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# Respiratory Pathogen Surveillance

## Programme Descriptions

| Programme                      | ILI   | Viral Watch   | National syndromic surveillance for pneumonia   | Private hospital consultations         |
|--------------------------------|---|---|---|--|
| <b>Start year</b>              | 2012  | 1984  | 2009  | 2002                                   |
| <b>Provinces*</b>              | KZ<br>NW<br>MP  | EC<br>FS<br>KZ<br>GP<br>LP<br>MP<br>NC<br>NW<br>WC  | GP<br>KZ<br>MP<br>NW<br>WC  | EC<br>FS<br>GP<br>LP<br>MP<br>NW<br>WC |
| <b>Type of site</b>            | Primary health care clinics   | General practitioners   | Public hospitals  | Private hospitals                      |
| <b>Case definition</b>         | An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days | An acute respiratory illness with a temperature ( $\geq 38^{\circ}\text{C}$ ) and cough, & onset $\leq 10$ days | Acute or chronic lower respiratory tract infection  | ICD codes J10-J18                      |
| <b>Specimens collected</b>     | $\geq 5$ years of age: oropharyngeal/nasopharyngeal swabs<br><5 years of age: nasopharyngeal aspirates          | Throat and/or nasal swabs or Nasopharyngeal swabs   | $\geq 5$ years of age: oropharyngeal/nasopharyngeal swabs<br><5 years of age: nasopharyngeal aspirates<br>Induced/expectorated sputum | Not applicable                         |
| <b>Main pathogens tested**</b> | INF<br>RSV<br>BP  | INF<br>RSV<br>BP  | INF<br>RSV<br>SP***<br>BP   | Not applicable                         |

\* EC: Eastern Cape; FS: Free State; GP: Gauteng; KZ: KwaZulu-Natal; LP: Limpopo; MP: Mpumalanga; NC: Northern Cape; NW: North West; WC: Western Cape

\*\*INF: Influenza; RSV: respiratory syncytial virus; BP: *Bordetella pertussis*

\*\*\* SP: *Streptococcus pneumoniae* children <1 year tested at KZ and all age groups tested at MP and NW

# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## Comments:

### Influenza

The 2017 influenza season started in week 21 (week starting 29 May) when the influenza detection rate in the Viral Watch rose above 10%, peaked in week 32 (week starting 7 August) and ended in week 42 (week starting 16 October). Influenza A(H3N2) was the predominant strain during the 1<sup>st</sup> part of the season with B predominating in the last few weeks.

ILI programme: From the 1<sup>st</sup> January 2018 to date, specimens from 131 patients were received from 3 ILI sites, influenza was not detected.

Viral Watch programme: During the same period, specimens from 75 patients were received from Viral Watch sites. Influenza A(H1N1)pdm09 was detected in two patients, one of these had a history of international travel. Influenza B was detected in seven patients, three of these also had a history of international travel.

Pneumonia surveillance: In this same period, specimens from 577 patients with severe respiratory illness (SRI) were received from the 6 sentinel sites. Influenza was not detected.

### Respiratory syncytial virus

The 2018 RSV season started in week 7 (week starting 12 February 2018) when the detection rate of RSV among patients hospitalised with SRI rose to 17% (15/87) and was sustained above 10% in subsequent weeks.

From the 1<sup>st</sup> January 2018 to date RSV was detected in specimens of 22 patients in the ILI programme, and 60 from patients in the pneumonia surveillance programme.

During the same period, three specimens from viral watch surveillance programme sites tested positive for RSV.

### *Streptococcus pneumoniae*

Pneumonia surveillance: From the 1<sup>st</sup> January 2018 to date, blood specimens from 283 patients from 3 sentinel sites were tested for *S. pneumoniae* which was detected in 8 (2.8 %) specimens.

### *Bordetella pertussis*

ILI programme: From 1<sup>st</sup> January 2018 to date, nasopharyngeal/oropharyngeal specimens were tested from 131 patients for *B. pertussis*, none tested positive.

Pneumonia surveillance: During the same period, sputa and/or nasopharyngeal specimens were tested from 577 patients for *B. pertussis* which was detected in 15 (2.6 %) specimens. The number of cases testing positive for *B. pertussis* continues to decrease compared to the last few months of 2017 where an increase in *B. pertussis* cases was noted, especially from the Western Cape site. <http://www.nicd.ac.za/index.php/increase-in-pertussis-whooping-cough-in-children-in-western-cape-province/>

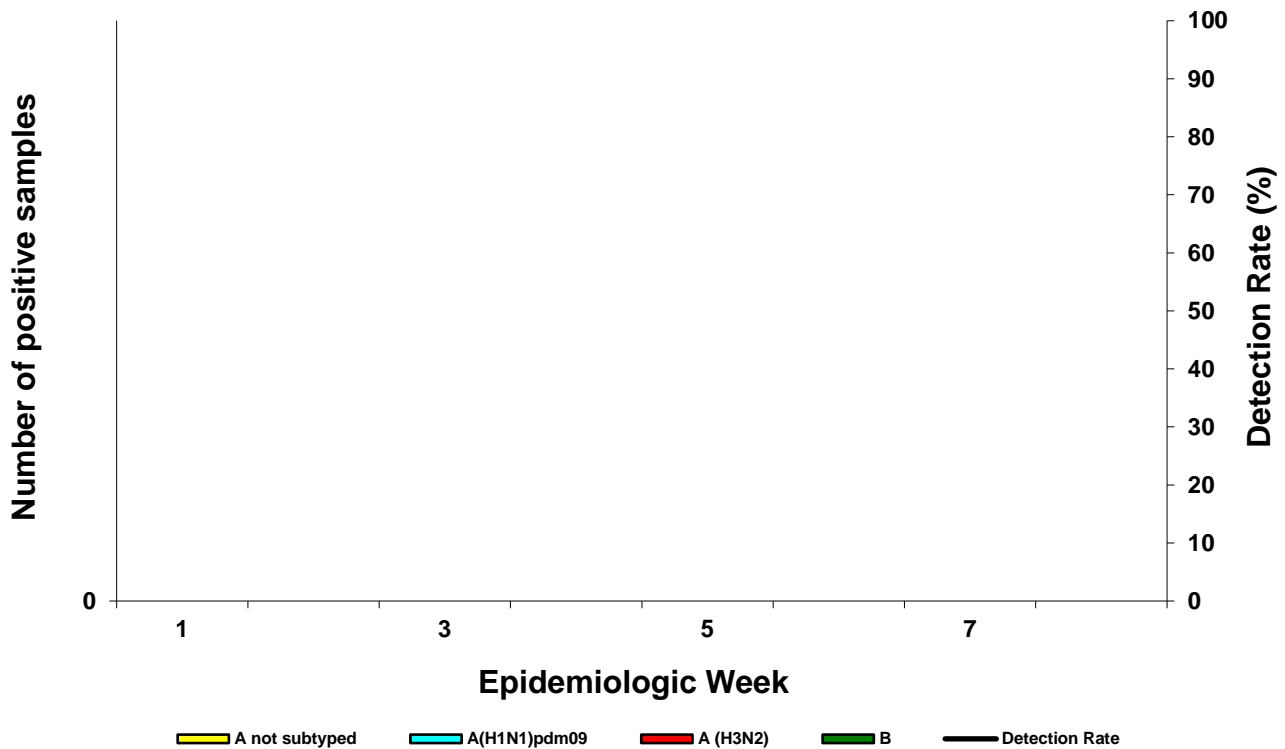
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## Influenza-like illness (ILI) surveillance primary health care clinics

**Figure 1. Number of positive samples\* by influenza types and subtypes and detection rate\*\* by week**



\*Specimens from patients with influenza-like illnesses at 3 sentinel sites in 3 provinces

\*\*Only reported for weeks with >10 specimens submitted

**Table 1. Cumulative number of influenza type and subtype and total number of samples tested by clinic and province**

| Clinic (Province)            | A not typed as yet | A(H1N1)pdm09 | A(H3N2)  | B        | Total samples |
|------------------------------|--------------------|--------------|----------|----------|---------------|
| Agincourt Clinic (MP)        | 0                  | 0            | 0        | 0        | 58            |
| Edendale Gateway Clinic (KZ) | 0                  | 0            | 0        | 0        | 46            |
| Jouberton Clinic (NW)        | 0                  | 0            | 0        | 0        | 27            |
| <b>Total:</b>                | <b>0</b>           | <b>0</b>     | <b>0</b> | <b>0</b> | <b>131</b>    |

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

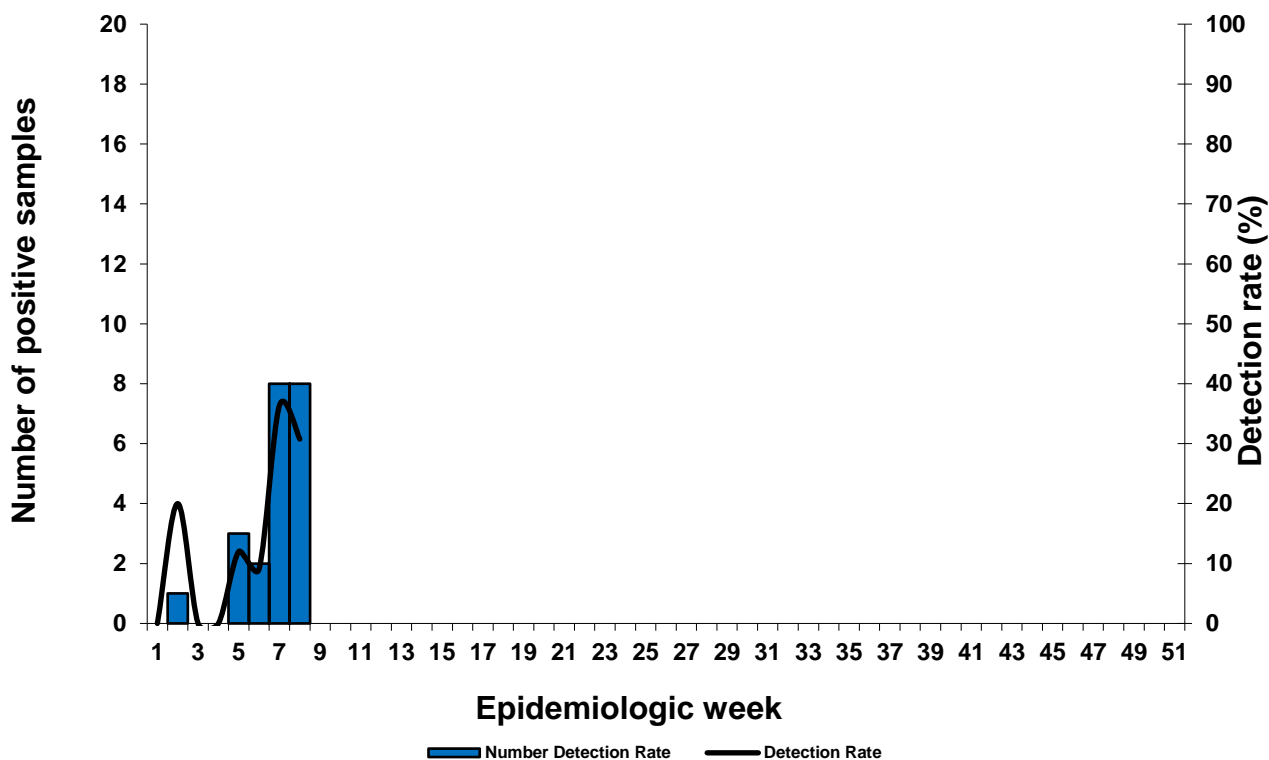
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## Influenza-like illness (ILI) surveillance primary health care clinics

**Figure 2. Number of samples testing positive for respiratory syncytial virus and detection rate by week**



**Table 2. Cumulative number of respiratory syncytial virus identified and total number of samples tested by clinic and province**

| Clinic (Province)            | RSV Positive | Total samples |
|------------------------------|--------------|---------------|
| Agincourt Clinic (MP)        | 14           | 58            |
| Edendale Gateway Clinic (KZ) | 8            | 46            |
| Jouberton Clinic (NW)        | 0            | 27            |
| <b>Total:</b>                | <b>22</b>    | <b>131</b>    |

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

# Respiratory Pathogen Surveillance

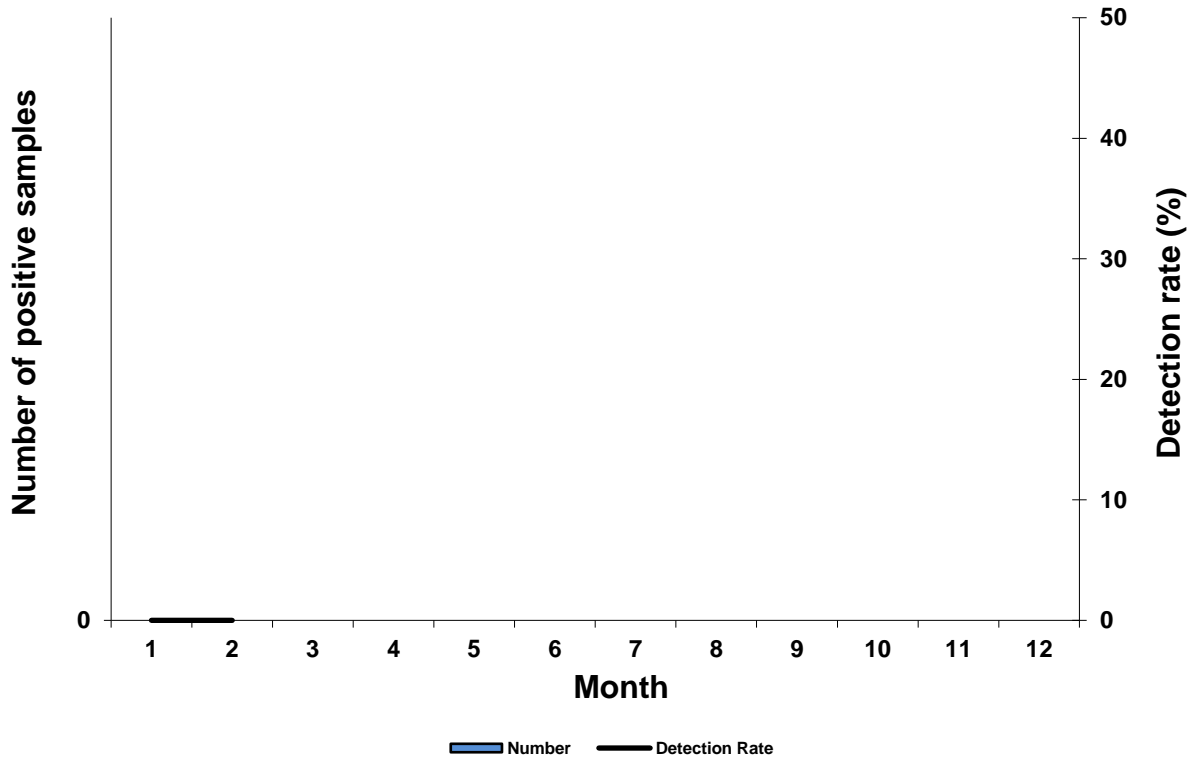
Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## Influenza-like illness (ILI) surveillance primary health care clinics

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**Figure 3. Number of samples testing positive for *B. pertussis* and detection rate by month**



**Table 3 Cumulative number of *B. pertussis* identified and total number of samples tested by province**

| Clinic (Province)            | <i>B. pertussis</i><br>Positive | Total<br>samples |
|------------------------------|---------------------------------|------------------|
| Agincourt Clinic (MP)        |                                 | 58               |
| Edendale Gateway Clinic (KZ) |                                 | 46               |
| Jouberton Clinic (NW)        |                                 | 27               |
| <b>Total:</b>                | 0                               | 131              |

KZ: KwaZulu-Natal; NW: North West, MP: Mpumalanga

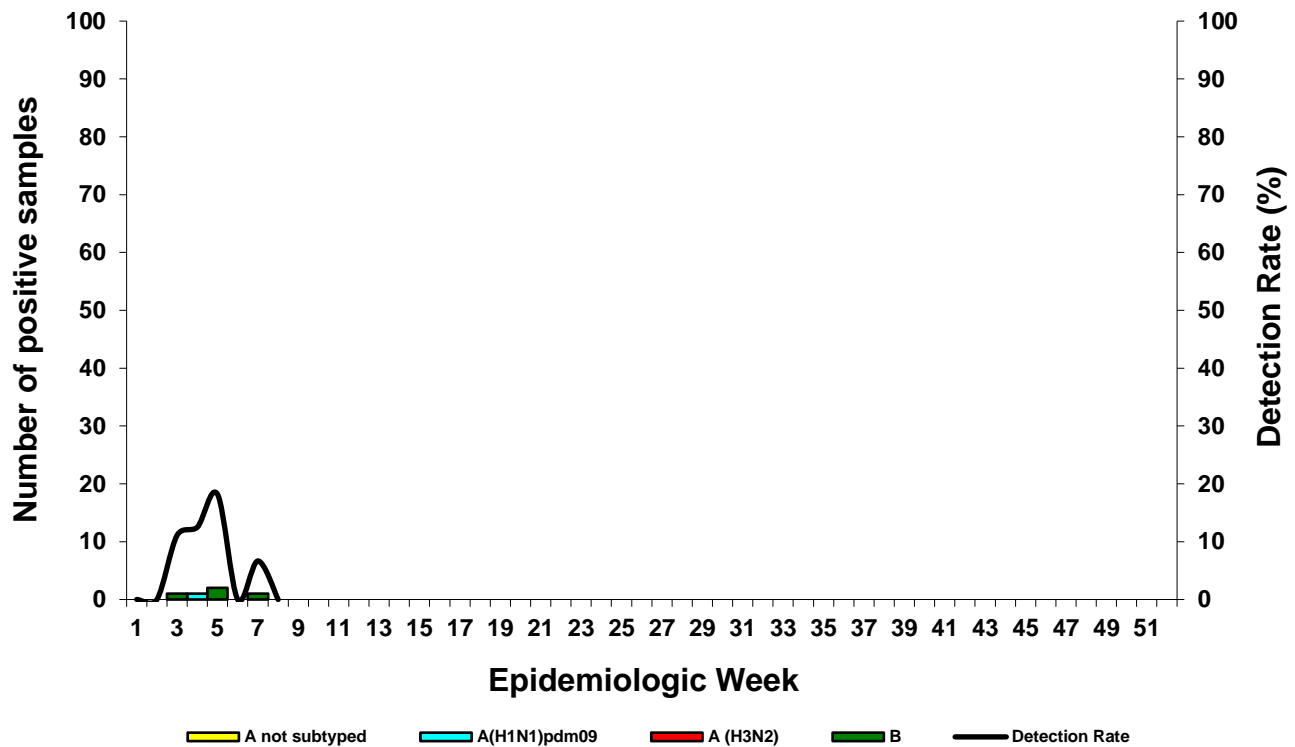
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## Influenza-like illness (ILI) surveillance Viral Watch

**Figure 4. Number of positive samples\* by influenza types and subtypes and detection rate\*\* by week**



\*Specimens from patients with Influenza-like illnesses at 104 sentinel sites in 8 provinces

\*\* Only reported for weeks with >10 specimens submitted.

**Table 4. Cumulative number of influenza type and subtype and total number of samples tested by province**

| Province       | A not subtyped | A(H1N1)pdm09 | A(H3N2)  | B        | Total samples |
|----------------|----------------|--------------|----------|----------|---------------|
| Eastern Cape   | 0              | 0            | 0        | 0        | 2             |
| Free State     | 0              | 0            | 0        | 0        | 0             |
| Kwa-Zulu Natal | 0              | 0            | 0        | 0        | 11            |
| Gauteng        | 0              | 0            | 0        | 2        | 33            |
| Limpopo        | 0              | 0            | 0        | 0        | 0             |
| Mpumalanga     | 0              | 1            | 0        | 0        | 4             |
| North West     | 0              | 0            | 0        | 0        | 12            |
| Northern Cape  | 0              | 0            | 0        | 0        | 0             |
| Western Cape   | 0              | 0            | 0        | 2        | 13            |
| <b>Total:</b>  | <b>0</b>       | <b>1</b>     | <b>0</b> | <b>4</b> | <b>75</b>     |

From 01 January 2018 to date, 21 patients were tested for influenza at the time of entry into South Africa following travel abroad and 13 have tested influenza positive.

Patients known to have acquired influenza abroad are not included in the table or epidemiological curve.

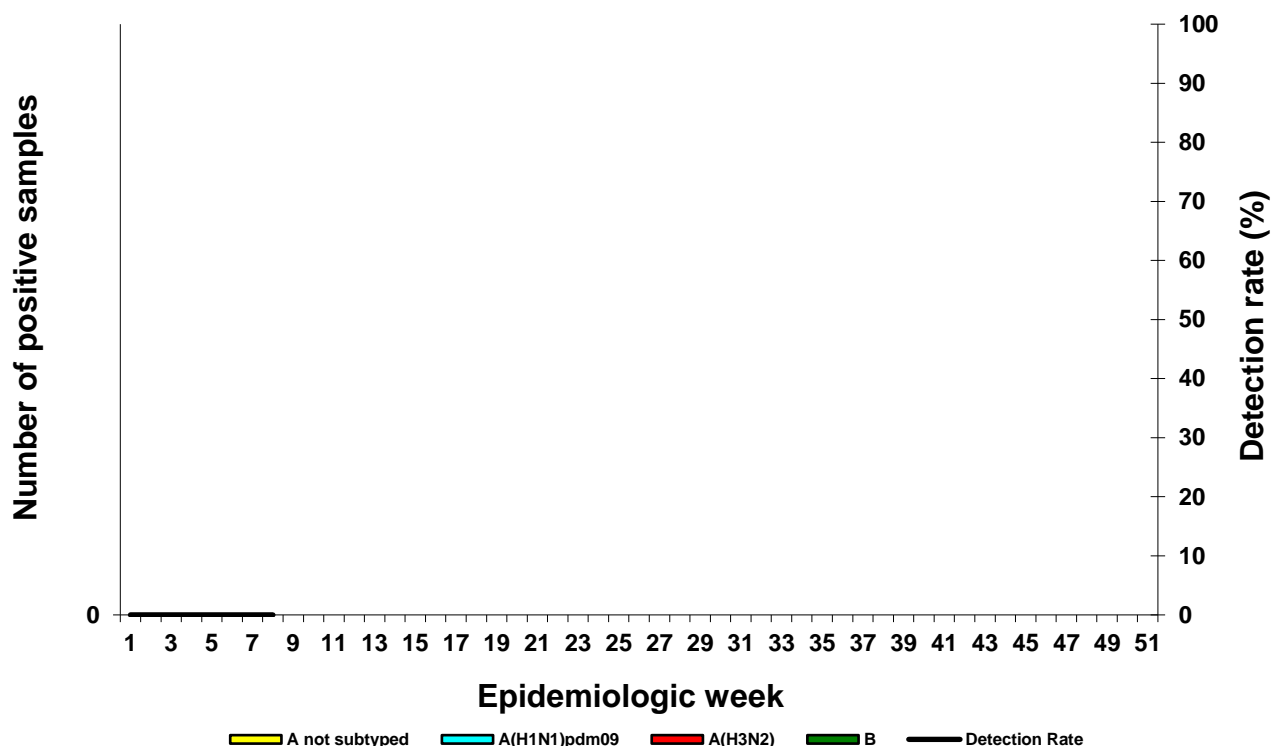
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## National syndromic surveillance for pneumonia

**Figure 6. Number of positive samples\* by influenza types and A not typed as yet and detection rate\*\* by week**



\*Specimens from patients hospitalised with pneumonia at 6 sentinel sites in 5 provinces

\*\*Only reported for weeks with >10 specimens submitted

**Table 5. Cumulative number of identified influenza types and subtypes and total number of samples tested by hospital**

| Hospital (Province)            | A not typed as yet | A(H1N1)pdm09 | A(H3N2) | B | Total samples |
|--------------------------------|--------------------|--------------|---------|---|---------------|
| Edendale (KZ)                  |                    |              |         |   | 142           |
| Helen Joseph-Rahima Moosa (GP) |                    |              |         |   | 107           |
| Klerksdorp-Tshepong (NW)       |                    |              |         |   | 94            |
| Mapulaneng-Matikwana (MP)      |                    |              |         |   | 47            |
| Mitchell's Plain (WC)          |                    |              |         |   | 120           |
| Red Cross (WC)                 |                    |              |         |   | 67            |
| <b>Total:</b>                  |                    | 0            | 0       | 0 | 577           |

GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape



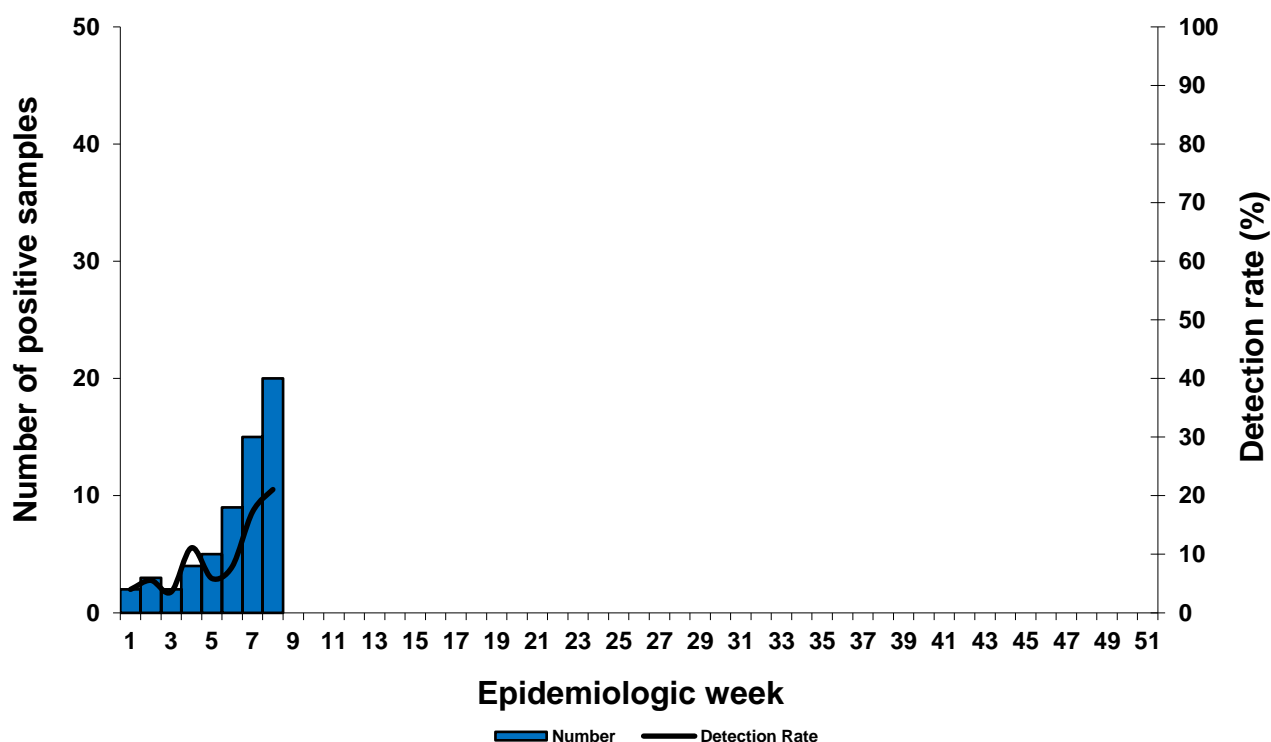
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## National syndromic surveillance for pneumonia

**Figure 8. Number of samples testing positive for respiratory syncytial virus and detection rate by week**



**Table 6: Cumulative number of respiratory syncytial virus identified and total number of samples tested by hospital**

| Hospital (Province)            | RSV Positive | Total samples |
|--------------------------------|--------------|---------------|
| Edendale (KZ)                  | 27           | 142           |
| Helen Joseph-Rahima Moosa (GP) | 6            | 107           |
| Klerksdorp-Tshepong (NW)       | 2            | 94            |
| Mapulaneng-Matikwana (MP)      | 13           | 47            |
| Mitchell's Plain (WC)          | 7            | 120           |
| Red Cross (WC)                 | 5            | 67            |
| <b>Total:</b>                  | <b>60</b>    | <b>577</b>    |

GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape

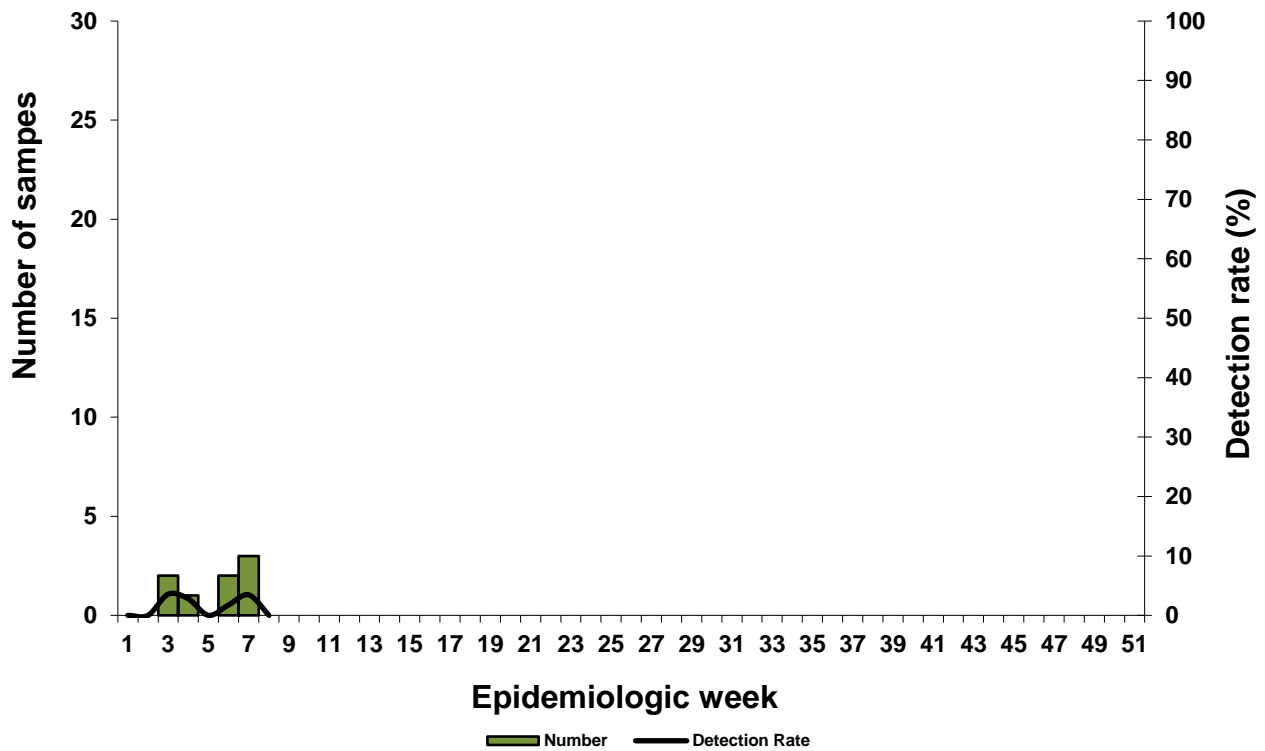
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## National syndromic surveillance for pneumonia

**Figure 9. Number of samples testing positive for *S. pneumoniae*\* and detection rate by week**



**Table 7. Cumulative number of *S. pneumoniae* identified and total number of samples tested by hospital and province**

| Hospital (Province)       | <i>S. pneumoniae</i><br>Positive | Total<br>samples |
|---------------------------|----------------------------------|------------------|
| Edendale (KZ)             | 2                                | 142              |
| Klerksdorp-Tshepong (NW)  | 1                                | 94               |
| Mapulaneng-Matikwana (MP) | 5                                | 47               |
| <b>Total:</b>             | <b>8</b>                         | <b>283</b>       |

KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga;

\* Children <1 year tested at KZ and all age groups tested at MP and NW

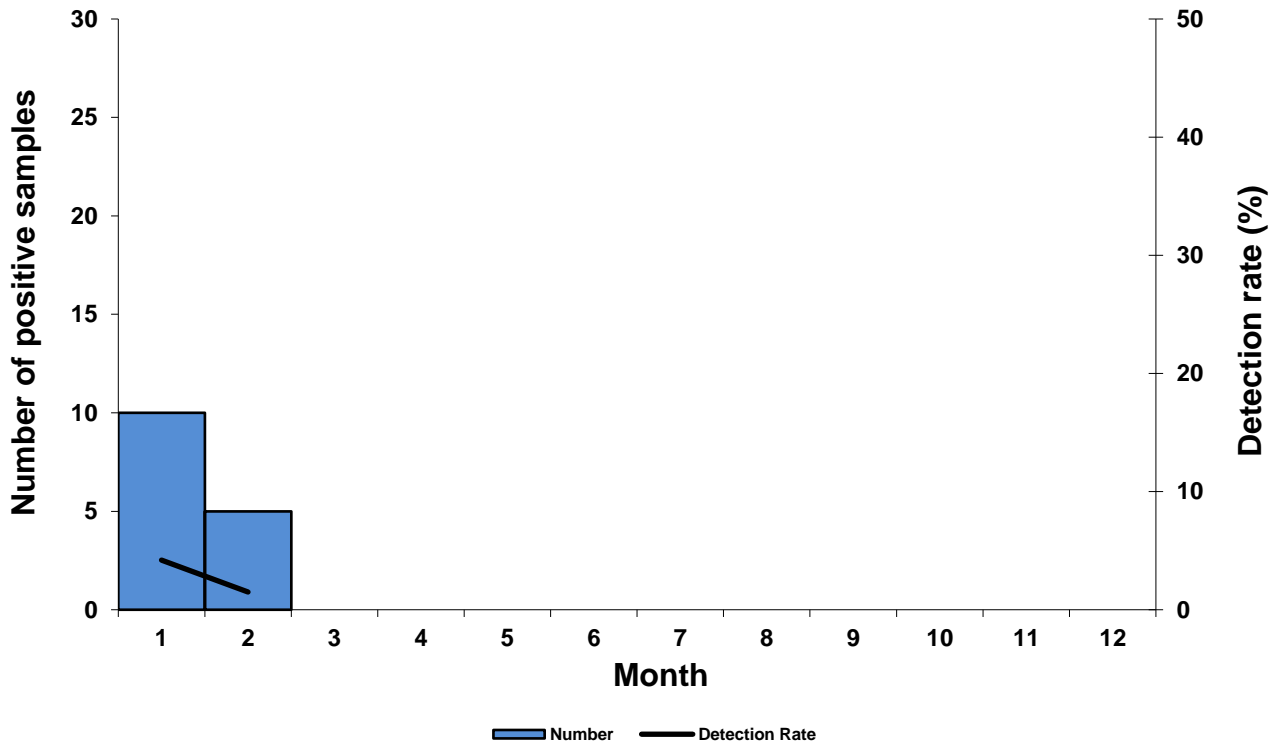
# Respiratory Pathogen Surveillance

Reporting period 01/01/2018 to 19/02/2018

Results until end of epidemiologic week 08 (2018)

## National syndromic surveillance for pneumonia

**Figure 10. Number of samples testing positive for *B. pertussis* and detection rate by month**



**Table 9. Cumulative number of *B. pertussis* identified and total number of samples tested by hospital and province**

| Hospital (Province)            | <i>B. pertussis</i><br>Positive | Total samples |
|--------------------------------|---------------------------------|---------------|
| Edendale (KZ)                  | 3                               | 142           |
| Helen Joseph-Rahima Moosa (GP) | 2                               | 107           |
| Klerksdorp-Tshepong (NW)       | 2                               | 94            |
| Mapulaneng-Matikwana (MP)      | 0                               | 47            |
| Mitchell's Plain (WC)          | 5                               | 120           |
| Red Cross (WC)                 | 3                               | 67            |
| <b>Total:</b>                  | <b>15</b>                       | <b>577</b>    |

GP: Gauteng; KZ: KwaZulu-Natal; NW: North West; MP: Mpumalanga; WC: Western Cape

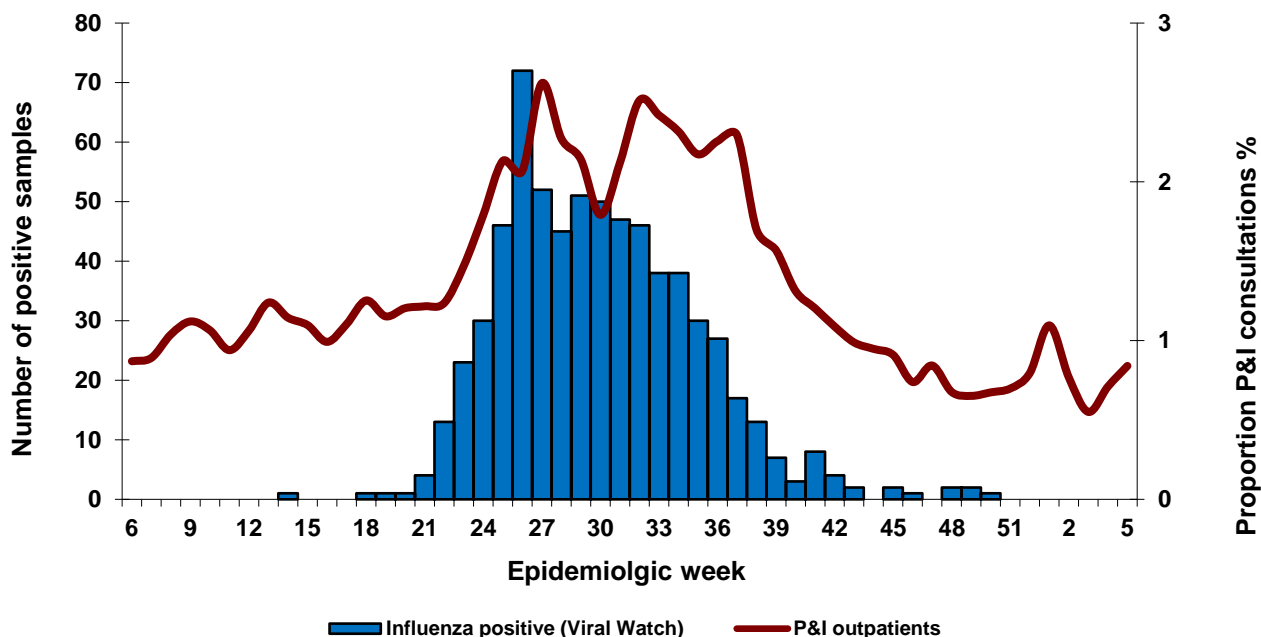
# Respiratory Pathogen Surveillance

Reporting period 05/02/2017 to 29/01/2018

Results until end of epidemiologic week 05 (2018)

## Private hospital consultations

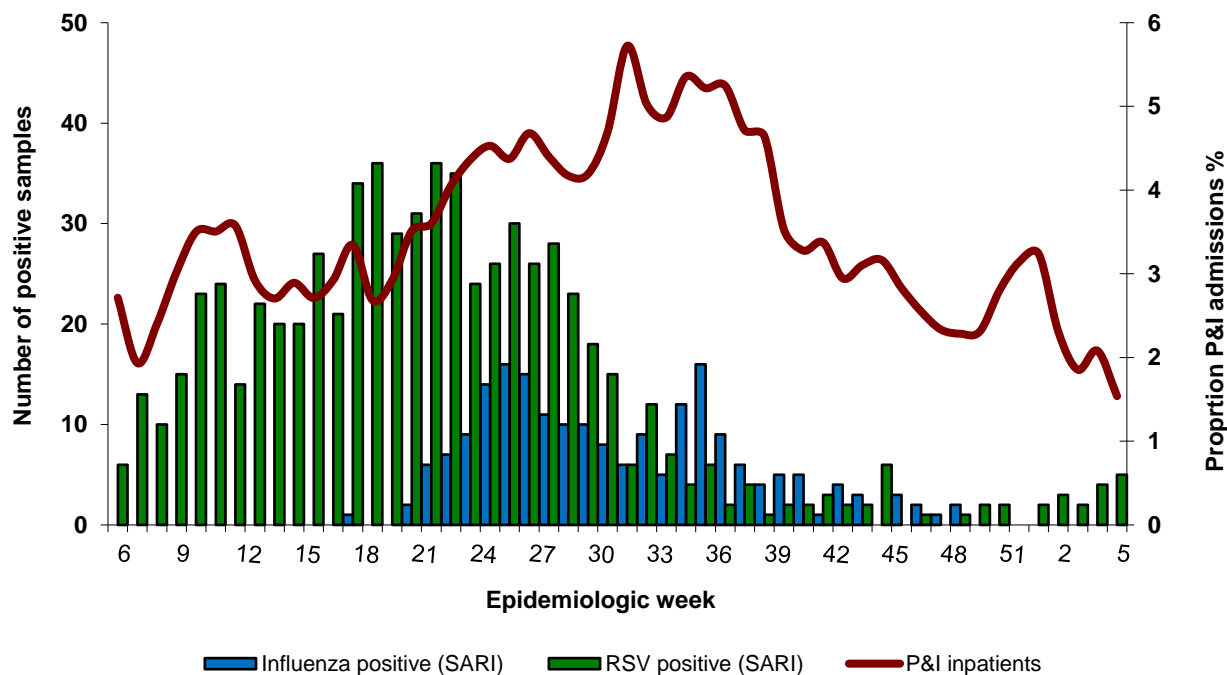
**Figure 9. Number of private hospital outpatient consultations\* with a diagnosis of pneumonia and influenza (P&I) and viral isolates\*\***



\* Hospital outpatient data from weekly reports of consultations to the Netcare hospital group. Discharge diagnosis is according to International Statistical Classification of Diseases and Related Health Problems coding by clinicians and does not represent laboratory confirmation of aetiology

\*\* Influenza positive specimens from the Viral Watch surveillance programme

**Figure 10. Number of private hospital admissions\* with a discharge diagnosis of pneumonia and influenza (P&I) and viral isolates\*\***



\*Hospitalisation admission data from weekly reports of consultations to the Netcare hospital group. Discharge diagnosis is according to International Statistical Classification of diseases and Related Health Problems/ ICD by clinicians and does not represent laboratory confirmation of aetiology

\*\* Influenza positive specimens from the national syndromic surveillance for pneumonia.