

ARF Surveillance in New Zealand – an overview

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Outline

- RF surveillance and its purposes
- Surveillance sector review
- Opinions of RF surveillance experts
- Estimating likely true case numbers
- Potential improvements

Surveillance and its purposes

"...on-going systematic collection, analysis, interpretation and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and to improve health'

Control-focused surveillance: identify affected individuals

Strategy-focused surveillance: provide information supporting prevention strategies

Five-year plan



ARF Surveillance Systems

Hospitalisation dataset

miscoding, misdiagnosis

Notifications (EpiSurv)

under-notification

Patient registers

transfers

Flaws -> inability to monitor national burden

Moxon, Lennon *et al* 2012

ARRFR vs ICD vs EpiSurv



Surveillance sector review

To identify potential surveillance improvements to better support RF prevention and control strategies

- Describe and review RF surveillance systems, perform gap analysis
- Capture-recapture analysis to estimate likely true cases

Causal pathway & surveillance points





Capture-recapture analysis

Estimate total ARF cases using **imperfect** surveillance **systems**

Chapman Estimate: removes bias when datasets non independent





Estimating a national case total

Overlap (R) adjusted to account for:

- Direct hospital notification
- PPVs from Auckland audit
 - 50% weight
- PPVs from Waikato 2008 audit
 - 50% weight

1997-2011: 2,235-2,337 cases ≈ **152 cases annually**

Surveillance system sensitivity

Likelihood of detecting true cases

Notification	Hospitalisation
dataset	dataset
sensitivity	sensitivity
62.2%	67.4%

Sensitivity = Cases detected Estimated true cases

Potential improvements

- Integrated surveillance strategy
 - On-going mandating, funding to support changes
 - Collegial approach
- EpiSurv -> national register
 - Infrastructure already exists
 - Develop further to meet requirements
 - Automatic notification w. manual review
 - Compile info. re. risk factors, interventions
 - Integrated annual reporting

Conclusions

- Limited ability to accurately monitor events on causal pathway
- Existing systems can be modified to permit effective RF surveillance
- RF surveillance sector has dedicated staff with considerable expertise
- 1997-2011: 150 cases annually

Conclusions

- Reviewed surveillance sector
- Reviewed individual surveillance systems
- Identified potential surveillance improvements to better support control and prevention strategies

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