

Did SARS have a long-lasting effect on levels of nasal colonization and hand contamination of food handlers in Hong Kong?



J. Ho¹, M. Boost², M. O'DONOGHUE¹

¹School of Nursing, ²Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Kowloon, Hong Kong

BACKGROUND

- ❖ Hand and nasal carriage of *Staphylococcus aureus* in food handlers is recognized as a major source of food poisoning.
- ❖ During the SARS epidemic in 2003, strict enforcement of hand hygiene, use of face masks, and gloves was implemented in efforts to reduce viral transmission.
- ❖ Immediately before SARS onset, we commenced a longitudinal study of *S. aureus* colonization of food handlers.
- ❖ A marked drop in both hand and nasal colonization was observed in the follow-up performed two months post-SARS, which we attributed to compliance with improved hygiene measures.
- ❖ Long term effects of the interventions have not been investigated.
- ❖ This study investigated *S. aureus* colonization in food handlers eight years on.



Fingerprint impressions of *S. aureus* on MSA



METHODS

- ❖ 150 workers at four catering establishments provided nose and hand samples.
- ❖ Nasal swabs were enriched in Brain Heart Infusion broth supplemented with 5% NaCl at 37°C overnight and then subcultured onto SaSelect (Bio-rad).
- ❖ Hand contamination was estimated by fingerprint impressions of the dominant hand on Mannitol Salt agar.
- ❖ All isolates were confirmed by Staphaurex and tested for susceptibility to a range of antibiotics.

RESULTS

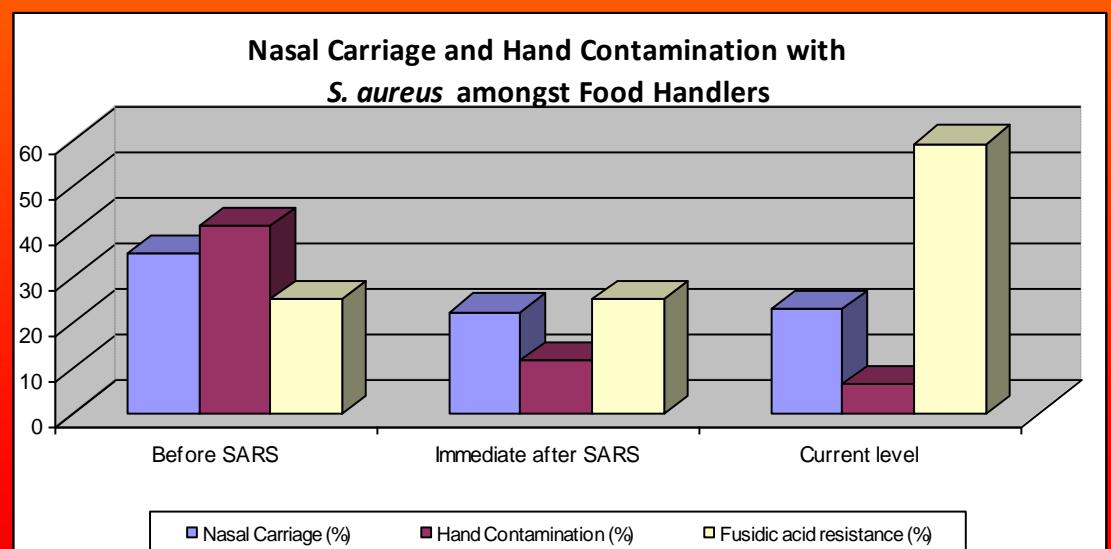
Pre-SARS nasal carriage was 35% and hand contamination 41%, reducing in the immediate post-SARS period to 22.3% and 11.5% respectively ($p = 0.001$).

In the current follow-up, the nasal carriage rate remained stable (22.8%) but hand contamination dropped to 6.5%.

Resistance to fusidic acid increased significantly over the period from 25 to 59%.

Reductions in tetracycline and erythromycin resistance rates were noted though not reaching significance. Resistance to other antibiotics appeared unchanged.

Methicillin resistance rates remain low. Strains isolated were SCCmec type V.



CONCLUSIONS

1. The remarkable decrease in colonization rates following SARS may be attributed to reduced opportunities for spread to transient carriers due to use of protective measures accompanied by improved hand hygiene.
2. Since the SARS outbreak, food handlers' routine use of gloves and masks if having respiratory symptoms, has resulted in sustained low colonization rates.
3. A significant increase in fusidic acid resistance may reflect increased use due to concern about community-associated MRSA infection.
4. Decreases in erythromycin and tetracycline resistance may reflect reduced local use of these agents.
5. Resistance to other agents had not increased and may be related to sustained efforts to reduce antibiotic prescribing in the community.

