

## Notes on COVID-19

### Part 18: 2020-10-01 to 2020-10-15

**Peter Bernard Ladkin**

**2020-10-15**

2020-10-03 The consequence of the family celebration on 2020-09-15 with 30 participants in Bielefeld seem now to be in. Let us call it the Event 74 people have Covid-19 as original or secondary infection from the Event. About 1,000 school pupils and teachers are in quarantine for two weeks, and twelve schools had infections and are thereby partially or fully closed. It is said that somewhat more than 20 of those in quarantine have turned out to be infected. BI is currently just short of the 35 ni105r7d mark which triggers the restriction of 50 participants in private celebrations in public spaces/rooms which is part of new state law this week.

The figures and the timing are worth remarking. The event was on 2020-09-15, a Tuesday; let us call it Day 0. On the subsequent Days 1-8, 2020-09-16 up until 2020-09-23 inclusive, Bielefeld had 3, 3, 2, 5, 7, 0, 0, 3 new infections per day. On Days 9-16, from 2020-09-24 until Friday 2020-10-02 inclusive, there were 9, 5, 19, 10, 19, 20, 19, 16 new infections per day registered. So for 8 days, the consequences of the superspreading event on September 15<sup>th</sup> were not apparent. Then, for a further 8 days (with one exception, September 25<sup>th</sup>) the figures went right up. There is some non-natural aspect to the higher figures on Day 9-16, namely that there was some delay in testing and obtaining test results because of the large number of people involved. With a total of 117 new infections, Days 9-16 have 94 more than Days 1-8, with a total of 23. With 74 people infected as a consequence of the Event, there is still an excess of 20 newly infected over Days 1-8, which is almost double that figure. So there is in any case an increase in infection in BI.

The mean incubation time (IncubT) is between 4 and 5 days. It seems that, with generally good TTI, we start seeing the consequences of transmission about  $2 \times \text{IncubT}$  days later. That is a longish lag time. It also suggests that the real “spike” in cases arising from a superspreading event is at the second level of transmission. Level 0 consists of the already-infected people who attended the event. Those who were present and contracted the disease at the event from a Level 0 participant constitute Level 1. Those who then contracted the disease from a Level 1 person form Level 2. Level 2ers were necessarily present (as indeed was the case with the Event, which had 30 participants, but infections were 74).

2020-10-03 In the news this morning is that 7 people amongst the “presidential group” at the Rose Garden reception for Supreme Court nominee Barrett on Saturday September 26<sup>th</sup> have tested positive for Covid-19 <https://www.theguardian.com/us-news/2020/oct/02/kellyanne-conway-covid-19-rose-garden-event> . There are pictures of the seated guests. The seats were placed next to each other, without distancing, and hardly anyone is wearing a mask. The article shows a tweet which indicates, in the photograph of the participants seated, who has Covid-19 now.

This is the second event to come into focus as to where POTUS and FLOTUS might have been

infected. Presumably Joe Derisi's lab (at UCSF, or CZ Biohub) could say who got it from whom, where, provided they get samples.

One might hope this event and the pictures of it finally make it clear to the American people that neither taking hydroxychloroquine nor ignoring distancing and mask measures are effective prophylaxis against Covid-19.

2020-10-03 Modelli et al in The Lancet Infectious Diseases on 2020-09-29 report observations about fomites in a hospital setting.

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30678-2/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30678-2/fulltext)

The risk appears to be low. *“Our findings suggest that environmental contamination leading to SARS-CoV-2 transmission is unlikely to occur in real-life conditions, provided that standard cleaning procedures and precautions are enforced. These data would support Goldman's point that the chance of transmission through inanimate surfaces is less frequent than hitherto recognised.”* (For Goldman's article also suggesting a fomites problem is likely minor, see Notes Part 12, entry 2020-07-05.)

2020-09-03 Webb et al have defined clinical criteria for Covid-19-related hyperinflammatory syndrome (the “cytokine storm”-like syndrome), published in The Lancet Rheumatology on 2020-09-29 [https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913\(20\)30343-X/fulltext](https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(20)30343-X/fulltext) They call it cHIS. (It is The Lancet “Editor's Pick” of this week.) In their comment, Cron, Shulert and Tattersall mention that cytokine storm syndromes have varied aetiology, referring to an “umbrella of clinical states ..., are frequently under-recognised, and the evidence base for treatment is lacking.” They welcome the development of cHIS.

2020-10-04 Robin McKie in TheG on 2020-10-04 reports on a new research project led by Michael Levin at Imperial College, George Kassiotis at the Francis Crick Institute, and Dan Davis at UCL, to look at antibodies and T-cells in blood samples taken during EU and Wellcome projects before SARS-CoV-2 distributed. <https://www.theguardian.com/science/2020/oct/04/scientists-study-whether-immune-response-wards-off-or-worsens-covid> From these samples, they know already that about 6% of UK adults have antibodies that recognise and react to SARS-CoV-2, and that in children this does up to about 60%. This is called cross-reactivity, and is supposed to come from reaction to other human coronaviruses, those which result in common colds. Children get coronavirus-caused colds much more frequently than adults, because of cross-infectivity in school, says Kassiotis. The study will also look at other immune reactions, including those of T-cells. They will also look at what may be contributing to MSI-C, which can occur weeks after the virus has been suitably countered by the immune system. (The article says nothing about cytokine storm syndrome, but it could be a case of antibody dependent enhancement, as MSI-C could be.)

2020-10-04 In Notes Part 17 I referenced William Hanage explaining how TTI was crucial, and still not working in the UK. In today's Observer, Will Hutton muses “....the government could not be so incompetent as to leave us without mass test and tracing by the autumn, could it? Well, here we are. The government is incompetent.” <https://www.theguardian.com/commentisfree/2020/oct/04/i-saw-up-close-the-trials-of-university-life-in-a-pandemic-we-should-have-done-better>

In the Bielefeld outbreak, stemming from a birthday part with 30 participants on September 15<sup>th</sup>, the city offered tests to teachers and school pupils at the test centre. Large numbers turned up on Monday 28<sup>th</sup> and there was “traffic chaos”. People were having to queue up, and then to wait. Some complained in frustration to the NW newspaper that they were having to wait... 2 hours! The city Covid-crisis-team leader apologised publicly, and issued testing times for batches of people based on last-names for Tuesday. The tests were offered (free) to all who may have had contact with a known infected person, which meant everyone associated with the 12 schools involved. (There is some discrepancy in the NW accounts when the party outbreak became known. An article on 29<sup>th</sup> September said the first infected participant was hospitalised on September 17<sup>th</sup>, but an article by the same journalists on 30<sup>th</sup> September said the first cases became known on September 25<sup>th</sup>.) And there was some confusion about notification. Results were supposed to come through the Warn-App, but many didn't, and the city said it would only inform the positive cases by telephone. So, perfect it wasn't. But it did get sorted out within a couple of days.

The UK situation seems somewhat different, and puzzling. There is an article by Jacqui Wise in the BMJ on 2020-09-21 on “... *what is going wrong with testing in the UK?*”. The problem appears to be the “Pillar 2 testing”, which is the equivalent to what I discuss above concerning the Bielefeld outbreak. Under the headline “*Are people getting tested when they don't need to?*”, Wise reports Health Secretary Hancock saying in the House of Commons on 2020-09-08 that about 25% of tests are on asymptomatic and uninfected people. The Department for Health and Social Care told the BJMJ that “*only people with symptoms should be requesting a test.*” With an incubation period of 4-5 days average for Covid-19, and a significant proportion of asymptomatic carriers, this reinforces Hanage's point that the UK testing criteria result in not knowing who is infected, where, and the TTI system cannot respond proactively to outbreaks such as Bielefeld did. Germany is offering free tests every two weeks to teachers, kindergarten and childcare workers, as well as other public servants whose jobs involve contact with many. And anyone can be tested for a fee.

Wise says “*There seems to be no shortage of staff or swabs at the testing sites. Sarah Jane Marsh, director of testing for NHS Test and Trace, said it was the laboratories that were “the critical pinch point.”*” This does not explain why people were being sent hundreds of miles away for a test. If there is spare capacity at the sites, then surely testing can be local. Where the test is then sent for analysis is a matter of logistics, and if the laboratories have a backlog then it doesn't matter that much if a test is evaluated at a laboratory which is hundreds of miles away – there is plenty of time to get it there to sit in a queue.

Wise says that apparently the UK is testing more than Germany: “*in countries' seven day averages up to 14 September the UK had carried out 2.8 tests per 1000 people, higher than most other European countries, including France (2.1 per 1000) and Spain and Germany (both 1.8).*” That is a factor of 1.56 more tests per unit of population in the UK than in Germany. This is somewhat surprising, given that Germany is offering tests to large fragments of the population, irrespective of symptoms. What are the proportions of infections? On 2020-10-04 at 1315 UTC the Johns Hopkins tracker is reporting the UK on 482,658 cases and Germany on 300,285. This is a proportion UK: Germany of 1.61 So the UK is testing slightly fewer people per confirmed case than Germany. That

does not suggest that the UK's nominally more stringent conditions for being tested is bringing much to the party.

There appears to me to be no obvious reason why testing in the UK isn't operating that well and in Germany is working (except for the occasional glitch during an outbreak). Maybe it really is down to some people being able to figure out how to do it and some people not, and then we are back with Hutton's observation.

2020-10-04 Anderson et al describe in the NEJM on 2020-09-29 the immunogenicity of the Moderna mRNA-1273 vaccine in older adults.

<https://www.nejm.org/doi/full/10.1056/NEJMoa2028436> It seems to be safe, as well as appropriately immunogenic.

2020-10-04 Joan Stephenson reports in the JAMA Health Forum on 2020-09-29 on cases described by the US CDC in which Covid-19 has been transmitted to adults and others by children in child-care centres in the US <https://jamanetwork.com/channels/health-forum/fullarticle/2771266>

2020-10-07 Reuter reports on 2020-10-06 that both Astrazeneca's AZD1222 and Biontech's BNT 162b2 vaccines have started a "rolling review" process towards approval with the European Medicines Agency. The EMA is reviewing the first batch of data, and will continue reviewing until the conditions for approval are reached. <https://de.reuters.com/article/us-health-coronavirus-pfizer-biontech-eu/eu-reviewing-pfizer-biontech-covid-19-vaccine-in-real-time-idUSKBN26R1GM>

2020-10-07 This article in Nature by the journalist Lynne Peeples seems to me a fair summary of what is known and not known about face masks and their effect on Covid-19 transmission <https://www.nature.com/articles/d41586-020-02801-8> The references are largely different from those I have cited in previous Notes.

2020-10-08 Peterson and Phillips in the journal Clinical Epidemiology on 2020-10-08 analyse data from the ONS Coronavirus Infection Survey pilot study of just over 36,000 people, gathered between 2020-04-26 and 2020-06-27

<https://www.dovepress.com/three-quarters-of-people-with-sars-cov-2-infection-are-asymptomatic-an-peer-reviewed-article-CLEP>

*"...625 (1.7%) reported symptoms on the day of the test. There were 115 (0.32%) with a positive SARS-CoV-2 test result. Of the 115, there were 27 (23.5%) who were symptomatic and 88 (76.5%) who were asymptomatic on the day of the test. Focusing on those with specific symptoms (cough, and/or fever, and/or loss of taste/smell), there were 158 (0.43%) with such symptoms on the day of the test. Of the 115 with a positive SARS-CoV-2 [test result], there were 16 (13.9%) reporting symptoms. In contrast, 99 (86.1%) did not report specific symptoms on the day of the test..."*

Some startling figures here. Only 27 of 625 people reporting symptoms of Covid-19 actually had the disease. That is 4.3%, less than one in twenty. Over 75% of people with Covid-19 were asymptomatic at the time of testing. The authors' well-justified conclusions are "COVID-19 symptoms are poor markers of SARS-CoV-2. .... A more widespread testing programme is necessary

*to capture “silent” transmission and potentially prevent and reduce future outbreaks.”* This work was also reported by Ian Sample in TheG on 2020-10-08

<https://www.theguardian.com/world/2020/oct/08/more-than-80-positive-cases-in-covid-study-had-no-core-symptoms>

2020-10-10 Well, here we are again. Bielefeld made the national news because of an outbreak after a birthday party with 30 people held on September 15<sup>th</sup> (see these Notes, entry 2020-10-04 above, and the consequences of that below) in which 74 people were infected and well over 1,000 people ended up in quarantine. Now, last weekend (that would have been 2-4 October), an infected person attended two weddings with 150 guests each (the current maximum in NRW). The health department cannot cope with the amount of tracing required. They requested help from the army, and 10 army personnel are now helping for 3 weeks. The health department is recruiting new personnel, to cope with expected increased demand, from 43 to, they hope, 80 employees. The head of the crisis team, who also heads the health department, Ingo Nürnberger, is saying that he would welcome a reduction of the participant limit, currently standing at 150 in public rooms such as restaurants, and unlimited if private, in NRW. I have remarked that, compared with our neighbouring countries, who limit public meeting as well as private meeting to 6 or to 10 people, our limit seems inappropriate. The city administration is indicating strongly it is also finding it impractical.

The numbers of currently-infected people in Bielefeld is, though, down below 50 again for the first time since September 25<sup>th</sup>, two weeks ago. It was up well over 100 on October 1<sup>st</sup> - 4<sup>th</sup>. That very clear bump has to do with the 74 secondary infections resulting from the September 15<sup>th</sup> birthday party. The data say some things. First, the secondary infections stemming from the party were 2.47 times the number of people present. Second, the effect started showing noticeably in the numbers 12 days after the event, and continued for a further 9 days.

The repeated comment in the news is that Germany's new growth is mainly amongst young people, and it is being propagated through parties and celebrations. The first observation is a simple fact; the second rather more complicated to ascertain. From recent outbreaks in Bielefeld and Hamm, it is clear because these superspreading events have been traced through. There are plenty of anecdotes to substantiate that people are ignoring government pleas to reduce contact. There are 14 weddings registered in Bielefeld for this weekend. Registration is required if the celebration takes place outside a residence and more than 50 guests are invited. It must be a “prominent occasion” (weddings count, so might a 50<sup>th</sup> birthday party, but probably not a 43<sup>rd</sup> birthday party). There must be a guest list, with addresses, submitted with the registration and modified during the event. There must be a person designated responsible. Keep in mind that the federal government and countless other officials have been asking people to please, please, limit the number of contacts you make. And just this weekend in Bielefeld there are 14 groups who just can't manage to do that. They will be visited by the public order office, the “Ordnungsamt”, a non-police organisation who generally checks that regulations are being adhered to. They can issue tickets for misdemeanours, such as riding your bicycle in a pedestrian zone, although they mostly just ask you to dismount. Sort of like “meter maids” for everything except parking meters (we have separate people for those). They visit people in quarantine unannounced, to make sure you are quarantining. And they will visit your

registered celebration to make sure it is conforming with AHA, the German acronym for masks, distancing and hand-hygiene facilities.

So the city health department is aiming to double its personnel in order to cope with this workload, and has already had to ask for help from the army. Yet completely absent from public debate is any observation that this increasing public expense is occurring because of private citizens wanting to party and celebrate and partly ignore the fact we are in the middle of a deadly pandemic (although we also have those who say Covid-19 is no worse than the flu, everybody in government and their advisors are lying about it and trying to take our “rights” away, and maybe it doesn't even exist). Another view would be sure, people can celebrate if they think they must, but the consequences should not be paid for from our taxes. Rather like mountain-rescue services in most places. They are there, and they work, but they will also cost you. I wonder how many such celebrations would be registered if people were required to insure their celebration for the administrative costs of TTI pursuant to an infected participant?

2020-10-10 Two interesting observations from virologists have been published in my local newspaper, the NW, recently.

In an interview article on 2020-09-30, Hendrik Streeck observed that a concurrent infection with two viruses is very, very unlikely. It does happen, but when it happens, one of the infections is very much secondary. He was speaking to the chances of simultaneous infection with Covid-19 and influenza. Streeck is Director of the Institute for Virology at the University of Bonn, and the lead investigator of the Gangelt seroprevalence study after the Heinsberg superspreading event in mid-February. His observation runs counter to those who are recommending people get vaccinated against 'flu this year, to reduce the consequences of a double-infection with Covid-19 and 'flu.

In the second interview with Bielefeld virologist Jörn Kalinowski, Kalinowski observed that often the cause of death with Covid-19 patients is opportunistic bacterial septicaemia, often from antibiotic-resistant bacteria, that we might have in our body or that are nosocomial. Kalinowski says a lot more people die from bacterial septicaemia than from Covid-19.

He also had an interesting suggestion for how to give relief to some of those quarantining with an asymptomatic case, without having explicitly to measure shedding. There is a day zero when the asymptomatic patient tested positive. A second test is given five days later. If the second test shows reduced results over the first, then infectivity is reducing (and is already lower in asymptomatic people compared with symptomatic people) and the patient is unlikely to be infectious and thereby need not remain in quarantine for nine days longer. Of course, that would require testing personnel to go by the residence of the quarantined person five days after the first test, and there doesn't seem to be that level of resources at the moment.

2020-10-10 Richard Horton opined in an editorial in The Lancet on 2020-09-26 that Covid-19 is not a pandemic, but rather a syndemic [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)32000-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32000-6/fulltext) The term was coined by Merrill Singer in 1997, and refers to an illness phenomenon which has biological *and* social components. Horton notes the well-established social-

group disparities in susceptibility and in outcome, and suggests this shows that any purely biomedical attempt at a solution will fail. He also points out that this crisis is not just biomedical and social, but economic. I am not sure I grasp the reasoning to the failure of purely biomedical solutions. Surely antivirals which work and an adequate vaccine available to all will suppress Covid-19? It is not to say the other problems won't still be present, but it is hard to see how they could hinder the effectiveness of vaccination and antivirals in any ways different from what the world has already experienced in healthcare.

2020-10-10 The WHO Strategic and Technical Advisory Group for Infectious Hazards has published in The Lancet a checklist of the components of an epidemiologically sound public health response to Covid-19 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)32117-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32117-6/fulltext) They mention that Covid-19 appears to be outbreak-driven. The measures involve TTI of course, investigating outbreaks, masks, distancing and hand hygiene, ensuring health and social care systems are adequate to the task, use of short-term measures to control outbreaks, and continuing research. Members include Johan Giesecke, Sweden's "guru", David Heymann of LSHTM, and Assistant Director-General of WHO, and Lothar Wieler, Director of the Robert Koch Institute.

2020-10-10 On 2020-10-08, the NEJM published a remarkable, strongly-worded and well-argued editorial, "Dying in a Leadership Vacuum", decrying the US governmental response to Covid-19 <https://www.nejm.org/doi/full/10.1056/NEJMe2029812>

When the Lancet's editor, Richard Horton, commented on various governments' poor reaction to Covid-19, some commentators took it poorly. But surely it is within the remit of health journals to comment on public health, including its promotion and its squandering. And when much of the response is gratuitous, and people are thereby suffering, it should be open to them to observe so, as here.

2020-10-10 The Recovery trial has published its article on hydroxychloroquine. Enrollment in the trial was closed early, when preliminary analysis indicated a lack of efficacy in hospitalised patients. That is what this final paper says. <https://www.nejm.org/doi/full/10.1056/NEJMoa2022926>

2020-10-10 Continuing the series of health-journal commentaries on various governmental responses, Gonsalves and Yamey comment in the BMJ on 2020-10-06 on political interference in public health science <https://www.bmj.com/content/371/bmj.m3878> Writing in the BMJ blog, Abraar Karan provides the grass-roots justification for these concerns <https://blogs.bmj.com/bmj/2020/10/09/abraar-karan-politics-and-public-health-in-america-taking-a-stand-for-what-is-right/> *"As a physician who has both cared for numerous patients with covid-19, as well as worked on a state level covid-19 epidemic response, of which much ends up being political, I know that there is no talking about health without talking politics, and vice versa. When I see patients, I do so knowing in my heart that many of them wouldn't be there if not for our failed response to this epidemic. This is personal."*

That is the point of public health – it is health and it is public, and public inevitably means political. It is as simple as that.



2020-10-12 There has recently been a great deal of fuss about the so-called “Great Barrington Declaration”, signed by some epidemiologists who think that actually there is more immunity to Covid-19 than has been measured by the seroprevalence surveys. They are suggesting as public health measures just letting the disease spread until herd immunity has been reached, while protecting the “vulnerable”. Quite how the vulnerable shall be protected while the rest of the “non-vulnerable” public is partying has not been adequately explained. A news article on a letter sent to HMG, as well as another letter from a group of public health experts saying that it is impractical to isolate and protect the “vulnerable”, was published on 2020-09-21 in the BMJ by Jacqui Wise <https://www.bmj.com/content/370/bmj.m3702> The context of the Great Barrington Declaration is well discussed by Sonia Sodha, the Observer's chief leader writer in The Observer on 2020-10-11 at <https://www.theguardian.com/commentisfree/2020/oct/11/the-rebel-scientists-cause-would-be-more-persuasive-if-it-werent-so-half-baked> Sodha says what other epidemiologists and public health experts have already noted, namely there is a lack of evidence for this state of affairs.

The letter by Sunetra Gupta, Carl Heneghan, Karol Sikora and the economic consultant Sam Williams may be found embedded in TheG's article on it at <https://www.theguardian.com/science/2020/sep/22/scientists-disagree-over-targeted-versus-nationwide-measures-to-tackle-covid>

It is a letter specifically on public-health policy. The response, by Trish Greenhalgh and others, is on the BMJ blog at <https://blogs.bmj.com/bmj/2020/09/21/covid-19-an-open-letter-to-the-uks-chief-medical-officers/#comment-5079217714> The list of signatories includes eminent public health

The Great Barrington Declaration (GBD) <https://gbdeclaration.org> suggests “*The most compassionate approach [to public health] that balances the risks and benefits of reaching herd immunity, is to allow those who are at minimal risk of death to live their lives normally to build up immunity to the virus through natural infection, while better protecting those who are at highest risk. We call this Focused Protection.*” Gupta is one of the three principals. Sikora is a signatory. Heneghan is not listed as a signatory. The Heneghan-Gupta-Sikora letter is broadly consistent with the GBD, while more tentative.

Let us be clear about what is going on here. A collection of scientists is making direct representations about policy to government. And those representations are being countered by other scientists who do not agree. The paradigm of scientists discussing amongst themselves in forums such as SAGE or Independent SAGE or in their institutions and then trying to determine if there is consensus is not being followed here.

The situation as I see it is this.

First, seroprevalence surveys have been performed in many places. In large cities, and such centres of outbreaks as Gangelt in Germany, those with antibodies amount generally to 10-15% of the population. In the “countryside”, smaller towns and such, survey are showing under 10%. The “herd immunity” level for Covid-19 lies between 60% and 70%. That is, at best, after the last eight months, and assuming that people displaying antibodies remain immune for long periods of time, at most a quarter of the population in big cities are immune. Outside those areas, it might be one tenth



or lower. Summary: there appears to be a long way to go. As I have mentioned in previous notes (e.g., Notes Part 17, entry on 2020-09-19 on the article by Peter Doshi) it is possible that some immunity is conferred by “T-cell memory” and cross-reactivity to other coronaviruses. But we don't know much about that yet. Assuming that any such mechanisms are prevalent is a supposition.

Second, how to protect the “vulnerable” while the virus is spreading widely amongst the rest of the population is a question which, as far as I can see, has not satisfactorily and effectively been addressed by anyone. Greenhalgh et al say so explicitly: “1.d) ..... *there are no examples of a segmentation-and-shielding policy having worked in any country....*”

If it goes wrong, there will be lots of deaths amongst the “vulnerable” which would not otherwise have occurred. There is a precedent for such failure: efforts in many countries to protect those in care homes around the world mostly failed from March to recently, except in those countries which succeeded (so far) in protecting most all of their citizens. Such failures have only slowly been remedied. If I were a politician weighing up whether to attempt to implement such a segmentation-and-shielding policy, I would be very concerned about the possibly hundreds of thousands of deaths which might occur (in, say, a country with a population of 60m-80m) if it didn't work out so well. Those deaths would be my responsibility if I chose to go that route.

Besides, many countries are currently experienced heavy strain – again – on their health care systems with increasing rates of infection. It is not clear if any health care system could cope with the consequences of an undamped increase in serious cases, let alone those which turn out to be fatal.

That all seems to be a huge risk with a significant probability of occurring. Why take it?

2020-10-12 After the weekend, there are now 33 districts and cities showing a “red” level of infections in the last 7 days (50 per 100,000 residents)  
[https://www.focus.de/politik/deutschland/grosse-hotspot-uebersicht-33-kreise-sind-jetzt-risikogebiet\\_id\\_12527054.html](https://www.focus.de/politik/deutschland/grosse-hotspot-uebersicht-33-kreise-sind-jetzt-risikogebiet_id_12527054.html) (in German). This from a total of 404, making 8% of them. (There are 294 districts, plus 107 district-free cities, plus Saarbrücken, Hannover and Aachen which are a mixture of city+surrounding region.)

Six of those red areas are on or adjacent to the Ruhr: Recklinghausen, Hamm, Unna, Hagen, Essen, Duisburg, and two more just south: Wuppertal and Cologne. All in NRW. For them, the 150-participant limit for celebrations is now down to 25 participants. I read in the newspaper today that the Ordnungsamt visited all 18 registered celebrations on Saturday evening to ensure the regulations were being adhered to (over 50 guests requires registration and various hygiene/tracing measures be implemented). Two representatives started their shift at around 1800 and finished it at about 0300 on Sunday morning. The way the numbers appear to be increasing, I can't see this extraordinarily liberal limit on participants in celebrations continuing for much longer. That limit surely has to be lowered.

2020-10-12 An interview with Christian Drosten, the head of the virology institute at the Charité

Hospital in Berlin, in Die Zeit on 2020-10-08 <https://www.zeit.de/wissen/2020-10/christian-drosten-coronavirus-infection-winter-virologist/komplettansicht> The interview does not emphasise his prominence – he is the codiscoverer of SARS, led the team who developed the first test for SARS-CoV-2 test, and the lab he heads is the German government reference institution for virology. He has been conducting a series of podcasts for the TV broadcaster ZDF since near the beginning of the pandemic and has captivated people with his style and his straight talking. For example, I have mentioned the Freiburg IMM study of and guidelines for music making in the era of Covid-19 (Notes Part 17, entry 2020-09-30). They speak of an air exchange rate in enclosed spaces of 6 room-volumes per hour as sufficient to clear the air of aerosols, and talk of the “cathedral situation” of music making in a space with high ceilings; suggesting 10m ceiling is sufficient to compare the aerosol attenuation with the 6 exchanges-per-hour rate. Drosten says *“I recently attended an event on a factory floor. The ceiling was so high that it was practically like being outside.”* Same info, put concisely and memorably. That is a hallmark of his communications, as it is of those of Chancellor Merkel.

My key takeaway from the interview was that we still do not know what rate of virus shedding makes us infective. (Of course, there are other variables involved, such as the amount of shedded virus which makes it on to another person's uptake organs, and the variable sensitivity of people to the initial amount of virus which can successfully replicate in them.) I have been looking for work to shed light on that, and not found much. It is informative to know that the top guy still doesn't know. Put that together with the Charité study which showed viral loads did not differ between adults and children (Notes Part 6, entry 2020-05-02) and this raises the puzzle why children under 10 appear to be less than half as susceptible to Covid-19 as older children, teenagers and adults. Despite all the work being done on Covid-19 and SARS-CoV-2, basic questions such as this, which are surely key for public health, have not yet been definitively answered.

2020-10-13 The WHO has come out strongly against the GBD suggestion, calling any attempt to develop immunity by letting people become infected “unethical” <https://www.theguardian.com/world/2020/oct/12/who-chief-says-herd-immunity-approach-to-pandemic-unethical> The WHO head, Tedros Adhanom Ghebreyesus, pointed out that less than 10% of people in most countries are believed to have contracted Covid-19 so far. Indeed, even if one could protect vulnerable people, it is hard to see how letting the virus distribute freely amongst less-at-risk people could result in fewer deaths and cases of severe illness than by continuing to attempt to dampen it; the likelihood is that it will result in more.

It has been observed that the economic misery accompanying attempts at dampening the disease has its cost also in terms of lives lost and severe illness and other distressing consequences. Under a utilitarian approach, “getting it over with quickly” by allowing the disease to run rampant could save some of those, at the cost of more short-term distress from Covid-19 itself. However, to enable a utilitarian weighing-up, one needs a plausible estimate of both of those quantities. I don't know of any plausible calculation of either. It is very hard for me to see how allowing six times the current rates of Covid-19 (the minimum quantity needed for herd immunity) would not result in significant breakdown of normal life in any country. Such an approach could surely only be tolerated if it turns out that resistance to the disease (immunity, or tolerance) is in fact much higher than has been seen

so far. Evidence for that is notably lacking, and evidence to the contrary is abundant – people are still getting the disease, and many of them are sick enough to significantly stress the health care systems in many developed countries. If people are somehow immune or tolerant of Covid-19, why would that be happening?

And of course not all ethical views are utilitarian. Other views say that taking an approach which will certainly result in more distress of a certain sort is not acceptable, even if other distress may thereby possibly be avoided. One has an equal duty of care to all, and cannot neglect that duty for some in order to gain other advantage.

Generally, I prefer the term “immoral” to “unethical”. “Unethical” says an action does not fit a particular view of ethics – but unless one says what that view is, it is a relative judgement. If one takes a “social-Darwinian” ethical view, say that Covid-19 kills the “weak” but lets the “strong” persist, and thinks that is a valuable outcome for the human race, then the GBD approach is fine according to that, not “unethical”. So, for example, a social-Darwinian-ethicist could legitimately disagree with Tedros Adhanom's assertion: “no, it is not”. The two assertions are then contraries. As usual, one could conclude that one of the two is mistaken. However, by saying such an outcome would be “immoral”, one is saying that the approach is unacceptable in the ethical view one holds oneself, which is in my case certainly not social-Darwinian, and I take it not in the WHO's case either. A social-Darwinian-ethicist could not legitimately disagree with the assertion. Heshe could still say “according to my moral philosophy, it is not,” but that is not contrary, and it is also more informative. It shows that a disagreement stems from holding different principles, not from making a mistaken judgement.

2020-10-14 A SAGE paper, “Summary of the effectiveness and harms of different non-pharmaceutical interventions”, dated 2020-09-21, has been published via SCRIBD in TheG on 2020-10-13 <https://www.theguardian.com/world/2020/oct/13/uks-test-and-trace-having-marginal-impact-which-countries-got-it-right> . Key takeaways from the SAGE paper:

- Over 90% of the (UK) population remains susceptible to the virus (as of writing).
- Estimates from SPI-M suggest R was between 1.1 and 1.4 nationally (as of writing), with most local authorities having  $R > 1$ .
- Households are key: “*Household transmission remains the most widely recorded setting of transmission. PHE reports secondary attack rates of around 40-50% within households....*”
- TTI isn't working very well: “*An effective test, trace and isolate (TTI) system is important to reduce the incidence of infections in the community. Estimates of the effectiveness of this system on R are difficult to ascertain. The relatively low levels of engagement with the system (comparing ONS incidence estimates with NHS Test and Trace numbers) coupled with testing delays and likely poor rates of adherence with self-isolation suggests that this system is having a marginal impact on transmission at the moment.*”
- The paper recommends a “circuit breaker” lockdown. Two weeks would dampen the then-current high rate of transmission for about 4 weeks, giving everyone a breather.

2020-10-15 The UK National Institute for Health Research has published a report on “long Covid”, people who are spending months on recovering from their bout of Covid-19

<https://evidence.nihr.ac.uk/themedreview/living-with-covid19/> It suggests there are (at least) four different syndromes: first, recovery from intensive care (which is known can take a long time, and some people are in intensive care for very long periods); second, long-lasting fatigue of the CFS sort; third, lasting organ damage, in particular to the lungs or heart; fourth, “fluctuating symptoms”, in which you sort of wake up every day with a different complaint. As one might expect, this is an ongoing study. Next steps include a series of Webinars in November.

2020-10-15 Germany recorded 6,638 new cases on Wednesday 2020-10-14 according to the RKI Dashboard, the highest total ever. There are new, uniform restrictions to come into place, the result of an eight-hour presence meeting between Chancellor and the federal states on 2020-10-14. The limits of 35  $\text{ni10}^5\text{r7d}$  and 50  $\text{ni10}^5\text{r7d}$  are still used. Above 35  $\text{ni10}^5\text{r7d}$  there is a requirement for masks in all situations in which people are either in close contact or together for an extended period. Meetings in public areas are limited to 25 people; in private to 15 people. Above 50  $\text{ni10}^5\text{r7d}$ , bars and clubs (but not restaurants) must close at 2300, private meetings, whether in public or private spaces, restricted to 10 people from maximal 2 households, and cultural events restricted to 100 participants. And if the rate does not come down within 10 days, then further restrictions. And non-essential travel inside and out of areas (districts and cities) with high  $\text{ni10}^5\text{r7d}$  should be avoided. Info from <https://www.sueddeutsche.de/politik/corona-deutschland-regeln-bund-laender-1.5070094> (in German).

Got all that? These numbers keep dancing around every couple of weeks. Not only that, but they are not uniformly reported in all newspapers. The SZ (above) says bars and clubs will be closed, but my local newspaper reports on “gastronomy” which includes restaurants. But most restaurants are closed by 2300 anyway, so the reports are practically equivalent. There is also the issue that individual states will not have *exactly* the same regulations – I read that Saxony, for example, is not going to alter its current regulation after yesterday's meeting.

I look at what our official state WWW site says <https://www.land.nrw/corona> (in German). There are 26 slides on the regulations to read through. They are not all consistent with yesterday's agreement. I read in the local NW newspaper that NRW last updated its regulations on Monday 2020-10-12.

I read numerical detail in regulations (primarily engineering regulations and standards) and have done for decades, and even I cannot remember these regularly-changing details anywhere near perfectly. There is no such simple “Rule of Six” or similar. At least Germany is coming nearer to what other European lands have decided, implementing a “Rule of Ten”, although only in the “risk areas” of 50  $\text{ni10}^5\text{r7d}$  or more.

I read in the NW that the result of the infected person visiting two 150-person wedding receptions in Bielefeld (BI) in the first October weekend have only been 12 new infections so far. However, that is still only on day 10, and during the last BI superspreading event on 2020-09-15, it took 12 days for the numbers to show up clearly in the city's statistics.