The Social Demography of Covid-19 Delta

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1 Introduction

The trajectory of Covid and its immediate consequences are tracked across several official and some non-official data sources. The main data comes from MOH, with the reported data related to:
- Scanning
- Testing
- Vaccination
- Cases of Covid and also
- MIQ.

Supplementary data provided by Stats NZ and MBIE and covers labour force and hardships consequences, besides other information. In addition, a range of surveys (some carried out by government agencies) provide information on people’s attitudes (see Crothers, 2021 for a summary). The usefulness of these various sources of information depends on the speed with which they are processed and made available and the extent to which the data allows close examination of particular social groupings given the social breakdowns provided. Fortunately, MOH data in particular is quickly available and although social breakdowns have been limited more has been made available recently, although ways of presenting data differ according to source. In a fast-changing situation the data presented here will be quickly out of date although it is likely that some of the broad patterns will endure.

Given the wider range of data available and the small-area spatial scale, Vaccination data affords the best insight into social effects on Covid-related phenomena. At the DHB level having 3 DHBs each with somewhat different social characteristics provides some insight into socio-economic effects.

2 Literature

There is already a small literature = which is useful since MOH present but do not analyses their data. A media report and two analyses reveal effects of systematic racism in terms of Covid outcomes – both hospitalisations and deaths (Janesen, 2021; Steyn et al., 2021a; Steyn 2021b) while a study of the spatial arrangements of vaccination services (Whitehead et al, 2021) comes to the same conclusion.
3 Scanning

Data has been developed for various ways of scanning and monthly averages shown in the table that the long period thought which NZ did not experience cases tended to suppress New Zealanders’ scanning behaviour.

### Report

| Period   | App Registrations | QR Codes Generated | NZBN Registered Businesses | Scans       | Manual Entries | Active Devices | Bluetooth Active (24hr) |
|----------|-------------------|--------------------|---------------------------|-------------|----------------|----------------|------------------------|
| 2020-05  | 36615.3846        | 2,578.38           | 18,981.50                 | 32241.6154  | 00             |                |                        |
| 2020-06  | 3666.6667         | 2,126.88           | 733.84                    | 29441.8667  | 00             | 10,293.13      |                        |
| 2020-07  | 1654.5455         | 294.64             | 101.77                    | 18936.3871  | 317.7419       | 10,270.90      |                        |
| 2020-08  | 50014.2857        | 9,376.36           | 3,316.89                  | 920085.5161 | 67661.1935     | 416,437.97     |                        |
| 2020-09  | 950000            | 1,536.50           | 178.11                    | 1677153.833 | 4600000        | 735,849.63     |                        |
| 2020-10  | 1506.4516         | 651.74             | 43.68                     | 768900.5161 | 28281.7742     | 377,089.03     |                        |
| 2020-11  | 181000            | 783.67             | 59.70                     | 873032.933  | 30711.3333     | 418,983.23     |                        |
| 2020-12  | 144400            | 398.83             | 34.37                     | 515588.3226 | 20372.6452     | 270,508.61     | 411,821.77            |
| 2021-01  | 3925.4000         | 845.23             | 63.33                     | 661939.8387 | 30712.1613     | 351,297.52     | 630,327.73            |
| 2021-02  | 5846.2143         | 2,001.89           | 160.64                    | 1215640.3929| 41744.5714     | 622,617.93     | 1,074,020.30          |
| 2021-03  | 2026.9355         | 1,004.19           | 71.19                     | 1185040.9355| 28915.4194     | 611,710.13     | 1,247,662.50          |
| 2021-04  | 1156.6333         | 545.10             | 30.33                     | 726707.833  | 26165.1333     | 386,399        | 1,289,125.87          |
| 2021-05  | 1081.6129         | 472.74             | 24.48                     | 584357.9677 | 23909.4516     | 314,948.03     | 1,303,754.32          |
| 2021-06  | 1469.9000         | 547.67             | 37.43                     | 602275.2667 | 34222.6000     | 322,850.13     | 1,445,668.60          |
| 2021-07  | 848.6452          | 464.65             | 28.06                     | 641844.8065 | 28786.2581     | 338,765.61     | 1,492,569.19          |
| 2021-08  | 6981.8065         | 2,377.71           | 257.61                    | 603584.2258 | 85937.4516     | 391,959.06     | 1,663,231.29          |
| 2021-09  | 4634.4000         | 2,136.43           | 269.47                    | 2139209.8000| 76954.0333     | 1,037,450.90   | 2,100,572.33          |
| 2021-10  | 2314.1818         | 1,652.23           | 117.82                    | 2367558.8636| 66139.7727     | 1,130,387.27   | 2,199,154.68          |
| Total    | 6617.1756         | 1,608.53           | 471.75                    | 863767.5230 | 36029.1820     | 462,017.96     | 1,384,854.24          |

4 Testing:

MOH tables show higher testing rates for the 3 Auckland DHBs, and also higher proportions of tests which are positive. The peak age-range are 40 year olds and there is the slightest gender difference.
All tests by DHB and in managed isolation and quarantine facilities from 22 January 2020 to 24 October 2021

|                      | Total tests | Tested positive (%) | Test rate per 1000 people |
|----------------------|-------------|---------------------|----------------------------|
| **Total**            | 3923269     | 0.18%               | 697.75                     |
| **Location**         |             |                     |                            |
| Managed isolation and quarantine | 381208     | 0.45%               | NA                         |
| Auckland             | 581241      | 0.17%               | 1037.01                    |
| Bay of Plenty        | 128797      | 0.07%               | 526.66                     |
| Canterbury           | 271685      | 0.07%               | 466.31                     |
| Capital and Coast    | 180517      | 0.09%               | 554.91                     |
| Counties Manukau     | 740081      | 0.22%               | 1276.34                    |
| Hawkes Bay           | 64266       | 0.08%               | 382.79                     |
| Hutt Valley          | 60959       | 0.05%               | 401.49                     |
| Lakes                | 59799       | 0.04%               | 535.53                     |
| MidCentral           | 74585       | 0.05%               | 408.44                     |
| Nelson Marlborough   | 63368       | 0.08%               | 414.2                      |
| Northland            | 109300      | 0.06%               | 594.17                     |
| South Canterbury     | 19098       | 0.18%               | 317.47                     |
| Southern             | 136953      | 0.24%               | 406.23                     |
| Tairāwhiti           | 21046       | 0.02%               | 425.79                     |
| Taranaki             | 49407       | 0.03%               | 405.99                     |
| Waikato              | 262034      | 0.12%               | 610.69                     |
| Wairarapa            | 16572       | 0.06%               | 359.3                      |
| Waitmatā             | 643106      | 0.18%               | 997.15                     |
| West Coast           | 5681        | 0.07%               | 177.86                     |
| Whanganui            | 20721       | 0.03%               | 318.51                     |
| Unknown              | 32845       | 0.25%               | NA                         |
| **Ethnicity**        |             |                     |                            |
| Māori                | 529768      | 0.22%               | 669.46                     |
| Pacific peoples      | 474704      | 0.31%               | 1458.86                    |
| Asian                | 666468      | 0.16%               | 830.74                     |
| European/Other       | 2098885     | 0.13%               | 674.81                     |
| Unknown              | 153444      | 0.35%               | NA                         |
| **Age group**        |             |                     |                            |
| 0 to 9               | 265037      | 0.28%               | 420                        |
| 10 to 19             | 346490      | 0.23%               | 540.56                     |
| 20 to 29             | 765901      | 0.2%                | 1025.43                    |
| 30 to 39             | 748434      | 0.18%               | 1097.45                    |
| 40 to 49             | 591918      | 0.16%               | 972.19                     |
| 50 to 59             | 580953      | 0.15%               | 915.61                     |
| 60 to 69             | 392753      | 0.12%               | 734.36                     |
| 70 to 79             | 160085      | 0.11%               | 440.35                     |
| 80+                  | 71626       | 0.1%                | 383.68                     |

1 The prioritised ethnicity classification system is used which means each person is allocated to a single ethnic group, based on the ethnic groups they identify with. Where people identify with more than one group, they are assigned in this order of priority: Māori, Pacific Peoples, Asian, and European/Other. So, if a person identifies as being Māori and New Zealand European, the person is counted as Māori.
| Sex       | Total tests | Tested positive (%) | Test rate per 1000 people |
|-----------|-------------|---------------------|---------------------------|
| Female    | 1990622     | 0.16%               | 782.39                    |
| Male      | 1894648     | 0.19%               | 762.42                    |

5 Vaccination:

MOH has been releasing vaccination date data by DHB (n=20) and locality (SA2; n=c2139). Data are up to 17th Oct 2021. The DHB level data is not only age (and gender specific) but also includes both Level 1 and Level 2 ethnic levels, allowing quite detailed tracking of groups. The table below is highly summarised but shows that for the 65+ age-group rates are similar for the three ethnic groupings, with increasing divergence with successively younger age-groups.

| Age-group | 65+ | 50-64 | 35-49 | 20-34 | 12-19 | All Ages (12+) |
|-----------|-----|-------|-------|-------|-------|----------------|
| Maori D1  | 94  | 82    | 67    | 54    | 57    | 66             |
| Maori 2   | 85  | 68    | 45    | 28    | 30    | 45             |
| Pacific p 1 | 95 | 95    | 89    | 84    | 74    | 74             |
| Pacific p 2 | 89 | 89    | 77    | 65    | 47    | 45             |
| Other 1   | 95  | 90    | 87    | 85    | 84    | 88             |
| Other 2   | 89  | 78    | 66    | 56    | 53    | 70             |

The locality-level data allow many links to be made, but they are links at the ‘aggregate level’ and such links might not also hold at the individual level. At the locality level separate data is provided for all, Maori and Pacific rates: from these an ‘Other (neither Maori nor Pacific) rate can be calculated. This is much higher than that for either Pacifica or Maori, which are both alarmingly low. Given that 2nd dose tends to follow fairly ‘automatically’ from the first attention is focused on the 1st.
Regional groupings have very similar overall rates with the South of the North Island lagging overall and for other but not so much for Maori (not-significant) or Pacifica. Measures of Association are not high apart slightly for others.
| Region group | Between Groups | Linearity | Deviation from Linearity |
|--------------|---------------|-----------|--------------------------|
| Maori dose rate 1 | (Combined) .168 | .185 | .192 |
| Pacifica dose rate 1 | (Combined) 1 | 0 | .646 |
| Other dose rate 1 | (Combined) 0 | 0 | .261 |

**Measures of Association**

| Region group | R | R Squared | Eta | Eta Squared |
|--------------|---|-----------|-----|-------------|
| Overall dose rate 1 | .032 | 1 | .070 | 5 |
| Maori dose rate 1 | .029 | 1 | .049 | 2 |
| Pacifica dose rate 1 | -.087 | 8 | .088 | 8 |
| Other dose rate 1 | -.196 | .038 | .198 | .039 |

There is a clear fall-off with size of urban area, illustrated by quite strong measures of association.

**Report**

| Urban Influence | Overall dose r1 | Maori dose r1 | Pacifica r1 | Other dose r1 |
|-----------------|-----------------|---------------|-------------|--------------|
| Major urban area | Mean 833.1362 | 671.7698 | 743.0205 | 882.3315 |
|                 | N 859 | 873 | 830 | 815 |
|                 | Std. Deviation 77.94581 | 126.71987 | 99.59948 | 60.97583 |
| Large urban area | Mean 755.0927 | 587.3874 | 701.7778 | 813.6019 |
|                 | N 302 | 302 | 279 | 264 |
|                 | Std. Deviation 93.61640 | 111.07191 | 119.99332 | 60.75898 |
| Medium urban area | Mean 780.2414 | 607.2315 | 705.3315 | 809.7080 |
| Source of Variation | Mean    | Std. Deviation | N  |
|---------------------|---------|----------------|----|
| High urban accessibility | 806.1392 | 74.73634       | 203|
|                     | 689.3974 | 99.18734       | 203|
|                     | 715.3333 | 113.69678      | 178|
|                     | 834.5475 | 59.26543       | 154|
| Medium-High         | 785.0732 | 52.64332       | 41 |
|                     | 668.3902 | 114.87230      | 41 |
|                     | 634.3103 | 161.45753      | 29 |
|                     | 802.5513 | 41.82065       | 21 |
| Medium urban accessibility | 752.4088 | 77.03662       | 137|
|                     | 610.4173 | 105.70145      | 139|
|                     | 662.7087 | 158.15775      | 103|
|                     | 799.2125 | 57.03383       | 86 |
| Lo-Medium           | 727.4786 | 68.17556       | 117|
|                     | 582.5517 | 96.23082       | 116|
|                     | 634.2347 | 157.41905      | 98 |
|                     | 767.4006 | 51.85334       | 43 |
| Low urban accessibility | 718.8480 | 84.68662       | 171|
|                     | 565.6512 | 103.37704      | 172|
|                     | 673.3953 | 154.63553      | 129|
|                     | 770.4387 | 70.03889       | 90 |
| Remote              | 705.5068 | 111.75806      | 73 |
|                     | 564.1857 | 113.16197      | 70 |
|                     | 580.0816 | 168.98778      | 49 |
|                     | 784.8055 | 58.51038       | 28 |
| Remote/V remote     | 686.5484 | 108.10576      | 31 |
|                     | 530.5161 | 104.40749      | 31 |
|                     | 552.8182 | 209.73195      | 22 |
|                     | 722.7282 | 128.96466      | 7  |
| Very remote         | 701.8235 | 90.34049       | 17 |
|                     | 55800    | 75.18311       | 17 |
|                     | 671.8000 | 168.89693      | 15 |
|                     | 763.0940 | 50.67599       | 9  |
| Total               | 781.1430 | 95.80597       | 2112|
|                     | 625.7943 | 123.51036      | 2120|
|                     | 703.7593 | 134.21954      | 1853|
|                     | 841.9963 | 75.34792       | 1595|

| Source of Variation | Between Groups (Combined) | Linearity | Deviation from Linearity | Sig. |
|---------------------|----------------------------|-----------|--------------------------|------|
| Overall dose rate 1 * UrbInfl | 0                          | 0         | 0                        |      |
| Maori dose rate 1 * UrbInfl | 0                          | 0         | 0                        |      |

Sig.
There is an even stronger association (although less so for Pacifica) between Deprivation level of area and vaccination.

| Measures of Association | R       | R Squared | Eta    | Eta Squared |
|-------------------------|---------|-----------|--------|-------------|
| Overall dose rate 1 * UrbInfl | -.390  | .152      | .529   | .280        |
| Maori dose rate 1 * UrbInfl   | -.205  | .042      | .383   | .147        |
| Pacifica dose rate 1 * UrbInfl | -.287  | .082      | .357   | .128        |
| Other dose rate 1 * UrbInfl   | -.414  | .171      | .600   | .360        |
|   | Mean   | Std. Deviation |
|---|--------|----------------|
| 4 | 816.1564 | 69.32476       |
|   | 655.2394 | 101.41147      |
|   | 717.9259 | 131.53397      |
|   | 855.2799 | 58.51600       |
| N | 211     | 209            |
|   | 213     | 208            |
|   | 189     | 211            |
|   | 155     | 179            |
| 5 | 799.2536 | 75.07078       |
|   | 632.7867 | 99.28954       |
|   | 710.7486 | 124.65576      |
|   | 845.8585 | 69.64919       |
| N | 213     | 209            |
|   | 211     | 208            |
|   | 155     | 211            |
|   | 159     | 183            |
| 6 | 776.8942 | 73.49524       |
|   | 608.5261 | 93.67641       |
|   | 706.6339 | 108.77249      |
|   | 836.6411 | 70.62662       |
| N | 211     | 210            |
|   | 211     | 209            |
|   | 168     | 188            |
|   | 174     | 187            |
| 7 | 766.7000 | 83.12444       |
|   | 584.0427 | 90.48844       |
|   | 709.1064 | 109.19966      |
|   | 823.8223 | 80.29763       |
| N | 211     | 210            |
|   | 211     | 209            |
|   | 174     | 187            |
|   | 167     | 187            |
| 8 | 717.7512 | 75.16962       |
|   | 546.2958 | 85.65366       |
|   | 661.5052 | 134.12917      |
|   | 820.2692 | 100.75419      |
| N | 212     | 210            |
|   | 213     | 209            |
|   | 172     | 187            |
|   | 167     | 187            |
| 9 | 653.0892 | 94.40937       |
|   | 498.6462 | 75.54982       |
|   | 641.5545 | 123.61322      |
|   | 806.5319 | 90.55114       |
| N | 212     | 213            |
|   | 212     | 213            |
|   | 172     | 202            |
|   | 167     | 194            |
| 10| 782.1189 | 93.87658       |
|   | 626.1071 | 122.77768      |
|   | 704.1573 | 133.94250      |
|   | 841.9963 | 75.34792       |
| N | 211     | 2095           |
|   | 211     | 2095           |
|   | 1595    | 1850           |
|   | 1595    | 1850           |

|             | Sig.       |         |
|-------------|------------|---------|
| Overall dose rate 1 * Dep Index 2018 | Between Groups (Combined) 0 |         |
|             | Linearity 0 |         |
|             | Deviation from Linearity 0 |         |
|             | Within Groups |         |
|             | Total |         |
| Maori dose rate 1 * Dep Index 2018 | Between Groups (Combined) 0 |         |
|             | Linearity 0 |         |
|             | Deviation from Linearity .026 |         |
|             | Within Groups |         |
|             | Total |         |
| Pacifica dose rate 1 * Dep Index 2018 | Between Groups (Combined) 0 |         |
|             | Linearity 0 |         |
|             | Deviation from Linearity .011 |         |
Some illustrative graphs are followed by a table of correlations of by rates with appropriate locality characteristics.

The four vaccination rates are very strongly locked together which suggests that locality-level characteristics may be pushing all in the locality towards a similar rate. Regions yielded little difference (see also above) in terms of tenure (except for other), local authority ownership, those without vehicles especially for Maori but not Pacifica, population change rate, median age, % European, % New Zealander, length of residence, average household size

Relations were strong with Density (moderately and not so much for Polynesians) and especially dep index, together with other measures of socio-economic status (median rent, affluence scale, private landlord, Housing NZ ownership (esp. overall or Maori) iwi ownership, access to the internet, living in joined dwelling, % Asian, MELAA, being born in NZ, variably able to speak English, Personal Income. Smoking regularly, % Professionals, agriculture workers, working at home (strongly negative) couple with children households, single parent households (negative), single person household, relatizied median income, % crowded.
|                  | Overall dose r1 | Maori dose r1 | Pacifica dose r1 | Other dose r1 |
|------------------|-----------------|---------------|-----------------|--------------|
| Overall dose rate 1 | Pearson Correlation | 1             | .775**         | .458**       | .838**       |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
|                  | N               | 2112          | 2089            | 1832         | 1566         |
| Maori dose rate 1 | Pearson Correlation | .775**       | 1               | .371**       | .576**       |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
|                  | N               | 2089          | 2120            | 1843         | 1585         |
| Pacifica dose rate 1 | Pearson Correlation | .458**       | .371**         | 1            | .348**       |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
|                  | N               | 1832          | 1843            | 1853         | 1458         |
| Other dose rate 1 | Pearson Correlation | .838**       | .576**         | .348**       | 1            |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
|                  | N               | 1566          | 1585            | 1458         | 1595         |
| Region group     | Pearson Correlation | .032         | .029           | -.087**      | -.196**      |
|                  | Sig. (2-tailed)  | .142          | .185           | 0            | 0            |
|                  | N               | 2112          | 2120            | 1853         | 1595         |
| Density          | Pearson Correlation | .332**       | .124**         | .179**       | .445**       |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
|                  | N               | 2108          | 2119            | 1853         | 1595         |
| Dep Index 2018   | Pearson Correlation | -.609**      | -.615**        | -.199**      | -.301**      |
|                  | Sig. (2-tailed)  | 0             | 0               | 0            | 0            |
| Description                                      | Pearson Correlation | Sig. (2-tailed) |
|--------------------------------------------------|---------------------|-----------------|
| **median rent 2018**                             | 0.679**             | 0.584**         |
|                                                  | 0.374**             | 0.576**         |
| **Affluence scale**                              | 0.645**             | 0.666**         |
|                                                  | 0.213**             | 0.427**         |
| **Total Dwelling owned or partly owned 2018**    | -0.033              | 0.095**         |
|                                                  | -0.026              | -0.354**        |
| **Private person trust or business 2018**       | 0.282**             | 0.314**         |
|                                                  | 0.047               | 0.064**         |
| **Local authority or city council**              | -0.072**            | -0.086**        |
|                                                  | -0.017              | -0.142**        |
| **Housing New Zealand Corporation**              | -0.209**            | -0.272**        |
|                                                  | -0.020              | -2              |
| **Iwi hapū or Māori land trust**                 | -0.250**            | -0.132**        |
|                                                  | -0.175**            | -0.158**        |
| **Other community housing provider**             | -0.082**            | -0.116**        |
|                                                  | -2                 | -0.082**        |
| **Other state owned corporation or state owned enterprise or government department or ministry** | -0.113** | -0.069** |
|                                                  | -0.030              | -5              |
| **No motor vehicle 2018**                        | -0.064**            | -0.123**        |
|                                                  | 0.027              | 0.191**         |
| **Access to the internet**                       | 0.702**             | 0.597**         |
|                                                  | 0.311**             | 0.505**         |
| **Joined dwelling**                              | 0.300**             | 0.116**         |
|                                                  | 0.147**             | 0.383**         |
| **Pop Chg 2008-18 %**                            | 0.080**             | 0.070**         |
|                                                  | 0.037              | 0.056**         |
| Category                        | Pearson Correlation | Sig. (2-tailed) | N   |  | 
|--------------------------------|---------------------|-----------------|-----| | 
| Median age (2018)              |                     |                 |     | | 
| European                       | .057**              | 0.088**         | .069** | .160** | 
| Māori                          | -.714**             | -.499**         | -.258** | -.499** | 
| Pacific Peoples                | -.116**             | -.169**         | .027** | .179** | 
| Asian                          | .481**              | .242**          | .270** | .614** | 
| Middle Eastern Latin American  | .434**              | .219**          | .213** | .514** | 
| Other Ethnicity                | .043*               | .044*           | -0.015 | -.092** | 
| New Zealander                  | -.066**             | -4              | -.094** | -.243** | 
| New Zealand COB                | -.603**             | -.352**         | -.304** | -.710** | 
| % Speak English                | -.218**             | -.052**         | -.190** | -.421** | 
| % Usual Residence 5 years      | .23**               | .145**          | -.026 | -.169** | 
| Median $ Personal income       | .535**              | .555**          | .223** | .337** | 
| No religion                    | -.8                 | .123**          | -.035 | -.285** | 
| Christian                      | .021                | -.033           | 2    | .107** |
| Variable                                      | Pearson Correlation | Sig. (2-tailed) |
|-----------------------------------------------|---------------------|-----------------|
| Regular smoker                                |                     |                 |
| Sig. (2-tailed)                               | .335                | .124            |
| N                                             | 2105                | 2118            |
| Own/Trust                                     |                     |                 |
| Sig. (2-tailed)                               | .089                | .194            |
| N                                             | 2108                | 2119            |
| Professionals                                 |                     |                 |
| Sig. (2-tailed)                               | .674                | .322            |
| N                                             | 2112                | 2120            |
| Agriculture Forestry and Fishing             |                     |                 |
| WPLC                                          | -.374              | -.230           |
| Sig. (2-tailed)                               | 0                   | 0               |
| N                                             | 2112                | 2120            |
| Proportions (worked at home)                 |                     |                 |
| Sig. (2-tailed)                               | -.274              | -.137           |
| N                                             | 2096                | 2111            |
| Couple with children household               |                     |                 |
| (with or without other people)                | -.289              | .326            |
| Sig. (2-tailed)                               | 0                   | 0               |
| N                                             | 2073                | 2091            |
| Single parent household (with or             |                     |                 |
| without other people)                         | -.433              | -.409           |
| Sig. (2-tailed)                               | 0                   | 0               |
| N                                             | 2073                | 2091            |
| Other multi-person household                 |                     |                 |
| Sig. (2-tailed)                               | .146                | .125            |
| N                                             | 2096                | 2112            |
| One-person household                          |                     |                 |
| Sig. (2-tailed)                               | -.208              | -.118           |
| N                                             | 2096                | 2112            |
| Median_OECD_Modified_Income                  |                     |                 |
| Sig. (2-tailed)                               | .631                | .263            |
| N                                             | 2103                | 2117            |
| 40-50 housing rental costs                   |                     |                 |
| Sig. (2-tailed)                               | .045                | .5              |
| N                                             | 1910                | 1929            |
| Percent crowded                              |                     |                 |
| Sig. (2-tailed)                               | -.197              | -.234           |
| N                                             | 1952                | 1972            |
| Residents Ave                                |                     |                 |
| Sig. (2-tailed)                               | .089                | .125            |
| N                                             | 0                   | 0               |
6 Catching Covid:

Covid cases need to be sequestered between those in MIQ (almost totally drawn from overseas travellers) and ‘community cases. During periods where there were no community cases were necessarily drawn from overseas. Community cases are drawn substantially from each of the main ethnic groups and across age groups up to the 50s and even between the two genders. Those hospitalized have been older and with more males.

| % within period | Miq    |       |       |
|-----------------|--------|-------|-------|
| period          | No     | Yes   | Total |
| 2020-03         | 100.0% |       | 100.0%|
| 2020-04         | 100.0% |       | 100.0%|
| 2020-05         | 100.0% |       | 100.0%|
| 2020-06         | 8.3%   | 91.7% | 100.0%|
| 2020-07         |        | 100.0%| 100.0%|
| 2020-08         | 77.4%  | 22.6% | 100.0%|
| 2020-09         | 52.6%  | 47.4% | 100.0%|
| 2020-10         | 4.1%   | 95.9% | 100.0%|
| 2020-11         | 7.8%   | 92.2% | 100.0%|
| 2020-12         |        | 100.0%| 100.0%|
| 2021-01         | 3.6%   | 96.4% | 100.0%|
| 2021-02         | 21.6%  | 78.4% | 100.0%|
| 2021-03         | 1.7%   | 98.3% | 100.0%|
| 2021-04         | 3.5%   | 96.5% | 100.0%|
| 2021-05         |        | 100.0%| 100.0%|
| 2021-06         |        | 100.0%| 100.0%|
| 2021-07         |        | 100.0%| 100.0%|
| 2021-08         | 88.6%  | 11.4% | 100.0%|
| 2021-09         | 89.9%  | 10.1% | 100.0%|
| 2021-10         | 97.2%  | 2.8%  | 100.0%|

Nearly one-third of overseas travellers do not get assigned to MIQ. Very few community cases are assigned to MIQ.
### Overseas travel * miq Crosstabulation

| Overseas travel | miq |   |   | Total |
|-----------------|-----|---|---|-------|
|                 | No  | Yes |   |       |
| Overseas travel | No  | 99.5% | 0.5% | 100.0% |
| Unknown         | 98.7% | 1.3% |   | 100.0% |
| Yes             | 30.7% | 69.3% |   | 100.0% |
| Total           | 76.5% | 23.5% |   | 100.0% |

| period | Other | Waitemata | Auckland | Counties-Manukau | Waikato | Total |
|--------|-------|-----------|----------|------------------|---------|-------|
| 2020-03 | 50.1% | 13.6% | 13.6% | 8.3% | 14.4% | 100.0% |
| 2020-04 | 53.3% | 17.1% | 9.6% | 9.4% | 10.5% | 100.0% |
| 2020-05 | 20.0% | 45.0% | 20.0% | 5.0% | 10.0% | 100.0% |
| 2020-06 | 100.0% |   |   |   |   | 100.0% |
| 2020-08 | 25.0% | 27.1% | 47.2% | 0.7% |   | 100.0% |
| 2020-09 | 42.0% | 18.0% | 28.0% | 12.0% |   | 100.0% |
| 2020-10 | 20.0% | 60.0% | 20.0% |   |   | 100.0% |
| 2020-11 | 62.5% | 25.0% | 12.5% |   |   | 100.0% |
| 2021-01 | 40.0% | 20.0% | 40.0% |   |   | 100.0% |
| 2021-02 | 6.3% |   | 93.8% |   |   | 100.0% |
| 2021-03 | 50.0% |   |   |   | 50.0% | 100.0% |
| 2021-04 | 25.0% |   |   | 75.0% |   | 100.0% |
| 2021-08 | 2.3% | 23.9% | 19.4% | 54.3% |   | 100.0% |
| 2021-09 | 0.2% | 11.4% | 15.4% | 73.1% |   | 100.0% |
| 2021-10 | 0.5% | 37.0% | 19.4% | 36.7% | 6.4% | 100.0% |
| Total   | 18.7% | 23.5% | 16.3% | 35.1% | 6.4% | 100.0% |

In some periods there has been a substantial backlog of ‘historical’ cases.

### period * Historical Crosstabulation

| period | Historical | Yes | Total |
|--------|------------|-----|-------|
| 2020-03 | 100.0% |   | 100.0% |
| 2020-04 | 100.0% |   | 100.0% |
| 2020-05 | 95.0% | 5.0% | 100.0% |
| 2020-06 | 100.0% |   | 100.0% |
| 2020-07 | 100.0% |   | 100.0% |
### Community Cases - Period * Sex Crosstabulation

% within period

| period  | Female | Sex    | Unknown | Total  |
|---------|--------|--------|---------|--------|
| 2020-03 | 54.6%  | 45.4%  |         | 100.0% |
| 2020-04 | 56.5%  | 43.5%  |         | 100.0% |
| 2020-05 | 65.0%  | 35.0%  |         | 100.0% |
| 2020-06 | 100.0% | 52.1%  |         | 100.0% |
| 2020-08 | 66.0%  | 34.0%  |         | 100.0% |
| 2020-09 | 20.0%  | 80.0%  |         | 100.0% |
| 2020-10 | 75.0%  | 25.0%  |         | 100.0% |
| 2021-01 | 60.0%  | 40.0%  |         | 100.0% |
| 2021-02 | 75.0%  | 25.0%  |         | 100.0% |
| 2021-03 | 50.0%  | 50.0%  |         | 100.0% |
| 2021-04 | 75.0%  | 25.0%  |         | 100.0% |
| 2021-08 | 53.5%  | 46.5%  |         | 100.0% |
| 2021-09 | 50.8%  | 49.2%  |         | 100.0% |
| 2021-10 | 48.1%  | 51.7%  | 0.2%    | 100.0% |
| Total   | 52.4%  | 47.6%  | 0.1%    | 100.0% |
### Age group

- 0 to 9
- 10 to 19
- 20 to 29
- 30 to 39
- 40 to 49
- 50 to 59
- 60 to 69
- 70 to 79
- 80 to 89
- 90+

| Period | 0 to 9 | 10 to 19 | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 59 | 60 to 69 | 70 to 79 | 80 to 89 | 90+ |
|--------|--------|----------|----------|----------|----------|----------|----------|----------|----------|-----|
| 2020-03 | 0.9%   | 7.0%     | 25.8%    | 14.2%    | 16.8%    | 15.5%    | 13.0%    | 5.2%     | 1.5%     |     |
| 2020-04 | 3.6%   | 9.0%     | 21.9%    | 16.1%    | 12.6%    | 17.4%    | 10.7%    | 5.1%     | 2.4%     | 1.2%|
| 2020-05 | 10.0%  | 10.0%    | 20.0%    | 25.0%    | 10.0%    | 10.0%    | 10.0%    | 5.0%     |          |     |
| 2020-06 |        |          |          |          | 50.0%    | 50.0%    |          |          |          |     |
| 2020-08 | 10.4%  | 18.1%    | 16.0%    | 15.3%    | 17.4%    | 15.3%    | 3.5%     | 3.5%     | 0.7%     |     |
| 2020-09 | 18.0%  | 26.0%    | 18.0%    | 22.0%    | 2.0%     | 4.0%     | 10.0%    |          |          |     |
| 2020-10 |        |          |          |          |          |          |          |          |          |     |
| 2020-11 |        |          |          |          |          |          |          |          |          |     |
| 2021-01 | 20.0%  |          |          |          |          |          |          |          |          | 60.0%|
| 2021-02 | 6.3%   | 43.8%    | 6.3%     | 12.5%    |          |          |          |          | 31.3%    |     |
| 2021-03 | 50.0%  |          |          |          |          |          |          |          |          | 50.0%|
| 2021-04 | 25.0%  | 25.0%    | 25.0%    | 25.0%    |          |          |          |          |          |     |
| 2021-08 | 12.8%  | 24.7%    | 26.4%    | 8.2%     | 9.7%     | 12.2%    | 3.4%     | 2.3%     | 0.1%     | 0.1%|
| 2021-09 | 24.2%  | 20.2%    | 22.9%    | 10.2%    | 11.5%    | 6.1%     | 3.4%     | 1.4%     | 0.2%     |     |
| 2021-10 | 15.6%  | 13.6%    | 18.2%    | 23.4%    | 14.1%    | 9.6%     | 3.8%     | 1.2%     | 0.4%     | 0.1%|
| Total   | 11.5%  | 14.7%    | 22.0%    | 16.0%    | 13.3%    | 12.0%    | 6.6%     | 2.8%     | 0.9%     | 0.3%|

### Period * Overseas travel Crosstabulation

| Overseas travel connection % within period | No | Unknown | Yes | Total |
|-------------------------------------------|----|---------|-----|-------|
| period                                    |    |         |     |       |
| 2020-03                                   | 45.3% | 0.4% | 54.3% | 100.0% |
| 2020-04                                   | 77.1% | 0.3% | 22.7% | 100.0% |
| 2020-05                                   | 85.0% |    | 15.0% | 100.0% |
| 2020-06                                   | 100.0% |    | 100.0% | 100.0% |
| 2020-08                                   | 100.0% |    | 100.0% | 100.0% |
| 2020-09                                   | 98.0% | 2.0% | 100.0% | 100.0% |
| 2020-10                                   | 100.0% |    | 100.0% | 100.0% |
| 2020-11                                   | 100.0% |    | 100.0% | 100.0% |
| 2021-01                                   | 100.0% |    | 100.0% | 100.0% |
| 2021-02                                   | 100.0% |    | 100.0% | 100.0% |
| 2021-03                                   | 50.0% | 50.0% | 100.0% | 100.0% |
| 2021-04                                   | 100.0% |    | 100.0% | 100.0% |
| 2021-08                                   | 99.3% | 0.7% | 100.0% | 100.0% |
| 2021-09                                   | 99.7% | 0.3% | 100.0% | 100.0% |
| 2021-10                                   | 89.0% | 11.0% | 100.0% | 100.0% |
| Total                                     | 83.0% | 3.6% | 13.4% | 100.0% |
### Period * Historical Crosstabulation

% within period

| period | Yes | Total |
|--------|-----|-------|
| 202003 | 100.0% | 100.0% |
| 202004 | 100.0% | 100.0% |
| 202005 | 95.0% | 5.0% | 100.0% |
| 202006 | 100.0% | 100.0% |
| 202008 | 100.0% | 100.0% |
| 202009 | 100.0% | 100.0% |
| 202010 | 80.0% | 20.0% | 100.0% |
| 202011 | 100.0% | 100.0% |
| 202101 | 100.0% | 100.0% |
| 202102 | 100.0% | 100.0% |
| 202103 | 100.0% | 100.0% |
| 202104 | 75.0% | 25.0% | 100.0% |
| 202108 | 100.0% | 100.0% |
| 202109 | 99.7% | 0.3% | 100.0% |
| 202110 | 99.9% | 0.1% | 100.0% |
| Total  | 99.8% | 0.2% | 100.0% |

### Crosstabs MIQ Cases

#### period * Sex Crosstabulation

% within period

| period | Female | Male | Unknown | Total |
|--------|--------|------|---------|-------|
| 202006.00 | 36.4% | 63.6% | | 100.0% |
| 202007 | 47.1% | 52.9% | | 100.0% |
| 202008 | 61.9% | 38.1% | | 100.0% |
| 202009 | 46.7% | 53.3% | | 100.0% |
| 202010 | 34.5% | 65.5% | | 100.0% |
| 202011 | 35.1% | 64.9% | | 100.0% |
| 202012 | 45.8% | 54.2% | | 100.0% |
| 202101 | 45.5% | 54.5% | | 100.0% |
| 202102 | 36.2% | 63.8% | | 100.0% |
| 202103 | 40.7% | 59.3% | | 100.0% |
| 202104 | 44.1% | 55.9% | | 100.0% |
| 202105 | 31.5% | 68.5% | | 100.0% |
| 202106 | 36.1% | 63.9% | | 100.0% |
| 202107 | 23.0% | 75.4% | 1.6% | 100.0% |
### period * Age group Crosstabulation

| Age group | 0 to 9 | 10 to 19 | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 59 | 60 to 69 | 70 to 79 | 80 to 89 | Total |
|-----------|--------|----------|----------|----------|----------|----------|----------|----------|----------|-------|
| period    |        |          |          |          |          |          |          |          |          |       |
| 202006    | 4.5%   | 4.5%     | 31.8%    | 36.4%    | 9.1%     | 9.1%     | 4.5%     |          |          | 100.0%|
| 202007    | 2.9%   | 35.3%    | 32.4%    | 8.8%     | 8.8%     | 5.9%     | 5.9%     |          |          | 100.0%|
| 202008    | 9.5%   | 4.8%     | 26.2%    | 33.3%    | 7.1%     | 14.3%    | 2.4%     | 2.4%     |          | 100.0%|
| 202009    | 17.8%  | 6.7%     | 26.7%    | 24.4%    | 6.7%     | 6.7%     | 4.4%     |          |          | 100.0%|
| 202010    | 6.0%   | 6.0%     | 22.4%    | 29.3%    | 15.5%    | 10.3%    | 10.3%    |          |          | 100.0%|
| 202011    | 3.2%   | 12.8%    | 29.8%    | 21.3%    | 12.8%    | 9.6%     | 7.4%     | 3.2%     |          | 100.0%|
| 202012    | 4.7%   | 9.3%     | 21.5%    | 28.0%    | 18.7%    | 10.3%    | 5.6%     | 1.9%     |          | 100.0%|
| 202101    | 9.0%   | 9.0%     | 26.1%    | 28.4%    | 14.2%    | 8.2%     | 4.5%     | 0.7%     |          | 100.0%|
| 202102    | 5.2%   | 8.6%     | 20.7%    | 25.9%    | 19.0%    | 17.2%    | 3.4%     |          |          | 100.0%|
| 202103    | 5.9%   | 4.2%     | 32.2%    | 36.4%    | 8.5%     | 11.0%    | 1.7%     |          |          | 100.0%|
| 202104    | 11.7%  | 2.7%     | 29.7%    | 28.8%    | 11.7%    | 7.2%     | 2.7%     | 3.6%     | 1.8%     | 100.0%|
| 202105    | 9.3%   | 5.6%     | 16.7%    | 29.6%    | 13.0%    | 18.5%    | 5.6%     | 1.9%     |          | 100.0%|
| 202106    | 15.3%  | 8.3%     | 25.0%    | 20.8%    | 15.3%    | 11.1%    | 4.2%     |          |          | 100.0%|
| 202107    | 8.7%   | 2.4%     | 20.6%    | 27.8%    | 20.6%    | 14.3%    | 4.0%     | 1.6%     |          | 100.0%|
| 202108    | 11.4%  | 13.6%    | 22.7%    | 20.5%    | 15.9%    | 8.0%     | 6.8%     | 1.1%     |          | 100.0%|
| 202109    | 13.6%  | 6.1%     | 34.8%    | 21.2%    | 6.1%     | 16.7%    | 1.5%     |          |          | 100.0%|
| 202110    | 10.5%  | 13.2%    | 26.3%    | 15.8%    | 10.5%    | 15.8%    | 5.3%     | 2.6%     |          | 100.0%|
| Total     | 8.6%   | 7.0%     | 25.9%    | 27.2%    | 13.4%    | 11.2%    | 4.9%     | 1.6%     | 0.2%     | 100.0%|

### period * Overseas travel Crosstabulation

| Overseas travel | No | Unknown | Yes | Total |
|-----------------|----|---------|-----|-------|
| period          |    |         |     |       |
| 202006          |    | 100.0%  |     | 100.0%|
| 202007          |    | 100.0%  |     | 100.0%|
| 202008          |    | 100.0%  |     | 100.0%|
| 202009          | 2.2%| 97.8%   |     | 100.0%|
| 202010          | 1.7%| 98.3%   |     | 100.0%|
| 202011          | 2.1%| 97.9%   |     | 100.0%|
| 202012          |    | 100.0%  |     | 100.0%|
| Year   | % Isolated | % Quarantined | % Total |
|--------|------------|---------------|---------|
| 202101 | 0.7%       | 99.3%         | 100.0%  |
| 202102 | 1.7%       | 98.3%         | 100.0%  |
| 202103 | 2.5%       | 97.5%         | 100.0%  |
| 202104 | 3.6%       | 96.4%         | 100.0%  |
| 202105 | 100.0%     | 0%            | 100.0%  |
| 202106 | 1.4%       | 98.6%         | 100.0%  |
| 202107 | 100.0%     | 0%            | 100.0%  |
| 202108 | 1.1%       | 98.9%         | 100.0%  |
| 202109 | 3.0%       | 97.0%         | 100.0%  |
| 202110 | 5.3%       | 94.7%         | 100.0%  |
| Total  | 1.4%       | 0.2%          | 98.5%   |

7 MIQ:

There is limited information on MIQ.

Occupancy and returnee overview, as at 11:59PM 21 October 2021
Number of people currently in Managed Isolation facilities 4,867
Number of people currently in Quarantine facilities 343
Projected Returnees – Next 14 days 4,216
Total number of people through MIQ facilities since 26 March 2020 182,536

8 International Comparisons

Several agencies have ranked countries’ Covid responses. NZ is depicted as having fallen from first place in their first ranking to 32nd. On the Bloomberg resilience rating largely as a result of the lockdown regime imposed in order to combat Delta. World-level comparative datasets and analyses can be found at:

- World Health Organization (WHO) COVID-19 dashboard
- John Hopkins Coronavirus Resource Center COVID-19 dashboard and map
- Worldometer COVID-19 statistics

A useful presentation provides data for total cases, and then cases, deaths and tests per million population. It is important to exclude various cases to obtain more comparable measurement and to recognize that countries vary enormously in the accuracy of their reporting. Ranking (in my view) is best carried out on case rate. On this basis NZ is 3rd amongst larger countries (after China and Taiwan and we do slightly better in terms of death rate.

| Country, Other | Total Cases | Tot Cases/1M pop | Deaths/1M pop | Tests/1M pop | Population |
|----------------|-------------|------------------|---------------|--------------|------------|
| World          | 237,548,427 | 30,475           | 622.1         |              |            |
| Micronesia     | 1           | 9                |               |              | 116,548    |
| Vanuatu        | 4           | 13               | 3             | 72,738       | 316,202    |
| Samoa          | 3           | 15               |               | 72,738       | 200,082    |

2 https://www.bloomberg.com/graphics/covid-resilience-ranking/
| Country, Other          | Total Cases | Tot Cases/1M pop | Deaths/1M pop | Tests/1M pop | Population     |
|------------------------|-------------|-----------------|---------------|--------------|----------------|
| **Solomon Islands**    | 20          | 28              | 6,355         | 708,135      |
| **China**              | 96,357      | 67              | 111,163       | 1,439,323,776|
| **Palau**              | 5           | 275             | 547,382       | **18,203**   |
| **Taiwan**             | 16,271      | 682             | 35            | 23,871,339   |
| **New Zealand**        | 4,527       | 905             | 6             | 5,002,100    |
| **Hong Kong**          | 12,252      | 1,618           | 28            | 7,573,912    |
| **Papua New Guinea**   | 21,896      | 2,390           | 27            | 9,161,039    |
| **Australia**          | 122,866     | 4,737           | 54            | 25,873,925   |
| **Pakistan**           | 1,256,233   | 5,551           | 124           | 87,414       |
| **Japan**              | 1,707,752   | 13,555          | 141           | **125,986,140** |
| **Thailand**           | 1,689,437   | 24,127          | 250           | 70,021,659   |
| **India**              | 33,914,465  | 24,274          | 322           | **1,397,161,207** |
| **New Caledonia**      | 8,860       | 30,661          | 640           | 288,969      |
| **Iceland**            | 12,092      | 35,147          | 96            | 344,045      |
| **Norway**             | 192,587     | 35,177          | 159           | 5,474,860    |
| **Canada**             | 1,651,233   | 43,271          | 737           | 38,160,672   |
| **Germany**            | 4,306,757   | 62,232          | 459           | 8,412,296    |
| **Russia**             | 7,690,110   | 52,667          | 1,463         | 146,013,681  |
| **Fiji**               | 51,386      | 56,801          | 717           | 904,662      |
| **Denmark**            | 362,068     | 62,232          | 459           | 5,818,016    |
| **Iran**               | 5,674,083   | 66,479          | 1,430         | 85,351,834   |
| **Italy**              | 4,692,274   | 77,752          | 2,174         | 60,349,253   |
| **Ireland**            | 397,831     | 79,447          | 1,054         | 5,007,521    |
| **Austria**            | 755,797     | 83,316          | 1,221         | 9,071,416    |
| **Chile**              | 1,659,386   | 85,873          | 1,942         | 19,323,737   |
| **Turkey**             | 7,357,336   | 86,064          | 767           | 85,486,524   |
| **Colombia**           | 4,967,524   | 96,328          | 2,453         | 51,568,624   |
| **Switzerland**        | 847,451     | 97,021          | 1,274         | 8,734,684    |
| **Brazil**             | 21,532,558  | 100,399         | 2,797         | 214,470,785  |
| **Portugal**           | 1,073,268   | 105,646         | 1,774         | 10,159,058   |
| **Spain**              | 4,971,310   | 106,275         | 1,853         | 46,777,704   |
| **France**             | 7,043,316   | 107,603         | 1,787         | 65,456,327   |
| **Belgium**            | 1,256,191   | 107,796         | 2,201         | 11,653,450   |
| **Sweden**             | 1,157,083   | 113,674         | 1,460         | 10,178,935   |
| **Argentina**          | 5,264,305   | 115,142         | 2,524         | 45,720,260   |
| **Netherlands**        | 2,016,171   | 117,336         | 1,059         | 17,182,860   |
| **UK**                 | 8,046,390   | 117,745         | 2,011         | 68,337,222   |
| **USA**                | 45,021,267  | 135,013         | 2,190         | 333,458,383  |
| **French Polynesia**   | 40,178      | 141,991         | 2,212         | 282,962      |
| **Czechia**            | 1,697,064   | 158,100         | 2,841         | 10,734,129   |
9 Conclusions

The data assembled in this research note shows that we are each experiencing Covid through the places we hold in society and viewpoints fatefully shaped by New Zealand’s social order. But Covid is also fatefully reshaping this social order not just in the short term as we experience the current shifting phases but into the longer-term future.

These different ways we relate to Covid are fractured by underlying socio-economic, ethnic and age differences (and perhaps others). Managers and Professionals and Businesspeople (according to the Household Labourforce Survey data reported in Crothers, 2021) are more likely to be able to have the advantages of ‘working from home’ affording them more protection from being exposed to the virus – whereas many ‘Essential workers’ (see Appendix) that have needed to venture out are closer to the breadline (Stats NZ data). Those suffering from lower incomes are more likely to be causal workers. Many service workers are vulnerable, and many do not have the flexibility or even the transport to be able to easily take opportunities to be vaccinated. To the different opportunities and difficulties which accrue to different socio-economic situations must be added difficulties which can arise through ethnicity and language, some embedded in very long-standing experiences of deprivation and prejudice. Moreover many in difficult circumstances are further handicapped by their distance from facilities – and perhaps also the opportunities to talk with others about the situation and its dangers. Different ethnic groups also have different age-structures and the Ministry of Health data show that different age-cohorts are being vaccinated at fairly similar rates. Analysis has to dig below the surface.

The analysis of data from MOH show useful light on some of the underlying social differences at DHB and locality (SA2) levels. Vaccination rates are strongly shaped by social class, ethnicity and location. These points are important: although Māori lags in vaccination are partly due to the greater extent to which Māori are working class but there is also a major vaccination gap in working class areas in general – and also in those which are more remote.

A further new class division which is emerging is that between the vaccinated and the unvaccinated which hopefully at least will be temporary until more of the disadvantaged catch up in their vaccinations with the advantaged. Such a division seems unfortunately seems unavoidable to ensure we can all cope with Covid. Assigning extra resources to educate and assist the vaccine hesitant is essential and the Government is working on this. To keep tabs on this issue formal government reporting on progress is being carried out which is useful to agencies in targeting their efforts although unfortunately it adds further pressure and stigmatisation.

While the majority are law abiding and will follow rules designed to limit the dangers of Covid not all are, and appalled respectable citizens often cannot understand why simple rules (e.g. stay at home isolation) cannot be more widely followed, and perhaps don’t realise how much extra resource is sucked into dealing with the relatively few stand-outs and why more complex approaches are needed. Covid too has brought out just how many people in various social situations (although many youth fall into this category) who are considerably detached from the broader society most respectable citizens live within.

Charting forward any path is completely rife with difficulty and continues to involve trade-offs in decisions and balancing of competing interests. The tendency of too many in the public, commentators in the media let alone opposition leaders is to paper over these conflicting interests and views and, worse, to increase polarizing them, which is not helpful to keeping the high social
cohesion we need to get through these difficulties. I try here to document some of the ways in which New Zealanders are divided and deserve recognition and acceptance for difficulties

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Appendix: Essential Workers: Statistics NZ estimates by Occupation and Industry – underlying data from Saville-Smith & Mitchell (2020).

| Occupation/Industry      | Code       | Numbers |
|--------------------------|------------|---------|
| Checkout operators       | 631111     | 16k     |
| Health carers            | 423        | 68k     |
| Nurses and midwives      | 254        | 58k     |
| Police officers          | 4413       | 11k     |
| Rubbish & recyclers      | 8996 and 839918 | 1k    |
| Total                    |            | 156     |

2. Industry

| Occupation/Industry        | Code  | Numbers |
|----------------------------|-------|---------|
| Supermarket & grocery      | G411  | 83k     |
| Health care                | Q84 & Q85 | 153k   |
| Residential care           | Q86   | 7k      |
| Police                     | D7711 | 13.5k   |
| Waste management           | D291  | 2k      |
| Total                      |       | 258.5   |