
Annex E

Evidence on the link between improving Food Hygiene Compliance in Food Businesses and Improving Food Safety Outcomes

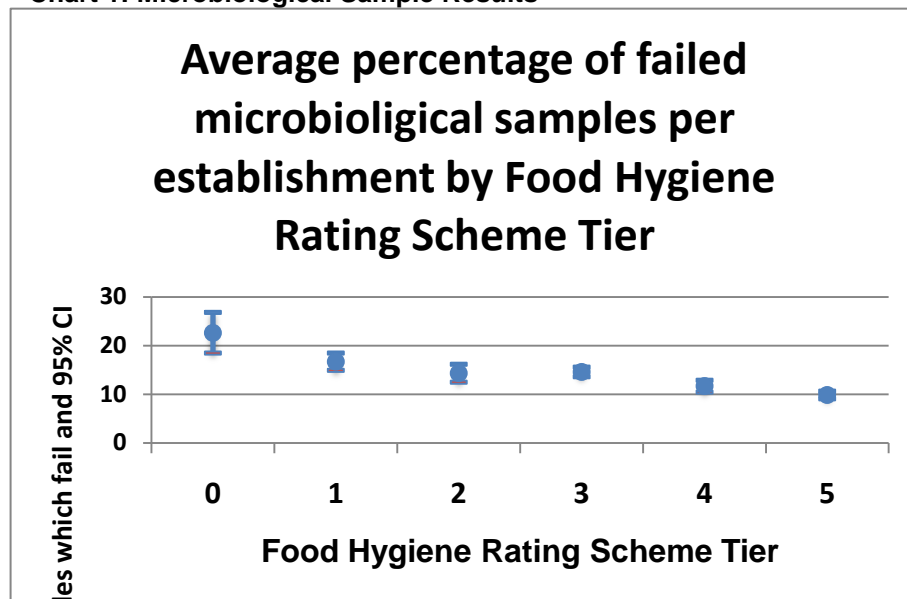
1. Evidencing a cause and effect relationship between the level of food hygiene compliance amongst food businesses and the public health outcomes associated with the burden of foodborne disease is a difficult task given the plethora of contributory factors and is not currently available for the UK.
2. Internationally, the most convincing evidence found of a link between foodborne disease and compliance is based on an evaluation of the food hygiene rating scheme in Los Angeles. Researchers showed that the introduction of the scheme resulted in a 13% fall in FBD hospitalisations¹. This change was in part due to improvement in compliance in food businesses, the rest of the effect was from consumers changing where they buy food. The analysis showed that both these effects happened as a result of the scheme but does not tell us the extent each of these drove the change in illnesses².
3. Intuitively the link between hygiene compliance in food establishments and health outcomes is clear, the production and sale of safe food reduces the level risk consumers are exposed to which in turn delivers improvements in public health protection. There is a larger body of evidence on the link between hygiene compliance (and/or HACCP an important element of hygiene compliance).
4. FSA analysis of microbiological sampling results by compliance scores for food establishments found that microbiological samples taken from non-compliant establishments (equivalent to the lower tiers in the Food Hygiene rating Scheme), are more likely to have a higher proportion of unsatisfactory results than those with a higher standard of compliance (see Chart 1³, below).

¹ Impact of Restaurant Hygiene Grade Cards on Foodborne Disease Hospitalizations in Los Angeles County, Ginger Z. Jin, Phillip Leslie, Paul Simon, Grace Run, Roshan Reporter, Arturo Aguirre and Jonathan E. Fielding *Journal of Environmental Health*, March 2005, Vol. 67, 32-36 <http://kuafu.umd.edu/~ginger/research/JEH-final.pdf>

² The Effects of Information on Product Quality: Evidence from Restaurant Hygiene Grade Cards, Ginger Z. Jin and Phillip Leslie, *Quarterly Journal of Economics*, May 2003, 118(2), 409-51 <http://kuafu.umd.edu/~ginger/research/restaurant-hygiene-wpversion.pdf>

³ Analysis carried out on establishment level data collated from Local Authorities through the LAEMS system for 2008/09, where 286 out of 434 Local Authorities submitted this level of data.

Chart 1: Microbiological Sample Results



5. This is supported by findings from LGR (formerly LACORS) co-ordinated microbiological sampling programmes. A number of these have shown statistically valid relationships between contamination rates and factors associated with the compliance of a food businesses e.g.:

- A recent survey of cheese⁴ found a higher proportion of samples were of unsatisfactory microbiological quality in establishments where there was little or no confidence in management (one of three elements of an establishments compliance score), and in establishments rated as Risk categories B or C than category D.
- Results of a shopping basket survey⁵ found a higher percentage of unsatisfactory microbiological quality samples from premises in Category A than other categories (13% compared to between 0.4% and 1.1%). A higher proportion of samples from category A premises also contained *Listeria*.
- In a study of ready to eat meat products, more unsatisfactory samples were from premises rated D (37%) than rated C (31%), B (35%) or A (26%). This was only a significant difference when comparing D with C⁶.

⁴ <http://www.lacors.gov.uk/lacors/ContentDetails.aspx?id=16479>

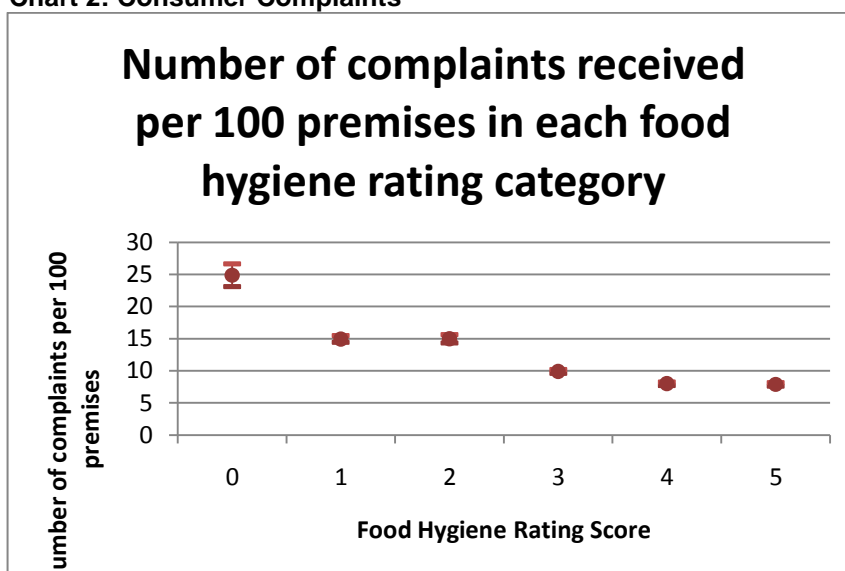
⁵ <http://www.lacors.gov.uk/lacors/ContentDetails.aspx?id=19849>

⁶ <http://www.lacors.gov.uk/lacors/ContentDetails.aspx?authCode=1D87D70&id=6681>

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6. European baseline surveys have suggested that differences in slaughterhouse practices have an impact on microbiological contamination⁷. It is however not known if these practices reflect differing degrees of regulatory compliance.
7. Finally, as well as the microbiological quality of foods, evidence also suggests a link between compliance and the frequency of complaints made to Local Authorities (Chart 2). FSA analysis of LAEMS data⁸ shows that consumers complain significantly more frequently to LAs about establishments that fall below the broadly compliant threshold (0, 1, 2 on the FHRS scale) than those above it, and complain most frequently about those establishments in the lowest compliance tier.

Chart 2: Consumer Complaints



⁷ Analysis of the baseline survey on the prevalence of Salmonella in slaughter pigs, in the EU, 2006-2007 - Part B:

<http://www.efsa.europa.eu/en/scdocs/scdoc/206r.htm>

Analysis of the baseline survey on the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses, in the EU, 2008 - Part B: <http://www.efsa.europa.eu/en/scdocs/scdoc/1522.htm>

⁸ Analysis carried out on establishment level data collated from Local Authorities through the LAEMS system for 2008/09, where 368 out of 434 Local Authorities submitted this level of data.