Evaluating the survival of Foot and Mouth Disease Virus in the environment

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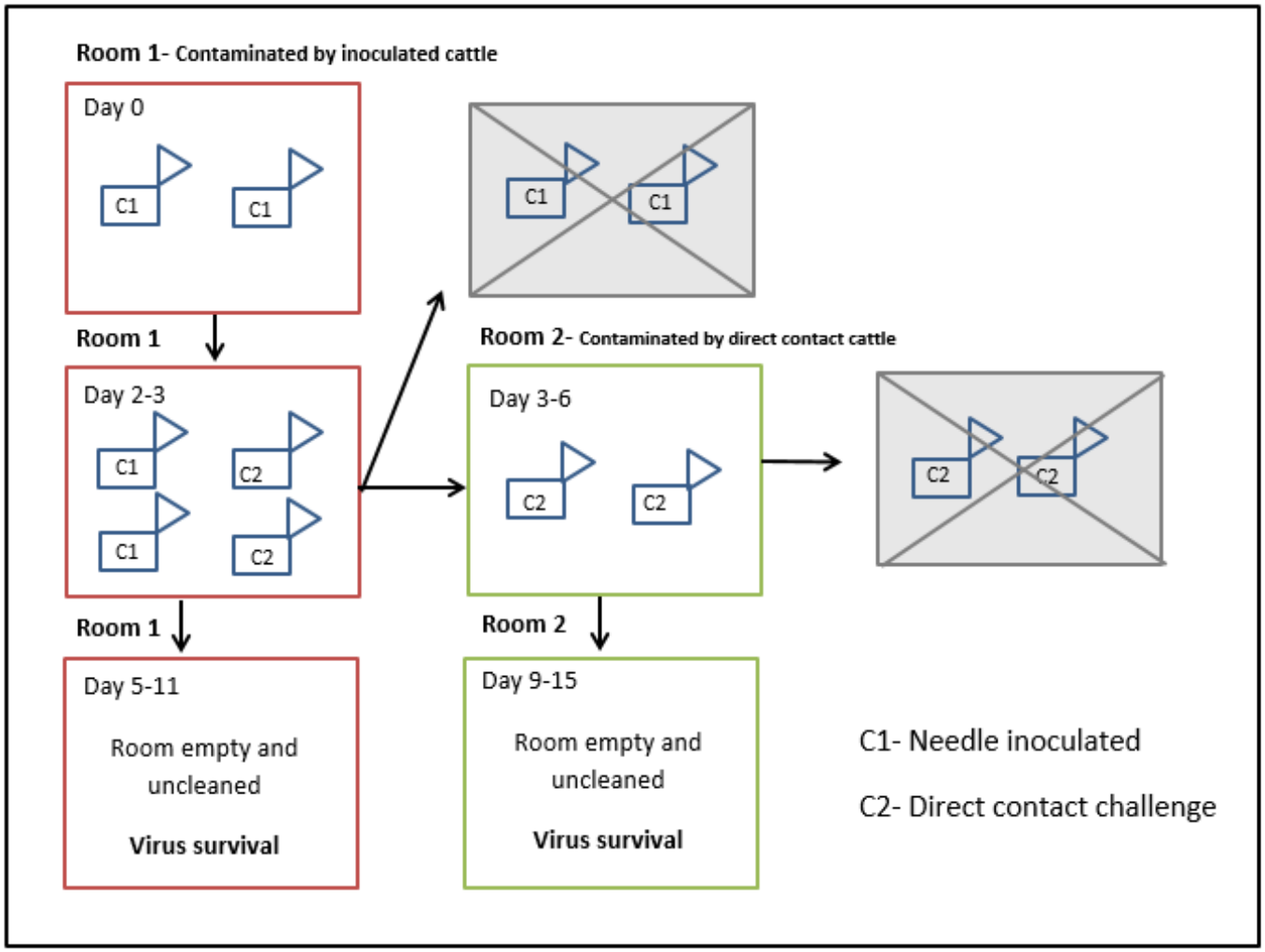
Study outline:

- ❑ 4x cattle transmission experiments to study environmental contamination and virus survival
- ❑ Environmental sampling to estimate the decrease in environment infectiousness over time
- ❑ Development of environmental sampling methods for surveillance

Transmission studies #1 & 2: Experimental plan



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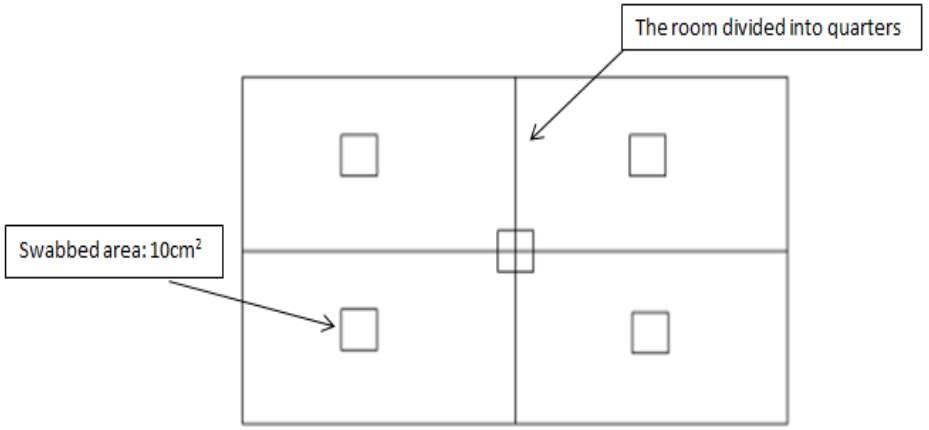
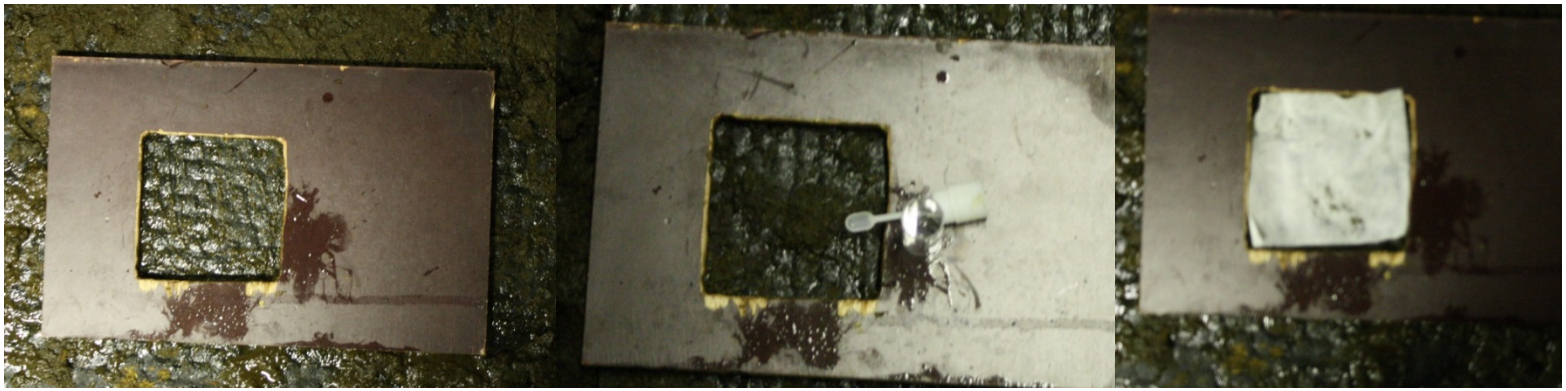
Transmission studies #1 & 2: Sampling plan

Samples collected:

- ❑ 2 Wall swabs (50x50 area)
- ❑ 5 Faecal samples
- ❑ 5 Floor swabs (10x10 area)
- ❑ 1 Food trough swab

Temperature: 19°C
Relative humidity: 60%





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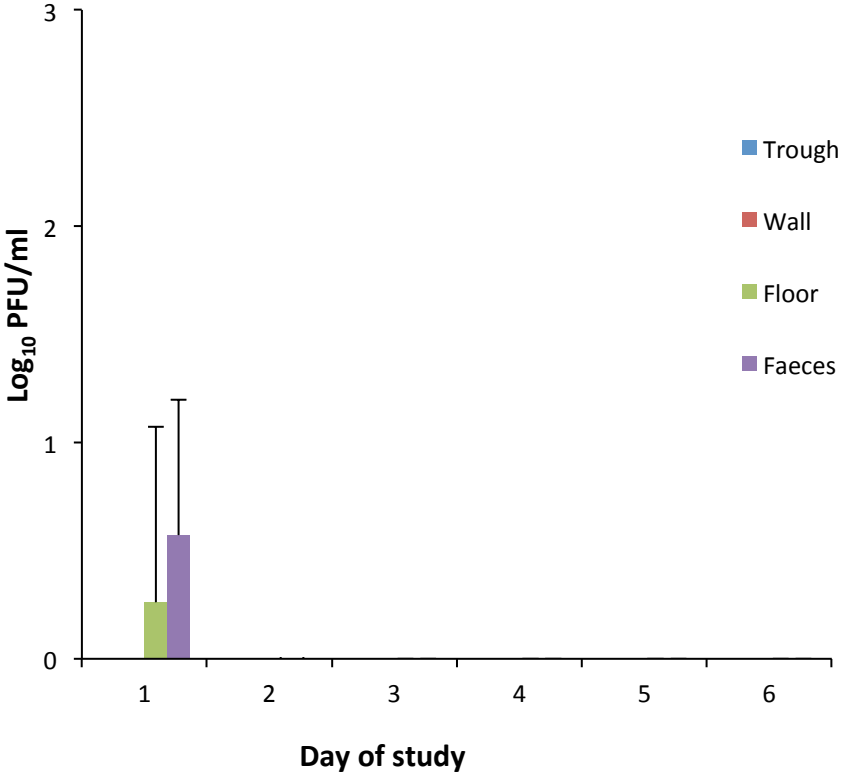
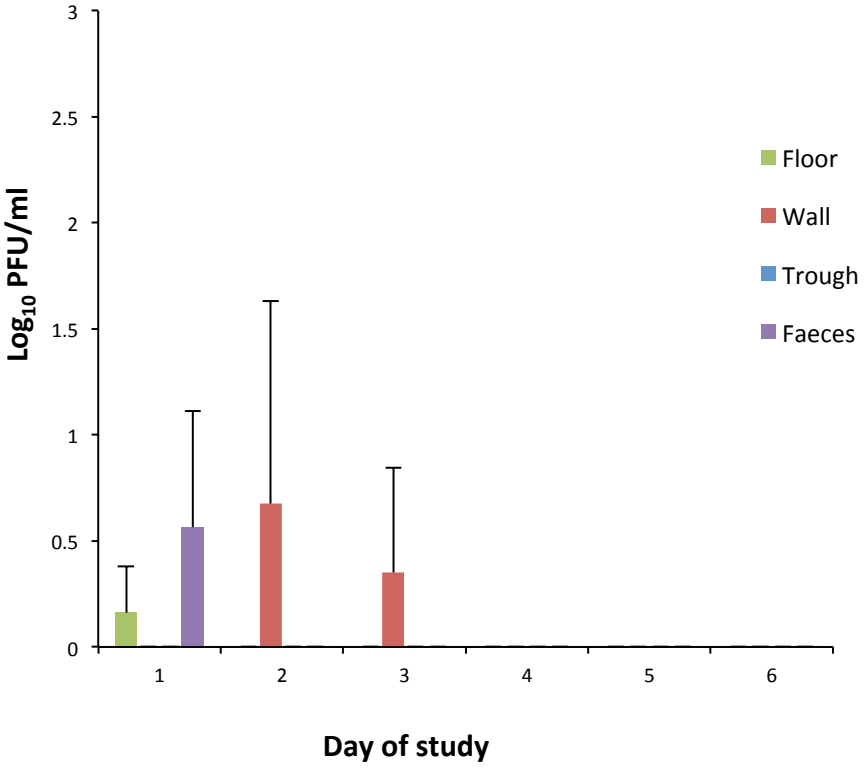
Transmission studies #1 & 2: Results- Room housing direct contact donors

Study 1



Study 2



N.B. Day 1 is Day 9 of the transmission studies

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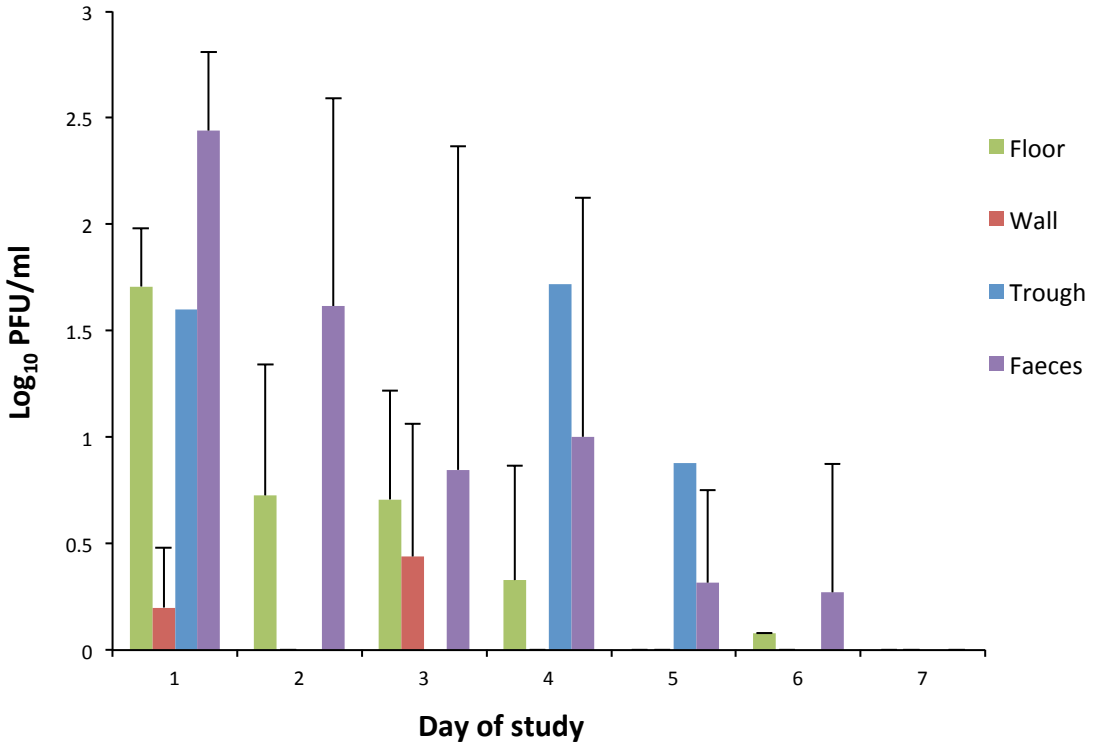
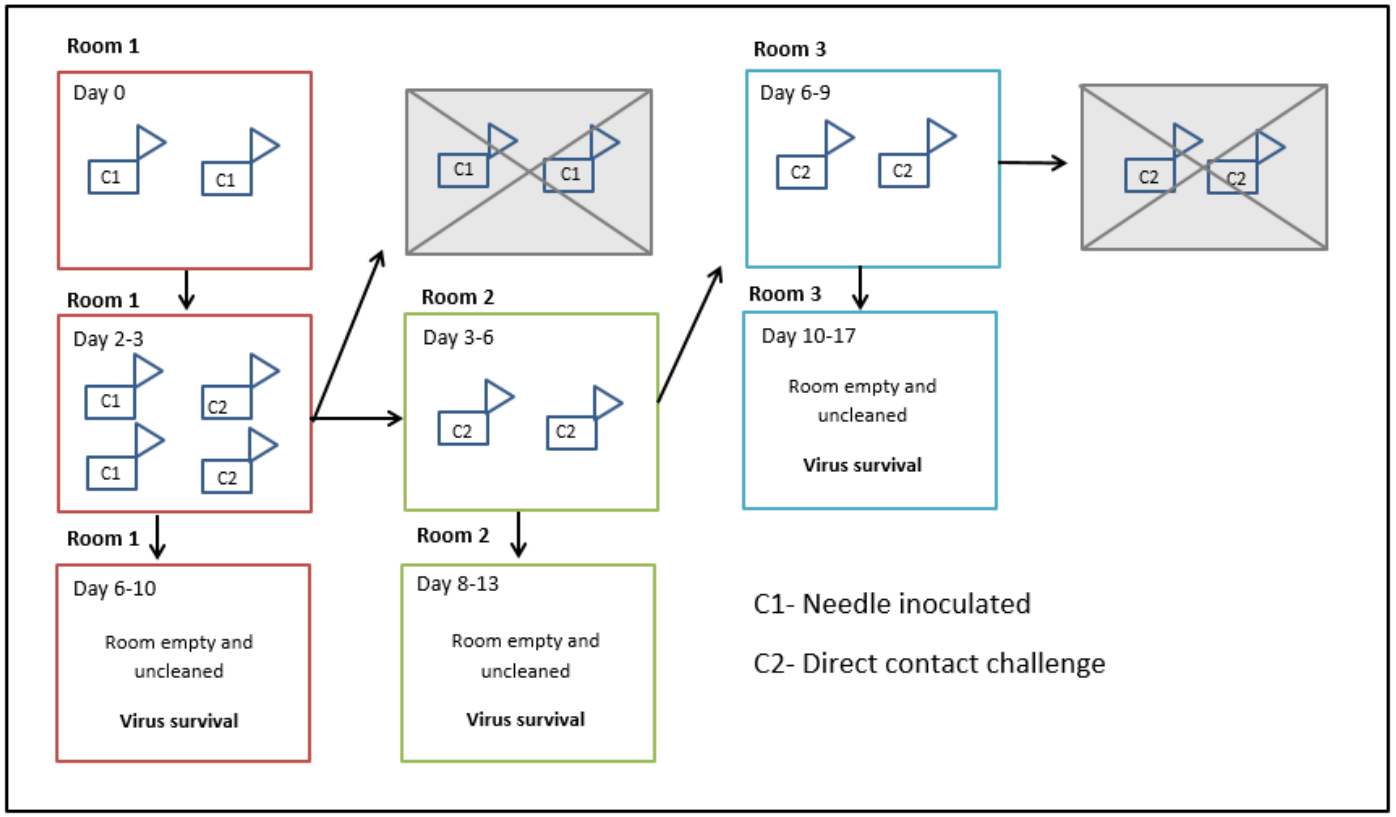
Transmission studies #1 & 2: Results- Room housing inoculated donors

Study 2



N.B. Day 1 is Day 5 of the transmission study

Transmission studies #3 & 4: Experimental plan / Sampling plan



Alterations to the sampling plan:

- ❑ 5 Wall Swabs (10x10cm)
- ❑ 2 Food trough swabs

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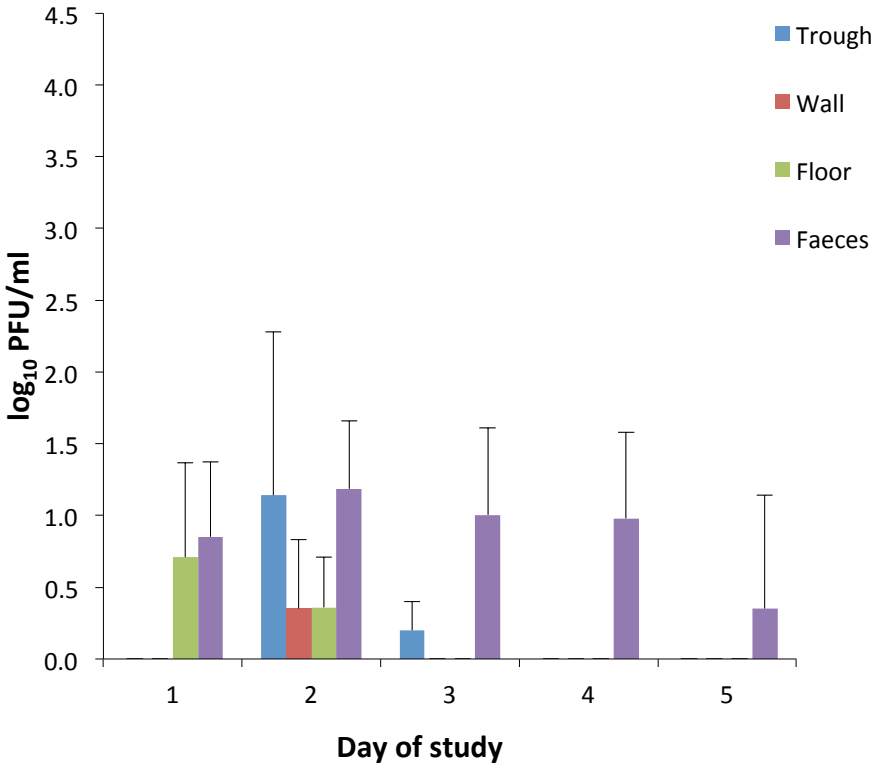
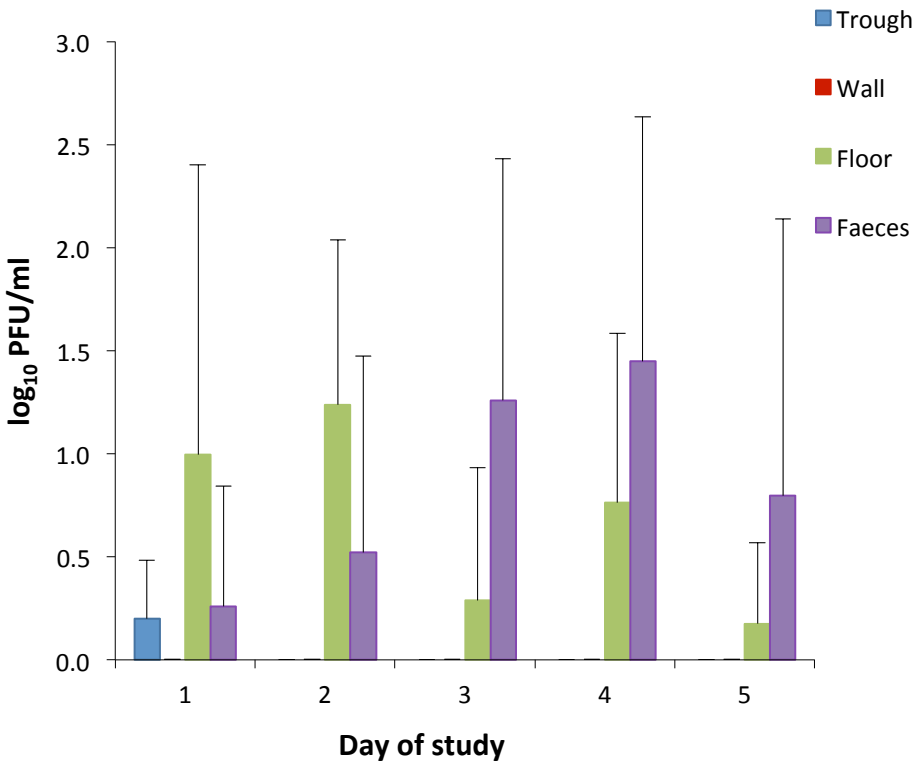
Transmission studies #3 & 4: Results: room housing inoculated donors

Study 3



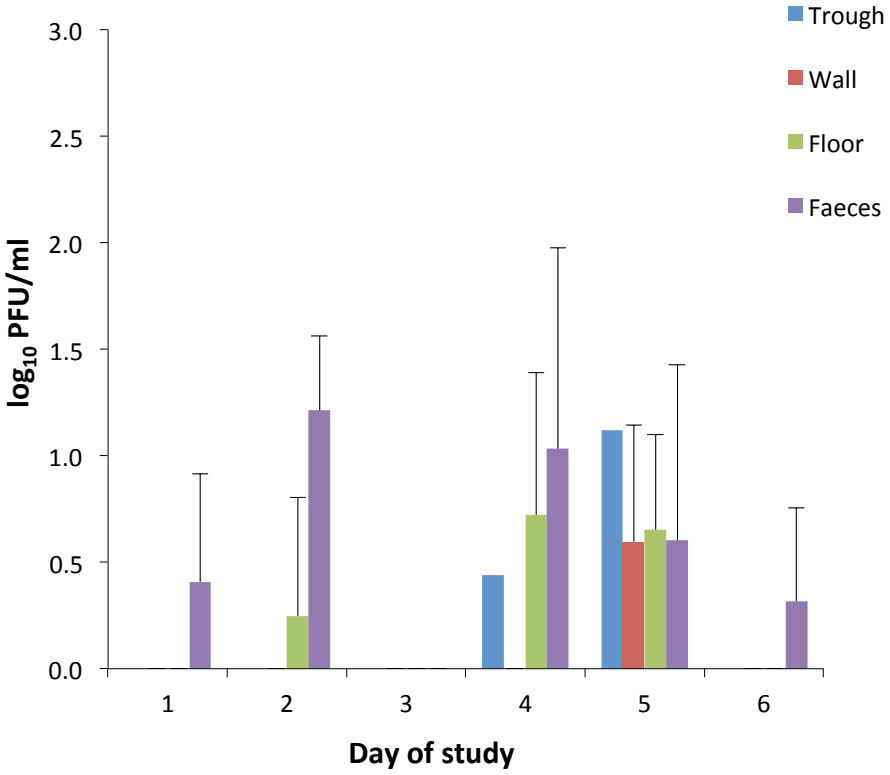
Study 4



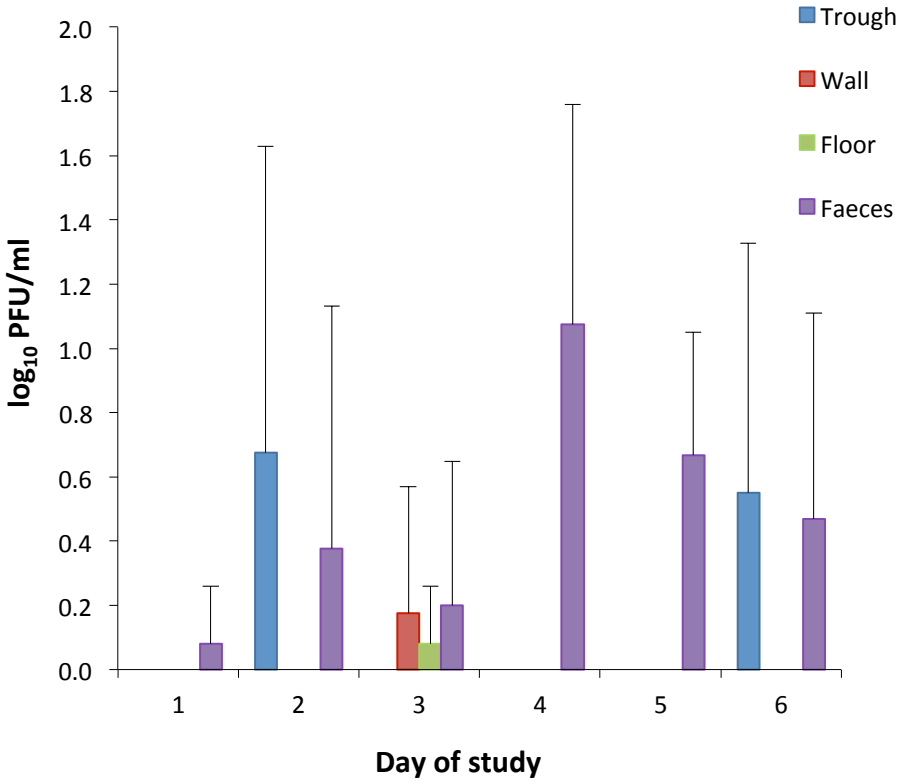
N.B. Day 1 is Day 6 of the transmission studies

Transmission studies #3 & 4: Results: room housing direct contact donors (Pre-clinical)

Study 3



Study 4



N.B. Day 1 is Day 8 of the transmission studies

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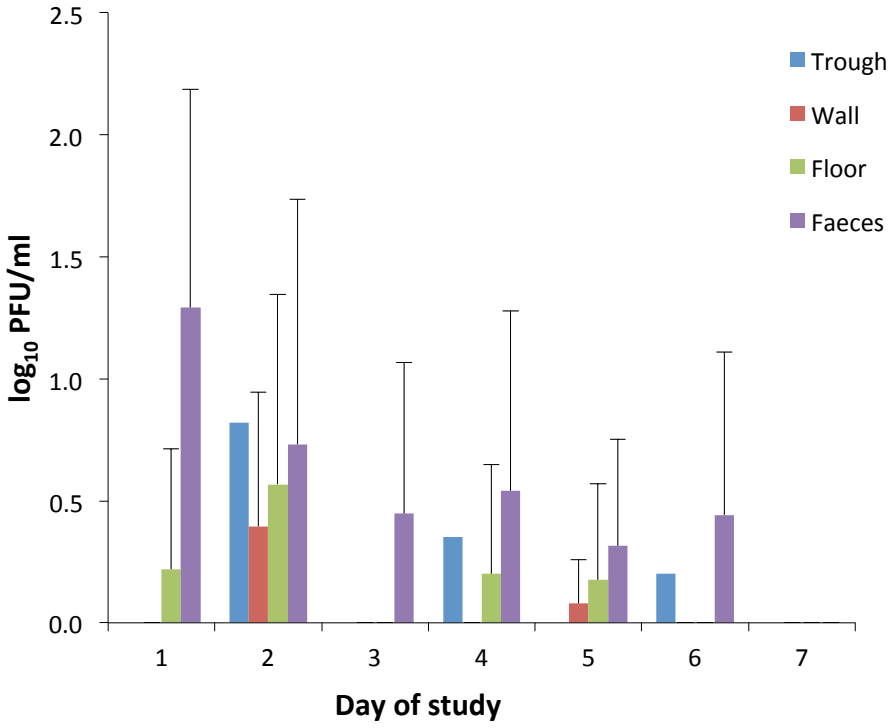
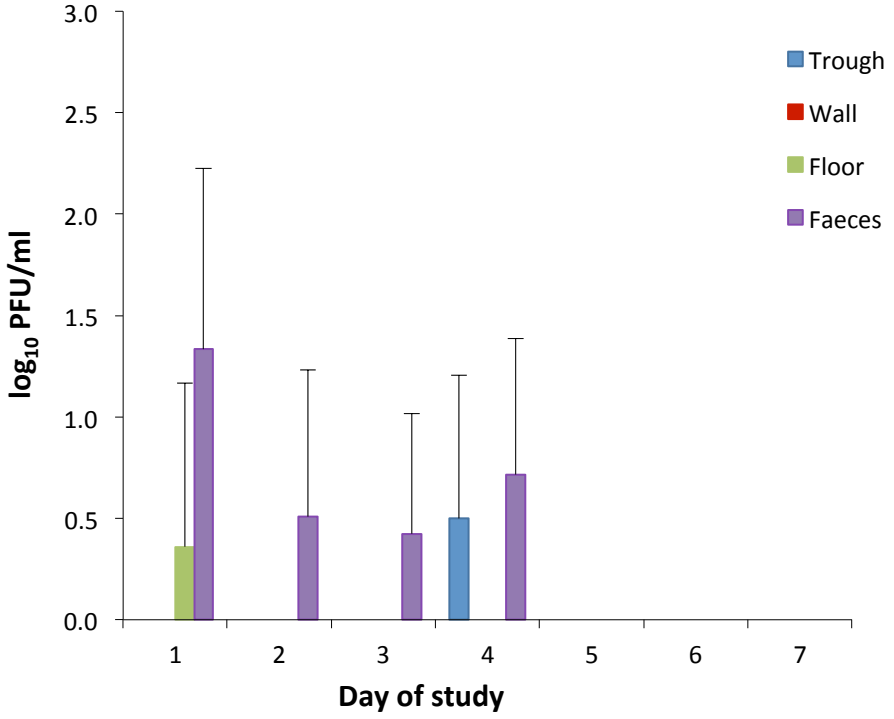
Transmission studies #3 & 4: Results: room housing direct contact donors (Clinical)

Study 3



N.B. Day 1 is Day 10 of the transmission study

Study 4



N.B. Day 1 is Day 11 of the transmission study

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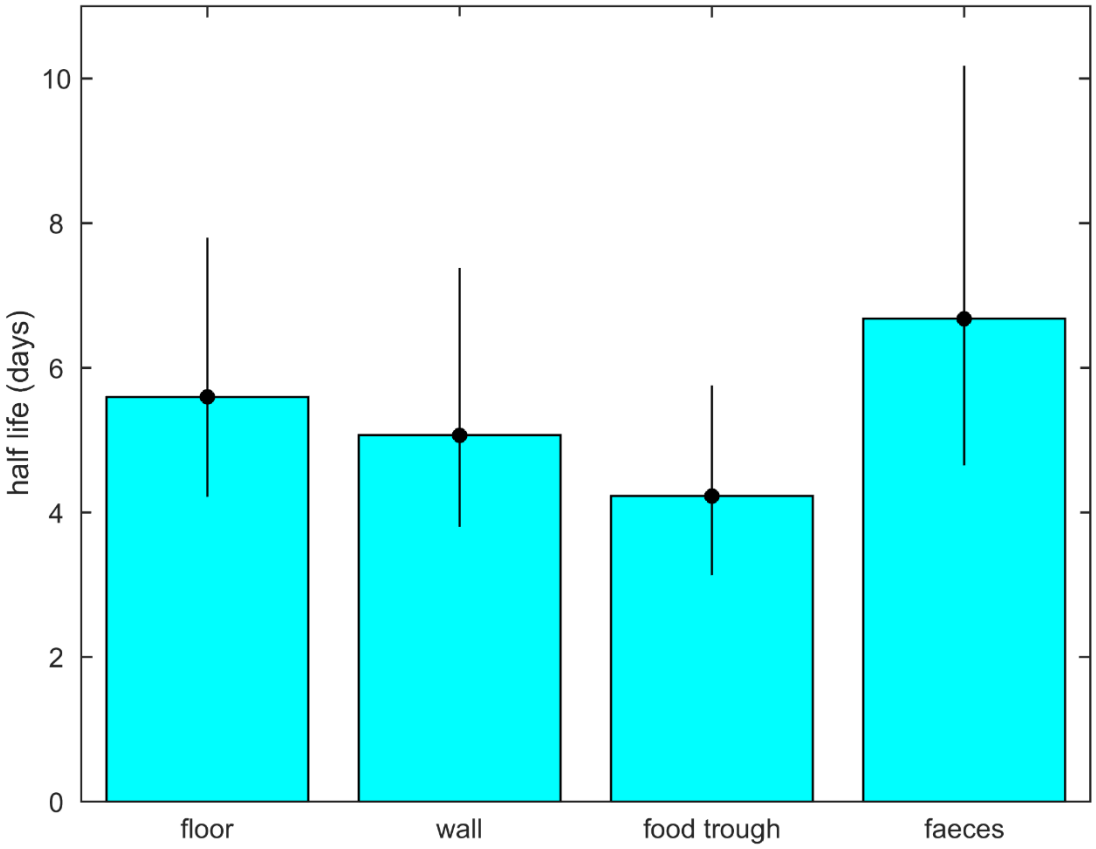
Half lives



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Conclusions

- Live virus can be detected up to 7 days after room has been evacuated.
- On average live virus was detected highest and longest in faeces.
- On average the lowest virus was detected on the walls and shortest on the food trough.
- There was not a large difference between virus titre and survival time between the rooms contaminated by clinical emission compared to pre-clinical emissions.
- The results of this study will be combined with those of the risk of transmission from exposure to contaminated environment. This will give a better understanding of the effect of disinfection and waiting time before re-population on the control of FMD outbreaks.

Acknowledgments

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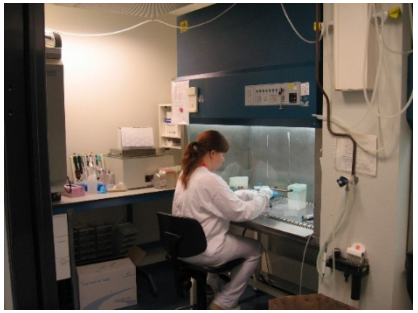

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