Food Water and Environmental Microbiology

Sampling and the Health Protection Agency

Rob Johnston
Health Protection Agency

http://www.hpa.org.uk
Health Protection Agency - Services

Health Protection Services in the East Midlands
Health Protection Agency
Changes to FW&E laboratories – Nationally
Health Protection Agency FW&E Labs
HPA FW&E laboratories – 2011; SIX SITES

Preston

~140 staff 160,000 samples

Leeds

B’ham

Bristol

Porton
• **London (Colindale)** – serving London LAs, the East of England, Bucks, Beds, Herts etc

• **Porton, Salisbury** – serving the South areas and South East

• **Bristol** – serving the South West, inc. Cornwall & Devon

• **Birmingham** – serving the West Mids, East Mids (Leics and Northants), Oxfordshire, Staffs/Shropshire Powys etc

• **Leeds** – serving Yorks &Humber, the East Mids and North East of England

• **Preston** – serving the North West, areas of North Wales, Merseyside, Cheshire, Manchester etc
Continued - service delivery - across a wider area (Transport infrastructure, cool boxes and temperature control)

Access - to the FW&E laboratory – samples

Re-active & Proactive – sampling during outbreaks and incidents

Access - to FW&E microbiologists and Food Examiners

Out-posted Scientist – support outside the lab

Development - of pro-active sampling plans

Supporting - liaison and sampling groups locally

Training - and consistency – across the patch/country etc
Health Protection Agency FW&E Labs

Challenges & Developments

National investment - in cool boxes and data-loggers

Outsourced transport provision through Royal Mail Same Day Delivery

Transport service specification

Innovations introduced include:

• late and early collections/extended laboratory hours
• ad-hoc collections
• continued and improved use of pick up points
Health Protection Agency FW&E Labs
HPA– Challenges & Developments

• Developments in FW&E microbiology eg PCR techniques for rapid confirmatory tests
• Development - of standard algorithms - for samples
• Standard Operating Procedures – across network
• Standard Request Forms - for consistency etc
• New Lab IT System – LIMS (Laboratory Information Management System)

• Development of FW&E expertise - and support within and across the HPA FW&E network
Standardised Consumables
– and guidelines on interpretation
Health Protection Agency
HPA FW&E Guidelines

HPA Guidelines for assessing the Microbiological Safety of Ready-to-Eat Foods Placed on the Market
Issued November 2009

http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259151921557

Examining Food, Water and Environmental Samples from Healthcare Settings
Issued July 2011

http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1296681857486

Environmental guidelines – in progress
LG Regulation/HPA studies:
Partnership with LAs and Others

• In consultation with LAs and others since 1994
• Various outputs
• Targeted at specific food hygiene problems.
• Combine direct observation of hygiene & practices with sampling & assessment of microbiological quality

The Future -
• Re-active studies with public health focus
• Regional, cross regional and local studies to focus on local public health issues
Taking a Clean Look at Sampling Dishwashers; a Regional / X-Regional Study

- 463 samples – from 58 premises
- 15 premises types
- 32 (7%) unsatisfactory – due to Enterobacteriaceae or E coli or both
- 28 – internal surfaces
- 4 – recently washed items
- Lower temperatures of wash cycle noted
## Proactive Health Protection/Public Health

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**Study Standard LGR/HPA study**

**Study Reactive Response Study** reacting to current public health incident or outbreak
Issues with Salmonella Bareilly 2010

• Epidemiology
  • National increase August to November
  • 231 confirmed cases in England Wales and Scotland (1 death)
  • One wedding party (37 cases, 7 confirmed)
  • Case control studies identified risk of bean sprout consumption

Food Microbiology
  • Mung beans on retail sale
  • contaminated with *S. Bareilly*

Molecular Microbiology
  • *S. Bareilly* from cases and mung bean sprouts indistinguishable
Reactive Study: Study 42

Survey of bean sprouts of retail sale
Jan to March 2011
Analysis ongoing

*Salmonella* Abaetetuba detected in multiple packs of Bean Sprouts on retail sale
Product recall 2\textsuperscript{nd} March 2011

*Salmonella* Amersfoort - Mung Bean Sprouts and Stir fry

England 1988, 143 cases of *Salmonella* Saint-Paul
Case control study - association with mung bean consumption
Planned study 2011
Study 43. Lightly cooked foods

April-Sept 2011
Including sampling of:

- sous vide foods cooked by water bath,
- rare duck meat (pink duck),
- chicken parfait
- pâté made with flash fried liver.

✓ Retail or catering
✓ Details of the cooking and food handling practices collected
✓ Samples - collected as served to the customer
✓ Tested - for a wide range of bacteria, including *Salmonella* spp. and *Campylobacter* spp.
Reactive study 2011
Ongoing issues - *Salmonella* and duck eggs

Recent data associating a risk of infection from this product

*S. Typhimurium DT 8*

- 36 cases from 1 January – 26 June 2011
- 27 cases in January – June 2010
- 15 cases in January – June 2009
- 17 cases in January – June 2008

*Cases linked to duck eggs through epidemiological investigations*

Ongoing FW&E investigations
Outbreak: Vero cytotoxic *E. coli* O104
Germany & France .....etc

Sprouting seeds – again!
Outbreak in Germany
3,889 cases since May 2011

Cluster of cases in France
15 cases in June-July 2011

Use of rapid PCR testing in HPA FW&E labs
Early Epidemiology
Outbreak of Cholera in London in 1854
Egg-sample of Working Together 2011
Local Public Health - Salmonella enteritidis PT6
The Health Protection Agency
FW&E Laboratories – Supporting Local Authorities and Health Protection
Thanks
LA colleagues
HPA FW&E Microbiology
HPA

http://www.hpa.org.uk