1006741

To: [redacted]@rivm.nl]; [redacted]@rivm.nl]
From: [redacted]
Sent: Thur 12/17/2020 3:20:27 PM
Subject: RE: back on the envelop vaccine impact
Received: Thur 12/17/2020 3:20:28 PM

Hi both,

Nice approach [redacted] I agree that we could also look at a shorter time before vaccination and re-run your analysis. However, looking at overall disease burden is a really effective way of putting the impact of vaccination in context.

[redacted] – I'm looking over the document you sent again and I'm a bit confused with this section:

[redacted]

How do you know that 1 week of restaurant openings will cause double the number of infectives? From some very rough calculations, I get a doubling time of 15 days when R = 1.3. Which would lead me to think that restaurants and bars could be open for 2 weeks. This ultimately doesn't change the conclusions, but I'd like to better understand the thinking.

Best,
[redacted]

From: [redacted]@rivm.nl>
Sent: donderdag 17 december 2020 14:44
To: [redacted]@rivm.nl>; [redacted]@rivm.nl>
Subject: RE: back on the envelop vaccine impact

Hi [redacted]

Sorry I should have added this to the excel (at the moment you have the sheet open, so can't add it)

[redacted]

You said: "You take all cases, IC survivors, deaths so far, and you calculate what percentage of population totals would have been prevented if you would have vaccinated 50% of the target group with a 95% effective all-or-nothing vaccine before the epidemic started. Is that correct?"

Yes that is correct.
The logic being, to discuss whether adding a vaccine would solve your problems, a simple start is to get some "feeling" for the impact of vaccination on the overall disease burden. So I just look at the burden so far, as this is what we know, and it assumes that the future disease burden will follow, more or less, the same age distribution. Of course this is not true, but with 10% of the population infected so far I guess that it still is reasonable to assume that the next 10% will still have more or less the same age-distribution, so the disease burden in the coming months. So this gives a feeling if it would have prevented all disease, or just a little bit, and how much, by which severity.

The interpretation, yes, it strongly suggest that most cases will still happen even if you vaccinate 50% of the 60+ year old (and thus transmission will continue), and yes by vaccinating 50% of the 60 year old you don't prevent

50% of all ICU admission, but just 28%.

It doesn't answer everything of the ministry, it is just a very simple approach, but it is a good start of a discussion on the subject.

Ideally we would add an age-distribution based on serology, there must be some estimates for this, but I don't know where it is.

Best wishes,
[redacted]

From: [redacted] <[redacted]@rivm.nl>
Sent: 17 December 2020 13:49
To: [redacted] <[redacted]@rivm.nl>; [redacted] <[redacted]@rivm.nl>
Subject: RE: back on the envelop vaccine impact

Hi [redacted]
Thanks. What data sources did you use? Mortality is reported deaths with a positive test, or inclusive of excess mortality?
I am not sure if I understand.
You take all cases, IC survivors, deaths so far, and you calculate what percentage of population totals would have been prevented if you would have vaccinated 50% of the target group with a 95% effective all-or-nothing vaccine before the epidemic started. Is that correct?

(i) How does this address the question of the ministry? Would you propose to use this as an argument that vaccinating 50% of 60+ will have almost no impact on transmission? Or should we use this to say that we vaccinate 50% of the 60+ and work with 28% reduction in IC rather than the 50% in yesterday's draft? Or both?

Regardless, I am sure it is a good idea to put in in
Best
[redacted]

From: [redacted] <[redacted]@rivm.nl>
Sent: donderdag 17 december 2020 12:57
To: [redacted] <[redacted]@rivm.nl>; [redacted] <[redacted]@rivm.nl>
Subject: back on the envelop vaccine impact

Hi both,

Following the discussion yesterday I quickly made an example of what I had in mind.

I looked at the age distribution of cases up till now: reported at GGD, IC (survived) and mortality (as reported to GGD), took the age distribution and applied 1-(efficacy*coverage) to the age groups, and calculated the absolute reduction of the 100%.

Which gives something like this for 50% uptake of a 95% effective vaccine:

Vacccinate the:	Cases	IC (survived)	Mortality
80+	2.8%	1.0%	30.7%
70+	5.6%	12.4%	42.7%
60+	10.2%	28.0%	46.1%

Where 2.8% is the reduction – thus the cases go from 100% to 97.2% Vaccinating all 80year olds will have almost no impact on cases, or ICU, but significantly on mortality (assuming 95% efficacy! in this age group)

Of course this is assuming no impact on transmission. This took me an hour or so, so expanding this a bit with

different groups, or different outputs is not a problem.
But this is the minimal impact you might expect, so a realistic place to start from.

The file is here:

[redacted] 5.1.2i

Is this helpful?

Best wishes,

[redacted] 5.1.2e