

Analysis of Vaccinated versus Unvaccinated populations in Israel, since the beginning of the Vaccination Program.

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Abstract

Israel is one of the most vaccinated countries in the world and is publishing health data about the Covid-19 pandemic. Analysis of this real-life data reveals another story than what generally is being portraited, based on modelling predictions. The world is not as bad, and the vaccines are not as good.

There is no merit in vaccinating all age groups and vaccine mandates are inconsistent with the ability of the vaccine to reduce the spread. A targeted approach aimed at the elderly age groups is sufficient to tackle the drawbacks of the pandemic.

Especially when vaccines are in short supply it is better to vaccinate the elderly with booster shots than vaccinating all age groups.

With the emergence of the Delta variant, risks of serious adverse effects is greater than the Crude Mortality Ratio of their age group for most of the population.

Background

The Australian government has embarked on a roadmap out of lockdowns via mass vaccination based on modelling from the Doherty Institute. Why is this plan based on modelling whilst there is real-life data available from other countries that have encountered severe outbreaks of Covid-19 and that are ahead in the vaccination-drive?

Israel started immunising their population on 20th Dec 2020 and reached an immunisation rate of 63.4% on 21st August 2021 with an immunisation rate in all age groups above 19 of more than 80%. In this period Israel experienced a major outbreak of Covid-19 (Alpha variant) and at the end of this period an outbreak of the Delta variant is emerging whilst having very high vaccination rates in the most vulnerable age groups.

This study analyses publicly available data from Israel and derives epidemiological and immunological parameters from this data and investigates the differences in the Alpha and Delta variant outbreaks.

Method

The data is derived from publicly available data from the Israeli Governmentⁱ and Health Departmentⁱⁱ. The Daily Vaccination data, Cases and Events amongst Vaccinated are combined into one spreadsheet to be able to compare vaccination data with epidemiological data. The spreadsheet can provide aggregate data for each age group and

determines the unvaccinated and vaccinated populations based on the average vaccination rate of the selected period. This provides data for the vaccinated population versus the unvaccinated control group.

The data is analysed for the whole period, the Alpha outbreak and the developing Delta outbreak. For visualisation of the outbreak periods and vaccination drive see Appendix 1 and 2.

The Alpha outbreak period is taken from the beginning of vaccinations until end march when the Alpha outbreak was nearly petered out and when the daily vaccinations started to drop (due to high vaccination rates) It covers a complete period from build-up, peak and petering out (daily deaths ± 15 to 76 and back down to ± 10).

The Delta outbreak looks at the period of beginning July until end of available data. Interesting to note is that at the end 1.4 million booster doses had been administered to the elderly age groups.

To make the appropriate conclusions about the data, benchmarks are set for the Crude Mortality Ratio (CMR), the Relative Risk Ratio (RRR) and the Number Needing Treatment (NNT).

The only adjustment to the downloaded data is to change '<5' notations for the weekly reported cases amongst vaccinated to 1.2 to enable aggregation calculations.

Results

Crude Mortality Rates

Based on 'whole period' sample of 604,821 cases the CMR for the Unvaccinated population = 0.038%. If projected to the Australian population this would equate to approximately 9500 deaths if no vaccination would take place. Looking at the Delta variant the CMR is 0.003% and excluding the 0-19 years old age group it is 0.015%. This would translate to approximately 3.3 thousand deaths for the whole Australian population if unvaccinated. This is comparable to normal Influenza mortality rates. (See appendix 6).

For any period, the Vaccination risk is higher than the CMR of the Unvaccinated for all ages below 40 years old.

For the Delta variant, as the Case Fatality Ratios (CFR) are significantly lower than the Alpha variant in all Age groups, the Vaccination Risk is higher than the CMR for the Unvaccinated below 60 years old.

Relative Risk Reduction

The RRR (often referred to as efficacy) is very low (even sometimes negative) for infections (positive cases). This confirms the suspicion that the vaccines do not stop the spread.

The RRR for avoiding Hospitalisation is approximately 70% for the age group 40-49 and lowers with the older age groups.

The RRR in avoiding deaths is approximately 56% for the age group 70-79 and drops in the higher age groups. The NNT (Death) for Ages below 70 is very high because the Absolute Risk (AR) for these age groups is very low in the first place.

The RRR's for Age groups above 70 seem to benefit from the booster shots (at this stage).

Discussion

RRR versus Absolute Risk Reduction (ARR) discussion.

There is debate amongst scientists about the Vaccine Trial results and the use of RRR as a representation of efficacy. Many claim the use of RRR is misleading. This is all dependant on the rate of infection. This can be demonstrated with this collection of data. Consider the analysis result for the period of 2-5-21 until 20-6-21. (Appendix 7). In this period (in between Alpha and Delta outbreaks) the infection rate is very low and the average daily deaths is below 1. The RRR's are looking pretty descent, but the NNT's are very high because the risk of infection is very low in this period. (CMR for this period = 0.001% or 10 in a million)

Thus, RRR is not always a good indication for efficacy as base of the ratio can be very thin and not statistically solid. For this reason, a benchmark NNT of 1000 is used.

It raises the question if the epidemiological strain on the population that was used for the vaccine trials, was appropriate.

Vaccination Risk

See Appendix 8 for an overview of adverse events after vaccination as reported by the TGA. Whilst the TGA only recognises 7 deaths due to vaccinations it is very likely that there is underreporting of all events. The reported events about Myocarditis and Pericarditis indicate a risk of 0.006% by itself. It is very likely that the total risk of vaccination is higher than 0.006%, which is used as benchmark in this analysis.

Booster Shots

Since the beginning of August 'booster shots' (dose 3) have been administered to the older age groups. It seems that these booster shots help in avoiding cases in these elderly groups. If the last week of the dataset is taken out of the analysis the RRR's for Cases amongst these age groups drop, but the NNT's also increase as it shifts to only the beginning of the outbreak.

Another question is if the habits of the age groups influence the outcomes. The older the less likely are people to mingle with a lot of other people. If you compare the Age Group 60-69 with 58% Booster shot ratio to the Age Group 70-79 with a 74% Booster shot ratio the RRR's are halved.

How exactly the parameters of the booster shots will develop over time and how long the effect will last remains to be seen.

Conclusion

- Vaccinations do **not** significantly reduce the spread.
 - The Real-life Efficacy of the vaccine is lower than the often publicly quoted 90 to 95%.
 - The Vaccination Risk is higher than the CMR for all ages below 40. (The benchmark used for Vaccination Risk is likely to be low)
 - There is merit to vaccinations to avoid Hospitalisation for the age groups 40 – 59 and some merit for the age groups 60-79 for the Alpha variant. For the Delta variant there is some merit to avoid Hospitalisation for the age groups above 70.
 - There is some merit to vaccinations to avoid Death for the age groups above 70.
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- There is no merit in vaccinating all age groups and vaccination mandates are inconsistent with the ability of the vaccine to reduce the spread.
 - A targeted vaccination program to age groups above 60 (with booster shots) is more productive than vaccinating all age groups. (Especially in a situation with short supply.)

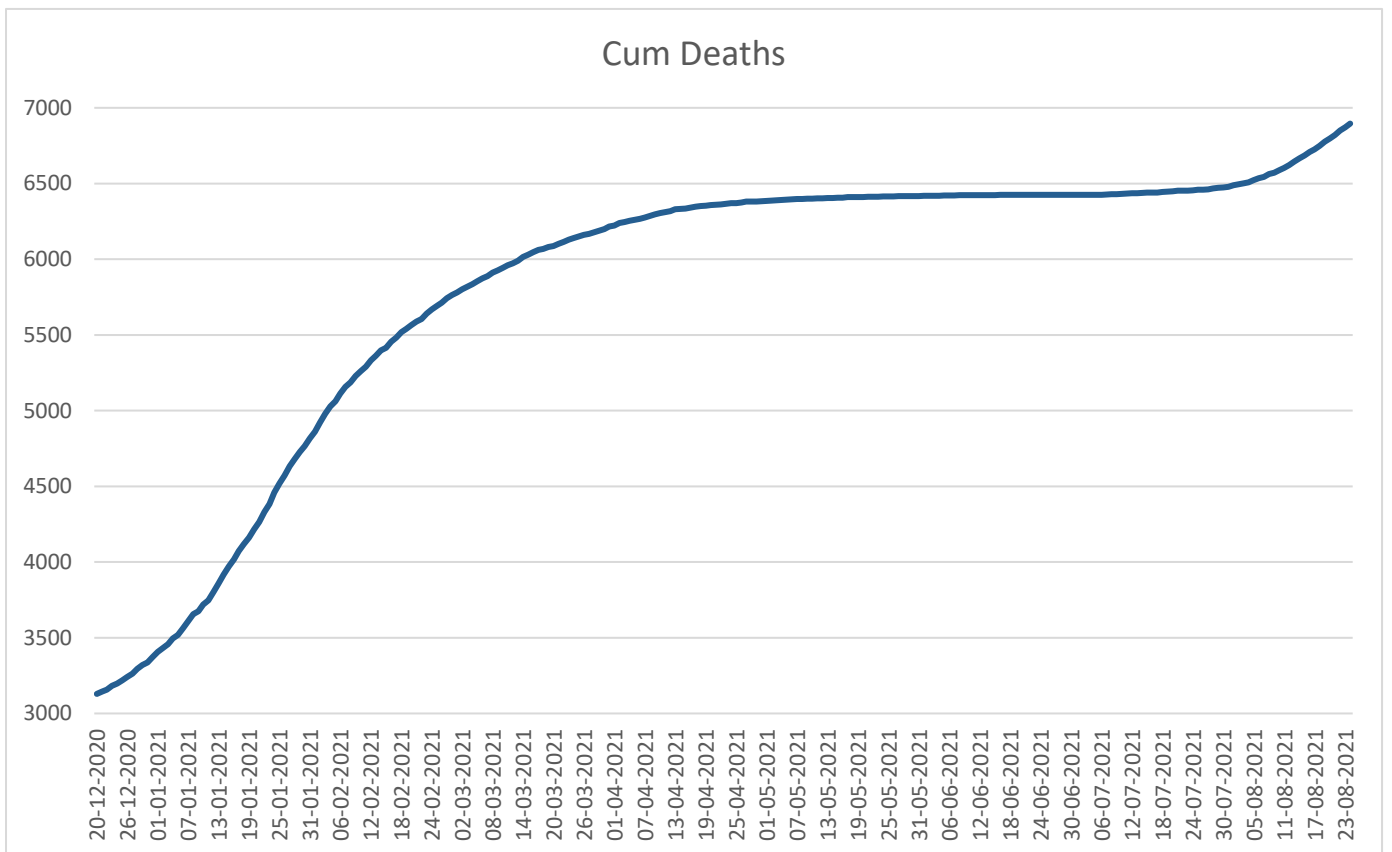
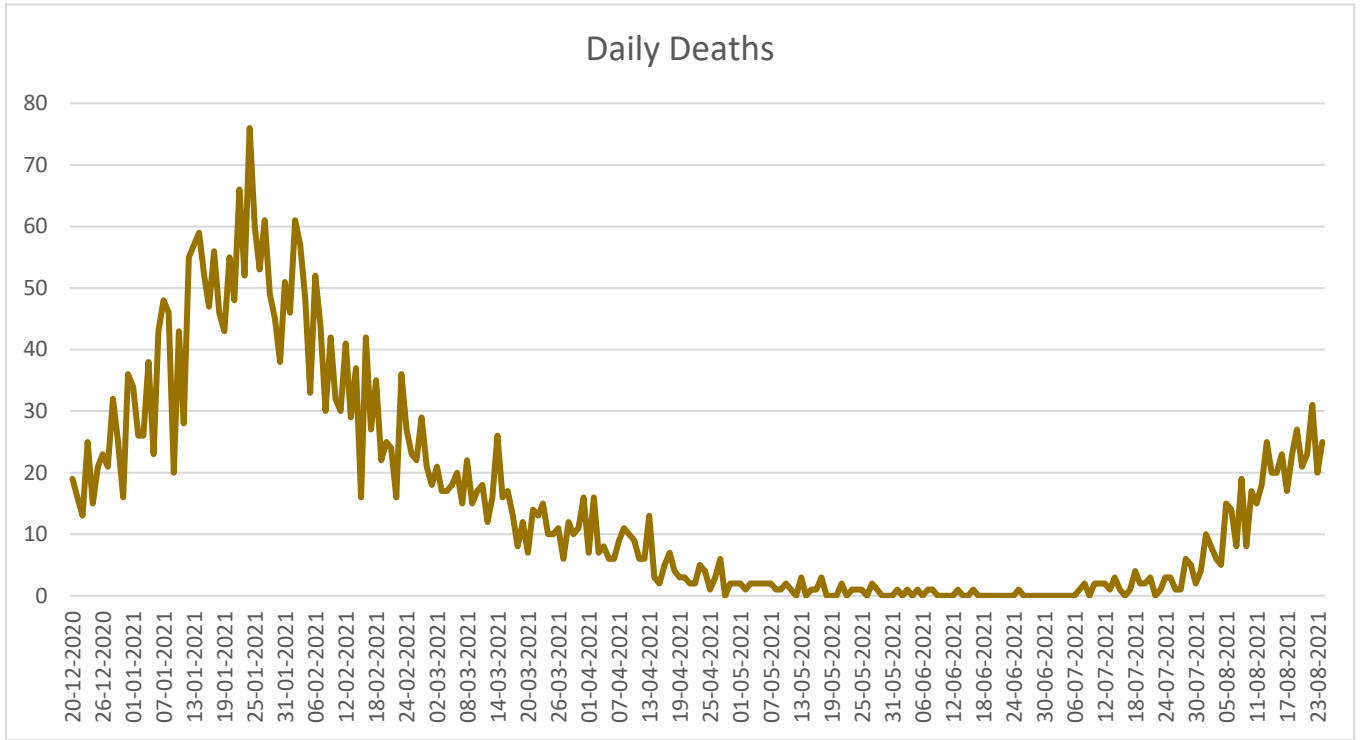
References

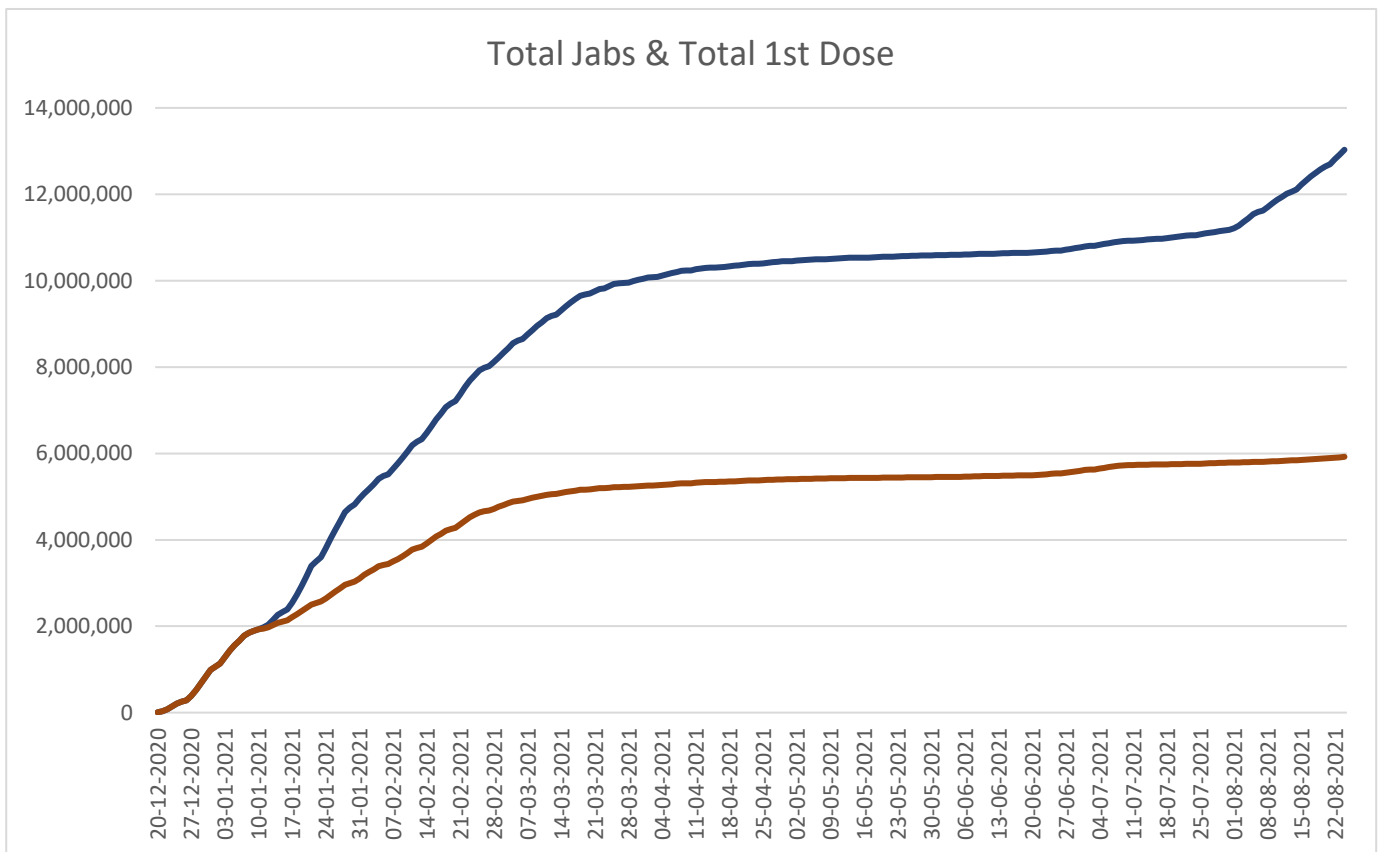
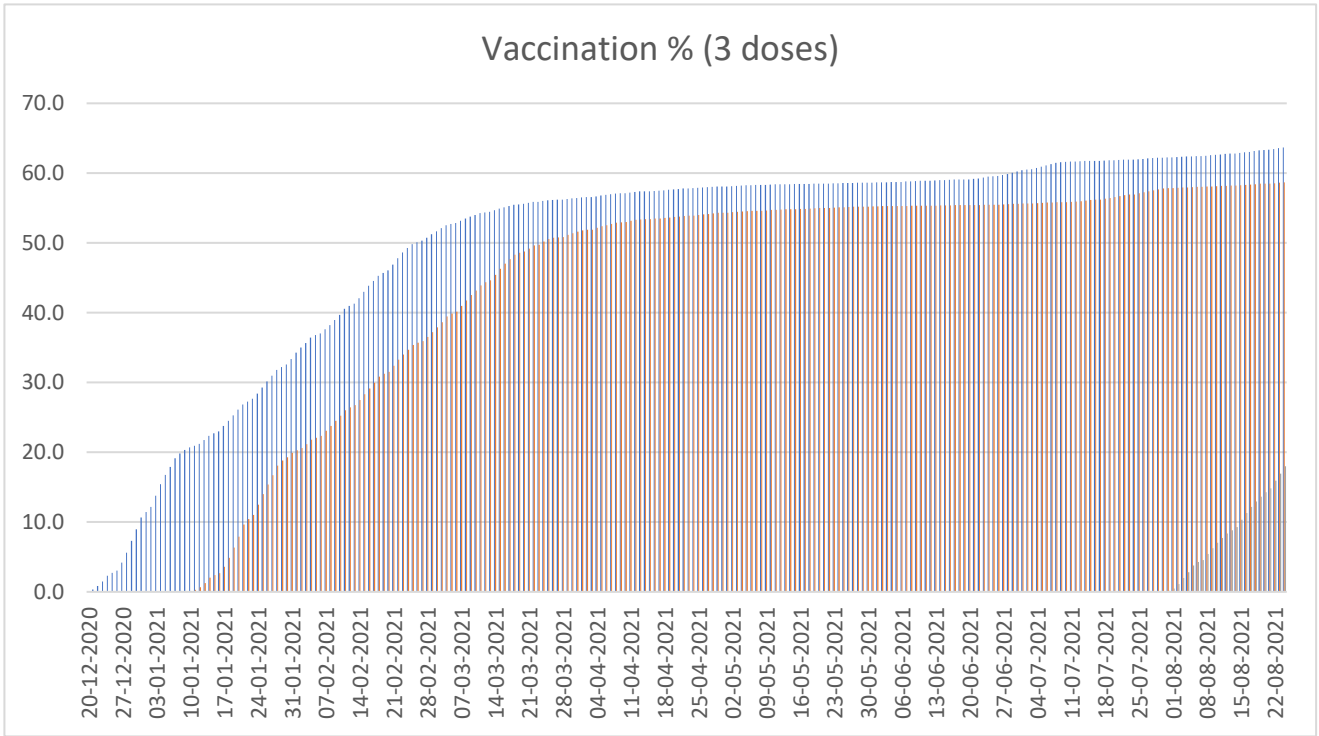
ⁱ <https://data.gov.il/dataset/covid-19>

ⁱⁱ https://datadashboard.health.gov.il/COVID-19/general?utm_source=go.gov.il&utm_medium=referral

Appendices

- Appendix 1 Graphical presentation of Covid-19 Outbreaks in Israel
- Appendix 2 Graphical presentation of Vaccination roll-out in Israel
- Appendix 3 Analysis public health data Israel - Whole Vaccination Period (2 pages)
- Appendix 4 Analysis public health data Israel - Alpha Outbreak (2 pages)
- Appendix 5 Analysis public health data Israel - Emerging Delta Outbreak (2 pages)
- Appendix 6 Influenza statistics
- Appendix 7 Analysis public health data Israel - Low Infection Rate Period (2 pages)
- Appendix 8 Vaccination Risks





Appendix 3 - Whole Vaccination Period

Week (All) <= select weeks

select weeks =>

Values	Age Groups									
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
Sum of pos_dose-1_1-6days	1,847	3,151	2,558	2,513	1,929	1,285	594	399	126	14,401
Sum of pos_dose-1_7-13days	3,245	5,086	4,500	4,822	4,080	3,037	1,466	777	296	27,309
Sum of pos_dose-1_14-20days	1,111	1,760	2,072	2,613	2,503	2,344	1,201	694	193	14,491
Sum of pos_dose-1_>20days	693	1,014	1,036	1,118	965	762	507	232	63	6,391
Sum of pos_dose-2_1-6days	283	420	546	673	728	622	371	250	93	3,986
Sum of pos_dose-2_7-13days	161	198	341	443	498	535	334	280	76	2,866
Sum of pos_dose-2_14-20days	74	41	95	123	129	132	152	102	33	880
Sum of pos_dose-2_>20days	4,885	14,471	15,988	15,757	10,528	7,235	4,294	1,942	502	75,602
Sum of pos_dose-1	6,895	11,012	10,167	11,066	9,477	7,427	3,768	2,102	679	62,592
Sum of pos_dose-2	5,403	15,130	16,969	16,995	11,884	8,523	5,151	2,574	703	83,334
Sum of pos_Unvax	233,688	76,026	57,119	41,711	26,018	13,605	6,341	3,289	1,098	458,895
Sum of Hosp_dose-1	17	121	182	275	409	669	756	755	308	3,491
Sum of Hosp_dose-2	29	84	142	160	304	566	869	888	277	3,319
Sum of Hosp_Unvax	1,499	1,435	1,654	1,815	2,019	2,015	1,946	1,629	592	14,603
Sum of Death_dose-1		4	6	8	21	112	204	266	151	772
Sum of Death_dose-2				1	11	61	131	195	91	490
Sum of Death_Unvax	5	16	28	62	162	388	605	719	346	2,329
Sum of #_dose-1	713,703	1,037,483	1,005,652	955,697	767,357	677,535	470,930	213,128	48,468	5,889,953
Sum of #_dose-2	580,535	944,938	935,216	894,885	723,510	649,491	458,509	207,139	46,674	5,440,897
Sum of #-dose-3	0	0	12,991	78,052	287,303	433,301	364,800	158,577	33,507	1,368,531
Max of total #_jabs	1,294,238	1,982,421	1,953,859	1,928,634	1,778,170	1,760,327	1,294,239	578,844	128,649	1,982,421
Average of jab_alloc	6%	15%	15%	16%	14%	16%	11%	5%	1%	11%
Min of total # dose-1 Age Gp	768	8,456	17,545	24,338	26,505	95,788	79,802	26,392	4,459	768
Max of total # dose-1 Age Gp	713,703	1,037,483	1,005,652	955,697	767,357	677,535	470,930	213,128	48,468	1,037,483
Min of % total dose-1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Max of % total dose-1	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34
Min of % total dose-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-2	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51
Min of % total dose-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-3	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83
Average of # weekly dose-1	168,284	168,284	168,284	168,284	168,284	168,284	168,284	168,284	168,284	168,284
Average of # weekly dose-2	155,454	155,454	155,454	155,454	155,454	155,454	155,454	155,454	155,454	155,454
Average of # weekly dose-3	39,101	39,101	39,101	39,101	39,101	39,101	39,101	39,101	39,101	39,101
Min of total # jabs	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053
Max of total # jabs	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381
Average of Average Daily Deaths	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
Min of Cumulative Deaths	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242
Max of Cumulative Deaths	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820
Min of total # dose-1	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053
Max of total # dose-1	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953

selected:

- 2020-12-20 - 2020-12-26
- 2020-12-27 - 2021-01-02
- 2021-01-03 - 2021-01-09
- 2021-01-10 - 2021-01-16
- 2021-01-17 - 2021-01-23
- 2021-01-24 - 2021-01-30
- 2021-01-31 - 2021-02-06
- 2021-02-07 - 2021-02-13
- 2021-02-14 - 2021-02-20
- 2021-02-21 - 2021-02-27
- 2021-02-28 - 2021-03-06
- 2021-03-07 - 2021-03-13
- 2021-03-14 - 2021-03-20
- 2021-03-21 - 2021-03-27
- 2021-03-28 - 2021-04-03
- 2021-04-04 - 2021-04-10
- 2021-04-11 - 2021-04-17
- 2021-04-18 - 2021-04-24
- 2021-04-25 - 2021-05-01
- 2021-05-02 - 2021-05-08
- 2021-05-09 - 2021-05-15
- 2021-05-16 - 2021-05-22
- 2021-05-23 - 2021-05-29
- 2021-05-30 - 2021-06-05
- 2021-06-06 - 2021-06-12
- 2021-06-13 - 2021-06-19
- 2021-06-20 - 2021-06-26
- 2021-06-27 - 2021-07-03
- 2021-07-04 - 2021-07-10
- 2021-07-11 - 2021-07-17
- 2021-07-18 - 2021-07-24
- 2021-07-25 - 2021-07-31
- 2021-08-01 - 2021-08-07
- 2021-08-08 - 2021-08-14
- 2021-08-15 - 2021-08-21

Appendix 3 - Whole Vaccination Period (part2)

Analysis	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total	
Population	3,351,464	1,297,229	1,194,691	1,096,460	848,720	741,432	490,532	225,308	51,523	9,297,359	
Min Vax %	0.0%	0.7%	1.5%	2.2%	3.1%	12.9%	16.3%	11.7%	8.7%	3.1%	
Max Vax %	21.3%	80.0%	84.2%	87.2%	90.4%	91.4%	96.0%	94.6%	94.1%	63.4%	
Average Vax %	10.7%	40.3%	42.8%	44.7%	46.8%	52.2%	56.1%	53.2%	51.4%	33.2%	
Average Vax Population	357,236	522,970	511,599	490,018	396,931	386,662	275,366	119,760	26,464	3,087,003	
Average Unvax Population	2,994,228	774,260	683,092	606,442	451,789	354,770	215,166	105,548	25,060	6,210,356	
Case # vaxed	12,298	26,142	27,136	28,062	21,361	15,950	8,920	4,676	1,382	145,926	
Case # Unvax	233,688	76,026	57,119	41,711	26,018	13,605	6,341	3,289	1,098	458,895	
Vax % of Cases	5.0%	25.6%	32.2%	40.2%	45.1%	54.0%	58.4%	58.7%	55.7%	24.1%	
Case % Vaxed (AR)	3.44%	5.00%	5.30%	5.73%	5.38%	4.13%	3.24%	3.90%	5.22%	4.73%	
Case % Unvac (AR)	7.80%	9.82%	8.36%	6.88%	5.76%	3.83%	2.95%	3.12%	4.38%	7.39%	
Case ARR (Risk Dif Pos)	4.36%	4.82%	3.06%	1.15%	0.38%	-0.29%	-0.29%	-0.79%	-0.84%	2.66%	
Case RRR ("Efficacy")	55.89%	49.09%	36.57%	16.74%	6.55%	-7.57%	-9.92%	-25.29%	-19.19%	36.03%	
Case NNT	23	21	33	87	265	-344	-342	-127	-119	38	
Hospitalised # Vax	46	205	324	435	713	1,234	1,625	1,644	585	6,810	
Hospitalised # Unvax	1,499	1,435	1,654	1,815	2,019	2,015	1,946	1,629	592	14,603	
Vax % of Hosp	3.0%	12.5%	16.4%	19.3%	26.1%	38.0%	45.5%	50.2%	49.7%	31.8%	
Hosp % Vax (AR)	0.01%	0.04%	0.06%	0.09%	0.18%	0.32%	0.59%	1.37%	2.21%	0.22%	
Hosp % Unvax (AR)	0.05%	0.19%	0.24%	0.30%	0.45%	0.57%	0.90%	1.54%	2.36%	0.24%	
Hosp ARR (Risk Dif Pos)	0.04%	0.15%	0.18%	0.21%	0.27%	0.25%	0.31%	0.17%	0.15%	0.01%	
Hosp RRR ("Efficacy")	74.39%	78.83%	73.85%	70.36%	59.80%	43.80%	34.76%	11.07%	6.46%	6.18%	
Hosp NNT	2685	685	559	475	374	402	318	586	656	6876	
Death # Vax	0	4	6	10	32	173	335	460	242	1,262	
Death # Unvax	5	16	28	62	162	388	605	719	346	2,329	
Vax % of Death	0.0%	18.8%	17.6%	13.4%	16.6%	30.8%	35.7%	39.1%	41.2%	35.1%	
Death % Vax (AR)	0.00%	0.00%	0.00%	0.00%	0.01%	0.04%	0.12%	0.38%	0.91%	0.04%	
Death % Unvax (AR)	0.00%	0.00%	0.00%	0.01%	0.04%	0.11%	0.28%	0.68%	1.38%	0.04%	
Death ARR (Risk Dif Pos)	0.00%	0.00%	0.00%	0.01%	0.03%	0.06%	0.16%	0.30%	0.46%	0.00%	
Death RRR ("Efficacy")	100.00%	65.83%	71.39%	80.84%	77.32%	59.21%	56.65%	43.53%	33.69%	-8.99%	
Death NNT	623798	75389	34174	12100	3616	1544	628	337	215	-29650	Excl 0-19
CFR Vax	0.00%	0.01%	0.02%	0.03%	0.15%	1.08%	3.76%	9.85%	17.51%	0.86%	0.94%
CFR Unvax	0.00%	0.02%	0.05%	0.15%	0.62%	2.85%	9.53%	21.85%	31.48%	0.51%	1.03%
CMR Vax	0.000%	0.001%	0.001%	0.002%	0.008%	0.045%	0.122%	0.384%	0.914%	0.041%	0.046%
CMR Unvax	0.000%	0.002%	0.004%	0.010%	0.036%	0.109%	0.281%	0.681%	1.379%	0.038%	0.072%
Benchmark CMR Unvax =Vax Risk	0.006%										
Benchmark RRR	50%										
Benchmark NNT	1000										



2020-12-20 - 2020-12-26 | 2020-12-27 - 2021-01-02 | 2021-01-03 - 2021-01-09 | 2021-01-10 - 2021-01-16 | 2021-01-17 - 2021-01-23 | 2021-01-24 - 2021-01-30 | 2021-01-31 - 2021-02-06 | 2021-02-07 - 2021-02-13 | 2021-02-14 - 2021-02-20 | 2021-02-21 - 2021-02-27 | 2021-02-28 - 2021-03-06 | 2021-03-07 - 2021-03-13 | 2021-03-14 - 2021-03-20 | 2021-03-21 - 2021-03-27 | 2021-03-28 - 2021-04-03 | 2021-04-04 - 2021-04-10 | 2021-04-11 - 2021-04-17 | 2021-04-18 - 2021-04-24 | 2021-04-25 - 2021-05-01 | 2021-05-02 - 2021-05-08 | 2021-05-09 - 2021-05-15 | 2021-05-16 - 2021-05-22 | 2021-05-23 - 2021-05-29 | 2021-05-30 - 2021-06-05 | 2021-06-06 - 2021-06-12 | 2021-06-13 - 2021-06-19 | 2021-06-20 - 2021-06-26 | 2021-06-27 - 2021-07-03 | 2021-07-04 - 2021-07-10 | 2021-07-11 - 2021-07-17 | 2021-07-18 - 2021-07-24 | 2021-07-25 - 2021-07-31 | 2021-08-01 - 2021-08-07 | 2021-08-08 - 2021-08-14 | 2021-08-15 - 2021-08-21

Appendix 4 - Alpha Outbreak

Week (Multiple Items) <= select weeks

select weeks =>

selected:

Values	Age Groups									
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
Sum of pos_dose-1_1-6days	1,496	3,103	2,523	2,495	1,918	1,281	588	395	123	13,923
Sum of pos_dose-1_7-13days	2,644	4,985	4,427	4,778	4,049	3,016	1,454	773	294	26,420
Sum of pos_dose-1_14-20days	798	1,708	2,006	2,563	2,474	2,320	1,196	689	191	13,945
Sum of pos_dose-1_>20days	230	561	688	864	824	692	466	207	56	4,588
Sum of pos_dose-2_1-6days	133	394	524	657	713	617	369	247	92	3,745
Sum of pos_dose-2_7-13days	46	180	312	423	490	528	331	275	75	2,659
Sum of pos_dose-2_14-20days	5	33	80	114	124	132	146	97	33	764
Sum of pos_dose-2_>20days	21	147	334	472	417	456	334	195	81	2,458
Sum of pos_dose-1	5,168	10,357	9,644	10,700	9,265	7,309	3,704	2,064	664	58,876
Sum of pos_dose-2	205	754	1,251	1,666	1,744	1,733	1,180	814	280	9,626
Sum of pos_Unvax	177,430	70,044	51,610	37,848	23,773	12,226	5,599	2,883	948	382,361
Sum of Hosp_dose-1	10	106	161	254	385	636	719	734	296	3,302
Sum of Hosp_dose-2	4	7	10	28	53	115	240	238	82	778
Sum of Hosp_Unvax	1,138	1,226	1,386	1,537	1,754	1,689	1,678	1,360	496	12,264
Sum of Death_dose-1		4	5	5	17	105	192	257	147	731
Sum of Death_dose-2				1	4	12	51	79	46	192
Sum of Death_Unvax	4	12	20	51	140	326	519	621	302	1,994
Sum of #_dose-1	355,286	918,380	913,678	893,346	726,162	652,253	457,098	205,967	46,129	5,168,299
Sum of #_dose-2	275,814	741,639	773,212	793,274	660,562	611,979	438,093	195,984	43,404	4,533,961
Sum of #-dose-3	0	0	0	0	0	0	0	0	0	0
Max of total #_jabs	631,100	1,660,019	1,686,890	1,686,620	1,386,724	1,264,232	895,191	401,951	89,533	1,686,890
Average of jab_alloc	3%	10%	12%	15%	15%	21%	16%	7%	1%	11%
Min of total # dose-1 Age Gp	768	8,456	17,545	24,338	26,505	95,788	79,802	26,392	4,459	768
Max of total # dose-1 Age Gp	355,286	918,380	913,678	893,346	726,162	652,253	457,098	205,967	46,129	918,380
Min of % total dose-1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Max of % total dose-1	55.58	55.58	55.58	55.58	55.58	55.58	55.58	55.58	55.58	55.58
Min of % total dose-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-2	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76	48.76
Min of % total dose-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-3	0	0	0	0	0	0	0	0	0	0
Average of # weekly dose-1	397,561	397,561	397,561	397,561	397,561	397,561	397,561	397,561	397,561	397,561
Average of # weekly dose-2	348,766	348,766	348,766	348,766	348,766	348,766	348,766	348,766	348,766	348,766
Average of # weekly dose-3	0	0	0	0	0	0	0	0	0	0
Min of total # jabs	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053
Max of total # jabs	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260	9,702,260
Average of Average Daily Deaths	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7
Min of Cumulative Deaths	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242	3,242
Max of Cumulative Deaths	6,088	6,088	6,088	6,088	6,088	6,088	6,088	6,088	6,088	6,088
Min of total # dose-1	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053	284,053
Max of total # dose-1	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299	5,168,299

- 2020-12-20 - 2020-12-26
- 2020-12-27 - 2021-01-02
- 2021-01-03 - 2021-01-09
- 2021-01-10 - 2021-01-16
- 2021-01-17 - 2021-01-23
- 2021-01-24 - 2021-01-30
- 2021-01-31 - 2021-02-06
- 2021-02-07 - 2021-02-13
- 2021-02-14 - 2021-02-20
- 2021-02-21 - 2021-02-27
- 2021-02-28 - 2021-03-06
- 2021-03-07 - 2021-03-13
- 2021-03-14 - 2021-03-20

Appendix 4 - Alpha Outbreak (part2)

Analysis	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total	
Population	3,351,464	1,297,229	1,194,691	1,096,460	848,720	741,432	490,532	225,308	51,523	9,297,359	
Min Vax %	0.0%	0.7%	1.5%	2.2%	3.1%	12.9%	16.3%	11.7%	8.7%	3.1%	
Max Vax %	10.6%	70.8%	76.5%	81.5%	85.6%	88.0%	93.2%	91.4%	89.5%	55.6%	
Average Vax %	5.3%	35.7%	39.0%	41.8%	44.3%	50.4%	54.7%	51.6%	49.1%	29.3%	
Average Vax Population	178,027	463,418	465,612	458,842	376,334	374,021	268,450	116,180	25,294	2,726,176	
Average Unvax Population	3,173,437	833,811	729,079	637,618	472,386	367,411	222,082	109,129	26,229	6,571,183	
Case # vaxed	5,373	11,111	10,895	12,366	11,009	9,042	4,884	2,878	945	68,502	
Case # Unvax	177,430	70,044	51,610	37,848	23,773	12,226	5,599	2,883	948	382,361	
Vax % of Cases	2.9%	13.7%	17.4%	24.6%	31.7%	42.5%	46.6%	50.0%	49.9%	15.2%	
Case % Vaxed (AR)	3.02%	2.40%	2.34%	2.70%	2.93%	2.42%	1.82%	2.48%	3.73%	2.51%	
Case % Unvac (AR)	5.59%	8.40%	7.08%	5.94%	5.03%	3.33%	2.52%	2.64%	3.61%	5.82%	
Case ARR (Risk Dif Pos)	2.57%	6.00%	4.74%	3.24%	2.11%	0.91%	0.70%	0.16%	-0.12%	3.31%	
Case RRR ("Efficacy")	46.02%	71.46%	66.95%	54.60%	41.87%	27.35%	27.84%	6.23%	-3.33%	56.82%	
Case NNT	39	17	21	31	47	110	142	607	-832	30	
Hospitalised # Vax	13	114	171	282	439	751	959	972	378	4,080	
Hospitalised # Unvax	1,138	1,226	1,386	1,537	1,754	1,689	1,678	1,360	496	12,264	
Vax % of Hosp	1.1%	8.5%	11.0%	15.5%	20.0%	30.8%	36.4%	41.7%	43.3%	25.0%	
Hosp % Vax (AR)	0.01%	0.02%	0.04%	0.06%	0.12%	0.20%	0.36%	0.84%	1.50%	0.15%	
Hosp % Unvax (AR)	0.04%	0.15%	0.19%	0.24%	0.37%	0.46%	0.76%	1.25%	1.89%	0.19%	
Hosp ARR (Risk Dif Pos)	0.03%	0.12%	0.15%	0.18%	0.25%	0.26%	0.40%	0.41%	0.40%	0.04%	
Hosp RRR ("Efficacy")	79.32%	83.33%	80.68%	74.49%	68.61%	56.30%	52.71%	32.85%	20.89%	19.81%	
Hosp NNT	3515	816	652	557	393	386	251	244	253	2704	
Death # Vax	0	4	5	6	20	117	243	336	193	923	
Death # Unvax	4	12	20	51	140	326	519	621	302	1,994	
Vax % of Death	0.0%	23.1%	19.7%	10.5%	12.6%	26.4%	31.9%	35.1%	39.0%	31.6%	
Death % Vax (AR)	0.00%	0.00%	0.00%	0.00%	0.01%	0.03%	0.09%	0.29%	0.76%	0.03%	
Death % Unvax (AR)	0.00%	0.00%	0.00%	0.01%	0.03%	0.09%	0.23%	0.57%	1.15%	0.03%	
Death ARR (Risk Dif Pos)	0.00%	0.00%	0.00%	0.01%	0.02%	0.06%	0.14%	0.28%	0.39%	0.00%	
Death RRR ("Efficacy")	100.00%	46.02%	61.65%	83.72%	81.89%	64.80%	61.30%	49.15%	33.73%	-11.60%	
Death NNT	881510	150980	60335	14876	4120	1739	698	358	257	-28402	Excl 0-19
CFR Vax	0.00%	0.03%	0.04%	0.05%	0.18%	1.29%	4.97%	11.68%	20.43%	1.35%	1.46%
CFR Unvax	0.00%	0.02%	0.04%	0.14%	0.59%	2.67%	9.27%	21.54%	31.86%	0.52%	0.97%
CMR Vax	0.000%	0.001%	0.001%	0.001%	0.005%	0.031%	0.090%	0.289%	0.763%	0.034%	0.036%
CMR Unvax	0.000%	0.001%	0.003%	0.008%	0.030%	0.089%	0.234%	0.569%	1.151%	0.030%	0.059%
Benchmark CMR Unvax =Vax Risk	0.006%										
Benchmark RRR	50%										
Benchmark NNT	1000										



Appendix 5 - Emerging Delta Outbreak

Week (Multiple Items) <= select weeks

select weeks =>

selected:

Values	Age Groups									
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
Sum of pos_dose-1_1-6days	324	17	19	8	5	2	5	2	1	384
Sum of pos_dose-1_7-13days	565	25	22	6	9	6	6	1	2	642
Sum of pos_dose-1_14-20days	284	9	17	6	4	2	2	2	2	328
Sum of pos_dose-1_>20days	441	409	298	203	120	57	30	18	7	1,584
Sum of pos_dose-2_1-6days	147	9	7	6	8	1	1	2	1	184
Sum of pos_dose-2_7-13days	111	5	10	4	4	1	2	4	1	141
Sum of pos_dose-2_14-20days	69	5	1	5	1		1	4		86
Sum of pos_dose-2_>20days	4,824	14,175	15,459	14,909	9,853	6,536	3,805	1,661	397	71,619
Sum of pos_dose-1	1,614	459	356	224	137	68	44	24	13	2,939
Sum of pos_dose-2	5,152	14,194	15,477	14,924	9,866	6,538	3,810	1,671	400	72,031
Sum of pos_Unvax	50,451	4,803	4,438	3,029	1,781	1,052	553	301	117	66,526
Sum of Hosp_dose-1	5	7	7	4	7	7	14	12	6	69
Sum of Hosp_dose-2	23	70	124	116	225	410	595	612	182	2,359
Sum of Hosp_Unvax	251	106	173	181	184	216	163	174	74	1,523
Sum of Death_dose-1					1		2	1	2	7
Sum of Death_dose-2					4	38	69	100	41	251
Sum of Death_Unvax		1	4	1	4	16	28	40	25	119
Sum of #_dose-1	255,362	29,046	22,886	17,196	11,526	7,161	3,981	2,062	591	349,811
Sum of #_dose-2	223,038	15,244	13,328	9,438	8,328	6,588	3,968	1,862	553	282,347
Sum of #-dose-3	0	0	12,991	78,052	287,303	433,301	364,800	158,577	33,507	1,368,531
Max of total #_jabs	1,294,238	1,982,421	1,953,859	1,928,634	1,778,170	1,760,327	1,294,239	578,844	128,649	1,982,421
Average of jab_alloc	10%	17%	17%	16%	13%	12%	9%	4%	1%	11%
Min of total # dose-1 Age Gp	531,511	1,013,604	987,093	941,584	757,834	671,465	467,441	211,327	47,928	47,928
Max of total # dose-1 Age Gp	713,703	1,037,483	1,005,652	955,697	767,357	677,535	470,930	213,128	48,468	1,037,483
Min of % total dose-1	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
Max of % total dose-1	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34	63.34
Min of % total dose-2	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7
Max of % total dose-2	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51	58.51
Min of % total dose-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-3	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83
Average of # weekly dose-1	43,726	43,726	43,726	43,726	43,726	43,726	43,726	43,726	43,726	43,726
Average of # weekly dose-2	35,293	35,293	35,293	35,293	35,293	35,293	35,293	35,293	35,293	35,293
Average of # weekly dose-3	171,066	171,066	171,066	171,066	171,066	171,066	171,066	171,066	171,066	171,066
Min of total # jabs	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809	10,806,809
Max of total # jabs	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381	12,699,381
Average of Average Daily Deaths	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Min of Cumulative Deaths	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426
Max of Cumulative Deaths	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820	6,820
Min of total # dose-1	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787	5,629,787
Max of total # dose-1	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953	5,889,953

- 2021-06-27 - 2021-07-03
- 2021-07-04 - 2021-07-10
- 2021-07-11 - 2021-07-17
- 2021-07-18 - 2021-07-24
- 2021-07-25 - 2021-07-31
- 2021-08-01 - 2021-08-07
- 2021-08-08 - 2021-08-14
- 2021-08-15 - 2021-08-21

Appendix 5 - Emerging Delta Outbreak (part2)

Analysis	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total	
Population	3,351,464	1,297,229	1,194,691	1,096,460	848,720	741,432	490,532	225,308	51,523	9,297,359	
Min Vax %	15.9%	78.1%	82.6%	85.9%	89.3%	90.6%	95.3%	93.8%	93.0%	60.6%	
Max Vax %	21.3%	80.0%	84.2%	87.2%	90.4%	91.4%	96.0%	94.6%	94.1%	63.4%	
Average Vax %	18.6%	79.1%	83.4%	86.5%	89.9%	91.0%	95.6%	94.2%	93.5%	62.0%	
Average Vax Population	622,607	1,025,544	996,373	948,641	762,596	674,500	469,186	212,228	48,198	5,759,870	
Average Unvax Population	2,728,857	271,686	198,318	147,819	86,124	66,932	21,346	13,081	3,325	3,537,489	
Case # vaxed	6,766	14,653	15,833	15,147	10,002	6,606	3,853	1,695	413	74,970	
Case # Unvax	50,451	4,803	4,438	3,029	1,781	1,052	553	301	117	66,526	
Vax % of Cases	11.8%	75.3%	78.1%	83.3%	84.9%	86.3%	87.5%	84.9%	77.9%	53.0%	
Case % Vaxed (AR)	1.09%	1.43%	1.59%	1.60%	1.31%	0.98%	0.82%	0.80%	0.86%	1.30%	
Case % Unvac (AR)	1.85%	1.77%	2.24%	2.05%	2.07%	1.57%	2.59%	2.30%	3.53%	1.88%	
Case ARR (Risk Dif Pos)	0.76%	0.34%	0.65%	0.45%	0.76%	0.59%	1.77%	1.50%	2.67%	0.58%	
Case RRR ("Efficacy")	41.22%	19.18%	28.99%	23.88%	36.57%	37.69%	68.30%	65.32%	75.74%	30.79%	
Case NNT	131	295	154	221	132	169	57	66	37	173	
Hospitalised # Vax	28	77	132	120	233	417	609	624	188	2,428	
Hospitalised # Unvax	251	106	173	181	184	216	163	174	74	1,523	
Vax % of Hosp	10.0%	42.1%	43.3%	39.8%	55.8%	65.9%	78.9%	78.2%	71.7%	61.5%	
Hosp % Vax (AR)	0.00%	0.01%	0.01%	0.01%	0.03%	0.06%	0.13%	0.29%	0.39%	0.04%	
Hosp % Unvax (AR)	0.01%	0.04%	0.09%	0.12%	0.21%	0.32%	0.76%	1.33%	2.24%	0.04%	
Hosp ARR (Risk Dif Pos)	0.00%	0.03%	0.07%	0.11%	0.18%	0.26%	0.63%	1.03%	1.85%	0.00%	
Hosp RRR ("Efficacy")	51.49%	80.74%	84.82%	89.69%	85.75%	80.86%	82.95%	77.85%	82.53%	2.08%	
Hosp NNT	21096	3168	1355	909	545	383	158	97	54	111887	
Death # Vax	0	0	0	0	5	38	72	101	43	259	
Death # Unvax	0	1	4	1	4	16	28	40	25	119	
Vax % of Death	na	0.0%	0.0%	0.0%	57.1%	69.6%	71.7%	71.5%	63.6%	68.4%	
Death % Vax (AR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.05%	0.09%	0.00%	
Death % Unvax (AR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.13%	0.31%	0.74%	0.00%	
Death ARR (Risk Dif Pos)	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.12%	0.26%	0.65%	0.00%	
Death RRR ("Efficacy")	na	100.00%	100.00%	100.00%	84.94%	77.25%	88.50%	84.53%	87.94%	-33.02%	
Death NNT	na	226405	55088	123183	28164	5283	849	383	154	-89734	Excl 0-19
CFR Vax	0.00%	0.00%	0.00%	0.00%	0.05%	0.57%	1.86%	5.98%	10.42%	0.34%	0.38%
CFR Unvax	0.00%	0.02%	0.08%	0.04%	0.20%	1.56%	5.14%	13.41%	20.95%	0.18%	0.74%
CMR Vax	0.000%	0.000%	0.000%	0.000%	0.001%	0.006%	0.015%	0.048%	0.089%	0.004%	0.005%
CMR Unvax	0.000%	0.000%	0.002%	0.001%	0.004%	0.025%	0.133%	0.309%	0.740%	0.003%	0.015%
Benchmark CMR Unvax =Vax Risk	0.006%										
Benchmark RRR	50%										
Benchmark NNT	1000										



Appendix 6 – Influenza statistics



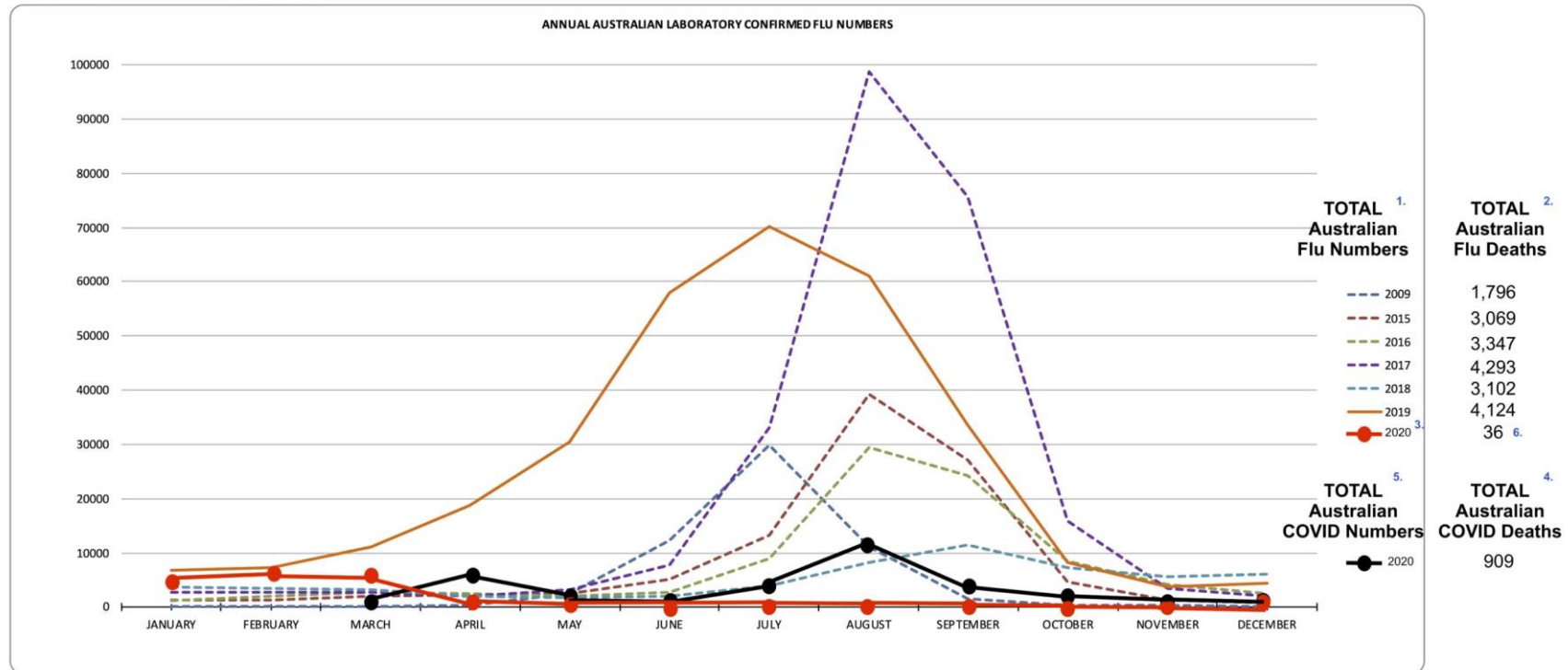
The Immunisation Coalition is the leading voice in whole-of-life immunisation in Australia, protecting all Australians against communicable diseases.

website: <http://www.immunisationcoalition.org.au/news-media/2019-influenza-statistics/>

ANNUAL AUSTRALIAN INFLUENZA STATISTICS

YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTALS	
2009		182	125	164	275	2558	12319	29841	11119	1626	407	255	171	59042
2015		1249	1342	1966	2218	2527	5013	13279	39222	27083	4725	1178	788	100590
2016		1175	1969	2666	2434	2058	2830	9037	29421	24216	8448	4044	2539	90837
2017		2744	2738	2810	1978	3274	7761	33115	98687	75549	15838	3391	1997	249882
2018		3750	3478	3173	1972	1714	1978	3963	8171	11438	7208	5570	6155	58570
2019		6829	7161	11155	18667	30364	57839	70150	60962	33570	8317	3734	4313	313061

LAST UPDATED: 12 February 2020



1. Reference: These statistics are taken from the Aust Government Department of Health, National Notifiable Diseases Surveillance System

5. <https://www.worldometers.info/coronavirus/country/australia/>

2. ABS - Australian Bureau of Statistics - <https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release#data-download>

6. <https://www1.health.gov.au/internet/main/publishing.nsf/Content/03943F9CD20D2CCCA2586410078F296/File/National-Influenza-Season-Summary2020.pdf>

3. http://www9.health.gov.au/cda/source/rpt_3.cfm

4. TOTAL Deaths to 22 March 2021 - <https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers>

Appendix 7 - Low Infection Rate Period

Week (Multiple Items) <= select weeks

select weeks =>

selected:

Values	Age Groups									
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
Sum of pos_dose-1_1-6days	17	1	2		1					22
Sum of pos_dose-1_7-13days	15	2		2						20
Sum of pos_dose-1_14-20days	6				1	1				8
Sum of pos_dose-1_>20days	2	4	2	4	1	1	1			16
Sum of pos_dose-2_1-6days										
Sum of pos_dose-2_7-13days						1				1
Sum of pos_dose-2_14-20days										
Sum of pos_dose-2_>20days	29	66	70	160	127	98	58	21	9	637
Sum of pos_dose-1	41	7	5	6	4	2	1	0	0	66
Sum of pos_dose-2	29	66	70	160	127	99	58	21	9	638
Sum of pos_Unvax	1,035	90	91	73	47	30	11	10	1	1,388
Sum of Hosp_dose-1		2	1	4	4	5	6	5	2	29
Sum of Hosp_dose-2	1	4	4	6	10	10	8	8	6	57
Sum of Hosp_Unvax	18	8	13	8	6	8	8	11	5	87
Sum of Death_dose-1			1				1	1		4
Sum of Death_dose-2						1	2	5	1	10
Sum of Death_Unvax			1	2	6	4	5	5	1	24
Sum of #_dose-1	71,425	21,695	18,003	11,408	7,579	4,321	2,303	1,089	372	138,195
Sum of #_dose-2	16,758	29,004	24,422	14,523	9,124	5,911	3,489	2,001	720	105,952
Sum of #_dose-3	0	0	0	0	0	0	0	0	0	0
Max of total #_jabs	815,838	1,938,131	1,904,654	1,823,948	1,471,013	1,313,277	921,490	416,343	93,998	1,938,131
Average of jab_alloc	7%	18%	18%	17%	14%	12%	9%	4%	1%	11%
Min of total # dose-1 Age Gp	389,666	991,706	969,046	929,760	749,985	667,076	465,203	210,257	47,574	47,574
Max of total # dose-1 Age Gp	458,341	1,008,437	982,766	938,501	755,831	670,374	466,949	211,066	47,877	1,008,437
Min of % total dose-1	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
Max of % total dose-1	59.58	59.58	59.58	59.58	59.58	59.58	59.58	59.58	59.58	59.58
Min of % total dose-2	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6
Max of % total dose-2	55.48	55.48	55.48	55.48	55.48	55.48	55.48	55.48	55.48	55.48
Min of % total dose-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max of % total dose-3	0	0	0	0	0	0	0	0	0	0
Average of # weekly dose-1	17,274	17,274	17,274	17,274	17,274	17,274	17,274	17,274	17,274	17,274
Average of # weekly dose-2	13,244	13,244	13,244	13,244	13,244	13,244	13,244	13,244	13,244	13,244
Average of # weekly dose-3	0	0	0	0	0	0	0	0	0	0
Min of total # jabs	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474	10,498,474
Max of total # jabs	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692	10,698,692
Average of Average Daily Deaths	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Min of Cumulative Deaths	6,398	6,398	6,398	6,398	6,398	6,398	6,398	6,398	6,398	6,398
Max of Cumulative Deaths	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426	6,426
Min of total # dose-1	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273	5,420,273
Max of total # dose-1	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142	5,540,142

- 2021-05-02 - 2021-05-08
- 2021-05-09 - 2021-05-15
- 2021-05-16 - 2021-05-22
- 2021-05-23 - 2021-05-29
- 2021-05-30 - 2021-06-05
- 2021-06-06 - 2021-06-12
- 2021-06-13 - 2021-06-19
- 2021-06-20 - 2021-06-26

Appendix 7 - Low Infection Rate Period (part2)

Analysis	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total	
Population	3,351,464	1,297,229	1,194,691	1,096,460	848,720	741,432	490,532	225,308	51,523	9,297,359	
Min Vax %	11.6%	76.4%	81.1%	84.8%	88.4%	90.0%	94.8%	93.3%	92.3%	58.3%	
Max Vax %	13.7%	77.7%	82.3%	85.6%	89.1%	90.4%	95.2%	93.7%	92.9%	59.6%	
Average Vax %	12.7%	77.1%	81.7%	85.2%	88.7%	90.2%	95.0%	93.5%	92.6%	58.9%	
Average Vax Population	424,004	1,000,072	975,906	934,131	752,908	668,725	466,076	210,662	47,726	5,480,208	
Average Unvax Population	2,927,460	297,158	218,785	162,329	95,812	72,707	24,456	14,647	3,798	3,817,151	
Case # vaxed	70	73	74	166	131	101	59	21	9	704	
Case # Unvax	1,035	90	91	73	47	30	11	10	1	1,388	
Vax % of Cases	6.3%	44.8%	44.9%	69.3%	73.7%	77.3%	84.3%	68.2%	87.8%	33.6%	
Case % Vaxed (AR)	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	0.01%	0.01%	0.02%	0.01%	
Case % Unvac (AR)	0.04%	0.03%	0.04%	0.05%	0.05%	0.04%	0.04%	0.07%	0.03%	0.04%	
Case ARR (Risk Dif Pos)	0.02%	0.02%	0.03%	0.03%	0.03%	0.03%	0.03%	0.06%	0.01%	0.02%	
Case RRR ("Efficacy")	53.57%	75.89%	81.71%	60.70%	64.28%	63.08%	71.86%	85.10%	42.97%	64.69%	
Case NNT	5280	4341	2936	3643	3199	3868	3094	1756	7365	4251	
Hospitalised # Vax	1	6	5	10	13	14	14	13	8	85	
Hospitalised # Unvax	18	8	13	8	6	8	8	11	5	87	
Vax % of Hosp	6.3%	41.7%	26.4%	53.3%	69.1%	63.2%	63.2%	54.5%	63.6%	49.6%	
Hosp % Vax (AR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.00%	
Hosp % Unvax (AR)	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.08%	0.13%	0.00%	
Hosp ARR (Risk Dif Pos)	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.03%	0.07%	0.11%	0.00%	
Hosp RRR ("Efficacy")	53.97%	78.78%	91.97%	80.14%	71.58%	81.36%	91.00%	91.66%	86.07%	31.47%	
Hosp NNT	301340	44907	17753	24114	22309	10638	3199	1453	919	139741	
Death # Vax	0	0	1	0	0	2	4	5	1	13	
Death # Unvax	0	0	1	2	6	4	5	5	1	24	
Vax % of Death	<i>na</i>	<i>na</i>	50.0%	0.0%	0.0%	40.0%	42.9%	50.0%	50.0%	35.5%	
Death % Vax (AR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Death % Unvax (AR)	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.02%	0.03%	0.03%	0.00%	
Death ARR (Risk Dif Pos)	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.02%	0.03%	0.03%	0.00%	
Death RRR ("Efficacy")	<i>na</i>	<i>na</i>	77.58%	100.00%	100.00%	92.75%	96.06%	93.05%	92.04%	61.69%	
Death NNT	<i>na</i>	<i>na</i>	235006	67637	15969	21775	5304	3279	3439	257815	Excl 0-19
CFR Vax	0.00%	0.00%	1.61%	0.00%	0.00%	2.37%	6.10%	22.86%	13.95%	1.88%	2.08%
CFR Unvax	0.00%	0.00%	1.32%	3.27%	12.88%	12.08%	43.64%	48.98%	100.00%	1.73%	6.80%
CMR Vax	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.001%	0.002%	0.003%	0.000%	0.000%
CMR Unvax	0.000%	0.000%	0.001%	0.001%	0.006%	0.005%	0.020%	0.033%	0.032%	0.001%	0.003%
Benchmark CMR Unvax =Vax Risk	0.006%										
Benchmark RRR	50%										
Benchmark NNT	1000										



Appendix 8

Vaccination Risks

<https://www.tga.gov.au/periodic/covid-19-vaccine-weekly-safety-report-26-08-2021>

			Risk per jab	Risk per Vaccinated person	
	Doses	17,150,654			
	Reports	52846	0.3081%	0.6163%	
	Deaths confirmed*	7	0.0000%	0.0001%	* 6 TTS & 1 ITP
	Death reports	476	0.0028%	0.0056%	
Astrazeneca	Doses	8,800,000			
	TTS confirmed & probable	116	0.0013%	0.0026%	
	GBS	89	0.0010%	0.0020%	
	ITP	56	0.0006%	0.0013%	
				<hr/>	
				0.0059%	
Pfizer	Doses	8,200,000			
	Myocarditis & Pericarditis	235	0.0029%	0.0057%	