

Wellcome Genome Campus | Course 1 - Case study: Hospital outbreak investigation in the United Kingdom

We were tasked quite early on in the pandemic with looking into a potential hospital outbreak of Covid-19, both of interest to the health protection team and the local Infection and control team. This was quite early on into the pandemic and we were trying to investigate how the virus transmitted and what we can do to prevent further transmission particularly in a hospital.

We looked at the genetic sequences from the hospital cases and it looked extremely similar when we did the analysis. Unfortunately, we could not tell that these were directly linked together afterwards because this was so early on in the pandemic and the virus had little evolution at that point. Whilst we were helpful in prioritising the samples to be sequenced and making sure that they could be linked, we could not reliably infer that there were definite transmission links.

This is quite different to other infectious disease outbreaks that require similar responses from the health protection team and infection control team in hospitals like *Clostridium difficile* where the outbreak patterns are easier to see through sequencing as when they are similar in sequence we can be more certain that they are linked.

Since then, sequencing SARS-CoV-2 genomes have been more helpful in detecting transmission links in hospitals as there has been a lot more variation in the genome over time and therefore we can be more sure that cases are linked.