hearing) and the report of 23rd December 2020 which the defendant has accepted formed part of the backdrop to the enactment of the Regulations on the same day.[102] By comparing those reports, it is readily apparent why it was considered necessary to introduce the significant restrictions on normal societal activities in late December 2020. In both reports, Figure 1a provides a snapshot of the daily count of confirmed cases. In the August report, it shows the numbers of daily cases at less than 100[103] per day in the period up to midnight on 2nd August 2020. In contrast, in the December report, Figure 1a shows a steep increase in the daily rate of confirmed cases over the course of December 2020 rising to close to 1,000[104] per day at the end of the period shown (i.e. up to midnight on 21st December 2020).

232. The HPSC reports dealt solely with the number of confirmed cases. They did not provide any estimate of the number of undiagnosed or asymptomatic cases of COVID-19. However, as the expert evidence confirmed in the course of the hearing, COVID-19 was known to be asymptomatic in a substantial proportion of cases. In his report, Professor Mallon expressed the view that COVID-19 is asymptomatic in at least one third of the infected population. In her report, Professor Horgan expressly agreed with this. It was therefore well known that, in addition to the confirmed cases

[102] While the defendant argued that the positive test for the hotel manager could not have formed part of the material reviewed in this report (which is expressly based on confirmed cases up to midnight on 21st December 2020), the defendant did not argue that the report itself was not available to the Government or the Minister for Health at the time the Regulations were enacted on 23rd December 2020.

[103] This number is based on my reading of the data depicted in Figure 1a measured by reference to the y axis which is calibrated by numbers from 0 to 1,400.

[104] Again, this number is based on my reading of the data depicted in the Figure measured by reference to the y axis which is calibrated in the same way as in Figure 1a of the August report.

reported by the HPSC, there were also a substantial number of unconfirmed cases. In referring to the spread of COVID-19 in the recitals to the relevant Regulations, it seems to me that the Minister (who can be taken to be fully informed of the characteristics of the disease which triggered the decision to introduce such swingeing restrictions), must, of necessity, have had in mind not only the reported cases but also the very substantial number of unconfirmed cases**.** Similarly, in reaching a conclusion that there was an immediate, exceptional and manifest risk to human life and public health by the spread of COVID-19, it seems to me that the Minister must be taken to have had in mind the true or full extent of the caseload that existed at that time. In assessing the need for the introduction of significant restrictions on normal activities, the Minister for Health must have taken into account all the facts known about the extent of the risk to human life and public health including the fact that, in addition to all of the confirmed cases of COVID-19, there were also a significant number of other occurrences of the disease which had been undiagnosed or not yet reported such that the level of risk, as of 23rd December 2020, was, in fact, even greater than that generated solely by the number of confirmed cases reported up to midnight on 21st December 2020. It was obvious from the HPSC report of 23rd December 2020 that the number of cases of COVID-19 would not stand still as of midnight on 21st December 2020.

233. Each case of the disease (whether confirmed or undiagnosed or not yet reported) was capable of spreading the disease and therefore must be taken to have been instrumental in the decision to impose the restrictions stipulated in the Amendment Regulations. While those restrictions were prophylactic in nature, being designed to reduce the burden of infection, it was the existing spread of infection in the community which made them necessary and which therefore caused the

restrictions to be imposed. In this context, as Professor Horgan confirmed in her evidence, a much more infectious variant of the virus had emerged by this time namely the alpha variant. In addition, as she also confirmed, there was a concern about the spread of the virus which had occurred as a result of the extent of pre-Christmas socialising that had taken place following the relaxation of restrictions under the No. 9 Regulations which, as noted in para. 17 above, took effect from 4th December 2020 and which permitted hospitality businesses to re-open. Against that background, it would make no sense for the Minister to solely take account of the confirmed cases. It was a known fact that the confirmed cases as of midnight on 21st December did not represent the full spread of the disease as of the date of the enactment of the Regulations on 23rd December. Having regard to the highly infectious nature of the disease, it was a known fact that more cases would have been diagnosed (even if not yet reported) in the intervening period. The HPSC report provided stark evidence that additional cases were arising on a daily basis. As outlined above, it was also a known fact that there were a large number of asymptomatic cases.

234. In light of the considerations discussed in paras. 229 to 233 above, I am of the view that each occurrence of COVID-19 (whether reported or not) was instrumental in the decision to enact the Amendment Regulations of 23rd December 2020. Having regard to the known characteristics of COVID-19, it could not be said that the Minister or the Government acted solely on the basis of those occurrences of the disease that had been reported by that date.

235. But a further issue arises. Given that each occurrence (whether known or unknown) was instrumental in the decision to impose the restrictions, how can it be said that the proximate cause test is satisfied in respect of the two occurrences at the

Marlin Hotel? How can they be said to be the effective or dominant cause of the decision? At first sight, it may seem implausible that the test could be said to be satisfied. The decision to impose the restrictions was plainly in response to all of the cases of COVID-19 across Ireland. However, this is an issue that has already been addressed in the context of COVID-19 insurance claims. In Ireland, it was addressed in *Hyper Trust No. 1*. It was also addressed in the United Kingdom in the *FCA* case. For that reason, it is not necessary to address it in detail here. In *Hyper Trust No. 1,* I drew attention to the approach that had been taken by Black J. in the Supreme Court in *Ashworth v. General Accident Fire and Life Assurance Corporation* [1955] I.R. 268 and by the Court of Appeal of England & Wales in *Miss Jay Jay (i.e. J.J. Lloyd Instruments Ltd v. Northern Star Insurance Co. Ltd* [1987] 1 Lloyd's Rep. 32). In both of those cases, it was recognised that there could be more than one proximate cause of an event. In the *Miss Jay Jay* case, there were two causes of damage to a ship, one of which was insured and one of which was not. The Court concluded that each were equally effective in causing the damage. The Court also held that, in circumstances where there was no exclusion in the policy in respect of the uninsured cause, the insured was entitled to succeed. In *Hyper Trust No. 1,* I came to the conclusion that the principle identified in *Miss Jay Jay* was equally applicable. The issue arose in *Hyper Trust No. 1* in circumstances where it could not be said that the outbreaks of COVID-19 within a radius of 25 miles from the insured premises were the sole cause of the Government imposed closure of March 2020. The outbreaks outside that radius were just as instrumental as those within it. While there were more causes (i.e. outbreaks) operating in *Hyper Trust No. 1* than the two causes identified in *Miss Jay Jay,* the fact remained that, like in *Miss Jay Jay*, each outbreak of COVID-19 (whether within or outside the radius) were each equal in force and they operated

in combination to lead to the imposition of the closures. There was no relevant exclusion in the FBD policy excluding liability in so far as closure arising from outbreaks outside the 25 mile radius are concerned. Thus, once the local outbreaks within that radius were an efficient cause of the closure, I took the view that this was sufficient to satisfy the proximate cause test in relation to that issue even though each of the other outbreaks in every other part of the country were also efficient causes of the closure. To paraphrase Slade L.J. in *Miss Jay Jay*, each of the outbreaks were equal in their efficiency.

236. It seems to me that the same principle applies here. It cannot be said that any one occurrence of COVID-19 was any more effective in the enactment of the Amendment Regulations of 23rd December 2020 than any other occurrence. Each occurrence forming the spread of COVID-19 referred to in the recitals to the Regulations was equally effective in the decision to enact them, such that each occurrence can be said to be the concurrent proximate cause of their enactment.

237. I now turn to the issue of interpretation. Would a reasonable person in the position of the parties, understand, at the time the insurance policy was agreed, that cover would be available in respect of a restriction imposed by a competent authority in response to an unreported or undiagnosed or asymptomatic case of COVID-19 at the hotel premises? In considering this issue, it is important to consider both the language of the policy and the relevant context. As outlined in para. 159 above, I have already said that I agree with the view of the Divisional Court in the *FCA* case that, in the context of a notifiable disease, the word *"occurrence"* includes both known and unknown cases and that this is how it would be understood by a person in the position of the parties, at the time the policy was put in place. This conclusion is underscored by the use of the words *"**any** occurrence of a Notifiable Disease … at the Premises*

…".[105] The use of the word *"any"* suggests that a broad scope is to be given to the word *"occurrence"*. The *Shorter Oxford English Dictionary* defines *"any"* (when used in the singular) as meaning *"a –, some –,* ***no matter which, or what****"*[106] That is consistent with the way in which *"any"* is used in ordinary language. That the Extension should be read in this way is also reinforced by the fact that, unlike some other policies available in the marketplace at that time (such as the clause in issue in *Premier Dale*), Extension 6 does not require that there should be a *"manifestation"* of disease at the premises.

238. In para. 159, I have also drawn attention to the fact that it was well known, at the time the policy was agreed, that some notifiable diseases were capable of being asymptomatic. Hepatitis C was a particularly well-known example which had been the subject of much publicity. The Human Immunodeficiency Virus (*"HIV"*) is another well-known example. It was also well known that many notifiable diseases are highly infectious and capable of spreading widely. Measles is a common example. The nature of notifiable diseases is an important element of the factual background against which Extension 6 falls to be understood. So too, is the nature of the business to be insured. That business involves the operation not only of a hotel but also of a bar and restaurant. These are all venues where people tend to meet and mix. They are therefore places where highly contagious diseases are likely to spread. When one considers Extension 6 against that backdrop, it can readily be appreciated that a reasonable person in the position of the parties could well envisage that it might be necessary for a competent authority to impose restrictions on the operation of premises where people mix (such as bars or hotels) in response to all occurrences of a

[105] Emphasis added
[106] Emphasis added.

highly contagious disease whether or not those occurrences had been reported. It is equally apparent that such a person would also understand that, if there was a need to impose restrictions in response to a highly contagious disease, such restrictions were unlikely to be imposed solely in respect of the insured premises but also in respect of other similar premises where people meet and mix. By its very nature, a highly infectious disease may well not be confined to a single premises. In these circumstances, I believe that the reasonable person would understand that Extension 6 was intended to provide cover in respect of any occurrence of such a disease at the premises (whether diagnosed or not) which leads (either on its own or in combination with all other occurrences of that disease outside the premises) to the imposition by a competent authority of restrictions on the operation of the premises.

The application of the *"but for"* test

239. The conclusion on causation in para. 236 above does not wholly address the issues of causation that arise. In addition to the proximate cause principle, a further issue arises in relation to the so-called *"but for"* test. It is a standard requirement in insurance cases that the insured must prove that the loss would not have arisen but for the eventuation of the insured peril. This is no more than an application of the ordinary rule of causation generally applied in contract and tort cases. In the context of contract law, the relevant principle is summarised as follows by *McDermott & McDermott*[107]:

> *"The plaintiffs may only recover damages for those losses which were caused by the defendants' wrong and 'the onus is on … plaintiffs to prove their loss'. The general test is the 'but for' test. In other words, the plaintiff must show that the loss would not have occurred but for the defendants' breach. …".*

[107] Contract Law (2nd Ed., 2017) at para. 23.229

240. The defendant has argued that this test cannot be satisfied here because it is clear that the Amendment Regulations of 23rd December 2020 would have been enacted in any event whether or not there was any case of COVID-19 at the Marlin Hotel. It is true that, if the *"but for"* test is to be applied without modification, it is capable of causing a major problem for the plaintiff in circumstances where the Amendment Regulations would undoubtedly have been enacted whether or not the two cases at the Marlin Hotel had occurred. How then can it be said that the *"but for"* test has been satisfied? Again, this is an issue which has been addressed in previous case law dealing with COVID-19 claims.

241. In *Hyper Trust No. 1*, I took the view that the approach suggested by *Hart & Honoré on Causation in the Law*[108] was correct. In support of their proposition that the *"but for"* test should not be applied mechanically, they cited the hypothetical example of a person who starts a fire which, before it destroys property, joins a fire started by another. The combined fire then causes the property to be burned to the ground. Each fire would have been sufficient on its own to have caused the fire in the absence of the other. In such circumstances, if the *"but for"* test was applied blindly, neither act of arson could be said to satisfy the test. Because both were equally instrumental in causing the destruction, the property owner, in an action for damages against the first arsonist could not say that, but for the acts of the first arsonist the destruction would not have occurred. The same problem would arise in respect of a case against the second arsonist. Similarly, they cited a further example of two men who simultaneously fire their guns at the same victim and each lodges a bullet in the victim's brain, each sufficient in itself to cause death. Would both men have a defence to an action for damages brought by the victim's family because neither shooting

[108] At pp. 123-124

could be shown to satisfy the test? Plainly, in such a case, it would be unthinkable that the law would permit the *"but for"* test to defeat the family's claim. As *Hart & Honoré* suggested, *"it is perfectly intelligible that in the circumstances a legal system should treat each as the cause rather than neither…".*

242. In *Hyper Trust No. 1*, I was not referred to any Irish authority that suggested that I was not free to follow the approach suggested by *Hart & Honoré.* I expressed the view that it was an entirely sensible and appropriate approach that should be taken where loss is sustained as a result of two or more interrelated events which are each capable of causing the loss but where it is not possible to say that, but for any one of them, the loss would not have been incurred. It ensures that the *"but for"* test is not taken to extremes and applied in an unduly mechanical way which could give rise to manifest injustice. If that approach were not taken, it could leave the injured party without a remedy notwithstanding that it has suffered loss or damage as a consequence of the actions in question. In an insurance context, such an approach seemed to me to be particularly appropriate having regard to the principle underlying the *Miss Jay Jay* line of authority addressing concurrent proximate causes. While the concepts of proximate cause and *"but for"* causation are different, the *Miss Jay Jay* principle appears to have been developed to deal with cases where there was more than one interdependent cause and where it could not be said that any one cause was predominant over the others.

243. I believe that a similar approach should be taken here. In circumstances, where the Amendment Regulations of 23rd December 2020 were enacted in response to the then existing spread of COVID-19, it seems to me that each individual case of COVID-19 was equally instrumental in the decision to impose the restrictions in issue and that it would be appropriate to treat each case as the cause of their enactment

rather than none of them. To impose the *"but for"* test mechanically would lead to manifest injustice of the kind described by *Hart & Honoré.*

244. There is also an alternative basis on which to reach the same conclusion. This arises as a consequence of the approach taken by the U.K. Supreme Court in the *FCA* case. There, the issue was approached principally from the standpoint of contractual interpretation. At para. 195 of their joint judgment, Lords Hamblen & Leggatt said:

> *"We do not consider it reasonable to attribute to the parties an intention that in such circumstances the question whether business interruption losses were caused by cases of a notifiable disease occurring within the radius is to be answered by asking whether or to what extent, but for those cases of disease, business interruption loss would have been suffered as a result of cases of disease occurring outside the radius. Not only would this potentially give rise to intractable counterfactual questions but, more fundamentally, it seems to us contrary to the commercial intent of the clause to treat uninsured cases of a notifiable disease occurring outside the territorial scope of the cover as depriving the policyholder of an indemnity in respect of interruption also caused by cases of disease which the policy is expressed to cover. We agree with the FCA's central argument in relation to the radius provisions that the parties could not reasonably be supposed to have intended that cases of disease outside the radius could be set up as a countervailing cause which displaces the causal impact of the disease inside the radius."*

245. In that case, it was not possible for the policyholders to prove that, but for the cases within the relevant radius from their property, there would not have been an interruption to their business. The problem was that the Government measures imposed on hospitality outlets were in response to all of the cases in the country and

could not be said to have arisen but for the cases within the relevant radii. However, Lords Hamblen and Leggatt, at para. 191, took the view that there was *"nothing in principle which precludes an insured peril that in combination with many other similar uninsured events brings about a loss with a sufficient degree of inevitability from being regarded as a cause – indeed a proximate cause – of the loss, even if the occurrence of the insured peril is neither necessary nor sufficient to bring about the loss by itself."* They took the view that it was necessary to interpret the policy in order to determine whether it was intended by the parties that such a causal connection was sufficient to trigger the insurer's obligation to indemnify. Having considered the relevant contractual terms and the factual context, they came to the conclusion outlined in para. 244 above.

246. It seems to me that, if one approaches the issue from the standpoint of contractual interpretation here, the same conclusion applies equally to the *"at the premises"* clause contained in Extension 6. For similar reasons to those discussed in paras. 220 to 221 above, I am of the view that a reasonable person, in the position of the parties, at the time the policy was agreed, would not understand the effect of Extension 6 to be that cases of COVID-19 outside the premises could be set up by insurers as a countervailing cause which displaces the causal impact of a notifiable disease within the premises. To suggest otherwise would involve overlooking the very important fact that Extension 6 expressly addresses notifiable diseases, many of which were known, at the time the policy was agreed, to be highly contagious. In my view, that is a highly significant aspect of the factual context. Thus, an occurrence of such a disease in one premises was likely to be replicated elsewhere. This is particularly so in the case of hospitality premises. While the Allianz policy was not directed solely at such premises, it was plainly regarded as suitable for such premises. The fact that the

plaintiff operated a hotel is a crucial element of the relevant context against which Extension 6 falls to be interpreted. If the competent authorities were imposing restrictions in response to occurrences of a highly contagious disease, it is very likely that they would have in mind not just the insured premises but other similar premises. In such circumstances, I do not think that the parties could reasonably have intended that there would be no cover where the restrictions were imposed in response to occurrences both within and outside the premises. In other words, I do not believe that a reasonable person in the position of the parties would have understood that the *"but for"* test would be applicable in this context. Any other interpretation fails to pay sufficient attention to the fact that Extension 6 addresses notifiable diseases which, by the nature of many of them, are unlikely to be confined to a single premises.

247. Thus, whether one approaches the application of the *"but for"* test by reference to the approach suggested in paras. 240 to 243 above or by reference to the contractual interpretation approach taken by the U.K. Supreme Court, it seems to me that the defendant's argument must be rejected. In the circumstances, I do not believe that the plaintiff's claim can be defeated by the application of the *"but for"* test.

The belated attempt by the plaintiff to rely on Regulations enacted after 23rd December 2020

248. There is one further issue that arises. In the course of his reply to the closing submissions of the defendant, counsel for the plaintiff sought to make a new argument which had not previously featured in the case made on behalf of the plaintiff. In the context of period 3, counsel for the plaintiff argued that, even if the hotel manager's infection with COVID-19 had not been known to the authorities at the time of enactment of the Amendment Regulations on 23rd December 2020, it was known by the time subsequent regulations were enacted on 30th December 2020. In light of the

view which I have formed on the issue of causation discussed in paras. 222 to 236 above, the plaintiff does not have to rely on this argument in order to succeed in relation to the claim made in respect of the restrictions imposed on 23rd December 2020. That said, were it necessary for the plaintiff to seek to rely on this argument, I do not believe that I could entertain it. The argument was nowhere flagged in the written or oral submissions made on behalf of the plaintiff in opening or closing arguments. Nor did it feature in any of the evidence tendered on the plaintiff's behalf. On the contrary, the plaintiff had specifically framed its case by reference to the three periods covered in Professor Mallon's report each of which concluded at a relevant date when restrictions on the operation of the hotel were imposed. There was no hint that the plaintiff intended to go beyond that. While the agreed facts mentioned the subsequent Regulations that were enacted between 30th December 2020 and 9th May 2021, the plaintiff advanced no case in relation to that period. In fairness to the defendant, I do not believe that the plaintiff is entitled, in these circumstances, to raise a completely new case for the first time in reply to the closing submissions of the defendant.

Conclusion

249. As explained in para. 23 above, the plaintiff has failed to establish any entitlement to an indemnity under Extension 7 of the policy. Its claim under Extension 7 must therefore be dismissed. Furthermore, in light of the findings I have made in this judgment, it follows that the plaintiff's claim under Extension 6 in respect of the first and second set of restrictions on its business (imposed respectively in March and September 2020) must also be dismissed.

250. In so far as the restrictions imposed on 23rd December 2020 are concerned, I hold, for all of the reasons discussed in this judgment, that cover has been triggered

under Extension 6. As outlined in para. 4 above, I have not been asked at this stage to go any further and to consider whether the plaintiff's claimed losses have been caused by the peril insured under Extension 6.

251. I will list the matter for mention before me at 10.30 a.m. on 9th October 2024 for the purposes of making the necessary orders on foot of this judgment and for the purposes of dealing with costs. In the meantime, I direct the legal teams for the parties to actively liaise together with view to reaching agreement on the orders to be made both in relation to the substance of the case and in relation to costs. A draft of the order should be emailed to the registrar not later than 8th October 2024.

252. The legal teams for the parties should also liaise with regard to the next steps to be taken in the proceedings. It may, however, make sense for the parties to explore whether the remaining issues in the proceedings can be resolved by agreement rather than through ongoing litigation.

253. Finally, with regard to High Court Practice Direction HC 101, I direct the parties to file all of their written submissions in this case (subject to any redactions that may be permitted or required by the practice direction) in the Central Office within 28 days from the date of electronic delivery of this judgment.

SCHEDULE OF CONFIDENCE INTERVALS

The tables below includes 95% confidence intervals (95% CI) for data originally presented in Figure 1 of the Joint Report of Professor Mary Horgan & Dr. Mark Roe

Period 1:
1 Feb 2020 to 15 Mar 2020
Estimated number of expected COVID-19 cases among hotel guests based on 14-day (i) incidence in Dublin, and (ii) total number of individual guests

Day of Period	Estimated COVID-19 Cases	95% CI Lower Limit	95% CI Upper Limit
1	0.00	0.00	0.00
2	0.00	0.00	0.00
3	0.00	0.00	0.00
4	0.00	0.00	0.00
5	0.00	0.00	0.00
6	0.00	0.00	0.00
7	0.00	0.00	0.00
8	0.00	0.00	0.00
9	0.00	0.00	0.00
10	0.00	0.00	0.00
11	0.00	0.00	0.00
12	0.00	0.00	0.00
13	0.00	0.00	0.00
14	0.00	0.00	0.00
15	0.00	0.00	0.00
16	0.00	0.00	0.00
17	0.00	0.00	0.00
18	0.00	0.00	0.00
19	0.00	0.00	0.00
20	0.00	0.00	0.00
21	0.00	0.00	0.00
22	0.00	0.00	0.00
23	0.00	0.00	0.00
24	0.00	0.00	0.00
25	0.00	0.00	0.00
26	0.00	0.00	0.00
27	0.00	0.00	0.00
28	0.00	0.00	0.00
29	0.00	0.00	0.00
30	0.00	0.00	0.00
31	0.00	0.00	0.08
32	0.00	0.00	0.08
33	0.00	0.00	0.08
34	0.00	0.00	0.08
35	0.00	0.00	0.12
36	0.00	0.00	0.11
37	0.00	0.00	0.14
38	0.01	0.00	0.16
39	0.01	0.00	0.20
40	0.02	0.00	0.26
41	0.05	0.00	0.47
42	0.05	0.00	0.50
43	0.06	0.00	0.55
44	0.07	0.00	0.60

Period 2:
1 Aug 2020 to 19 Sept 2020
Estimated number of expected COVID-19 cases among hotel guests based on 14-day (i) incidence in Dublin, and (ii) total number of individual guests

Day of Period	Estimated COVID-19 Cases	95% CI Lower Limit	95% CI Upper Limit
1	0.02	0.00	0.28
2	0.02	0.00	0.33
3	0.02	0.00	0.33
4	0.02	0.00	0.33
5	0.03	0.00	0.36
6	0.03	0.00	0.38
7	0.04	0.00	0.44
8	0.06	0.00	0.52
9	0.06	0.00	0.54
10	0.06	0.00	0.52
11	0.06	0.00	0.55
12	0.07	0.00	0.58
13	0.07	0.00	0.60
14	0.11	0.00	0.76
15	0.10	0.00	0.73
16	0.10	0.00	0.73
17	0.12	0.00	0.81
18	0.14	0.00	0.86
19	0.16	0.00	0.94
20	0.17	0.00	0.99
21	0.20	0.00	1.06
22	0.22	0.00	1.13
23	0.25	0.00	1.24
24	0.26	0.00	1.27
25	0.31	0.00	1.40
26	0.32	0.00	1.42
27	0.34	0.00	1.48
28	0.35	0.00	1.51
29	0.38	0.00	1.59
30	0.39	0.00	1.61
31	0.41	0.00	1.67
32	0.43	0.00	1.71
33	0.42	0.00	1.69
34	0.41	0.00	1.66
35	0.43	0.00	1.71
36	0.43	0.00	1.72
37	0.41	0.00	1.67
38	0.50	0.00	1.87
39	0.47	0.00	1.82
40	0.53	0.00	1.95
41	0.56	0.00	2.02
42	0.56	0.00	2.02
43	0.57	0.00	2.05
44	0.60	0.00	2.11
45	0.66	0.00	2.26
46	0.70	0.00	2.34
47	0.74	0.00	2.43
48	0.79	0.00	2.52
49	0.80	0.00	2.54
50	0.80	0.00	2.55

Period 3:
25 Nov 2020 to 24 Dec 2020
Estimated number of expected COVID-19 cases among hotel guests based on 14-day (i) incidence in Dublin, and (ii) total number of individual guests

Day of Period	Estimated COVID-19 Cases	95% CI Lower Limit	95% CI Upper Limit
1	0.00	0.00	0.14
2	0.01	0.00	0.23
3	0.03	0.00	0.34
4	0.05	0.00	0.46
5	0.06	0.00	0.51
6	0.07	0.00	0.58
7	0.08	0.00	0.65
8	0.09	0.00	0.68
9	0.12	0.00	0.78
10	0.23	0.00	1.18
11	0.44	0.00	1.75
12	0.47	0.00	1.82
13	0.50	0.00	1.89
14	0.53	0.00	1.96
15	0.54	0.00	1.99
16	0.60	0.00	2.12
17	0.76	0.00	2.46
18	0.97	0.00	2.91
19	0.98	0.00	2.92
20	1.02	0.00	3.00
21	1.10	0.00	3.15
22	1.21	0.00	3.37
23	1.37	0.00	3.67
24	1.52	0.00	3.94
25	1.78	0.00	4.40
26	2.13	0.00	4.98
27	2.52	0.00	5.63
28	2.82	0.00	6.12
29	3.22	0.00	6.73
30	3.43	0.00	7.06