Literature Review

**Thibaut *et al.***

Benefits

* allows for multiple introductions (not in Ypma or Morelli)
* accounts for unobserved events (not in Ypma or Morelli)

Drawbacks

* Broader generation time distribution increases error on infection date estimates
* Generation estimates less effective with lower sampling density
* Mis-identifying imports increases error on mutation rate estimates
* Long generation times and subsequently high diversity between generations makes the detection of imports (identified by their high diversity) nearly impossible

Questions

* When analysing super-spreaders, do we subdivide the groups prior to analysis?
  + i.e. outbreaker does not figure out if individuals are super-spreaders or not

**Ypma *et al.***

**Morelli *et al.***

**Paul Kellam** (lecture)

* Real time viral genetics
* Inform us of sustained introduction but low R0, compared to the inverse
* MERS
  + Used genetic information to determine that most cases are single transfers with little onward spread, in that putative cases were far too genetically distant to represent direct transmission events
  + Explained why MERS wasn’t spreading uncontrollably
  + Instead suggested a reservoir which was leaking into the general population
  + This completely changes infection control policy
  + Showed that camel viruses were dispersed across all cases, suggesting they were continuously seeding cases into humans with little human-human transmission

**Further literature**

* Chauchemez – Eurosurveillance (2013)