

Message

From: Vallance, Patrick (GO-Science) [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=34A3DB026A094839B977362D13396897-VALLANCE, P]
Sent: 20/02/2020 06:52:31
To: WILLETT, Keith (NHS ENGLAND & NHS IMPROVEMENT - X24) [keith.willett@nhs.net]; Whitty, Chris [Chris.Whitty@dhsc.gov.uk]; Government Chief Scientific Adviser (GO-Science) [gcsa@go-science.gov.uk]
CC: Harries, Jenny [Jenny.Harries@dhsc.gov.uk]; Dodds, Kevin [kevin.dodds@dhsc.gov.uk]; **Name Redacted** NHS ENGLAND & NHS IMPROVEMENT - X24 [Name Redacted@nhs.net]; LEAVERS, Barnabas (NHS ENGLAND & NHS IMPROVEMENT - X24) [barnabas.leavers@nhs.net]; Van Tam, Jonathan [Jonathan.VanTam@dhsc.gov.uk]; MEDICALDIRECTOR2, England (NHS ENGLAND & NHS IMPROVEMENT - X24) [England.medicaldirector2@nhs.net]; **Name Redacted** dhsc.gov.uk; SAGE Mailbox **I&S** [sag**I&S**] Government Chief Scientific Adviser (GO-Science) [gcsa@go-science.gov.uk]
Subject: Re: Requests for demand modelling of key non-NHS interventions

Dear Keith

Apologies for the misunderstanding. I was asking for clarification on what variables you need as input for your model for bed use. SAGE modelers will then make sure we provide the best estimate plus confidence intervals for them for you to use. These will be the SAGE validated numbers. The ones you lost below are some of the current SAGE numbers. So to be clear, what would be helpful to know what you need to be able to plan and we will then make sure you get the numbers

Give me a shout if not clear

Best wishes

Patrick

This email is for personal matters only. If your email relates to the Government Office for Science, please re-send to my office email account - gcsa@go-science.gov.uk

From: WILLETT, Keith (NHS ENGLAND & NHS IMPROVEMENT - X24) <keith.willett@nhs.net>
Sent: Wednesday, February 19, 2020 9:19 PM
To: Vallance, Patrick (GO-Science); Whitty, Chris; Government Chief Scientific Adviser (GO-Science)
Cc: Harries, Jenny; Dodds, Kevin; **Name** NHS ENGLAND & NHS IMPROVEMENT - X24); LEAVERS, Barnabas (NHS ENGLAND & NHS IMPROVEMENT - X24); Van Tam, Jonathan; MEDICALDIRECTOR2, England (NHS ENGLAND & NHS IMPROVEMENT - X24) [NR] SAGE Mailbox **I&S** Government Chief Scientific Adviser (GO-Science)
Subject: RE: Requests for demand modelling of key non-NHS interventions

Dear Patrick,

I now have acquired some excellent data (attached) from ICNARC our intensive care national clinical audit programme that offers quite granular detail on patients admitted to ICU over recent years with viral pneumonia, and indeed bacterial/non-specified. There is a really close match on many of the patient characteristics (age, co-morbidities, etc) to the Wuhan first 1000 cases and I think we can with some confidence, given the sample size of >5000, model against this. I have also commissioned other work from them to populate our service impact and resource consumption modelling and our simulation model for later live data collection. ICNARC also did modelling work on swine flu impact which they will rerun based on our 2020 ICU resource (Agreed proposal also attached for your reference).

What these data don't help us with now is the percentage of the population infected, the percentage symptomatic and the percentage needing hospitalisation and then ICU but those proportions I think CMO and others have settled on for

the reasonable worst case scenario of 80%, 50% of the population and then 4% and 1% of the symptomatic respectively. For impact modelling for the NHS for hospitalised we are expecting a mean LoS of 6 days, except ICU which is included in the ICNARC data for both ICU stay and total hospital stay.

May I suggest for the purpose of determining what interventions, when, and with what expected impacts we model against 20%, 30%, 40% and 50% symptomatic infection rates in the population.

Happy to discuss or help interpret the data if you want to meet up or arrange a call

Personal Data

Professor Keith Willett
EU Exit Strategic Commander
Medical Director for Acute Care &
Emergency Preparedness
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From: Vallance, Patrick (GO-Science) <P.Vallance1@go-science.gov.uk>

Sent: 19 February 2020 10:38

To: Whitty, Chris <Chris.Whitty@dhsc.gov.uk>; WILLETT, Keith (NHS ENGLAND & NHS IMPROVEMENT - X24) <keith.willett@nhs.net>; Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>

Cc: Harries, Jenny <Jenny.Harries@dhsc.gov.uk>; Dodds, Kevin <Kevin.Dodds@dhsc.gov.uk> **Name Redacted** NHS ENGLAND & NHS IMPROVEMENT - X24 | **Name** @nhs.net>; LEAVERS, Barnabas (NHS ENGLAND & NHS IMPROVEMENT - X24) <barnabas.leavers@nhs.net>; Van Tam, Jonathan <Jonathan.VanTam@dhsc.gov.uk>; MEDICALDIRECTOR2, England (NHS ENGLAND & NHS IMPROVEMENT - X24) <england.medicaldirector2@nhs.net>;

Name Redacted @dhsc.gov.uk>; SAGE Mailbox | **I&S** <SAGE | **I&S** Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>

Subject: RE: Requests for demand modelling of key non-NHS interventions

Dear Keith

Thanks for pulling this together. Some of these are issues that have already been discussed at SAGE (eg public gatherings, transport etc) and others are new. I think the key thing that would help SAGE modelling address the right questions is to understand the desired outcome from the NHS perspective – which you identify as Flattening the curve (delaying spread, reducing peak. Extending duration). If this is the primary aim (please confirm) then we can get the modelling to look at the most effective ways to achieve that aim and can respond to your points in red. A second aim from the call that I took, is to understand the impact on bed need (esp respiratory support beds and ITU) under different scenarios. For this you undertook to come up with the input variables you require to model that (eg % infected, % infected plus symptoms, plus need for respiratory support, average duration of requiring resp support etc). It would be really helpful to have a list of these input variables so that we can ensure that we get them and validate with confidence intervals where possible. Please shout if I have got anything wrong here.

I have copied the SAGE team

Many thanks

Patrick

From: Whitty, Chris <Chris.Whitty@dhsc.gov.uk>

Sent: 19 February 2020 09:37

To: Willett, Keith <keith.willett@nhs.net>; Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>

Cc: Harries, Jenny <Jenny.Harries@dhsc.gov.uk>; Dodds, Kevin <Kevin.Dodds@dhsc.gov.uk> **Name Redacted** (NHS ENGLAND & NHS IMPROVEMENT - X24) <Name@nhs.net>; LEAVERS, Barnabas (NHS ENGLAND & NHS IMPROVEMENT - X24) <barnabas.leavers@nhs.net>; Van Tam, Jonathan <Jonathan.VanTam@dhsc.gov.uk>; MEDICALDIRECTOR2, England (NHS ENGLAND & NHS IMPROVEMENT - X24) <england.medicaldirector2@nhs.net>; **Name Redacted** <NameRedacted@dhsc.gov.uk>

Subject: RE: Requests for demand modelling of key non-NHS interventions

Dear Keith

Thanks a lot. I think some of these are established issues, some are reasonable but need testing on modelling, and some a bit speculative (eg banning private cars).

I suggest rather than a long email we have a run through at some stage. SPI-M and SAGE may be able to help (or comment on) modelling.

Chris

From: WILLETT, Keith (NHS ENGLAND & NHS IMPROVEMENT - X24) <keith.willett@nhs.net>

Sent: 17 February 2020 21:12

To: Government Chief Scientific Adviser (GO-Science) <GCSA@go-science.gov.uk>; Whitty, Chris <Chris.Whitty@dhsc.gov.uk>

Cc: Harries, Jenny <Jenny.Harries@dhsc.gov.uk>; Dodds, Kevin <Kevin.Dodds@dhsc.gov.uk> **Name Redacted** (NHS ENGLAND & NHS IMPROVEMENT - X24) <Name@nhs.net>; LEAVERS, Barnabas (NHS ENGLAND & NHS IMPROVEMENT - X24) <barnabas.leavers@nhs.net>; Van Tam, Jonathan <Jonathan.VanTam@dhsc.gov.uk>; MEDICALDIRECTOR2, England (NHS ENGLAND & NHS IMPROVEMENT - X24) <england.medicaldirector2@nhs.net>

Subject: Requests for demand modelling of key non-NHS interventions

Dear All,

Following the meeting on Friday exploring the RWCS and the potential impact of societal interventions to flatten the demand curve in an epidemic from the NHS perspective we have now worked through various ideas.

The attached reflects the wider scope of our thinking by our '2 steps ahead' group for your reference. We will build much into our NHS operational resource impact modelling. I would be grateful however if the sections highlighted in RED text could be considered for the wider modelling of impact. The interventions descriptions are currently quite high level so I'd be keen to work with colleagues to define the questions.

Our clinical impression from the evidence is that the protecting and isolating the 'vulnerable individuals' particularly the immunocompromised may have the greatest impact on diminishing the demand for hospital services.

**Personal
Data**

Professor Keith Willett

EU Exit Strategic Commander
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