



Emergence due to
changes in agent,
environment or
host

Infectious diseases

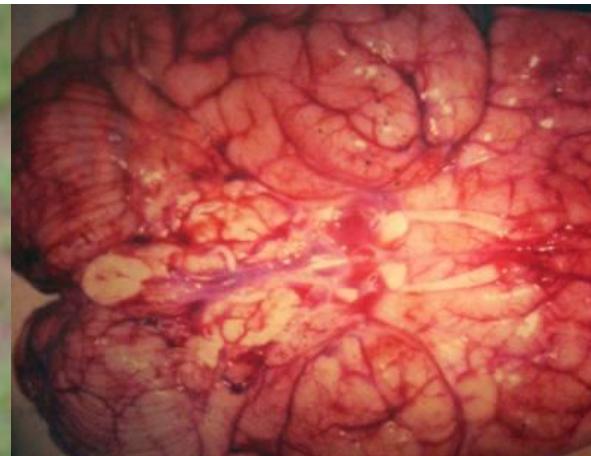
Series of islands
North-west of New
Zealand!

Emerging IDs: The Australian Picture

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Emerging Infectious Diseases

- Federated system
- EID Threats
 - Extrinsic - without...
 - Intrinsic - within...
- Response capacity
- Future concerns





Communication



Australian Health Principal Protection Committee (AHPPC)

- Reports - Australian Health Ministers
- Chief medical officers
 - All jurisdictions
- Coordinate response

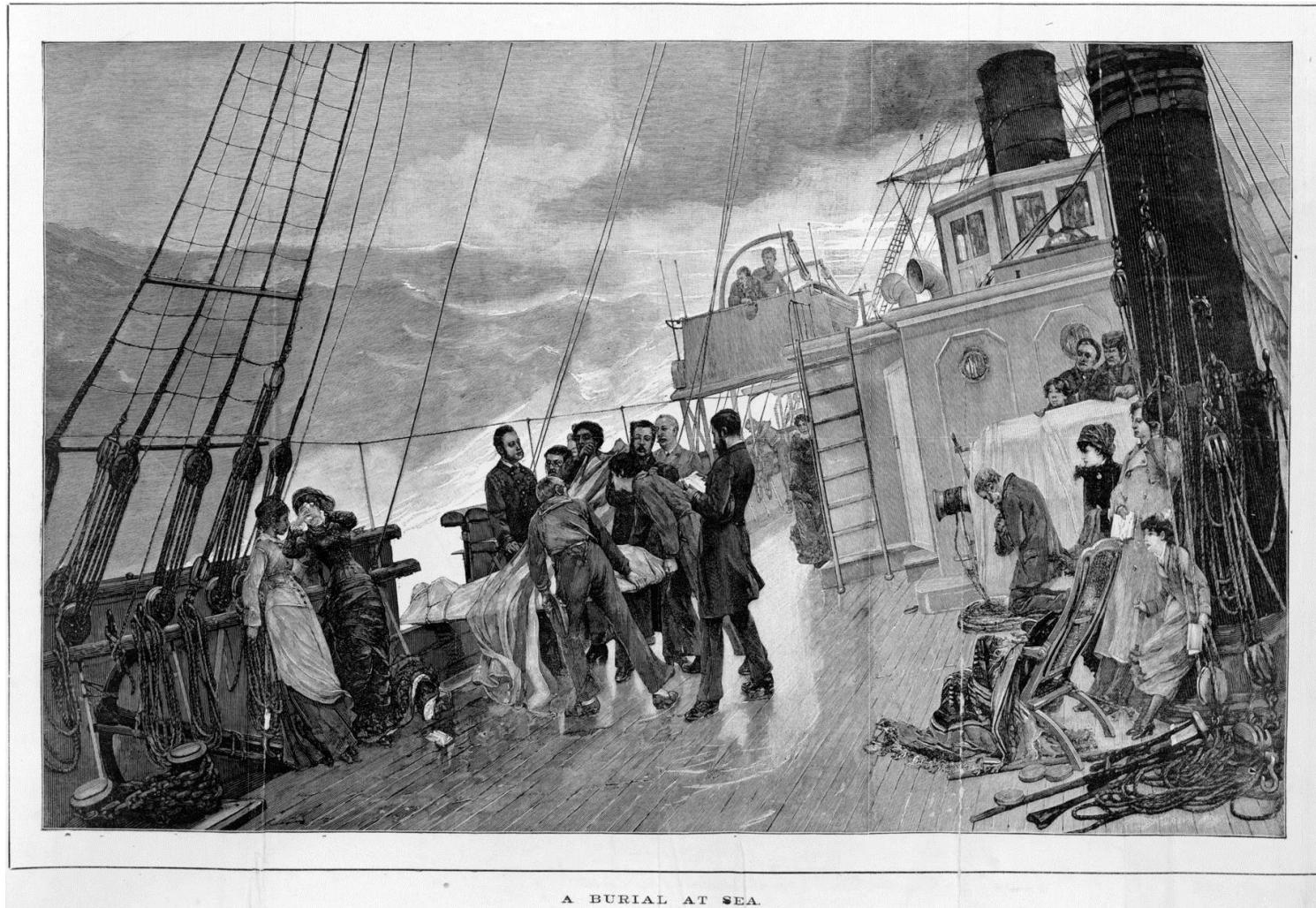
Communicable Diseases Network Australia

- Communicable disease directors
- Review epidemiology & actions

Public Health Laboratory Network

- Laboratory directors
- Establish testing procedures
- Coordinate reference function

A burial at sea*. *November 1880, The Illustrated Australian News.

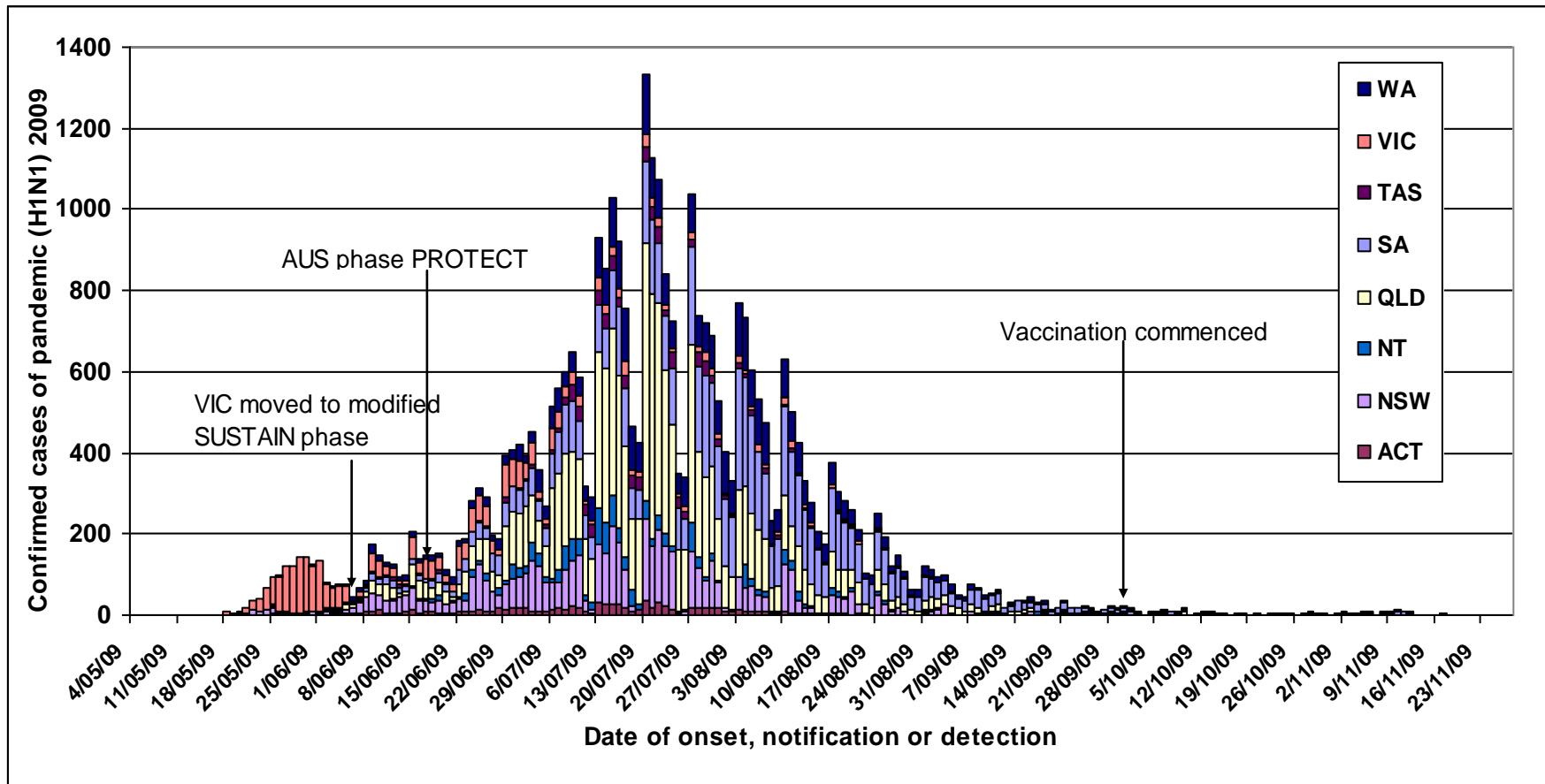


Beverley J Paterson et al. BMJ Open 2013;3:e002033

BMJ Open



H1N1 Influenza, Australia 2009



Source: Department of Health & Ageing NetEpi database



H1N1 Influenza On A Plane...

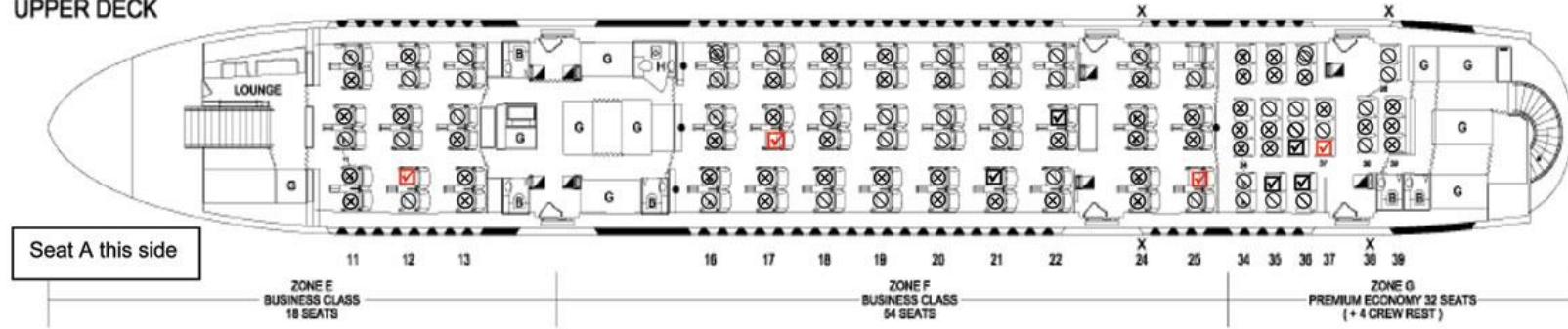
A380-800

14P/72J/32W/332Y (+4 CREW REST)

- ⊕ ILI preflight not pandemic (H1N1) 2009 or not tested
- ⊕ Pandemic (H1N1) 2009 onset preflight
- ★ Pandemic (H1N1) 2009 onset during flight
- ☒ ILI postflight not pandemic (H1N1) 2009
- ☒ ILI postflight not tested
- Pandemic (H1N1) 2009 post flight
- ⊗ No ILI (completed survey)
- No pandemic (H1N1) 2009 (no survey)
- Seat not occupied

- BASSINET POSITIONS
- T TOILETS
- B BABY CHANGE TOILET
- H ACCESSIBLE TOILET FACILITIES
- G GALLEY
- X EXIT ROW SEATING

UPPER DECK



MAIN DECK



Foxwell AR, Roberts L, Lokuge K, Kelly PM. Transmission of influenza on international flights, may 2009. Emerg Infect Dis. 2011 Jul;17(7):1188-94.



Extrinsic Threats

Agent	Transmission Source	Place, Year
Polio	No local transmission	Melbourne 2007
Dengue	Infected travellers	Cairns, Yearly
Zika virus	No local transmission	Australia, 2014 -
Drug resistant S. Typhimurium 104	Imported halva	Melbourne, 2001
Drug resistant S. Paratyphi	Tropical fish	National, 2000-6
<i>Cyclospora cayetanensis</i>	Cruise ship	Western Australia, 2010





Intrinsic Threats

Agent	Transmission Source	Place, Year
Hendra virus	Horses, bats	Queensland, 1994
Australian Bat Lyssavirus	Bats	Queensland, 1990s
Brachylaimid trematodes	Snails	South Australia, 1995-
<i>Burkholderia pseudomallei</i>	Soil	Northern Australia, ongoing
CA-MRSA	People	Australia, 1990s
CA- <i>C. difficile</i>	People	Australia, 2000s
Tularemia	Ringtail possum	Tasmania, 2011



Risks Of Establishment

- Depends on:
 - Suitable host or vector
 - Infection pressure
 - Transmission chain
 - Lack of system for detection
 - Ineffective intervention
- System constantly tested
 - SARS
 - Ebola virus response workers
 - Travellers to Bali!!!





Response Capacity

- Communicable Disease Framework
 - Detection
 - Coordination of response
- High quality capacity
 - State, Territory, Federal resources
 - National centres
 - Public health laboratories
 - Tension: CIDT - WGS
 - Centres Research Excellence
- Medical Research Futures Fund
 - Communicable diseases
 - AMR

Conclusion

- **Animal-human-environment**
- EIDs – inside & out...
- System constantly tested
- Surveillance is robust in Australia
 - Future threats
- Requires constant vigilance



Thank you...

