

**Erasmus MC**

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# **Impact of Covid-19 on cervical cancer screening programs**

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## Disclosure

I have no relevant financial or non-financial relationships to report

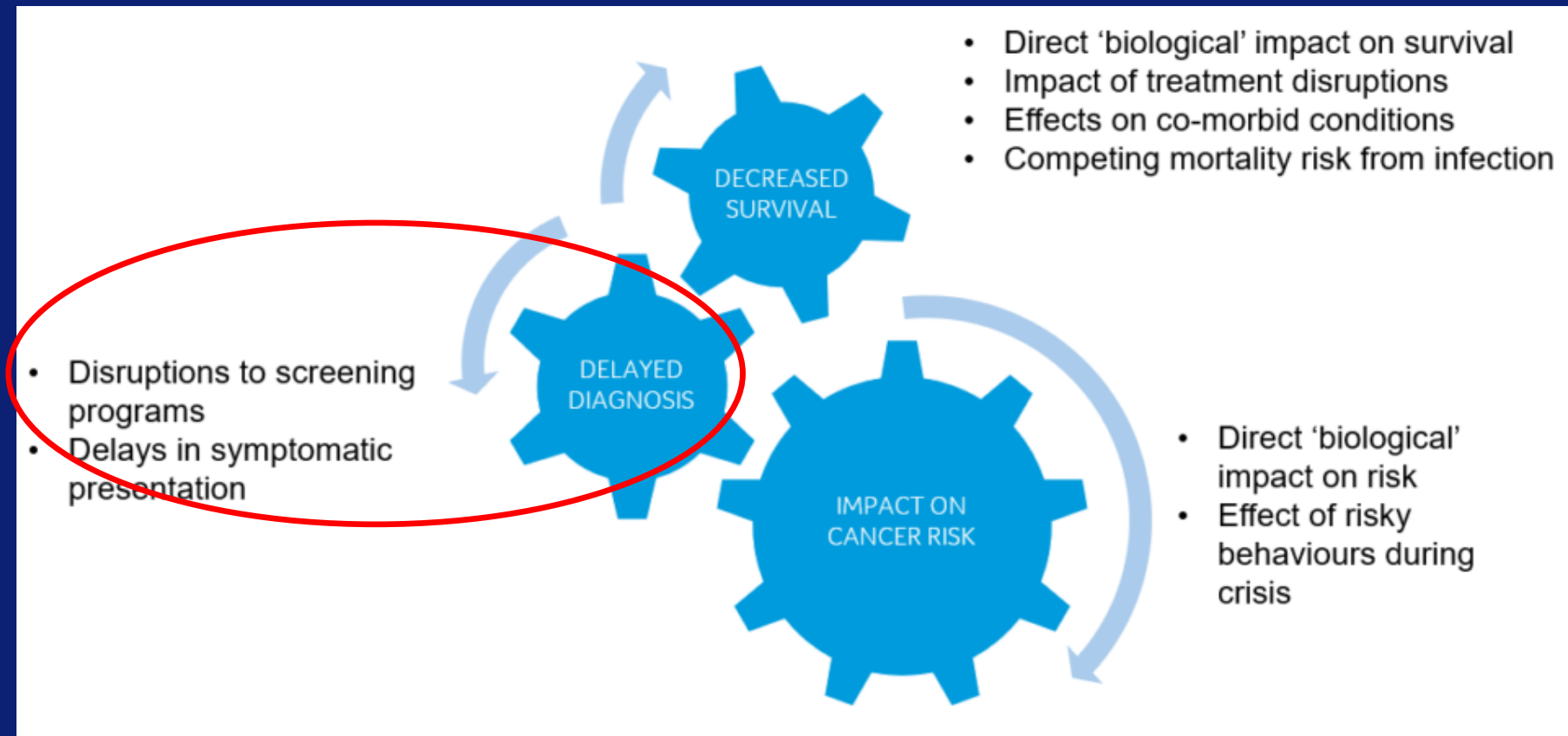
*Furthermore...*

I'm an epidemiologist and a modeller, with experience in the evaluation of the effect of cervical cancer prevention strategies. I'm not a Covid-19 expert.

## Background

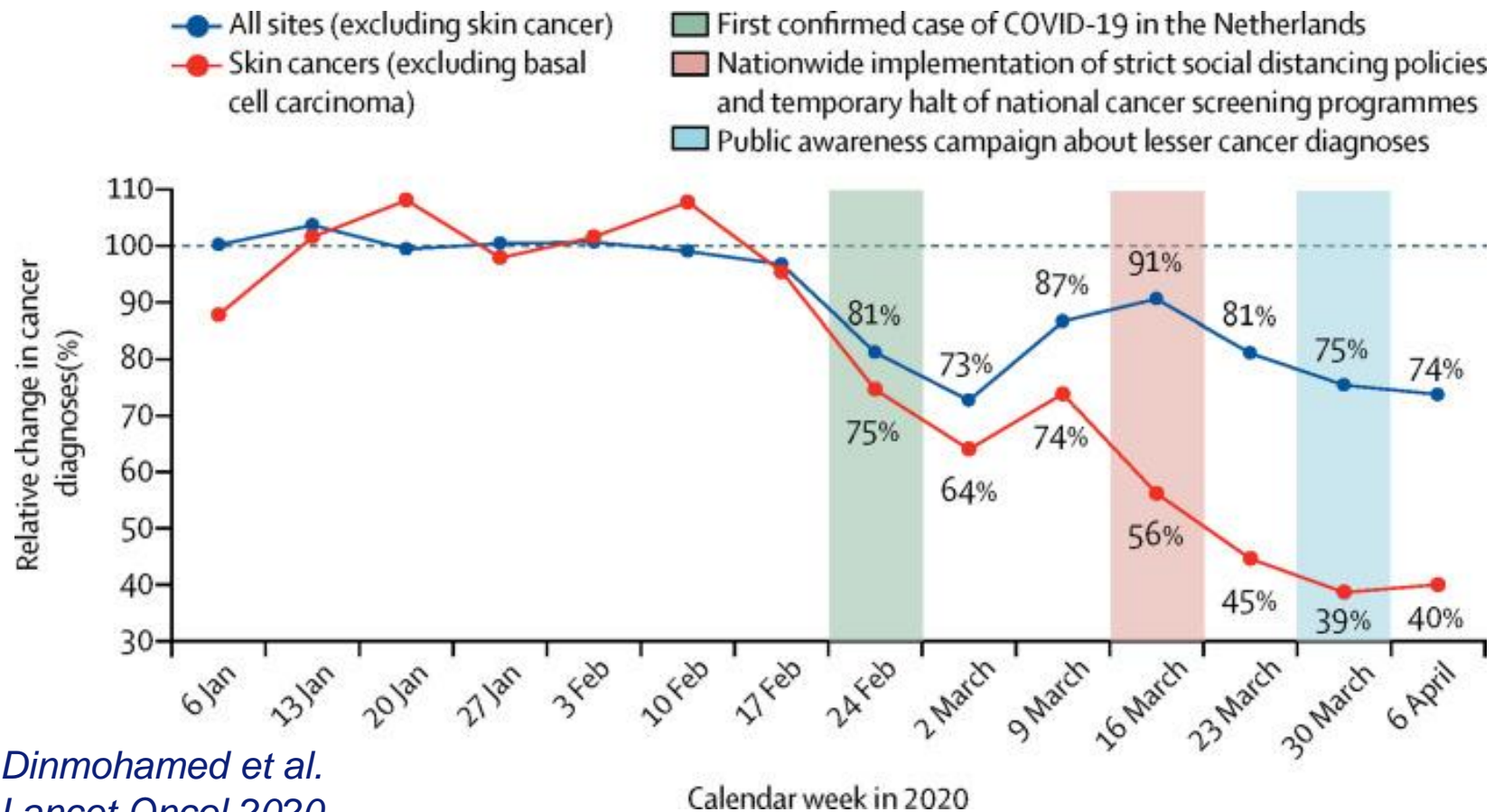
- Due to the COVID-19 pandemic, cervical cancer prevention activities have been disrupted in many countries.
- In may 2020, 46% of the 122 countries included in a survey report closure of population-level screening activities (Source: WHO)
- ICSN found that cancer screening services were suspended in 88% of the settings.
- WHO: 'Disruptions in HPV vaccination and screening programmes for breast, cervical and colorectal cancers are particularly concerning, as these can create missed opportunities for prevention.'

# Potential mechanisms of impact on cancer outcomes



Source: COVID-19 and Cancer Global Modelling Consortium [ccgmc.org]

# Drop in cancer diagnoses in the Netherlands



Dinmohamed et al.  
Lancet Oncol 2020

→ this effect might be less notable for cervical cancer because screening aims to identify precancerous lesions

## Factors influencing the potential increase in cancer incidence and mortality

- the length of the disruption period
- which individuals (risk groups) are affected
- whether screens are postponed or omitted
- how fast this catch-up will be
- whether screens are omitted because of the upper age limit

**→ Microsimulation models can be used to estimate the potential impact of screening disruption**

# What is the effect of different start-up strategies?

- The MISCAN microsimulation model was used to simulated four restart strategies for cervical cancer screening.
- The restart strategies varied in whether screens were delayed or immediately caught up, and/or omitted because of the upper age limit.

Restart strategy	Population affected	Duration of effects	Changes in stopping age
<b>Everyone delay</b>	Total population	The delay will exist forever	Individuals exceeding the original stopping age due to the delay missed their last invitation
<b>First rounds no delay</b>	Total population except individuals who reach the first screening age after 2020	All individuals eligible for screening in or before 2020 are delayed for all screening rounds	Individuals exceeding the original stopping age due to the delay missed their last invitation
<b>Continue after stopping age</b>	Total population	The delay will exist forever	The stopping age increased with the duration of the disruption
<b>Catch-up after stop</b>	Population due for a screening appointment during the disruption	The delay is caught up in the second half of 2020.	The stopping age increased with the duration of the disruption for the individuals who were invited for their last round in 2020

## Conclusions based on this study

- Disruption of screening activities in a well screened population up to 9 months has little influence on cx cancer incidence and mortality rates.
- Obviously, if all missed screens are caught up directly after the disruption period, we see the smallest effects on incidence and mortality, but this has a big (unrealistic) effect on screening capacity.
- The other investigated restart strategies show that the cancer incidence and mortality rates were most favourable when screening was continued after the stopping age to allow for a similar number of screening rounds for the target population as without disruption.



## However, the impact can be much larger if...

- ...surveillance, colposcopies or excisional treatment activities are disrupted
- ...higher risk groups (for example, low SES women) are more affected than low risk groups
- ...the screening capacity remains low for a long time (increased disruption period)
- ...screening before the disruption period was of low quality
- ...screening was not implemented yet (so mainly unscreened women), and implementation is (much) delayed (**LMICs**)

## Food for thought...

In most western countries, over-screening of low risk women leads to inefficient use of scarce resources and can even be harmful

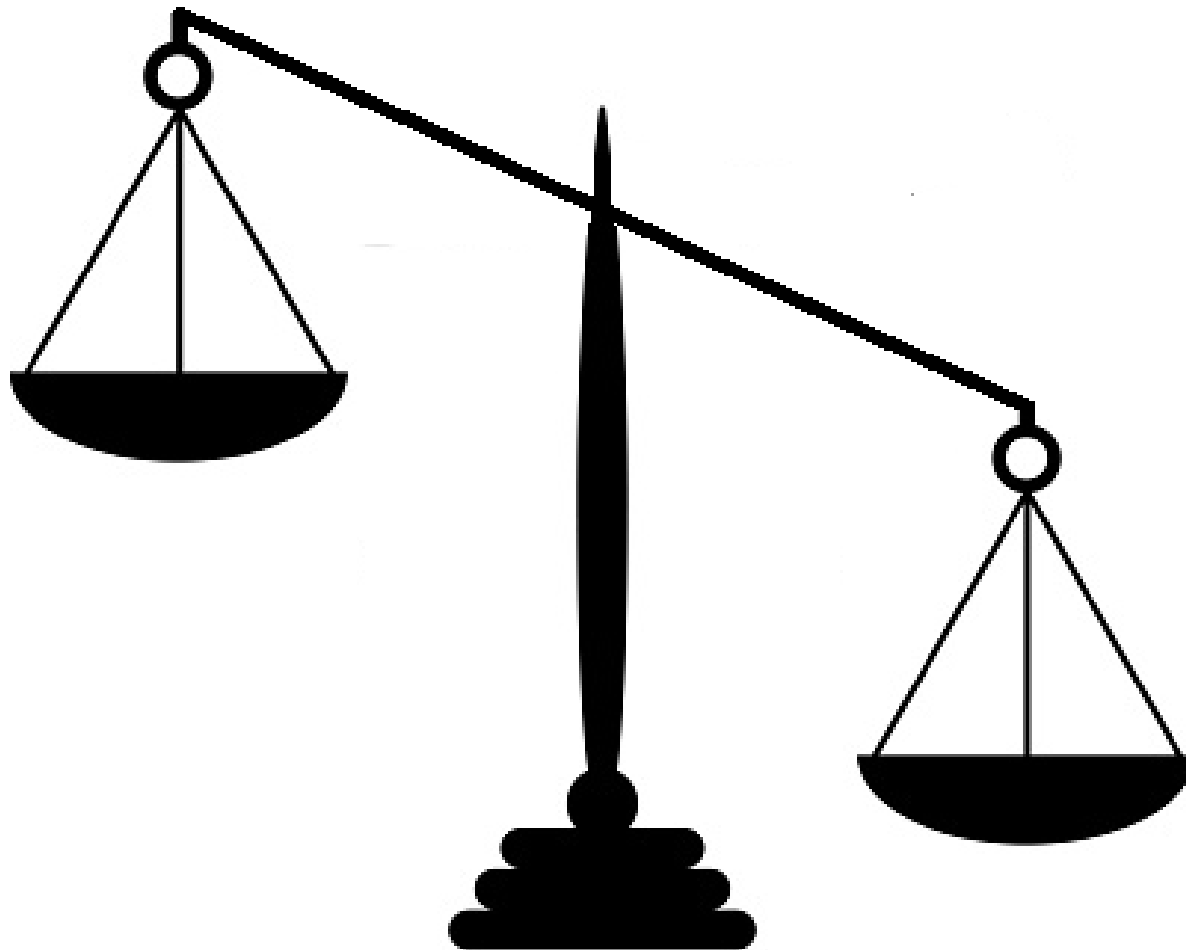
- So *“the COVID-19 pandemic might also generate opportunities for **more efficient prevention**, by promoting more cost-effective, evidence-based protocols, by focusing on women who are at high-risk, extending HPV testing on self-collected samples, and **discouraging inefficient policies**, such as screening with two tests”* [Arbyn et al. Lancet Public Health. 2020 Aug; 5(8): e425.]

# International collaborations are necessary

CCGMC brings together the global modelling community to support decision-making in cancer control both during and after the crisis



## The biggest problem...



**Thank you!**

Questions?

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## Discussion points

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