

To: 5.1.2e 5.1.2e [ 5.1.2e @rivm.nl]  
 From: 5.1.2e 5.1.2e  
 Sent: Wed 11/11/2020 10:01:31 AM  
 Subject: RE: regionaal vs nationaal  
 Received: Wed 11/11/2020 10:01:31 AM

Prima.  
 Sluit wel aan bij wat ik al geschreven heb volgens mij.

Succes met het stuk!

Groet,

5.1.2e

---

From: 5.1.2e 5.1.2e <5.1.2e @rivm.nl>  
 Sent: woensdag 11 november 2020 10:58  
 To: 5.1.2e 5.1.2e <5.1.2e @rivm.nl>  
 Subject: FW: regionaal vs nationaal

Hierbij, ik zal het verwerken.

---

From: 5.1.2e 5.1.2e <5.1.2e @rivm.nl>  
 Sent: woensdag 11 november 2020 08:39  
 To: 5.1.2e 5.1.2e <5.1.2e @rivm.nl>  
 Subject: regionaal vs nationaal

Local measures enable COVID-19 containment with fewer restrictions due to cooperative effects.

**Philip Bittihn et al.**

medRxiv preprint doi:  
<https://doi.org/10.1101/2020.07.24.20161364>

Many countries worldwide that were successful in containing the first wave of the COVID-19 epidemic are faced with the seemingly impossible choice between the resurgence of infections and endangering the economic and mental well-being of their citizens. While blanket measures are slowly being lifted and infection numbers are monitored, a systematic strategy for balancing contact restrictions and the freedom necessary for a functioning society long-term in the absence of a vaccine is currently lacking. Here, we propose a regional strategy with locally triggered containment measures that can largely circumvent this trade-off and substantially lower the magnitude of restrictions the average individual will have to endure in the near future. For the simulation of future disease dynamics and its control, we use current data on the spread of COVID-19 in Germany, Italy, England, New York State and Florida, taking into account the regional structure of each country and their past lockdown efficiency. Overall, our analysis shows that tight regional control in the short term can lead to long-term net benefits due to small-number effects which are amplified by the regional subdivision and crucially depend on the rate of cross-regional contacts. We outline the mechanisms and parameters responsible for these benefits and suggest possible ways to gain access to them, simultaneously achieving more freedom for the population and successfully containing the epidemic. Our open-source simulation code is freely available and can be readily adapted to other countries. We hope that our analysis will help create sustainable, theory-driven long-term strategies for the management of the COVID-19 epidemic until therapy or immunization options are available.

Een systeem waarin (reis & andere) restricties worden getriggerd op lokaal of regionaal niveau door een overschrijden van een incidentie grens, kan alleen succesvol toegepast worden als virus-indam strategie wanneer er

- 1) weinig uitwisseling van personen is tussen de regio's / lokaties EN
- 2) de populatie van de regio's klein is. (waarbij weinig uitwisseling hier betekent dat <1% van de personen in een regio contact heeft met anderen buiten de regio en kleine populatie is < 200.000). Bij grote populatie of veel uitwisseling tussen regio's geldt: nationale strategie werkt net zo goed, in de zin dat hij leidt tot een vergelijkbaar aantal dagen onder restricties.

5.1.2a

Hoi [redacted] bij deze.

Groetjes, [redacted]

[redacted] [redacted] [redacted]  
[redacted] [redacted] [redacted]  
RIVM | Centrum Infectieziektebestrijding | [redacted] [redacted]  
Antonie van Leeuwenhoeklaan 9 | 3721 MA Bilthoven  
Postbus 1 | 3720 BA Bilthoven | [redacted]  
Tel. 030 [redacted]  
<http://www.rivm.nl>