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NSW Real-time Emergency Department Syndromic Surveillance

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Menu

- What is syndromic surveillance? What does it add?
- Introduction to the NSW Syndromic Surveillance System
- Relevance to heat-related illness surveillance
- Discussion

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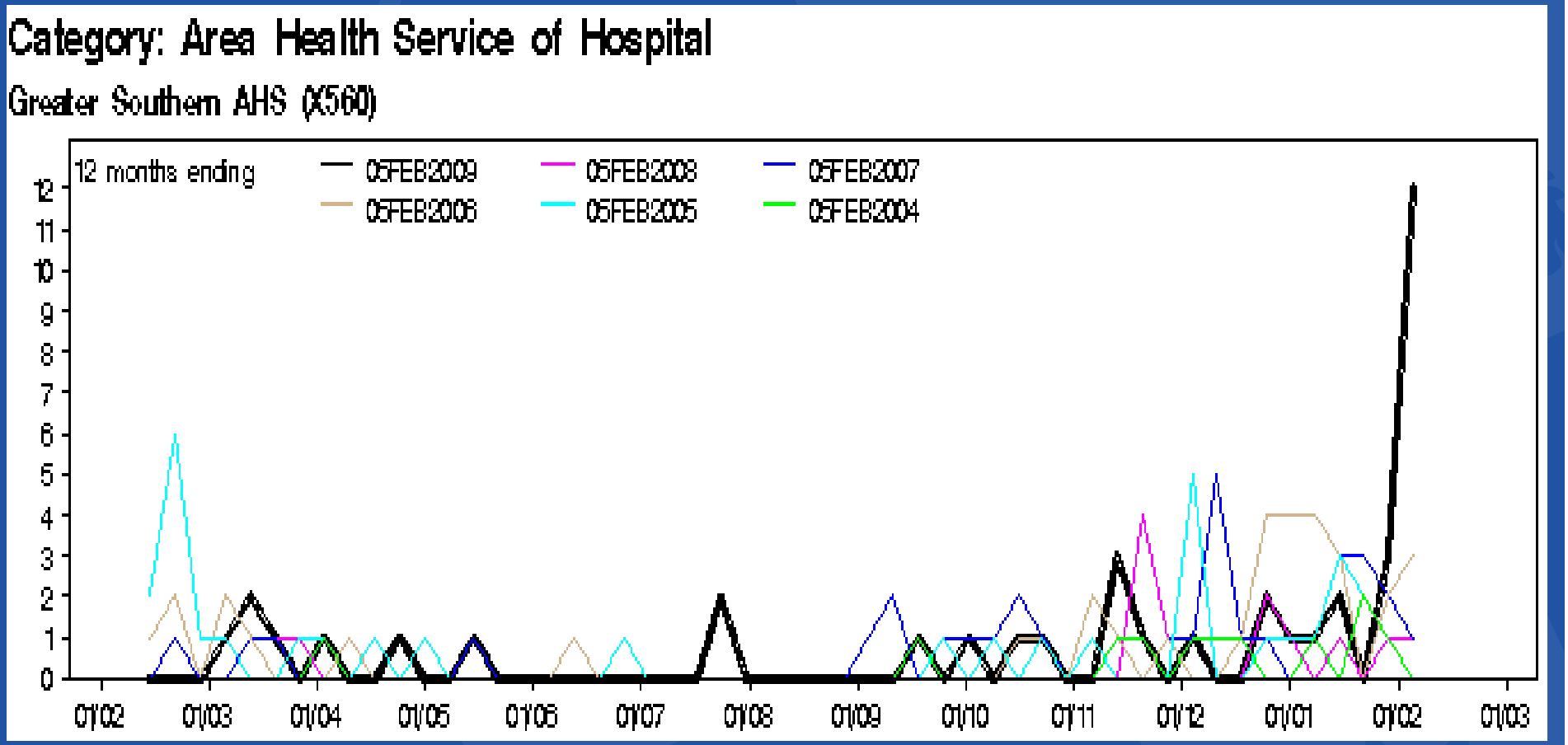
Real time reporting – 12 mths to Feb 09



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What is syndromic surveillance?

- Systematic and ongoing collection, analysis and interpretation of data that precede diagnosis and that can signal, with sufficient probability, an outbreak to warrant public health investigations" (Sosin, 2003).

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NSW ED syndromic surveillance

- **PHREDDSS** - Public Health Real-time Emergency Department Surveillance System
- **Background**
  - Set up for Olympics, Infec. Disease >board disease surveillance
- **Components**
  - 52 EDs providing data 4-6 hrly for 36 syndromes
  - Hourly feeds from metro ambulance services

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Outputs

- Alerts when threshold exceeded
- Regular reports
- + unusual incidents are followed up and public health action taken, as required

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What does syndromic surveillance add?

- Near real-time situational intelligence (immediate)
- Surveys a ‘pre-disease state’ therefore captures broad group of illnesses (broad)
- Supports evidence-based control (scientific)

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Practical challenges

- Real-time element requires rapid analysis and reporting of data. Needs to be automated
- High volume of data – computation and storage issues
- Sensitivity – to health events of interest
- Specificity – what's driving the health events
- Human element – support rapid and effective decision-making without fatigue

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Main limitations

- Oversensitive to small changes in small counts
- Does not account for annual seasonal influences
- Do not account for some calendar effects, such as public holiday and school holidays

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January 2009 heatwaves, NSW picture

- In January 2009, 298 presentations to EDs with dehydration. This is the highest 4 week count in the last 6 years.
- 50% arrived by ambulance, 49% admitted.
- In January 2009, 80 presentations to EDs with heat stroke/exhaustion/sun stroke/ heat syncope. This compares with an average of 41 presentations for the same period in the last five years. This increase is similar to the increase which occurred during the 2006 January heatwave.
- 62% arrived via ambulance, 19% admitted.

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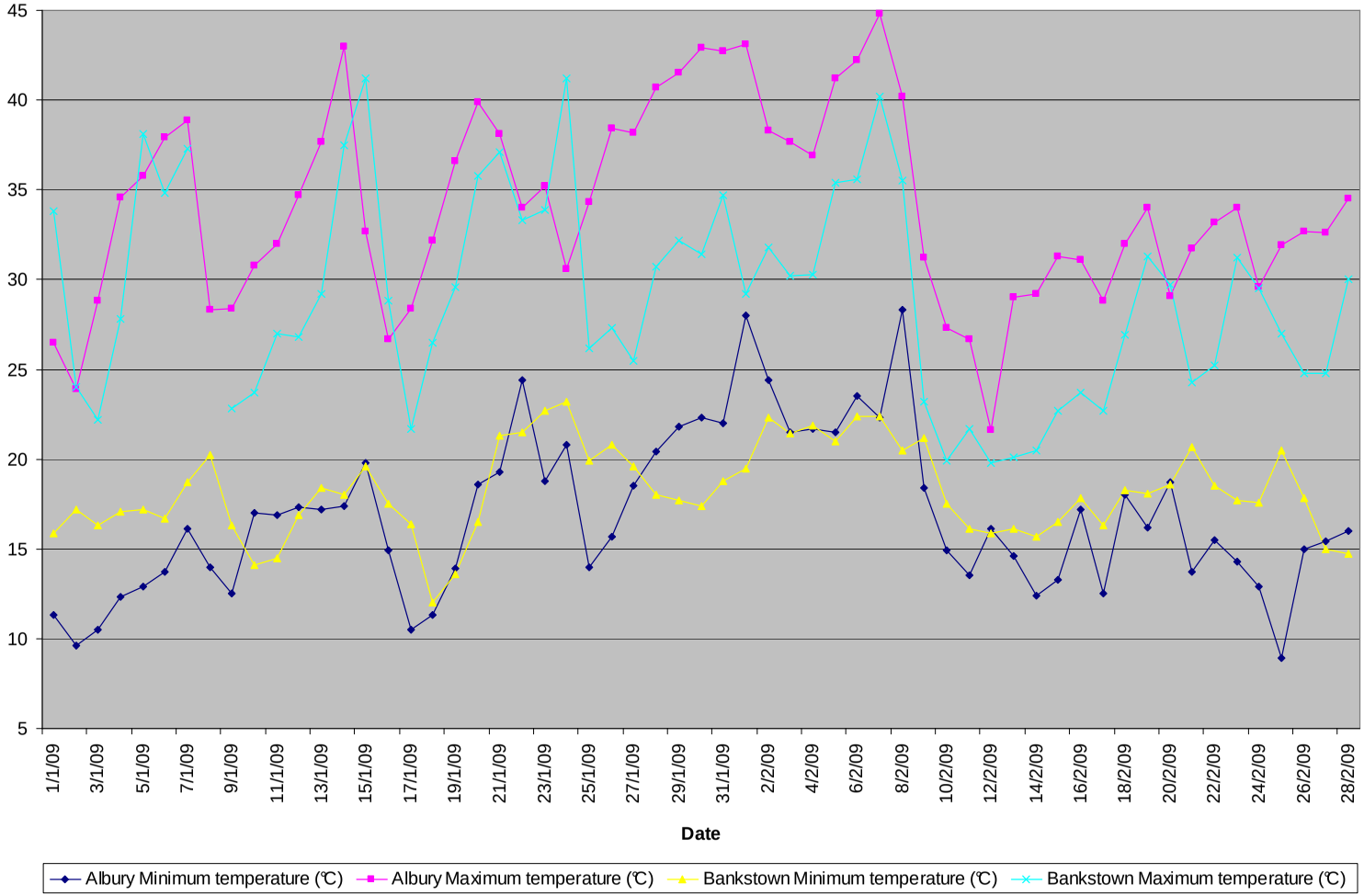
Daily temps for Jan/Feb 09, Albury & Bankstown



Dehydration

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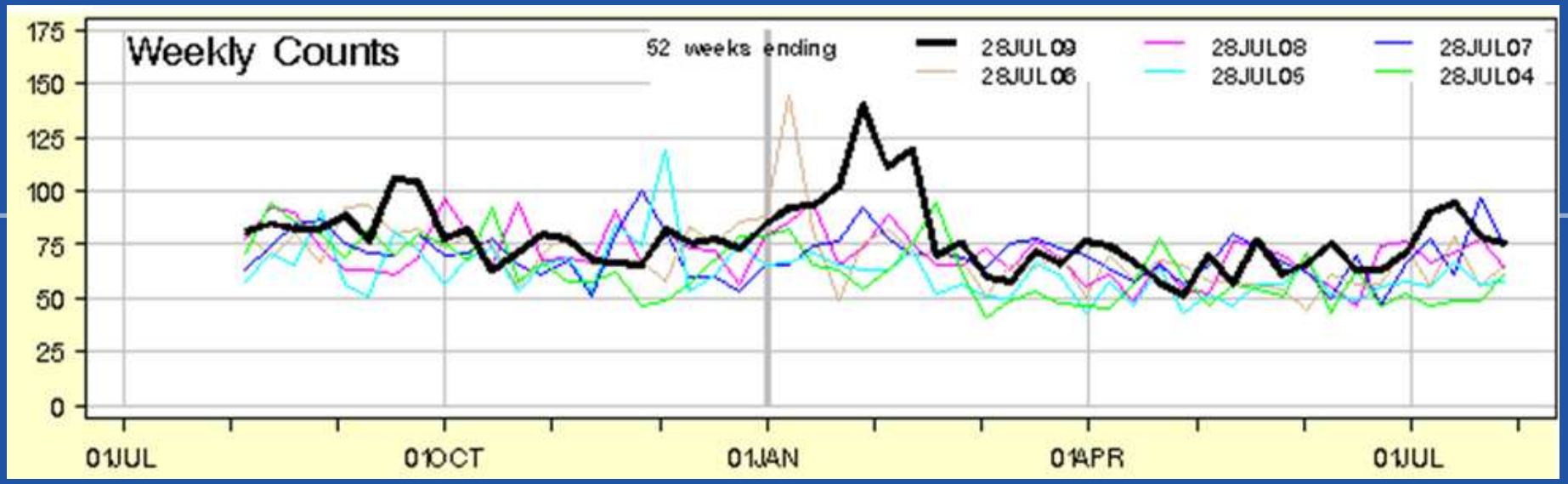
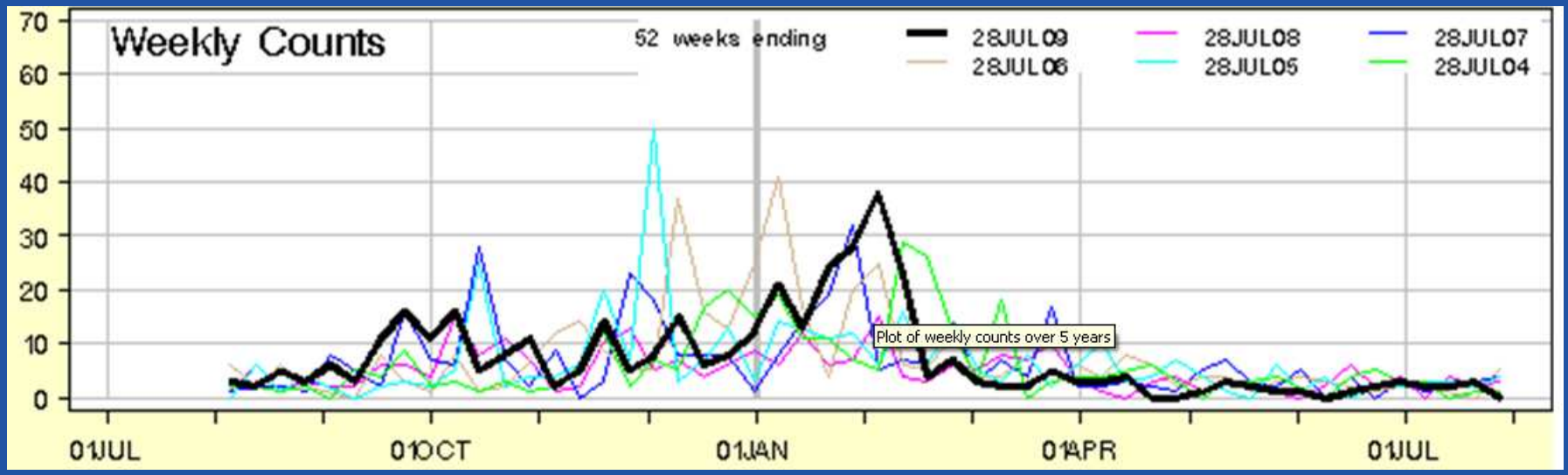


Heat stroke



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Conclusion

- Provides a near real-time window into the acute disease experience of the population
- Tool to inform evidence based decision making
- Quickly answers public health questions that were previously unable to be answered
- Needs to be strongly integrated with other forms of surveillance and intelligence and other conventional public health activities.