Purpose: The table below sets out a **<u>draft</u>** view on planning assumptions for the UK reasonable worst-case scenario.

SAGE (Scientific Advisory Group for Emergencies) only provides scientific advice to Government it does not decide what scenario Government should be planning for. The Cabinet Office, Civil Contingencies Secretariat, will advise HMG when they should work to revised planning assumptions.

Audience: HMG and SAGE participants.

Epidemic parameters	COVID-19 RWCS estimates
Reproduction number, when unmitigated	2.8
Doubling time **(Time required for the number of cases to double)**	3.3 days
Deaths (This is the total number of deaths due to Covid-19 across all waves. This does not take into account the number of deaths that could occur due to lack of NHS capacity)	Wave 1: 65,000 (to the nearest 10,000, Jan 2020 – Sept 2020) In wave 1 during peak weeks it is expected that the number of deaths per week will rise to be between 3000-3700 for approximately 8 weeks.
Number of cases requiring hospitalisation	Wave 1: 320,000 (to the nearest 10,000, Jan 2020 – Sept 2020)

Timing: The RWCS is based on a mitigated epidemic. The mitigations in place are: case isolation, voluntary home quarantine, closure of schools and universities and social distancing for the entire population. These policies were enacted on 17th March, barring school closures which began a week later. The mitigations as assumed to be in place for 6months.

The Reasonable Worst-Case Scenario assumes a poor compliance. The specific assumptions in the modelling are detailed below, based on public behaviour where mitigations such as school closures, social distancing and shielding have been enacted:

- School closures lead to an increase of social contact by 50%
- School closures lead to an increase in household contacts by 100%
- Social distancing reduced contacts outside the home and workplace by 66%
- 50% of households adhere to household quarantine and 70% of symptomatic cases adhere to case isolation. In both these cases, non-household contacts are reduced by 75%.

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Current modelling suggests that if the mitigations are lifted after 6 months a second more significant peak would be seen later in the year, this is illustrated in figure 2 below. There is a large amount of uncertainty around this modelling.
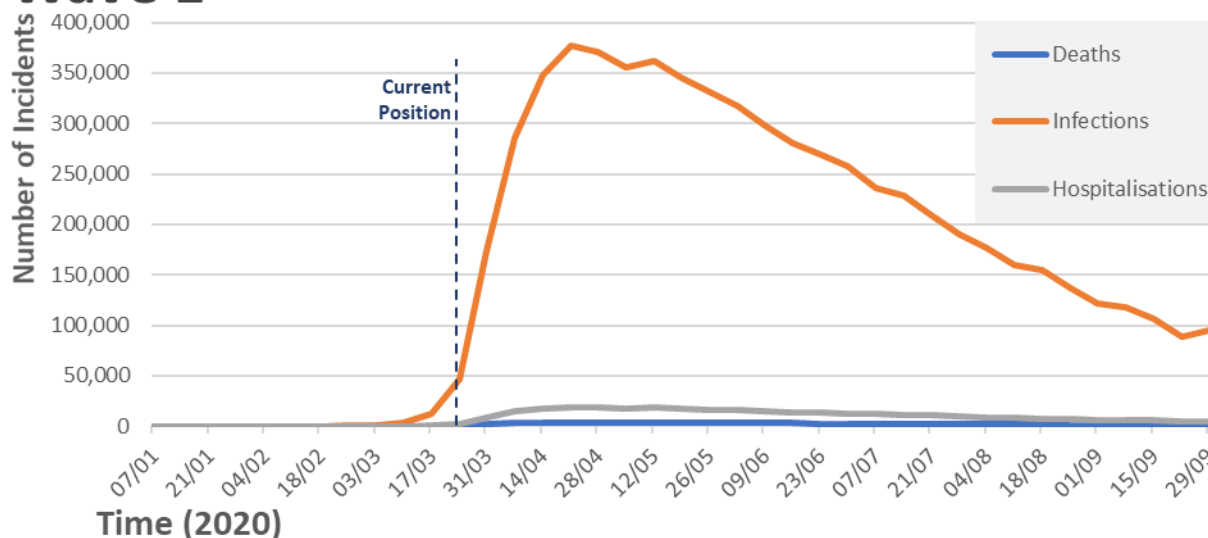
RWC Scenario Charts (Poor Compliance with BSIs)

Figure 1 - Model shows the peak of the first wave and the impact of BSI measures being in place for 6 months
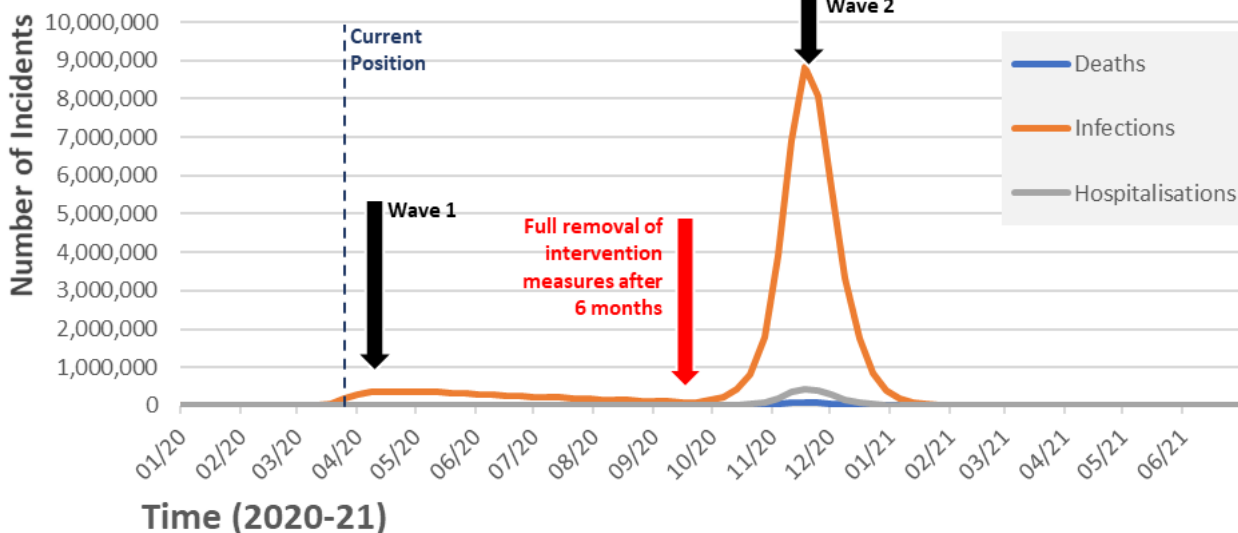

Figure 2 – Chart shows the impact of removing all BSI measures around September 2020 - A second peak begins shortly after the measures have been removed
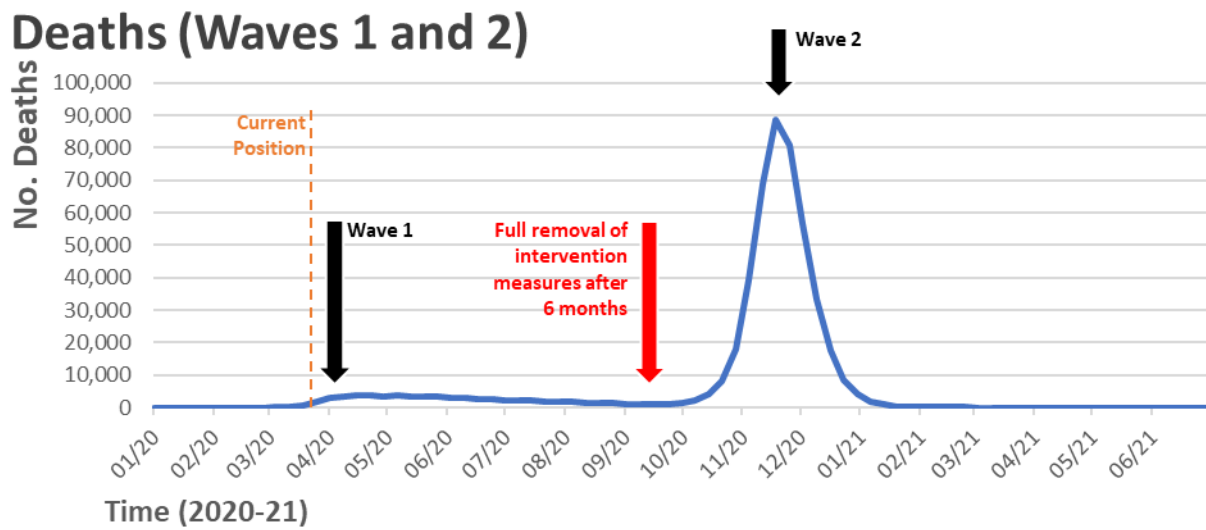
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Deaths (Waves 1 and 2)

Figure 3 - Chart shows the number of deaths for both wave 1 and 2 should BSI measures be removed September 2020

Reasonable Worst Case Planning - Under Poor Compliance

Date		Deaths	Infections	Hospitalisations
11/02/2020		0	0	0
18/02/2020		0	0	0
25/02/2020		4	400	20
03/03/2020		4	400	20
10/03/2020		30	3,000	150
17/03/2020		121	12,100	605
24/03/2020		471	47,100	2,355
31/03/2020		1,742	174,200	8,710
07/04/2020		2,858	285,800	14,290
14/04/2020		3,478	347,800	17,390
21/04/2020		3,773	377,300	18,865
28/04/2020		3,704	370,400	18,520
05/05/2020		3,553	355,300	17,765
12/05/2020		3,618	361,800	18,090
19/05/2020		3,453	345,300	17,265
26/05/2020		3,320	332,000	16,600
02/06/2020		3,178	317,800	15,890
09/06/2020		2,987	298,700	14,935
16/06/2020		2,802	280,200	14,010
23/06/2020		2,689	268,900	13,445
30/06/2020		2,578	257,800	12,890

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07/07/2020		2,360	236,000	11,800
14/07/2020		2,284	228,400	11,420
21/07/2020		2,095	209,500	10,475
28/07/2020		1,897	189,700	9,485
04/08/2020		1,769	176,900	8,845
11/08/2020		1,593	159,300	7,965
18/08/2020		1,552	155,200	7,760
25/08/2020		1,366	136,600	6,830
01/09/2020		1,222	122,200	6,110
08/09/2020		1,181	118,100	5,905
15/09/2020		1,061	106,100	5,305
22/09/2020		880	88,000	4,400
29/09/2020		949	94,900	4,745

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