



# Healthcare Infection Surveillance Western Australia

## Interpretation of HISWA Reports

### Healthcare Infection Surveillance

Public and private hospitals in Western Australia voluntarily participate in submitting standardised information on a range of serious and significant healthcare associated infections. HISWA collates and analyses this data on behalf of contributors with the aim of supporting and improving healthcare associated infection surveillance activities in WA and providing opportunities for collaboration and shared learning.

Surveillance is a crucial quality improvement activity with the principle objective of reducing the incidence of healthcare associated infections. A reduction in infection rates have been demonstrated when data are linked with feedback to stakeholders and intervention strategies. Hence, detailed analysis and interpretation of the data are essential for policy development and decision making.

Benchmarking involves comparing an infection rate with another point of reference which gives an indication of performance. Benchmarking should only be used as a guide and interpreted with caution due to variability in case mix, intensity of surveillance and classification reliability between jurisdictions.



### HISWA Reports

One of the main functions of HISWA is to provide contributors with timely reports. These include

- Quarterly aggregate reports
- Quarterly hospital-based reports for each indicator
- Hospital-based ACHS reports (6 monthly)
- Mandatory indicator reports
- HISWA annual reports

### Quarterly Aggregate Reports

The quarterly aggregate report summarises state-based infection rates and trends.

### Quarterly Hospital-based Reports

A quarterly report will be produced by HISWA for each contributing hospital. These reports analyse internal infection rate trends and allow for a timely response to an increased infection rate.

### ACHS 6 Monthly Report

In accordance with ACHS reporting requirements, a 6 monthly report will be produced by HISWA for each contributing hospital.

### Annual & Mandatory Indicator Reports

The annual HISWA and mandatory indicator reports provide data on infection rates which allows for review of annual trends. It provides the opportunity for WA healthcare administrators, managers, clinicians and infection prevention and control staff to assess the impact of key healthcare associated infections, inform strategic policy and prioritisation, and monitor the effects of prevention and control programs.





## Rate

A rate is a kind of ratio, indicating a relationship between two measurements with different units. The division operator when dealing with rates can be expressed as "per". Infection data are often displayed as a rate.

- Surgical site infections: per 100 procedures
- Central-line bloodstream infections: per 1,000 central line days
- MRSA infections: per 10,000 bed-days
- Haemodialysis access-associated bloodstream infections: per 100 patient-months
- *Staphylococcus aureus* bloodstream infections: per 10,000 bed-days or 1,000 separations
- Occupational exposures: per 100 bed-days

## Rate Previous Two Quarters

This measure provides an internal benchmark to determine short term trends in the infection rate over time. Mathematically, it is the number of infections over the last two quarters (numerator) divided by the relevant denominator over the last two quarters.

## Trend

Trend is a term used to describe the long term movement in a time series. HISWA reports describe trend in terms quarterly rates.

- Rate this quarter > previous quarter  $\uparrow$
- Rate this quarter  $\leq$  previous quarter  $\downarrow$
- Rate this quarter = previous quarter  $\leftrightarrow$

## WA Aggregate Rate

This is an infection rate calculated from combined data received from all contributing hospitals in WA for the specified period. It provides a useful benchmark with which individual hospitals can compare their infection rate for the same period.

## Cumulative Infections and Rate

The cumulative number of infections for a hospital is defined as the total number of infections that have been reported since their inclusion in the HISWA program. Mathematically, the cumulative rate is the total number of infections since reporting began (numerator) divided by the total denominator since reporting began.

## Cumulative WA Aggregate Rate

The cumulative aggregate rate is based on the overall rate for Western Australia since HISWA data collection began in July 2005. Mathematically, the cumulative rate is the total number of infections since reporting began for Western Australia (numerator) divided by the total relevant denominator for the state since reporting began.

## Number of Contributors

The number of contributors refers to the number of hospitals that contribute to the indicator.

## Comparator Rate

If available, a comparator rate from another state or country will be used for external benchmarking. Appropriate rates for comparison are selected based on case definitions and risk-adjustment.

## Confidence Interval

Infection rates are given with 95% confidence intervals (CI) which provides an indication of the true infection rate. The CI displays the lowest and highest values that the true infection rate is likely to fall between 95% of the time. As a general rule, a larger sample size results in a narrower CI and thus gives a better indication of the true rate.

*Note: Infection rates over short periods or based on small numbers may be subject to random variation. Specifically, a small increase in the number of infections can result in a large increase in the infection rate. Therefore rates should always be interpreted in conjunction with other data.*

## Further Information

For enquiries regarding the interpretation of reports please contact:

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