**Sensitivity Analysis**

These analyses are aimed to inform whether our main analysis was seriously affected by invalid submissions made before the introduction of a captcha. The possible fraudulent responses were suspicious given the high rate of submission and repetitive pattern of email address names. We took some immediate measures to address the issue, which included temporarily closing the survey, adding a Captcha to ensure that respondents were submitted by humans, removing mention of incentivization on public websites where the survey was distributed, stopping any social media publicization and requiring a health authority email address for entry into the prize draw. We consulted the BC Children's Hospital Research Institute REDCap Data Management team for recommendations and guidance. We excluded any responses which were incomplete, not fully submitted, or did not properly fill out the consent section of the survey. We examined our data for clusters of identical responses. To avoid missing real data and to increase confidence in our results, we decided to analyse responses from direct care providers and IPAC professionals together to lessen the error in one particular group.

**Basic Demographics both Pre- and Post-Captcha**

In tables S.1-S.4, the first column presents the counts and percent respondents for each demographic category (i.e. columnwise percents) for all respondents combined. Totals may not add up to exactly 100 due to rounding. The subsequent columns break the combined column by the number of responses received for that demographic category before and after introducing the captcha. Percents represent percent of the respective combined totals (i.e. rowwise, not columnwise). Overall, there were more responses received pre-captcha, simply reflecting the timing during the survey period at which the captcha was required and introduced.

Table S.1

|  |  |  |  |
| --- | --- | --- | --- |
| Age  Category | Combined  *n* (%) | Pre-  *n* (%) | Post-  *n* (%) |
| < 30 years old | 885 ( 36) | 788 (89) | 97 (11) |
| 30-39 years old | 903 ( 36) | 713 (79) | 190 (21) |
| 40-49 years old | 399 ( 16) | 255 (64) | 144 (36) |
| 50-59 years old | 229 ( 9) | 128 (56) | 101 (44) |
| 60+ years old | 72 ( 3) | 43 (60) | 29 (40) |
| Total | 2488 (100) | 1927 | 561 |

Note that if the number responses for any demographic group differs greatly between the surveys completed pre-captcha and post-captcha, then the respective tests of equal proportions between those working in acute care and those in LTC/AL may be biased. The ‘< 30 years old’ group makes up 41% of the pre-captcha responses whereas it only makes up 17% of the post-captcha responses (Table S.1), and higher proportions of the older age groups responded post-captcha compared to the proportions that responded pre-captcha. This trend may simply reflect that younger respondents were more likely to complete an online survey earlier in the survey period. Similarly, a much higher proportion (861/1927=45%) of those working as ‘Other’ (housekeeping, facilities maintenance, etc.) were represented in the pre-captcha group compared to the post-captcha group (35/561=6%), while a higher proportion of nurses (323/561=58%) comprised the post-captcha group compared to the pre-captcha group (427/1927=22%); see Table S.2. Those working in ‘Other’ may have had more free time to complete the survey earlier compared to those in ‘Nursing’.

Table S.2

|  |  |  |  |
| --- | --- | --- | --- |
| Job  Category | Combined  *n* (%) | Pre-  *n* (%) | Post-  *n* (%) |
| Clinical support | 684 ( 28) | 517 (76) | 167 (24) |
| Nursing | 750 ( 30) | 427 (57) | 323 (43) |
| Paramedic | 95 ( 4) | 73 (77) | 22 (23) |
| Physician/provider | 63 ( 3) | 49 (78) | 14 (22) |
| Other | 896 ( 36) | 861 (96) | 35 ( 4) |
| Total | 2488 (101) | 1927 | 561 |

While fewer respondents identified working in acute care post-captcha (361 vs 535), they represented a much higher proportion of the respondents post-captcha than pre-captcha (361/561 = 64% vs 535/1927=28%); see Table S.3. Conversely, the 387 respondents from LTC/AL represented 20% of the pre-captcha group while the 54 LTC/AL that responded post-captcha represented only 10% of the post-captcha group.

Table S.3

|  |  |  |  |
| --- | --- | --- | --- |
| Workplace  Category | Combined  *n* (%) | Pre-  *n* (%) | Post-  *n* (%) |
| Acute care | 896 ( 36) | 535 (60) | 361 (40) |
| Home care visits | 193 ( 8) | 190 (98) | 3 ( 2) |
| LTC/AL | 441 ( 18) | 387 (88) | 54 (12) |
| Mental health | 128 ( 9) | 108 (84) | 20 (16) |
| Pre-hospital care | 723 ( 29) | 628 (87) | 95 (13) |
| Outpatient/CC | 98 ( 4) | 76 (77) | 22 (22) |
| Other | 9 ( < 1) | 3 (33) | 6 (67) |
| Total | 2488 (100) | 1927 | 561 |

The most notable takeaway from Table S.4 is that all respondents from First Nations Health Authority responded pre-captcha, though we did not perform any analyses based on this demographic. Further, Fraser Health Authority represented a higher proportion of the post-captcha responses than the pre-captcha responses (362/561 = 65% vs 467/1927 = 24%). In fact the vast majority of responses from the other HAs were completed pre-captcha compared to post-captcha.

Monte Carlo p-values for comparing Acute Care to LTC/AL were calculated separately for pre-captcha and post-captcha proportions for select questions (without adjustment for multiple comparisons). Overall, the results are in line with what was reported for all responses combined. In particular, the proportions across the reported sources and online sources used for informing IPAC guidance were not statistically different at the 5%level of significance across the Acute Care and LTC/AL workers, regardless of whether the survey was completed pre- or post-captcha (p-values ranged from 0.09 to 1.00).

Table S.4

|  |  |  |  |
| --- | --- | --- | --- |
| Health  Authority | Combined  *n* | Pre-  *n* (%) | Post-  *n* (%) |
| First Nations HA | 200 ( 8) | 200 (100) | 0 ( 0) |
| Fraser Health | 829 ( 33) | 467 ( 56) | 362 (44) |
| Interior Health | 344 ( 14) | 316 ( 92) | 28 ( 8) |
| Island Health | 257 ( 10) | 252 ( 98) | 5 ( 2) |
| Northern Health | 244 ( 10) | 243 (>99) | 1 (<1) |
| Providence Health | 205 ( 8) | 195 ( 95) | 10 ( 5) |
| Provincial HSA | 342 ( 14) | 198 ( 58) | 144 (42) |
| Vancouver Coastal | 67 ( 3) | 56 ( 84) | 11 (16) |
| Total | 2488 (100) | 1927 | 561 |

However, for some questions, there was a statistically significant difference in proportions for all responses combined, but one of the pre- or post-captcha tests were not statistically significant. The associated p-values for these tests are highlighted in Table S.5 below. From the analyses presented here, it is not clear whether discrepancies between the pre- and post-captcha tests are reflective of contamination due to invalid surveys or biases introduced by an imbalance of representation from some demographic group(s) in the pre-captcha responses compared to post-captcha responses.

Table S.5

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Population | IPAC source in-person | Knows correct  PPE | Covid low risk in workplac | IPAC low priority | Not responsible for IPAC | Changing Guidance | Confusing messaging | Contradicting Guidance |
| Pre-Captcha | 0.036 | 0.013 | 0.047 | 0.020 | 0.001 | 0.050 | 0.003 | 0.153 |
| Post-Captcha | 0.535 | 0.148 | 0.417 | 0.020 | 0.606 | 0.628 | 0.773 | 0.033 |
| Combined | 0.262 | 0.102 | 0.381 | 0.001 | 0.001 | 0.006 | 0.002 | 0.020 |

We would also note that one might expect that an invalid survey may have the first option checked for all responses. The demographic questions do not support (nor refute) that this was the case among the responses included in the analysis. Our opinion is that this set of subanalyses are inconclusive, mainly because (i) most responses were not blindly selecting the first option on all demographic questions pre-captcha; and (ii) imbalances seen between demographic categories pre- vs post-captcha could often be deemed reasonable independent of the need for a captcha. We would conclude as we argued in the original report: there may be a few invalid surveys that were erroneously retained in the analysis, but the number of such surveys is likely very small and likely to have minimal impact on reported results.