Government of JERSEY

Briefing on the Statistical Coronavirus Model

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Gouvèrnément d'JÈRRI

Why do we need a statistical model?

Key aim is to ensure that we protect the population as a whole and in particular shield those most vulnerable.

Minimising the health impact

We have taken a three step approach to achieve this:

- avoid becoming infected (contain)
- reduce the infection rate (delay and shield)
- if infections occur treatment is available and adequate.

Each step needs to be supported by effective measures.

How do we know whether measures are effective?

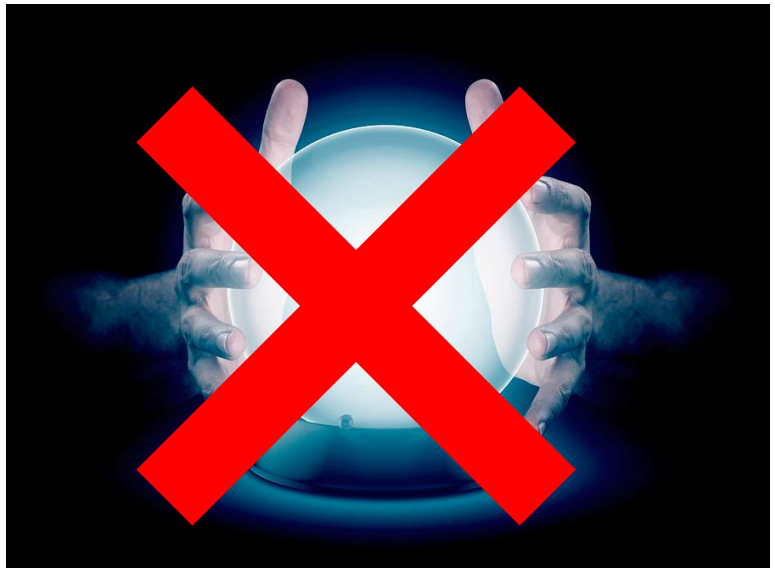
Using a statistical model

Statistical modelling is a useful tool to quantify the expected impact over time from each intervention.

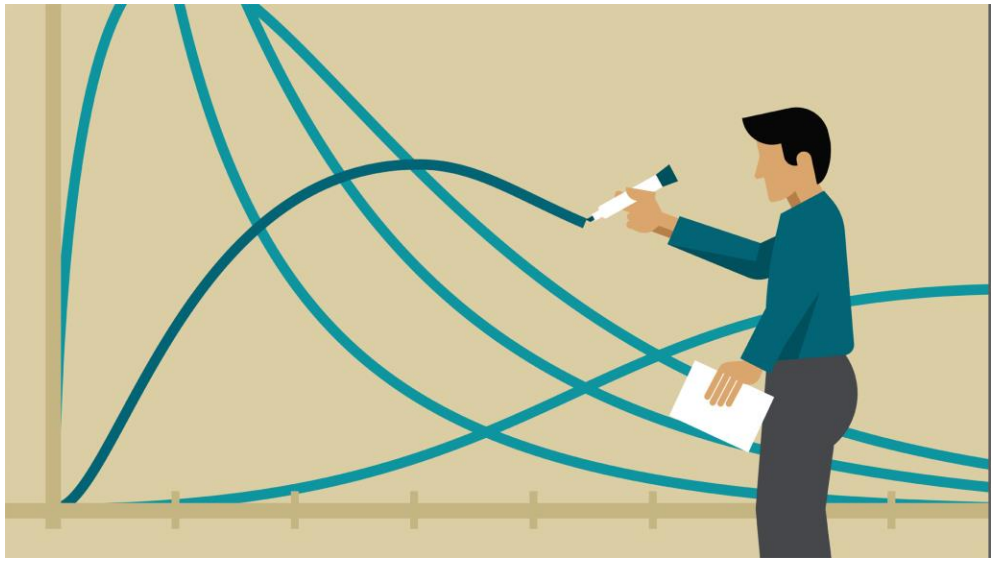
To quantify a reduction, we need to start with the maximum we would expect.

This means each Coronovirus model needs to start with an assumption of what the realistic worst case scenario would be in order to calculate which measures will have the biggest impact on reducing the overall number and the distribution over time. This worse case scenario needs to be reasonable and based on previous evidence.

What is the statistical Coronavirus model



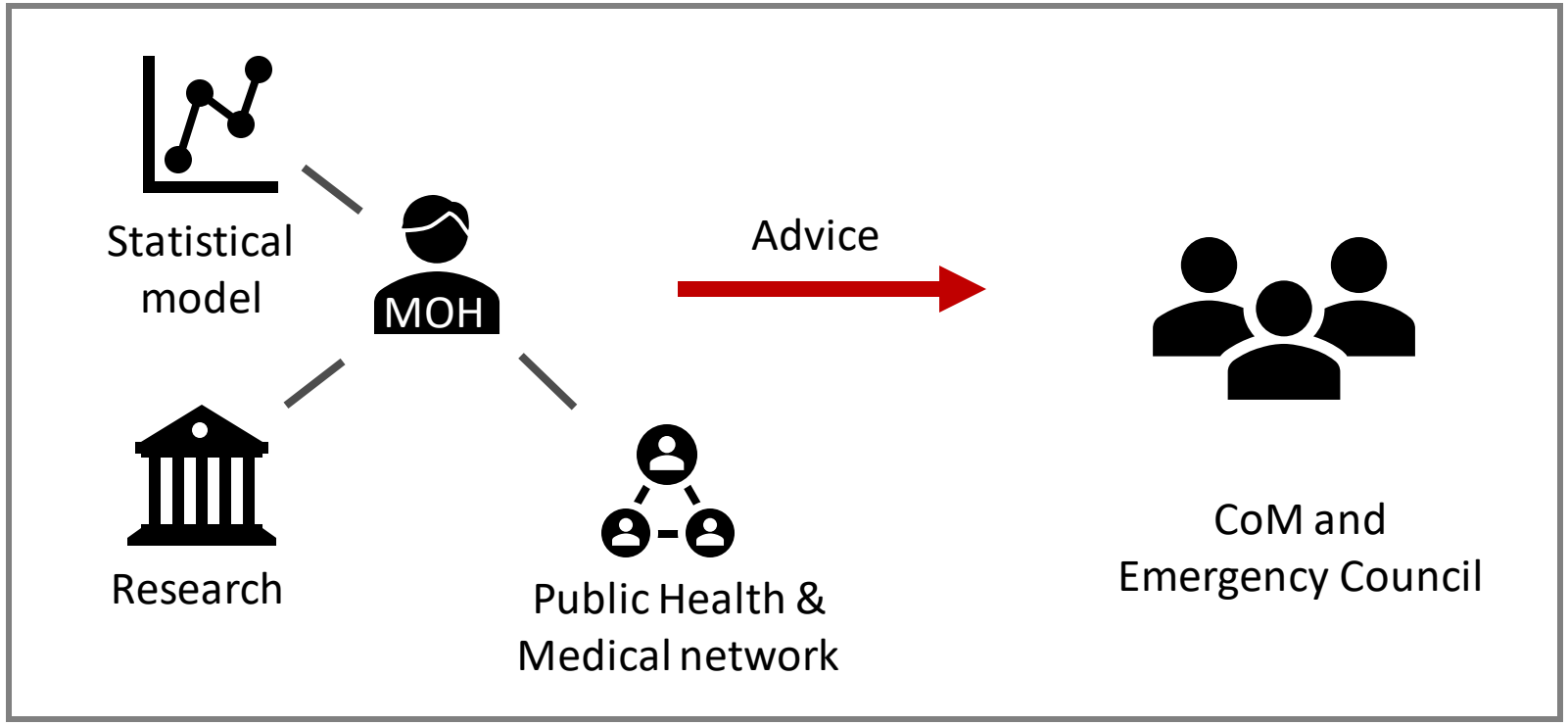
It is not a crystal ball



It is a mathematical tool to model the impact of interventions on events. It supports decision-making.
It does not predict the future.

Who is the model for?

- The model is a technical tool that informs the advice given by the Medical Officer of Health to the Council of Ministers and the Emergency Council.

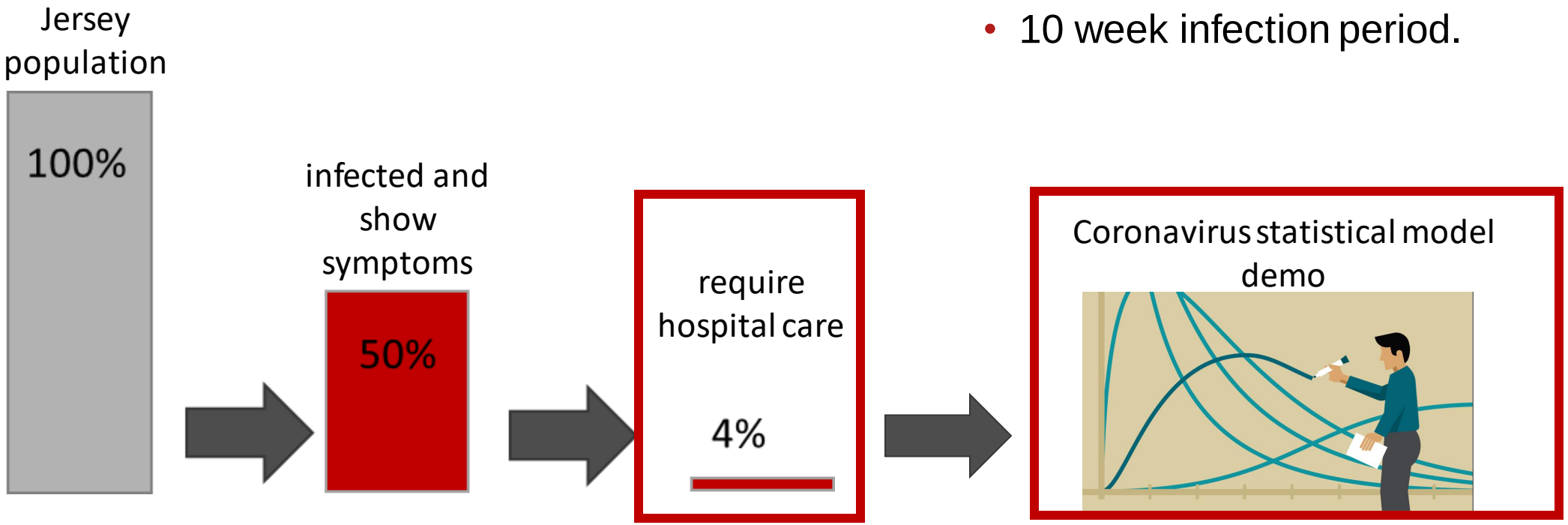


Realistic worse case scenario

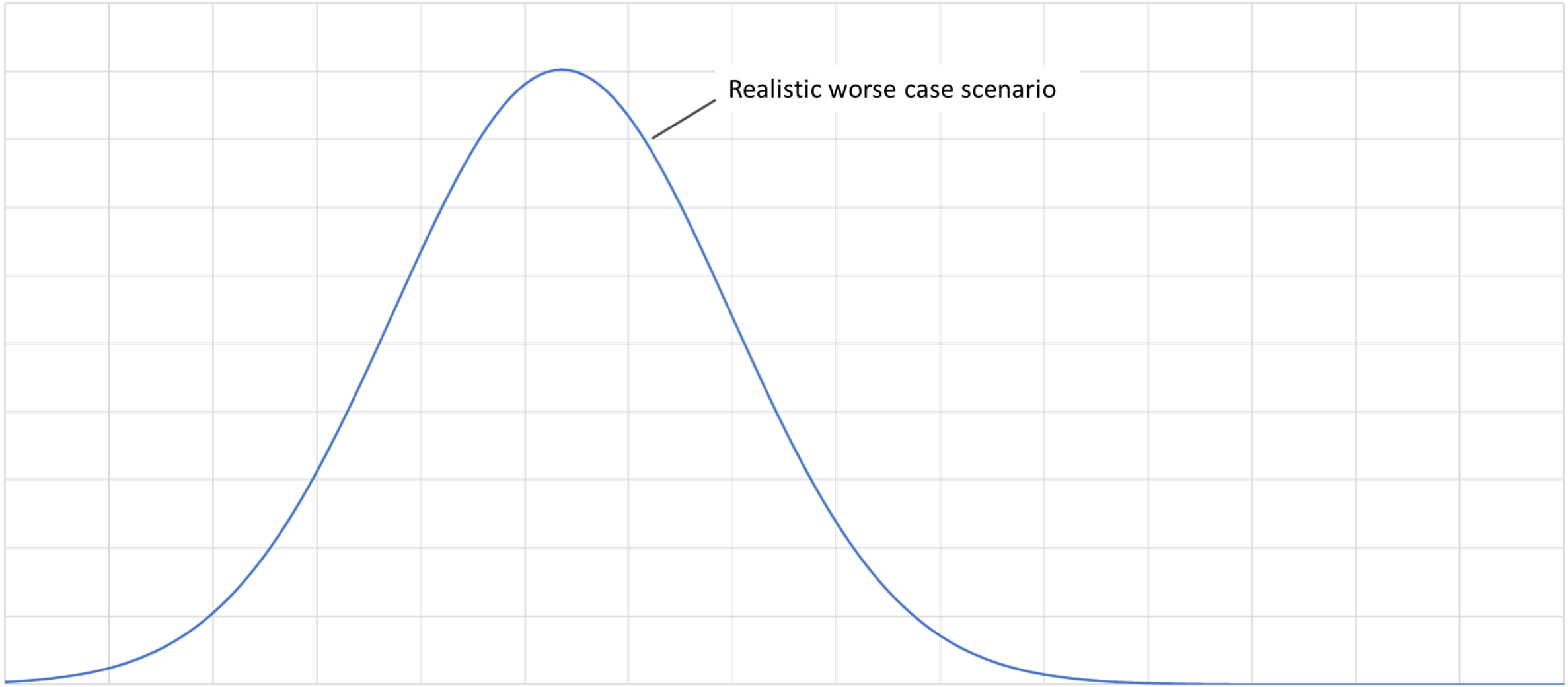
We have based our model on the empirical CORVID-19 model created by Public Health England (PHE) and Scientific Advisory Group for Emergencies (SAGE). It is a model specifically created for UK overseas territories (small populations, islands).

The assumptions for the realistic worst case scenario ('principal scenario') are:

- a maximum of 50% of the population would contract the virus and be symptomatic;
- of those 4% would require hospital care
- 10 week infection period.



Epidemic curve of hospitalised cases in the absence of intervention (realistic worst case scenario)



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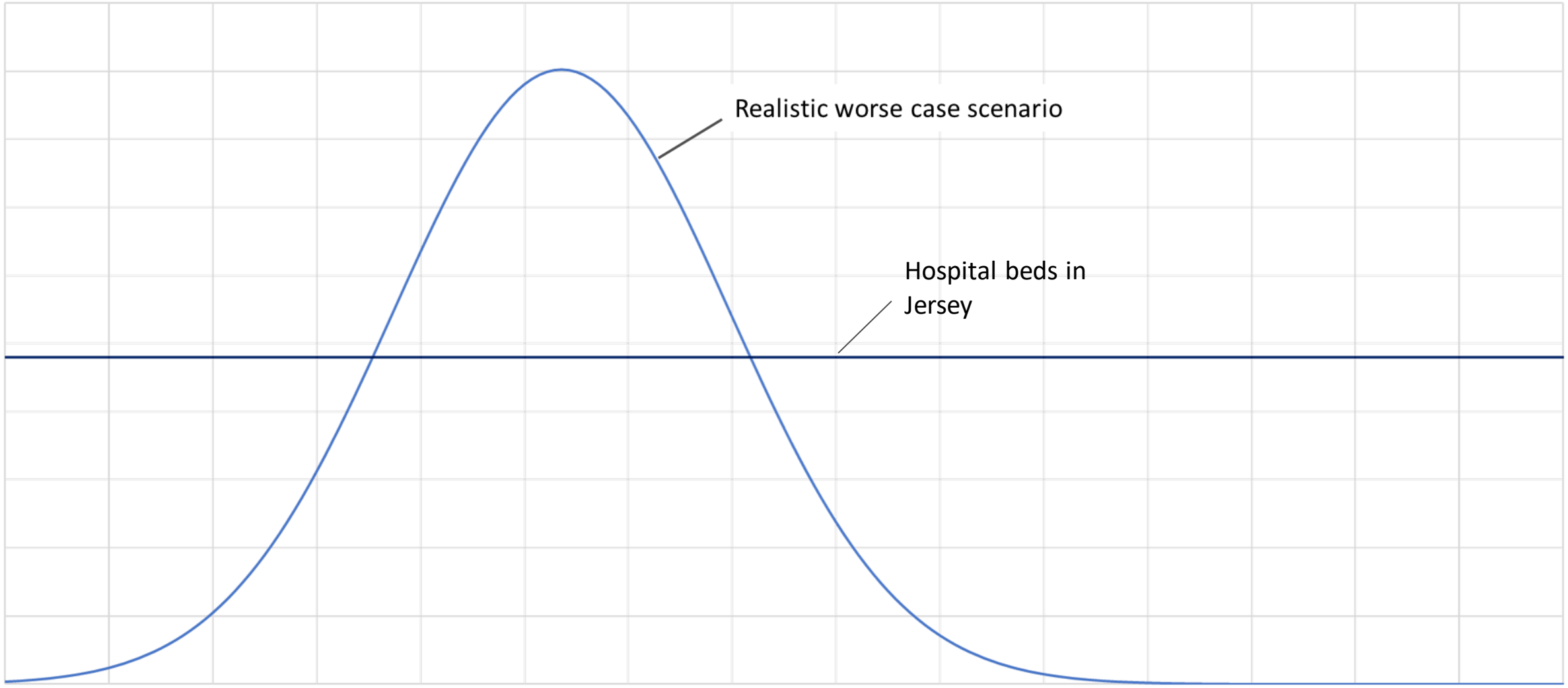


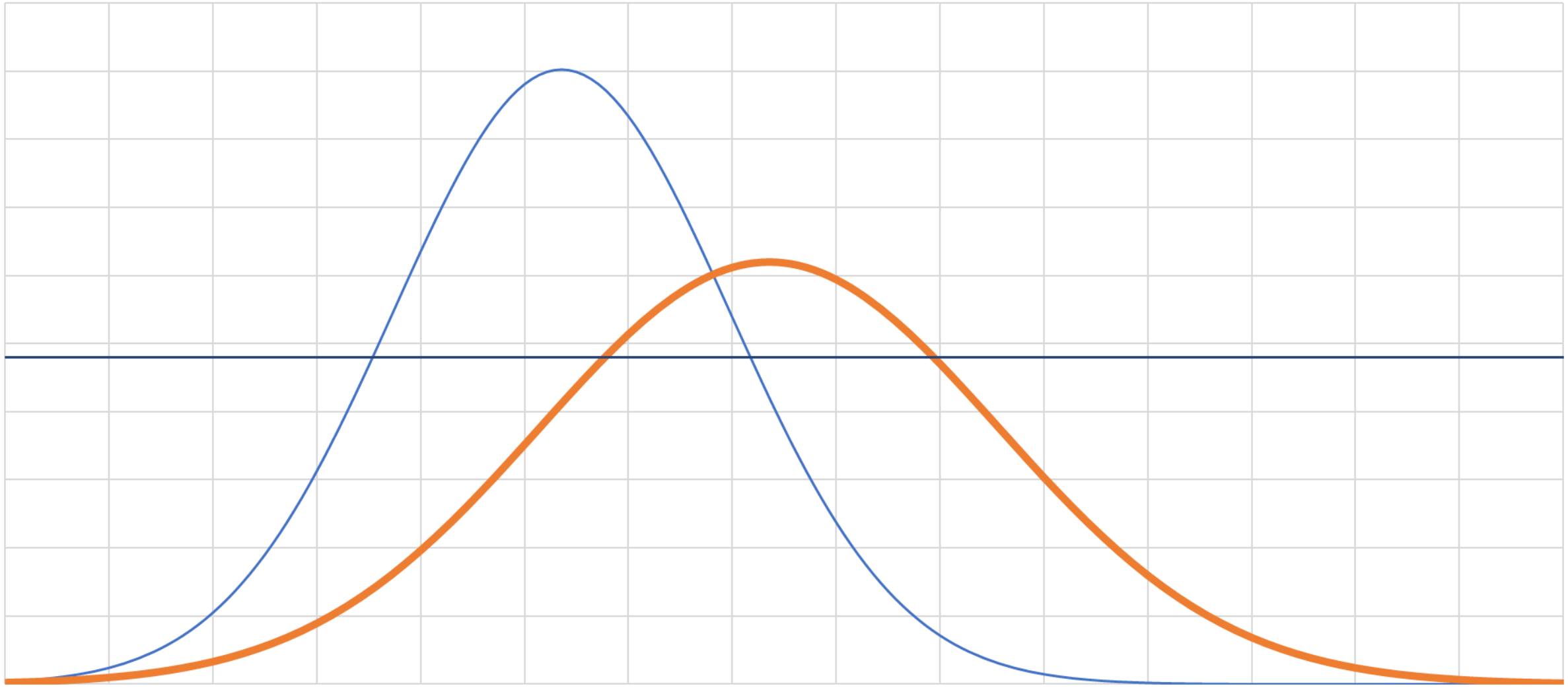
Using a statistical model

Statistical modelling is a useful tool to quantify the expected impact over time from each intervention.

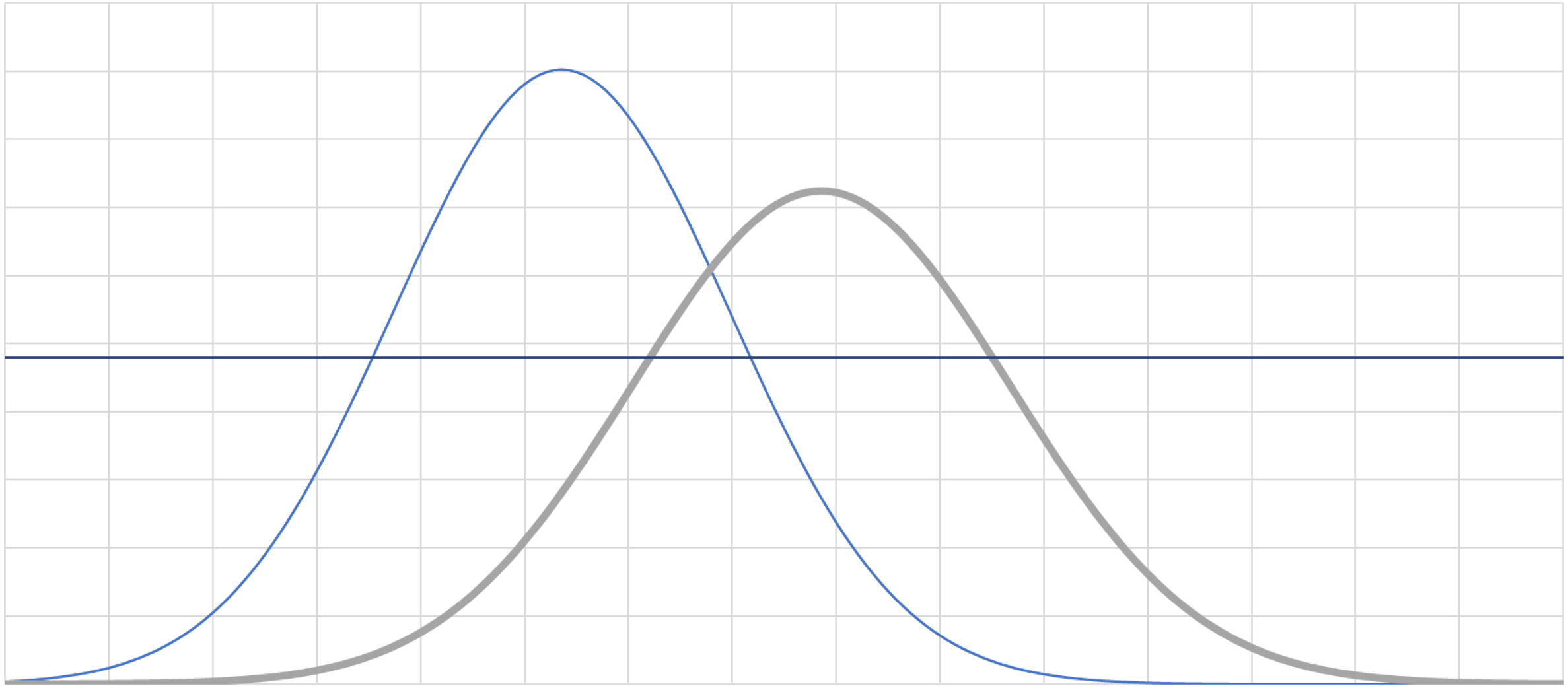
Based on the realistic worse case scenario, we can model the impact of measures. Five measures have been modelled:

1. Closure of schools for 8-12 weeks
2. Home isolation of symptomatic cases for 7 days
3. Voluntary household quarantine for 14 days
4. Social distancing
5. Only 25% of population symptomatic + social distancing

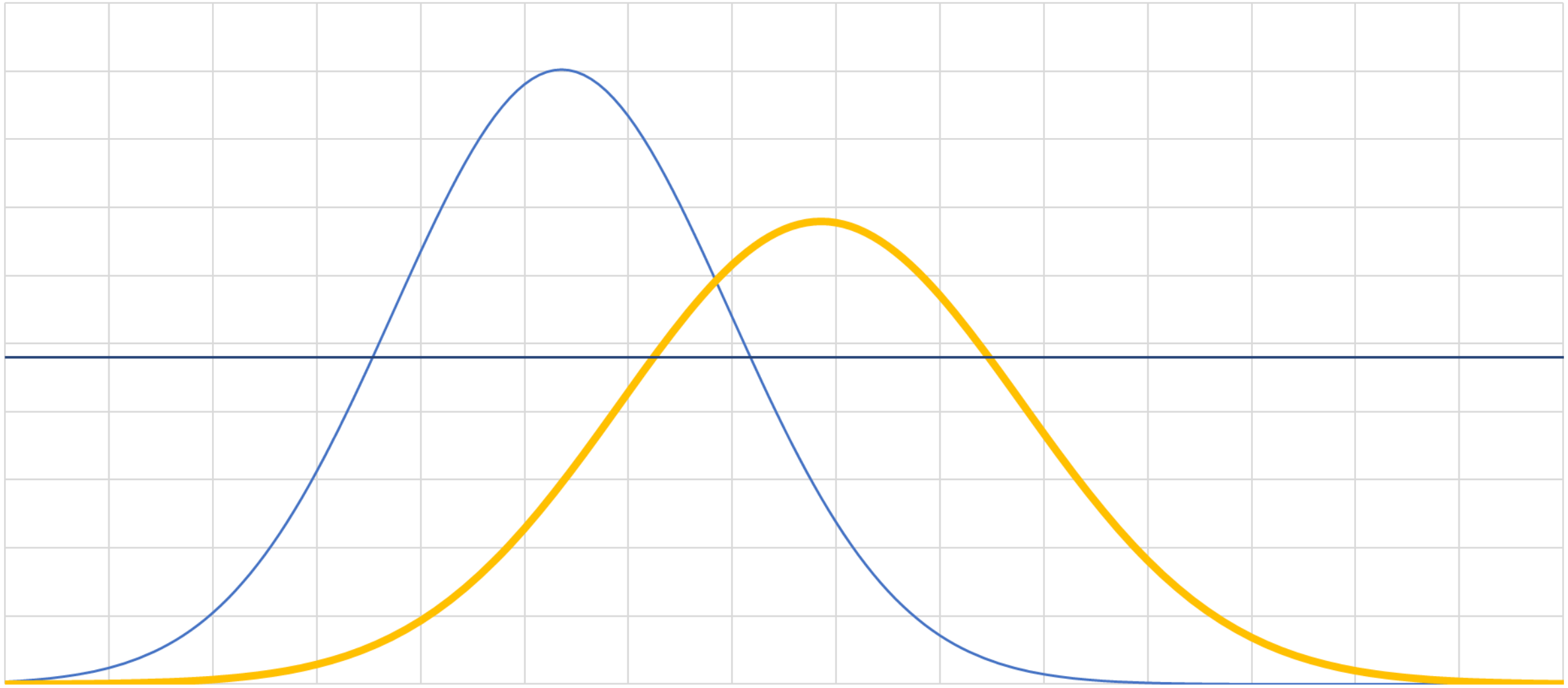
Modelling the impact of measures on hospital cases
Scenario 1 – Closing schools



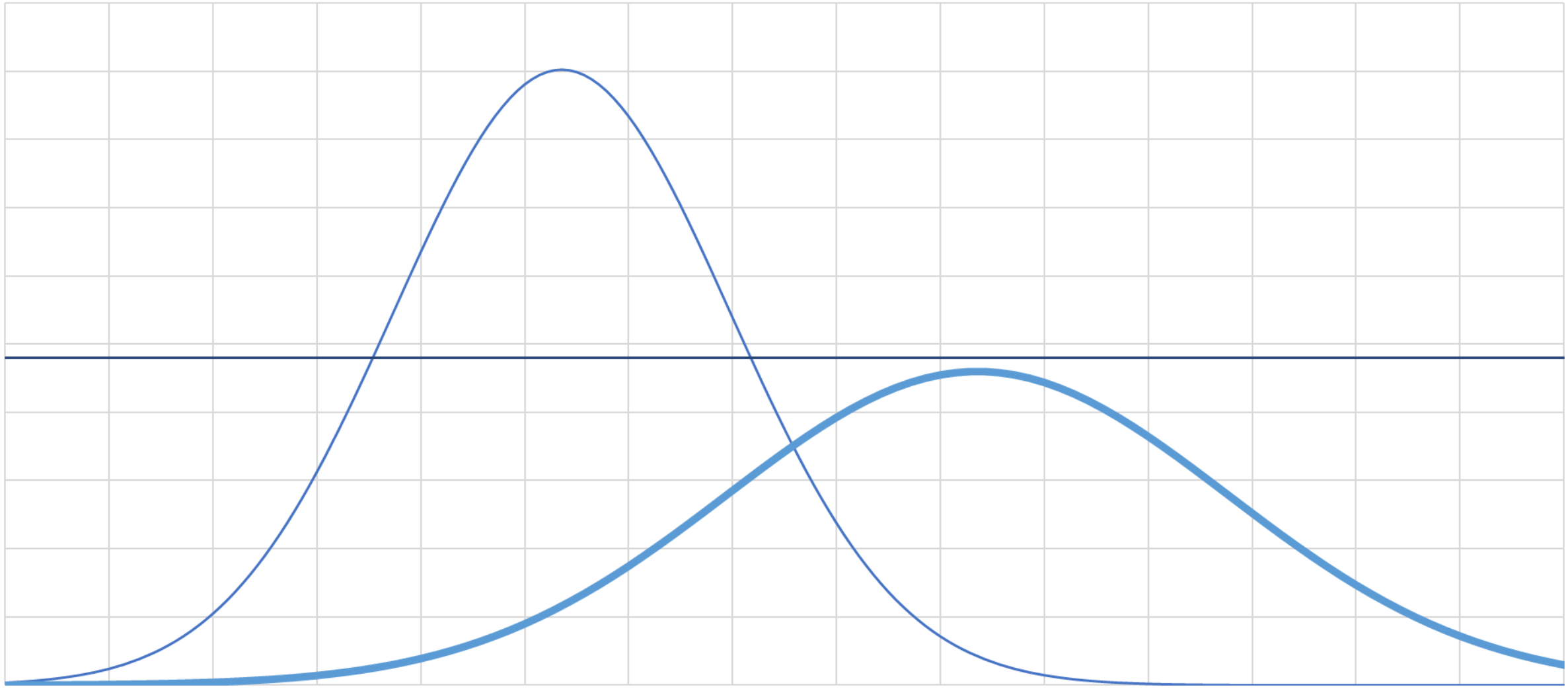
Modelling the impact of measures on hospital cases
Scenario 2 – self-isolation



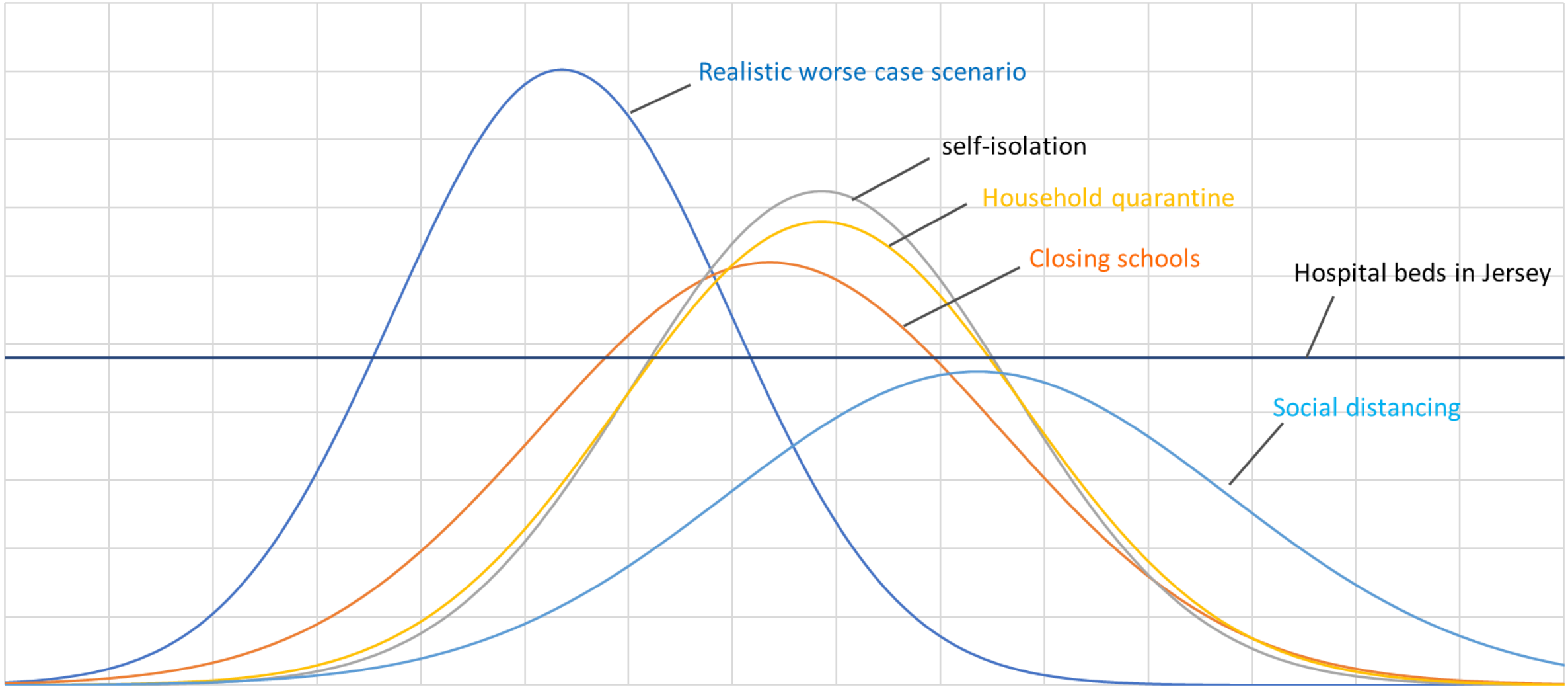
Modelling the impact of measures on hospital cases
Scenario 3 – household quarantine



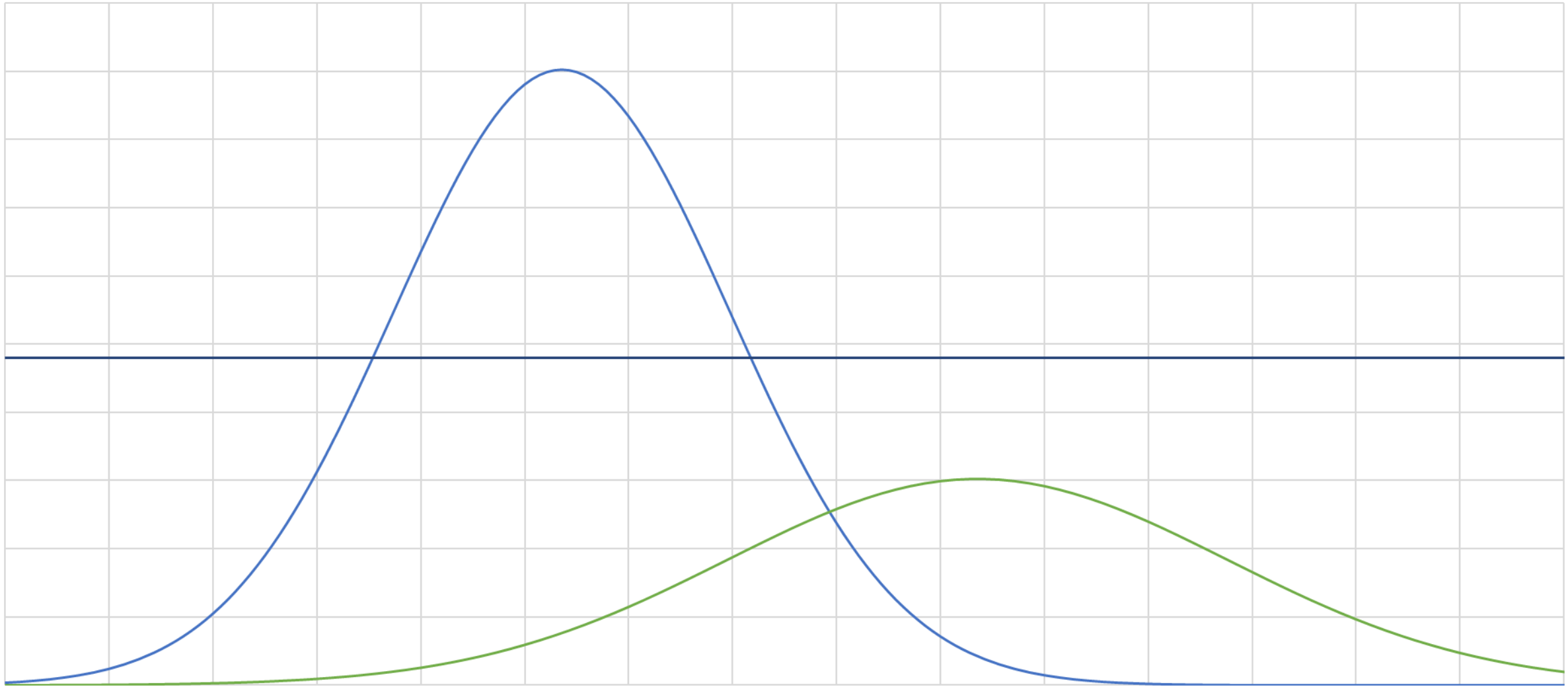
Modelling the impact of measures on hospital cases
Scenario 4 – social distancing



Modelling the impact of measures on hospital cases
All scenarios



Modelling the impact of measures on hospital cases
Scenario 5 – 25% symptomatic + social distancing



How the model will be used over the next weeks

- The model is continuously updated with information from Public Health England, the Scientific Advisory Group for Emergencies (SAGE) and the WHO.
- It informs the Medical Officer of Health and the Public Health Policy team in their decision-making.

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End

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