

'Antimicrobial' curtains do not prevent contamination with MRSA in a clinical setting

Background

Hospital curtains may be a source of MRSA. A new antimicrobial fabric (Cliniweave) claims to reduce bacterial contamination. Curtains made of Cliniweave fabric were recently introduced into all clinical areas within our hospital. This study investigated the effectiveness.

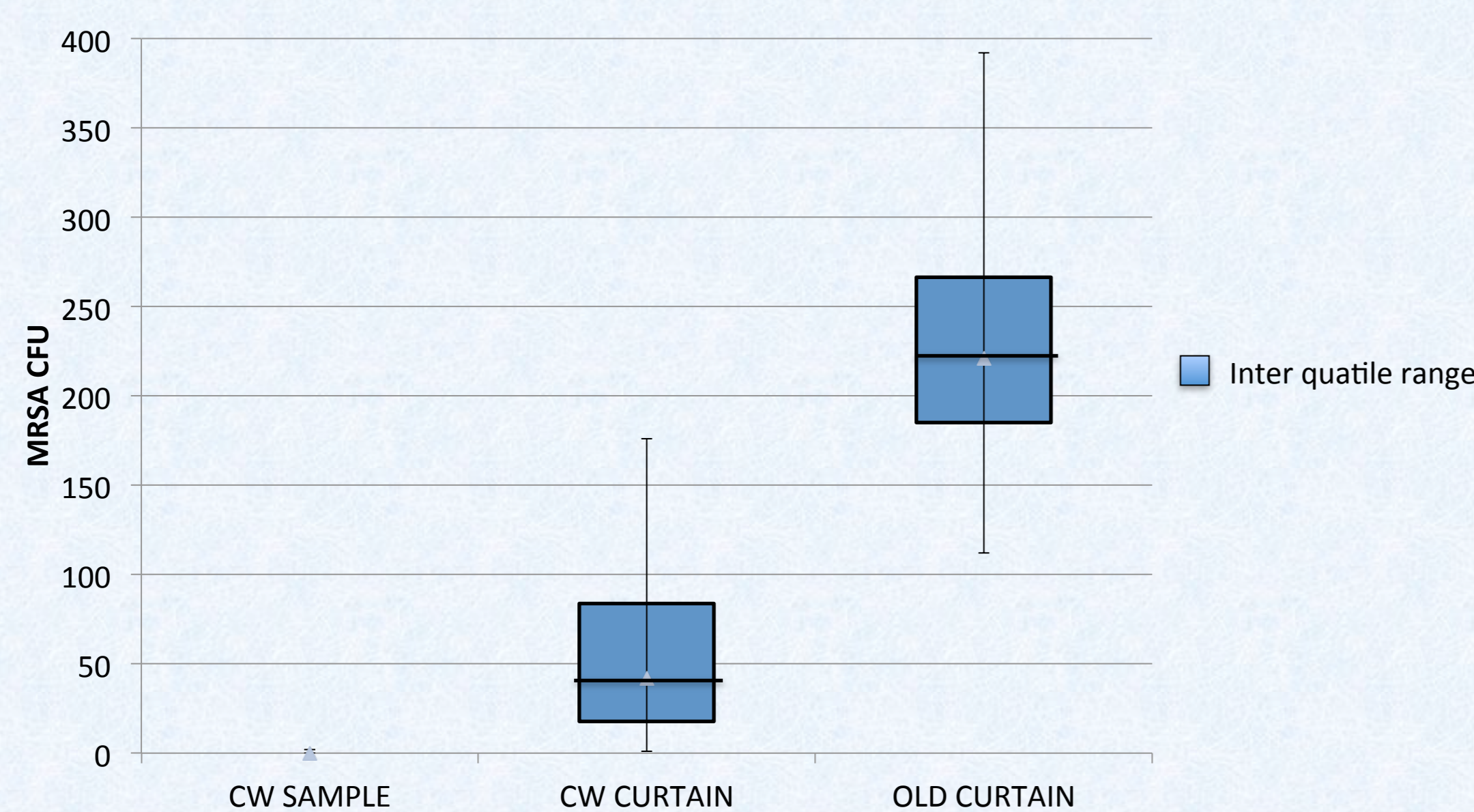


Method

Fabric squares were inoculated *in vitro* with MRSA and colony forming units (CFUs) recovered after 24 hours were counted. 269 Cliniweave curtains within wards were sampled using the 'sweep' plate technique. In a prospective control trial, 12 new Cliniweave curtains and 12 control curtains (same fabric but without Cliniweave) were sampled daily for 25 days using the 'sweep' plate technique on 2 wards (dermatology and elderly care).

Results

In vitro



Cliniweave materials were proven to significantly ($p < 0.001$) reduce the number of MRSA CFUs after 24 hours compared with a cotton curtain previously used in the hospital. There was also a significant difference ($p < 0.001$) between the Cliniweave sample we had been given and a Cliniweave curtain which had been used in the hospital.

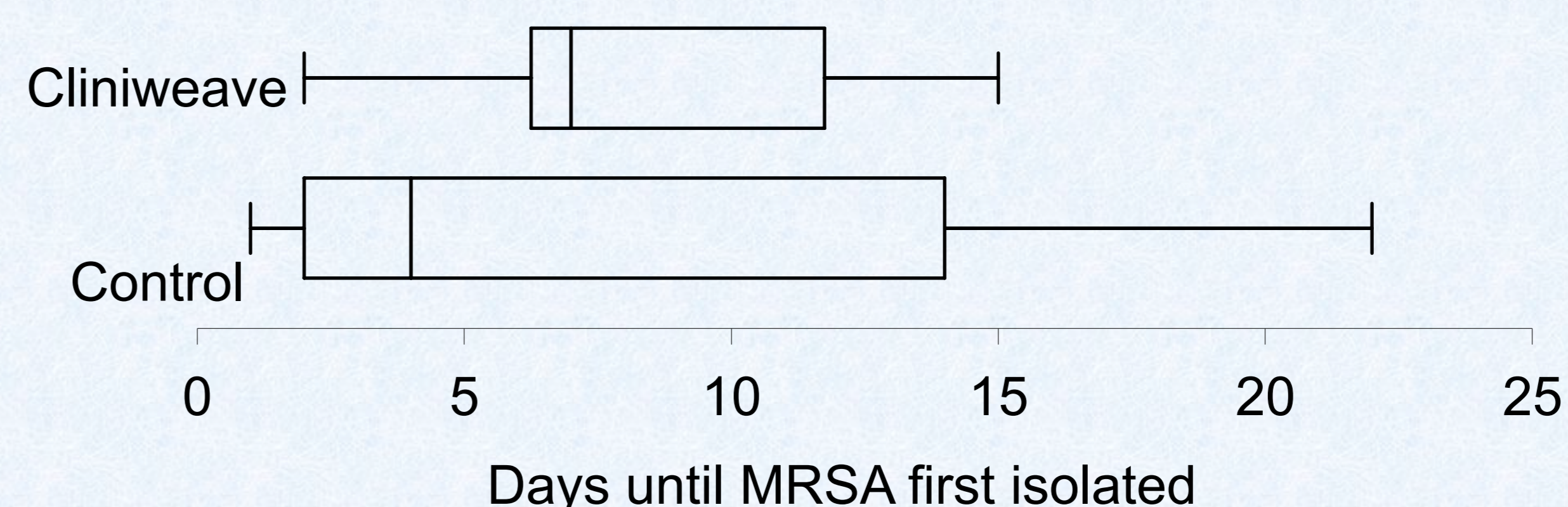
In a clinical setting

In the prospective control trial, 53.5% of curtains became contaminated with MRSA over 28 days.

MRSA	Yes	No
Cliniweave	10 (45%)	12
Control	13 (62%)	8

There was no significant difference ($p = 0.280$) between MRSA contamination of Cliniweave and polyester curtains.

There was also no significant difference ($p = 0.663$) in the number of days it took to first recover MRSA from a Cliniweave or a polyester curtain.



Effect of Laundering

There was no significant reduction in antimicrobial activity between 0 and 100 washes ($p = 0.058$) but there was a significant reduction in antimicrobial activity between 0-200 ($p = 0.008$) and 100-200 ($p = 0.036$).

There was however a significant ($p < 0.001$) reduction in hospital wide curtain contamination of MRSA after the introduction of Cliniweave curtains. However, there were other infection control measures implemented during this time which could have led to the reduction.

MRSA	Before Cliniweave	After Cliniweave
Yes	31 (15.5%)	13 (4.8%)
No	169	256
Total	200	269

Conclusion

Despite promising results *in vitro*, Cliniweave did not show any advantages over non-antimicrobial polyester curtains in a clinical setting. This discrepancy is probably due to the *in vitro* challenge being a liquid suspension of MRSA in contrast to the 'dry' inoculum from dust and hand contamination.