

**Re:**

Deirdre Hennessy <hennessy.twaddle@gmail.com>

Mon 2020-04-20 4:44 PM

To: Ludwig, Antoinette (PHAC/ASPC) <antoinette.ludwig@canada.ca>

Cc: Hennessy, Deirdre (STATCAN) <deirdre.hennessy@canada.ca>; Berthiaume, Philippe (PHAC/ASPC) <philippe.berthiaume@canada.ca>; Swerdfeger, Howard (PHAC/ASPC) <howard.swerdfeger@canada.ca>; Molladavoudi, Saeid (STATCAN) <saeid.molladavoudi@canada.ca>; Claude Nadeau <jjcnadeau@hotmail.com>; j@barnzilla.ca <j@barnzilla.ca>; Maikol Diasparra <mdiaspar@gmail.com>

Thanks for sharing this additional scenario.

If we have any questions we will let you know,

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On Mon, Apr 20, 2020 at 4:28 PM Ludwig, Antoinette (PHAC/ASPC)

<[antoinette.ludwig@canada.ca](mailto:antoinette.ludwig@canada.ca)> wrote:

Hello,

I wanted to share with you additional context.

The scenarios we were working on had two parts: the past and the predicted future of the epidemic. We are currently at day 50 approx. In the epidemic.

We think that the parameters that we should change to improve our fit are the ones that affected the unfolding of the epidemic up to today so the peak wouldn't occur so early.

We are thinking more specifically about the contact rates and its decreasing over a between day 40 and day 54.

We don't know when the good peak date would be. But certainly after day 74 (as in scenario1). Maybe the peak date we obtained in sc.1 is too late (day=142) (if we compare with other models).

So, to summarize, one thing we would like to be able to explore with sensitivity analysis (if possible) is the impact of the dynamic variation of a parameter (like  $c$ , that is the main dynamic parameter in our model for the first days) on the epidemic outcomes (including peak date).

Does it make sense?

Have a nice end of day,

Antoinette

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**From:** Ludwig, Antoinette (PHAC/ASPC)

**Sent:** 2020-04-20 12:14 PM

**To:** Hennessy, Deirdre (STATCAN) <[deirdre.hennessy@canada.ca](mailto:deirdre.hennessy@canada.ca)>; Berthiaume, Philippe (PHAC/ASPC) <[philippe.berthiaume@canada.ca](mailto:philippe.berthiaume@canada.ca)>; Swerdfeger, Howard (PHAC/ASPC) <[howard.swerdfeger@canada.ca](mailto:howard.swerdfeger@canada.ca)>; Molladavoudi, Saeid (STATCAN) <[saeid.molladavoudi@canada.ca](mailto:saeid.molladavoudi@canada.ca)>; Claude Nadeau <[jjcnadeau@hotmail.com](mailto:jjcnadeau@hotmail.com)>; [j@barnzilla.ca](mailto:j@barnzilla.ca); Maikol Diasparra <[mdiaspar@gmail.com](mailto:mdiaspar@gmail.com)>; Deirdre Hennessy <[hennessy.twaddle@gmail.com](mailto:hennessy.twaddle@gmail.com)>

**Subject:**

Dear all, as discussed we send you three scenarios/examples we would like to work on to see how we could improve the fit between our current simulations and the previous ones (done with the previous model). We have chosen three scenarios:

SC1 = Fast epidemic burning

SC4= Epidemic with dye-out after day 74 (implementation of the more drastic control measures)

SC5= Slow epidemic burning

We attached the inputs files for the three in the last version of the model (input\_sheet\_SCX.xlsx) and the new version (BLuePrint....) ). As well as the code of our previous model, and the results obtained with our previous model (pdf).

In this pdf, you will see the list of the epidemic parameters we aim to extract from the simulations as well as some figures. The R code called Outcomes aims at doing that (partially, most of the graphs being done in Excel, because we are not super good in programming nice graphs). Note also that the Outcome code has not been updated yet for the new version, so there is a little changes to do, in the variables names, we are aware of that.

We also attached the conceptual model of the last version (V3) and of the new version (V4)(in case you need definition of the parameters).

The Excel file called parameter list will give you the value of the parameters for the new version of the model.

I hope everything is here.

Thanks a lot for your help,

Antoinette

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Antoinette Ludwig, DVM, PhD

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