COVID-19
Technical briefing To Parliament
22 april 2020
Jaap van Dissel
Background
role of children in the COVID-19 outbreak – data

› Analysis of reports of notified, infected patients and infected pairs
› Sentinel surveillance by GP’s NIVEL polling stations
› Targeted research among Dutch COVID-19 patients and their family contacts (FF100; preliminary, first round results)
› ‘PIENTER Corona study’ into seroimmunity of Dutch population
› Sanquin: seroimmunity among Dutch blood and plasma donors
› Literature study on children & COVID-19 (i.e., other countries)

NB. studies performed mostly at the time of school closure.
COVID-19 outbreak
children 0-18 yr

age and sexe distribution of notified COVID-19 patients

Cohort ≤18 jr:
China 0.9%
Korea 0.8%
Spanje 0.8%
VS 1.7%

211/28.134 ~0.74%
COVID-19 outbreak children 0-18 yr

age and sexe distribution of notified COVID-19 patients

no clusters in schools or daycare centres
no change in epidemiology after school closure
COVID-19 outbreak
who infected who?

Epi-CIb/RIVM

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Background
role of children in the COVID-19 outbreak – data

- Analysis of reports of notified, infected patients
- Sentinel surveillance by GP’s NIVEL polling stations
  - over 40 GP polling stations collect data on influenza-like illness
  - sampling in first cases each day, tested at RIVM for influenza and corona
  - no samples of children found positive for coronavirus

NIVEL/RIVM GPs (covering ~0.8% Dutch population) since 4 February:
785 patients of which 52 positively (6.6%), but 0/137 sampled children
COVID-19 – Pienter study
how many people have been infected?

F van der Klis et al, IIV-CIb/RIVM

Research on multiple antibodies (Luminex) detection multiple hCov/SARS-Cov-2 antigens
99% spec, sens 85% based on response to S1 spike protein.

overall 3.6% positief

randomly chosen municipalities, sampling random population

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COVID-19 – Sanquin study how many people have been infected?

‘total antibody antigen sandwich assay’

Antibodies against SARS-CoV-2 in ~3% Dutch blooddonors

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Positive Cases / Total Donors</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 yr</td>
<td>25 / 688</td>
<td>3,6%</td>
</tr>
<tr>
<td>31-40 yr</td>
<td>17 / 494</td>
<td>3,4%</td>
</tr>
<tr>
<td>41-50 yr</td>
<td>26 / 752</td>
<td>3,5%</td>
</tr>
<tr>
<td>51-60 yr</td>
<td>38 / 1234</td>
<td>3,1%</td>
</tr>
<tr>
<td>61-70 yr</td>
<td>29 / 1030</td>
<td>2,8%</td>
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<tr>
<td>71-80 yr</td>
<td>0 / 10</td>
<td>(0%)</td>
</tr>
</tbody>
</table>

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Findings research so far children & spread COVID-19

› Analysis notification reports: ~1% <20 yrs (but <20 yrs = 22% of Dutch population)
› No clusters in schools/day child-care
› NIVEL GP’s polling stations: in 137 tested children <20 yrs: 0 infected
› Research in households (FF100): No evidence that child was the first infected within family. Usually parents infect children, not the other way around.
› Children found to be infected with COVID-19 had fewer and less severe symptoms than adults.

› PIENTER-Corona: since 17 April 2,096 samples examined: 3.6% had antibodies against COVID-19 in blood.
› Children <20 yrs only 1% seropositive, versus 4.2% in other age groups.
› Contact studies show that children have hardly infected other persons. (NB. prone to selection bias!)
Summary
role of children in covid-19 outbreak

Data so far confirms the picture that emerged already from other countries:

› likely a small role for children in spreading COVID-19 (contrary to influenza!)
› worldwide relatively few children reported with COVID-19
› symptoms in children generally milder
› hardly transfer of children to adults described
› in families, children test less often positive (both PCR and antibodies) than parents
› spread occurs between persons of about same age (between 40 and 80 years)

Open schools embedded in careful monitoring and accessible testing of teachers!