STI epidemiology update

• This slide set was prepared by the Health Intelligence Group at ESR from various presentations throughout 2019.

• Further detail is available for chlamydia, syphilis and gonorrhoea on the STI Dashboard at https://www.esr.cri.nz/our-services/consultancy/public-health/sti/

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• Please email queries to survqueries@esr.cri.nz
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• Key points for control of chlamydia, gonorrhoea, infectious syphilis
• HPV
• Other STIs (NSU, LGV)
Overview chlamydia, gonorrhoea and infectious syphilis

National chlamydia rate 2013 – 2018*

National gonorrhoea rate 2013 – 2018*

National infectious syphilis case counts 2013 – 2018*

* Data for 2018 provisional.
Data sources: STI laboratory-based surveillance, ESR and infectious syphilis surveillance, ESR
National chlamydia rates by sex

Chlamydia rate, 2014-2018*

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR

Year:
- 2014
- 2015
- 2016
- 2017
- 2018*
Chlamydia rates by DHB/region at diagnosis

* Data for 2018 provisional.

Data source: STI laboratory-based surveillance, ESR
Chlamydia rates by DHB/region and sex, 2018*

Data source: STI laboratory-based surveillance, ESR

* Data for 2018 provisional.
Chlamydia rates by sex and age group

Chlamydia rate by age for males, 2014-2018*

Chlamydia rate by age for females, 2014-2018*

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Chlamydia rates by sex and ethnicity

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Chlamydia rates, test positivity and coverage in highest risk age groups by sex and ethnicity - males
Chlamydia rates, test positivity and coverage in highest risk age groups by sex and ethnicity - females
National gonorrhoea rate by sex

Gonorrhoea rate, 2014-2018*

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Gonorrhoea rates by DHB/region at diagnosis

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Gonorrhoea rates by DHB/region and sex

* Data for 2018 provisional.

Data source: STI laboratory-based surveillance, ESR
Gonorrhoea rates by DHB/region and sex, 2018

- Male rate significantly much higher than female rate
- Male rate significantly higher than female rate
- Female rate significantly much higher than male rate
- Female rate significantly higher than male rate
- No significant differences in male and female
Gonorrhoea rates by sex and age group

*Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Gonorrhoea rates by sex and ethnicity

Gonorrhoea rates by ethnicity for males, 2014-2018*

Gonorrhoea rates by ethnicity for females, 2014-2018*

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Gonorrhoea site of infection as a percentage of all positive tests

Specimen site for Gonococcal positive tests in males, 2013-2018*

Specimen site for Gonococcal positive tests in females, 2013-2018*

* Data for 2018 provisional.
Data source: STI laboratory-based surveillance, ESR
Gonorrhoea lab confirmed cases with a completed notification by DHB

Percent of Gonorrhoeae Notifications with REDCap Records*

- Northland: 31%
- Auckland: 32%
- Waikato: 49%
- Lakes: 58%
- Bay of Plenty: 39%
- Taiāwhiti*: 27%
- Taranaki*: 60%
- Hawke’s Bay: 40%
- Whanganui*: 33%
- MidCentral: 41%
- Wellington Region: 39%
- Nelson Marlborough*: 41%
- Canterbury: 55%
- Southern: 56%

*Data sources: laboratory and REDCap notifications. All data provisional.

** Low monthly gonorrhoeae notification counts. South Canterbury and West Coast excluded due to low counts.
Gonorrhoea lab confirmed cases with a completed notification by reporting health provider type

* Data source: Gonorrhoeae REDCap surveillance, ESR. All data provisional.
Gonorrhoea by sexual behaviour* Q4, 2018 to Q1, 2019

* Data provisional (data extracted 4 June, 2019)
Data source: STI laboratory-based surveillance and Gonorrhoea REDCap surveillance, ESR.
National infectious syphilis case numbers

Infectious syphilis cases, 2014-2019

* Data for 2018-2019 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases by residential DHB/region at time of diagnosis
Infectious syphilis cases by facility of diagnosis

Other facilities includes blood screening sites, Youth programs, immigration screening.

Data source: Infectious syphilis surveillance, ESR. Data extracted 25 Sept.
Infectious syphilis cases by sexual behaviour

Infectious syphilis cases by sexual behaviour, 2013-2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in MSM by age group

Infectious syphilis cases for MSM by age, 2013-2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in heterosexual males by age group

Infectious syphilis cases for heterosexual males by age, 2013-2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in heterosexual females by age group

Infectious syphilis cases for heterosexual females by age, 2013-2018*

* Data for 2017-2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in MSM by ethnicity

*Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in heterosexual males by ethnicity

Infectious syphilis cases for heterosexual males by ethnicity, 2013-2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases in heterosexual females by ethnicity

Infectious syphilis cases for heterosexual females by ethnicity, 2013-2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis cases by reported treatment status

Infectious syphilis cases by treatment adequacy from November 2018*

Data source: Infectious syphilis surveillance, ESR. Data extracted 12 Nov, 2019.
Infectious syphilis cases by contact tracing status

Data source: Infectious syphilis surveillance, ESR. Data extracted 12 Nov, 2019.
Infectious syphilis – HIV positivity among MSM cases

Percentage of MSM Infectious syphilis cases reported as HIV Positive, 2013-2018*

- 30% in 2013
- 32% in 2014
- 27% in 2015
- 26% in 2016
- 20% in 2017
- 23% in 2018*

* Data for 2018 provisional.
Data source: Infectious syphilis surveillance, ESR
Infectious syphilis – primary reason for testing

<table>
<thead>
<tr>
<th>Year</th>
<th>Other</th>
<th>Other STI/HIV Contact</th>
<th>Immigration purposes</th>
<th>Syphilis contact</th>
<th>Asymptomatic screening incl PreP</th>
<th>Clinical symptoms or suspicion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
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<td>2015</td>
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<td>2016</td>
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<td>2017</td>
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<tr>
<td>2018*</td>
<td></td>
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</tr>
</tbody>
</table>

* Data for 2018 provisional.  
Data source: Infectious syphilis surveillance, ESR
Reinfections* 2013 - 2018

*Data sources: laboratory and REDCap notifications. Data for 2018 provisional.

<table>
<thead>
<tr>
<th></th>
<th>Chlamydia</th>
<th>Gonorrhoea</th>
<th>Syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age at last notification</td>
<td>23</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>% Male</td>
<td>21</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>% Auckland Region</td>
<td>35</td>
<td>59</td>
<td>74</td>
</tr>
<tr>
<td>% European / Other</td>
<td>7</td>
<td>33</td>
<td>77</td>
</tr>
<tr>
<td>Average days between episodes</td>
<td>401</td>
<td>327</td>
<td>508</td>
</tr>
</tbody>
</table>
Infection in infants aged <12 months, 2013 - 2018

* Data for 2018 provisional.

Data source: STI laboratory-based and infectious syphilis REDCap surveillance, ESR
### Congenital syphilis

<table>
<thead>
<tr>
<th>Year*</th>
<th>Outcome</th>
<th>Case classification</th>
<th>Gestation</th>
<th>Mother’s age (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>Stillbirth</td>
<td>Confirmed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Stillbirth</td>
<td>Confirmed</td>
<td>22/40</td>
<td>23</td>
</tr>
<tr>
<td>2017</td>
<td>Stillbirth</td>
<td>Confirmed</td>
<td>29/40</td>
<td>22</td>
</tr>
<tr>
<td>2017</td>
<td>Stillbirth</td>
<td>Confirmed</td>
<td>27/40</td>
<td>16</td>
</tr>
<tr>
<td>2017</td>
<td>Live birth</td>
<td>Confirmed</td>
<td>37/40</td>
<td>35</td>
</tr>
<tr>
<td>2017</td>
<td>Live birth</td>
<td>Probable</td>
<td>28/40</td>
<td>34</td>
</tr>
<tr>
<td>2018</td>
<td>Live birth</td>
<td>Confirmed</td>
<td>37/40</td>
<td>19</td>
</tr>
<tr>
<td>2018</td>
<td>Stillbirth</td>
<td>Under investigation</td>
<td>24+2/40</td>
<td>23</td>
</tr>
<tr>
<td>2018</td>
<td>Stillbirth</td>
<td>Confirmed</td>
<td>32/40</td>
<td>27</td>
</tr>
<tr>
<td>2018</td>
<td>Live birth</td>
<td>Confirmed</td>
<td>34+4/40</td>
<td>32</td>
</tr>
<tr>
<td>2018</td>
<td>Stillbirth</td>
<td>Under investigation</td>
<td>34/40</td>
<td>27</td>
</tr>
<tr>
<td>2019</td>
<td>Live birth</td>
<td>Under investigation</td>
<td>39/40</td>
<td>36</td>
</tr>
<tr>
<td>2019</td>
<td>Live birth</td>
<td>Confirmed</td>
<td>32/40</td>
<td>21</td>
</tr>
<tr>
<td>2019</td>
<td>Live birth</td>
<td>Confirmed</td>
<td>41/40</td>
<td>32</td>
</tr>
</tbody>
</table>

*2019 cases as reported to 04/11/2019; Note: the 2 U/I stillbirths – both awaiting further information from pathology, the U/I live birth – baby being followed up

#### Mother

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Number of cases (confirmed, probable and U/I)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016</td>
</tr>
<tr>
<td>Māori</td>
<td></td>
</tr>
<tr>
<td>Pacific people</td>
<td>1</td>
</tr>
<tr>
<td>NZ European</td>
<td></td>
</tr>
</tbody>
</table>

#### Antenatal screening

- **First trimester**
  - 1 (+ve, rescreened 4 days prior to birth)
  - 3 (one -ve, one +ve, not treated, rescreened in labour, one +ve, incorrect Rx, rescreened at delivery)

- **2nd or 3rd trimesters**
  - 1 (+ve)

- **No screening**
  - Presented in labour or within the week prior to labour: 3 1
  - Unknown: 1

*2019 cases as reported to 04/11/2019*
Key points for control of chlamydia, gonorrhoea, infectious syphilis

- **Chlamydia**
  - Ongoing problem with high reported rates of chlamydia infection but coverage and test positivity rates indicate that many cases remain undiagnosed, possibly because they do not access care. Surveillance data gives reasonable evidence of risk groups by age, ethnicity and geographical location. Case counts in infants in recent years have not decreased.

- **Gonorrhoea**
  - Increasing rates, especially in males. Notification data suggests MSM are a high risk group. Increasing rate in females may be affecting risk in infants.

- **Infectious syphilis**
  - Increasing cases in all risk groups, including infants. Surveillance data suggests an increase in the proportion of cases diagnosed due to screening in MSM and in pregnant women. The data collected also suggests that contact tracing remains a challenge.

- **Gaps in information that could support control efforts**
  - Surveillance data could be used for additional analyses such as re-testing rates in positive cases compared with the relevant guideline, co-infections, screening behaviour by provider type (gonorrhoea and syphilis)...
  - Other information, including behavioural data such as attitudes to accessing testing, safe sex including condom use cannot be answered by routine surveillance.
HPV infection

Genital Warts (HPV) cases from SHCs, 2008‡ and 2013 - 2018

Legend:
- 2008‡
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

Genital Warts (first presentation) case numbers for Sexual Health Clinics

<table>
<thead>
<tr>
<th>Total Number of cases 2008</th>
<th>Total number of cases 2018</th>
<th>% change since 2008*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3749</td>
<td>940</td>
<td>-75%</td>
</tr>
</tbody>
</table>

*From 2008 to 2017 there was a non-significant increase in sexual health clinic visits

‡ 2008 - HPV vaccine introduction.
* Data for 2017 - 2018 provisional.
Data source: STI clinic-based surveillance, ESR
Trends in other STIs

• Non-specific urethritis (NSU)
  • 639 cases reported by SHCs and FPCs in 2018 - a small increase from the 622 cases reported in 2017 but lower than the 649 cases reported in 2016.
  • Prior to 2016 there had been an increasing trend in case numbers from 2011 to 2015 (725 cases)
  • Majority of cases in 2018 reported European ethnicity, followed by Asian and then Māori ethnicity – a change from 2017 when more cases reported Māori ethnicity compared with Asian

• Lymphogranuloma venereum (LGV)
  • 5 cases reported in 2018 (Auckland region, Waikato and Capital Coast DHBs)
  • No cases reported in 2017, following the 6 cases reported from 2013 – 2016
  • All cases were male
  • Ethnicity reported as: European or Other ethnicity (10 cases), Asian (1 case)

Data source: NSU and LGV cases are reported by Sexual Health and Family Planning Clinics in New Zealand to ESR as part of clinic-based sentinel surveillance
How to notify and other links

• STI Dashboard is at https://www.esr.cri.nz/our-services/consultancy/public-health/sti/

• Information on how to notify and the notification forms (questionnaire) are on the ESR STI surveillance page at https://surv.esr.cri.nz/public_health_surveillance/sti_surveillance.php

• Case definitions are at https://www.health.govt.nz/publication/communicable-disease-control-manual

• New Zealand Sexual Health Society Syphilis Guidelines can be found at https://www.nzshs.org/docman/guidelines/management-of-sexual-health-conditions/syphilis/174-syphilis-guideline/file

• If you have any questions or issues with accessing the systems, please contact us at KSC.STISurv@esr.cri.nz

  • if an urgent enquiry please phone EpiSurv Support at 0800 437 734 or (04) 978 6699