COVID-19 vaccine: How we calculate our vaccine uptake rate ratio

Analysis of vaccine uptake rate ratios can be confusing because the ‘All Ages ratio’ is often a lower figure than the ratios of all of the age group bandings. This is counter intuitive.

**Brief explanation:**
The weightings of the different age groups impact the total. Europeans are weighted towards an older demographic with high vaccination rates, but Māori and Pacific peoples are typically younger with lower vaccination rates.

**Detailed explanation:**
The calculation is dependent on the uptake for the age band of the non Māori/ non Pacific peoples. Māori and Pacific peoples generally have a much younger age demographic and with the younger cohorts becoming eligible at a later stage, this can affect the ‘all ages’ calculation. The all ages calculation is based on ages 12 and over.

- Non Māori/non Pacific groups have a lot more older people who are vaccinated, this skews their overall vaccination rate up.
- Māori/Pacific are a relatively young population, and their overall vaccination rate is skewed down.
- As a result, when the entire cohort is compared the relative rates are low. This is also why, when uptake is compared across all age bands, the percentage of total vaccinations is lower for Māori/Pacific than other ethnicities.

The rate ratio calculation for Pacific peoples is:
- Uptake (dose per 1000 population) for Pacific peoples /
- Uptake (dose per 1000 population) for non Māori/ non Pacific peoples

And similarly the rate ratio for Māori is:
- Uptake (dose per 1000 population) for Māori /
- Uptake (dose per 1000 population) for non Māori/ non Pacific peoples

**Rate Ratio Tables**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Maori Dose 2</th>
<th>Maori Population</th>
<th>Maori Dose 2 Uptake</th>
<th>Non Maori Non Pacific Dose 2</th>
<th>Non Maori Non Pacific Population</th>
<th>Dose 2 Uptake</th>
<th>Rate Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 to 19</td>
<td>3,169</td>
<td>4,931</td>
<td>643</td>
<td>22,651</td>
<td>27,957</td>
<td>810</td>
<td>0.79</td>
</tr>
<tr>
<td>20 to 34</td>
<td>4,792</td>
<td>7,540</td>
<td>636</td>
<td>51,396</td>
<td>60,176</td>
<td>854</td>
<td>0.74</td>
</tr>
<tr>
<td>35 to 49</td>
<td>3,572</td>
<td>5,046</td>
<td>708</td>
<td>47,532</td>
<td>55,945</td>
<td>850</td>
<td>0.83</td>
</tr>
<tr>
<td>50 to 64</td>
<td>3,547</td>
<td>4,175</td>
<td>850</td>
<td>53,568</td>
<td>59,522</td>
<td>900</td>
<td>0.94</td>
</tr>
<tr>
<td>65+</td>
<td>1,871</td>
<td>1,954</td>
<td>958</td>
<td>52,677</td>
<td>54,738</td>
<td>962</td>
<td>0.99</td>
</tr>
<tr>
<td>Total</td>
<td>16,951</td>
<td>23,646</td>
<td>717</td>
<td>227,824</td>
<td>258,338</td>
<td>882</td>
<td>0.81</td>
</tr>
</tbody>
</table>

---

Te Kāwanatanga o Aotearoa
New Zealand Government