



National Institute for Public Health  
and the Environment  
Ministry of Health, Welfare and Sport



## Assessing the burden

*exploration of the  
necessary decisions and  
assumptions*

Assessing COVID-19 burden in the Netherlands | 20-11-2020



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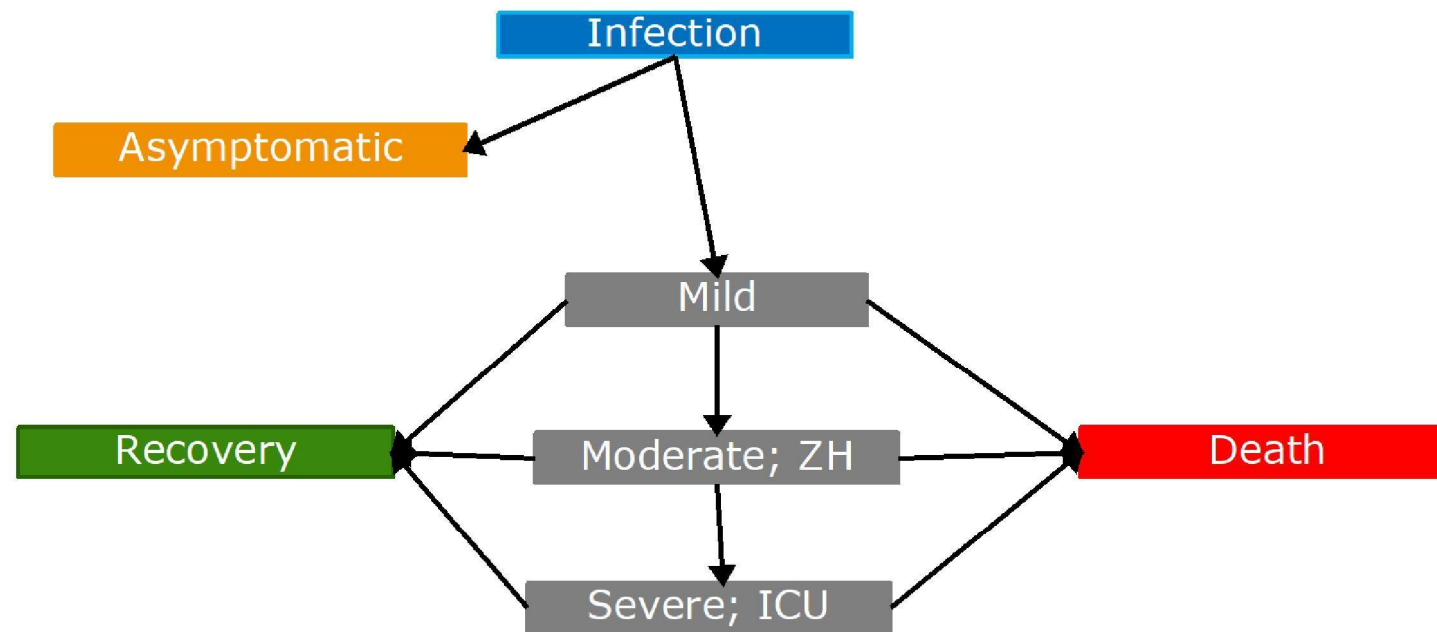


## Situation in the Netherlands

- Number of positive tested / died patients are notified (via Municipal Health Services/Labs) at the RIVM
- Stichting NICE; National Intensive Care Evaluation
- Statistic Netherlands (CBS); cause of death



## Outcome tree / Clinical pathway





## Estimation of the YLD

- Completeness of data
  - › Mild cases – most not tested in the beginning of the pandemic except for some healthcare workers in Brabant
  - › Hospital cases – follow-up missing
  - › Fatal cases – cases without being tested
- Comorbidity of patients
  - › Effect on YLD
- Long-term complications
  - › Little evidence available, e.g. mental problems, post-intensive care syndrom (PICS)





## Estimation of the YLD – Decisions we made

- Completeness of data
  - › Mild cases - from other sources (e.g. ratio mild – ZH from august and extrapolate to April)
  - › Hospital cases – RIVM database versus NICE
  - › Fatal cases – excess mortality models
- Comorbidity of patients
  - Effect on YLD – investigated with multiplicative methods, but not incorporated due to incompleteness and incomparability with other infectious diseases
- Long-term complications;
  - Little evidence available – included in the future



## Estimation of the YLD – Results

- First wave (01-03 until 30-06)

	Incidence	YLD
Mild	34.000	48
Hospital – not IC	11.600	50
Hospital IC	2.900	110
Fatal	6.200	9



## Estimation of the YLD – Results

- First wave (01-03 until 30-06)

	Incidence	YLD	Corrected incidence	Corrected YLD
Mild	34.000	48	340.000	480
Hospital – not IC	11.600	50	14.000	56
Hospital IC	2.900	110	2.900	110
Fatal	6.200	9	9.900	14





## Estimation of the YLL

- Test-capacity/reality; people died before being tested
- Life expectancy of fatal cases; especially the 85+ cases  
(*NL table from 2019*)
- Underlying diseases ; all fatal cases also due to COVID-19
  - Correction for severity / LE ; healthy-quality of life measure



## Estimation of the YLL – Decisions we made

- Test-capacity/reality; people died before being tested  
*Excess mortality models & cause of death administration*
- Life expectancy of fatal cases; especially the 85+ cases  
*For comparability; GBD LE table (aspirational)*  
*Country specific; LE of 90year old?*
- Underlying diseases ; all fatal cases also due to COVID-19
  - Correction for severity / LE ; healthy-quality of life measure



## Estimation of the YLL – Results

- Test-capacity/ reality; people died before being tested

	<b>Incidence</b>	<b>YLL</b>	<b>Corrected incidence</b>	<b>Corrected YLL</b>
Fatal cases	6.200	58.000	9.900	88.000



## Estimation of the YLL – Results

- Life expectancy of fatal cases; especially the 85+ cases

Netherlands COVID-19		GBD		Netherlands – other studies	
75-84	9.38 years	75-79	12.85 years	75-79	11.03 years
		80-84	9.34 years	80-84	7.85 years
85+	4.35 years	85+	5.05 years	85+	5.35 years

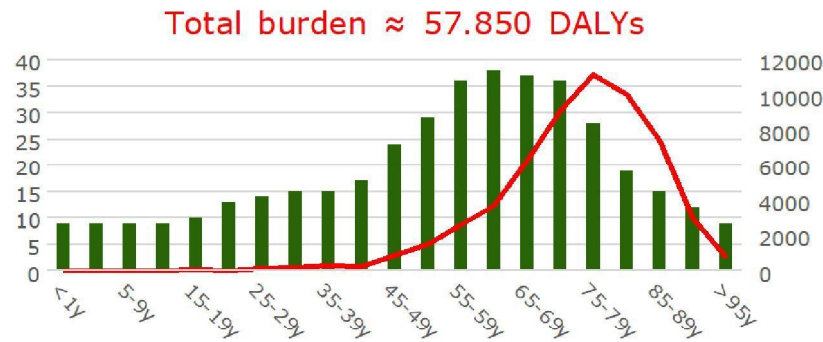


## Estimation of the YLL – Results

- Underlying diseases
  - Survival / LE for this year;
    - › First results: around 10.000 deaths with COVID-19 as cause
  - Correction for severity / LE ; healthy-quality of life measure



## Estimated YLL comparing 5- vs 10-year age-groups



Without excess mortality





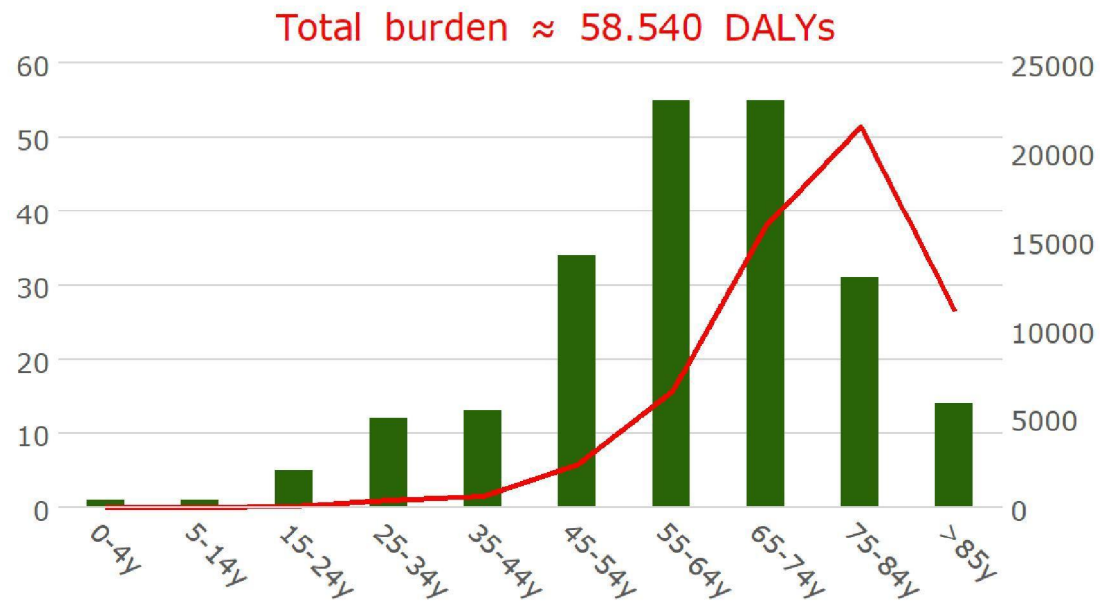


## Summary

- Clinical pathway
  - *mild phase also for moderate/severe phases*
  - *Inclusion of long term complications*
- YLD estimate
  - *Comorbidity*
  - *Correction for underestimation*
- YLL estimation
  - *Cause of death, with or due to COVID-19*
  - *Choice of LE table*
  - *Correction underlying disease / age*



# Questions



Without excess  
mortality