

Table S1: Table of tests used for all testing policies for 100 days under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test. The number first written is the number of PCR tests and the number written in brackets is the number of LFDs. The Baselines are slightly different between them due to statistical variation.

	Low	Medium	High	Very High
PCR and LFD Full	49.2 [-3.07, 102]	17.8 [-30.3, 66.0]	38.6 [-8.45, 85.7]	<b>34.7</b> <b>[9.92, 59.4]</b>
PCR and LFD Ward	<b>89.4</b> <b>[33.4, 145]</b>	<b>71.7</b> <b>[20.7, 123]</b>	<b>77.9</b> <b>[35.1, 121]</b>	<b>45.0</b> <b>[20.1, 69.9]</b>
PCR only Full	<b>94.8</b> <b>[43.4, 146]</b>	<b>70.7</b> <b>[25.8, 116]</b>	<b>75.1</b> <b>[31.6, 119]</b>	<b>38.1</b> <b>[6.83, 69.4]</b>
PCR only Ward	<b>115</b> <b>[51.0, 179]</b>	<b>100</b> <b>[49.8, 151]</b>	<b>93.2</b> <b>[56.8, 130]</b>	<b>62.6</b> <b>[33.6, 91.5]</b>

Table S2: Table of the expected additional total cost of the testing policies over the baseline testing strategy for 100 days under lockdown for a HCW population of 8000.

	Low	Medium	High	Very High
PCR and LFD Full	278,000	367,000	374,000	378,000
PCR and LFD Ward	88,300	90,900	92,900	94,900
PCR only Full	986,000	1,060,000	1,130,000	1,180,000
PCR only Ward	232,000	250,000	267,000	277,000

Table S3: Table of the total number of HCW infections reduced of the testing policies over the baseline testing strategy for 100 days under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test.

	Low	Medium	High	Very High
PCR and LFD Full	49.2 [-3.07, 102]	17.8 [-30.3, 66.0]	38.6 [-8.45, 85.7]	<b>34.7</b> <b>[9.92, 59.4]</b>
PCR and LFD Ward	<b>89.4</b> <b>[33.4, 145]</b>	<b>71.7</b> <b>[20.7, 123]</b>	<b>77.9</b> <b>[35.1, 121]</b>	<b>45.0</b> <b>[20.1, 69.9]</b>
PCR only Full	<b>94.8</b> <b>[43.4, 146]</b>	<b>70.7</b> <b>[25.8, 116]</b>	<b>75.1</b> <b>[31.6, 119]</b>	<b>38.1</b> <b>[6.83, 69.4]</b>
PCR only Ward	<b>115</b> <b>[51.0, 179]</b>	<b>100</b> <b>[49.8, 151]</b>	<b>93.2</b> <b>[56.8, 130]</b>	<b>62.6</b> <b>[33.6, 91.5]</b>

Table S4: Table of the total number of HCW infections reduced of the testing policies over the baseline testing strategy for 100 days not under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test.

	Low	Medium	High	Very High
PCR and LFD Full	<b>59.6</b> <b>[8.12, 111]</b>	7.45 [-30.4, 45.3]	29.6 [-0.264, 59.5]	-15.4 [-37.9, 7.18]
PCR and LFD Ward	<b>94.2</b> <b>[41.1, 147]</b>	<b>49.2</b> <b>[18.2, 80.2]</b>	<b>78.5</b> <b>[45.3, 112]</b>	8.47 [-10.7, 27.7]
PCR only Full	28.5 [-18.4, 75.4]	<b>92.5</b> <b>[46.6, 138]</b>	<b>40.1</b> <b>[8.79, 71.4]</b>	23.0 [-0.843, 46.9]
PCR only Ward	<b>104</b> <b>[57.5, 150]</b>	<b>117</b> <b>[75.7, 158]</b>	<b>72.2</b> <b>[42.4, 102]</b>	<b>52.1</b> <b>[27.3, 76.8]</b>

Table S5: Table of the expected percentage reduction in nosocomial infections of the testing policies over the baseline testing strategy for 100 days under lockdown for a HCW population of 8000.

	Low	Medium	High	Very High
PCR and LFD Full	1.18 [-0.872, 3.11]	0.00264 [-1.58, 1.58]	0.957 [-0.331, 2.24]	<b>1.26</b> [0.508, 2.02]
PCR and LFD Ward	<b>2.70</b> [0.762, 4.64]	<b>2.13</b> [0.323, 3.94]	<b>2.09</b> [0.956, 3.22]	<b>1.43</b> [0.671, 2.19]
PCR only Full	<b>3.21</b> [1.05, 5.38]	<b>2.29</b> [0.866, 3.70]	<b>2.11</b> [0.780, 3.45]	<b>1.21</b> [0.410, 2.02]
PCR only Ward	2.51 [-0.371, 5.38]	<b>2.41</b> [0.670, 4.14]	<b>2.58</b> [1.57, 3.59]	<b>1.47</b> [0.420, 2.02]

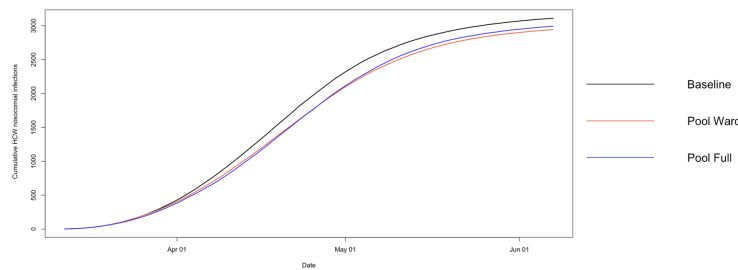


Figure S1: Cumulative average nosocomial infections across parameter sets and replications against time for a hospital with 8000 HCWs at low prevalence during a lockdown for PCR follow-up test.

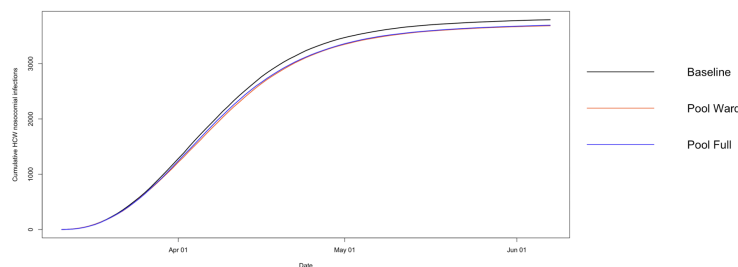


Figure S2: Cumulative average nosocomial infections across parameter sets and replications against time for a hospital with 8000 HCWs at high prevalence during a lockdown for PCR follow-up test.

Table S6: Table of the expected increase in peak HCW isolations for the testing policies over the baseline testing strategy for 100 days under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test.

	Low	Medium	High	Very High
PCR and LFD Full	42.4 [31.9, 52.9]	49.6 [-39.6, 59.5]	71.0 [60.5, 81.4]	109 [98.4, 119]
PCR and LFD Ward	42.0 [30.8, 53.2]	54.3 [43.3, 65.3]	66.1 [57.3, 74.9]	103 [94.7, 111]
PCR only Full	40.1 [29.7, 50.4]	61.5 [48.5, 74.4]	82.0 [70.2, 93.7]	127 [114, 140]
PCR only Ward	33.8 [23.0, 44.6]	52.9 [42.7, 63.1]	83.3 [70.9, 95.7]	128 [117, 140]

Table S7: Table of the expected increase in peak HCW isolations for the testing policies over the baseline testing strategy for 100 days not under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test.

	Low	Medium	High	Very High
PCR and LFD Full	40.1 [30.3, 49.8]	66.0 [56.0, 76.0]	72.8 [63.0, 82.6]	107 [96.6, 117]
PCR and LFD Ward	40.3 [30.9, 49.6]	66.2 [55.6, 76.8]	70.7 [60.0, 81.4]	99.2 [87.7, 111]
PCR only Full	55.5 [41.9, 69.0]	59.2 [48.5, 69.9]	77.5 [66.7, 88.3]	120 [107, 133]
PCR only Ward	53.5 [41.6, 65.5]	58.8 [45.6, 72.1]	82.5 [71.5, 93.5]	119 [108, 130]

Table S8: Table of the expected percentage increase in peak HCW isolations over Baseline policy for the testing policies over the baseline testing strategy for 100 days not under lockdown for a HCW population of 8000. PCR and LFD denotes follow-up testing was down with an LFD and PCR only means follow-up testing was down with a PCR test.

	Low	Medium	High	Very High
PCR and LFD Full	17.1	23.9	20.9	24.4
PCR and LFD Ward	17.2	23.9	20.3	22.7
PCR only Full	21.0	17.7	18.6	22.6
PCR only Ward	20.3	17.6	19.8	22.4

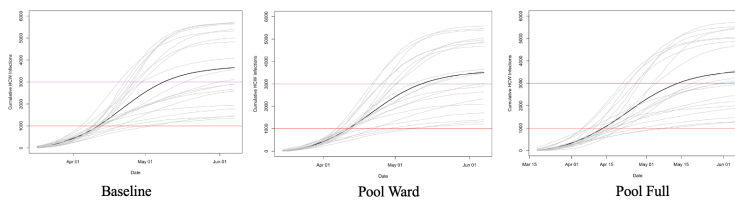


Figure S3: Cumulative graphs for HCW infections showing the 20 parameter sets and the average of those parameter sets for the three different testing methods for low prevalence in a lockdown. The horizontal orange line denotes 1000 HCW cumulative infections and the purple one denotes 3000.

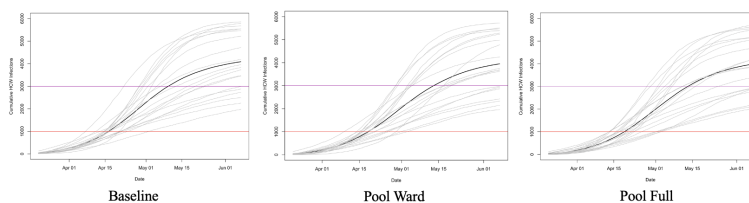


Figure S4: Cumulative graphs for HCW infections showing the 20 parameter sets and the average of those parameter sets for the three different testing methods for low prevalence not in a lockdown. The horizontal orange line denotes 1000 HCW cumulative infections and the purple one denotes 3000.

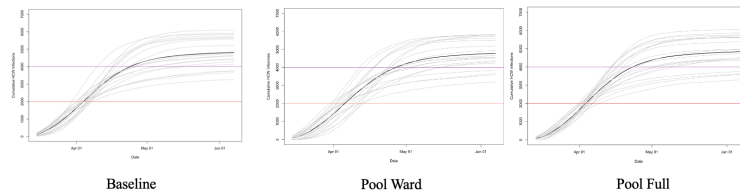


Figure S5: Cumulative graphs for HCW infections showing the 20 parameter sets and the average of those parameter sets for the three different testing methods for high prevalence in a lockdown. The horizontal orange line denotes 2000 HCW cumulative infections and the purple one denotes 4000.

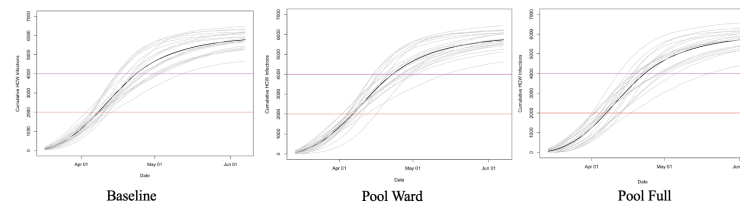


Figure S6: Cumulative graphs for HCW infections showing the 20 parameter sets and the average of those parameter sets for the three different testing methods for high prevalence not in a lockdown. The horizontal orange line denotes 2000 HCW cumulative infections and the purple one denotes 4000.

Table S9: Table of the expected percentage reduction in patient infections for the testing policies over the baseline testing strategy for 100 days for a HCW population of 8000 with a 95% confidence interval for under lockdown.

	Low	Medium	High	Very High
PCR and LFD Full	1.76 [-3.08, 6.61]	-1.03 [-5.44, 3.39]	-0.653 [-4.36, 3.06]	1.53 [-1.75, 4.81]
PCR and LFD Ward	<b>5.08</b> [ <b>1.39, 8.77</b> ]	-0.805 [-6.09, 4.48]	-0.219 [-3.50, 3.07]	1.73 [-1.18, 4.63]
PCR only Full	0.710 [-3.51, 4.93]	4.07 [-0.244, 8.38]	0.906 [-2.47, 4.29]	-1.49 [-4.06, 1.08]
PCR only Ward	0.0839 [-4.90, 5.07]	1.64 [-2.51, 5.80]	-0.452 [-3.68, 2.78]	-0.875 [-3.72, 1.97]

Table S10: Table of the expected total reduction in patient infections for the testing policies over the baseline testing strategy for 100 days for a HCW population of 8000 with a 95% confidence interval for not under lockdown.

	Low	Medium	High	Very High
PCR and LFD Full	-6.75 [-46.7, 33.2]	5.10 [-50.1, 60.3]	3.17 [-63.2, 84.7]	-18.6 [-77.5, 40.4]
PCR and LFD Ward	4.00 [-33.4, 41.4]	32.6 [-19.4, 84.7]	24.6 [-42.5, 91.7]	57.2 [-1.87, 116]
PCR only Full	1.73 [-42.8, 46.2]	46.2 [-13.1, 106]	-8.73 [-77.8, 60.3]	28.8 [-24.9, 82.5]
PCR only Ward	7.53 [-41.3, 56.4]	<b>88.0</b> [ <b>24.5, 151</b> ]	12.8 [-61.4, 86.9]	39.1 [-23.5, 102]

Table S11: Table of the expected total reduction in patient infections for the testing policies over the baseline testing strategy for 100 days for a HCW population of 8000 with a 95 % confidence interval for under lockdown.

	Low	Medium	High	Very High
PCR and LFD Full	33.3 [-8.06, 74.7]	9.58 [-38.6, 57.8]	14.3 [-51.7, 80.2]	52.3 [-15.9, 120]
PCR and LFD Ward	<b>57.8</b> [ <b>20.7, 94.8</b> ]	21.8 [-34.1, 77.7]	14.5 [-44.5, 73.4]	58.5 [-3.42, 120]
PCR only Full	24.8 [-11.9, 61.6]	<b>61.6</b> [ <b>13.0, 110</b> ]	36.2 [-26.3, 98.6]	-21.8 [-76.6, 34.4]
PCR only Ward	13.9 [-25.6, 53.4]	33.6 [-14.2, 81.3]	5.88 [-52.1, 63.9]	-8.05 [-70.7, 54.6]