Health impact of the *Salmonella enterica* serotype Enteritidis phage type 4 epidemic

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Background

Special Report
Scares prompt Food Agency move
Background

Salmonella

Salmonella is one of the most common causes of food poisoning and can be fatal. It is contracted mainly through eating raw or undercooked food.

Salmonella came to prominence when Edwina Currie MP, a junior health minister, said in 1988 that most eggs in Britain were infected with the bacterium. Her comments sparked a public outcry and two weeks later she resigned.

But by early 1989, the House of Commons Select Committee on Agriculture had investigated the issue and concluded there was a link between eggs and salmonella poisoning.

Relevant Stories
- 13 Jan 98 | UK Food expert warns of crisis
- 13 Jan 98 | Background Salmonella poisoning
- 05 Dec 97 | Special Report BSE - The story so far
- 16 Oct 97 | Background BSE

Internet Links
- Ministry of Agriculture, Fisheries and Food
- Institute of Trading Standards
Background

Egg fans uneasy about FDA's 'No over easy' advice

December 8, 2000

Egg-safety measures to be announced today

July 1, 1999
Web posted at: 8:45 a.m. EDT (1245 GMT)

WASHINGTON (CNN) -- A government report says federal agencies need to do a better job of fighting salmonella contamination in eggs. And, as a result, new safety initiatives will be announced Thursday.
Background

Health

Chickens to be vaccinated against salmonella

Thursday, June 18, 1998 Published at 12:14 GMT 13:14 UK

Health

Salmonella infection cases drop

You are in: Health

Saturday, 10 February, 2001, 00:40 GMT

Eggs from vaccinated hens have helped cut salmonella cases

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See also:

- 05 Feb 01 | Northern Ireland
  'One in ten' suffered food poisoning
- 06 Sep 00 | Health
  Food poisoning 'pits and not under-reported'
Aims

To estimate the health impact of the emergence of indigenous foodborne *Salmonella enterica* serotype Enteritidis phage type 4 (IFSE4) on the population of England and Wales during the period 1981 - 2000.
Methods

Laboratory reports of S. Enteritidis PT4 (SE4) to PHLS
Methods

IID (Population) study

Laboratory reports of S. Enteritidis PT4 (SE4) to PHLS

All SE4 illness in England & Wales

Data for England and Wales
Methods

IID (Population) study → Laboratory reports of S. Enteritidis PT4 (SE4) to PHLS

LabBase data → All SE4 illness in England & Wales → All indigenous SE4 illness

Data for England and Wales
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LabBase data

GSurv Data

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Indigenous foodborne SE4

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- Indigenous foodborne SE4
- IID study
- Family doctor
- GSurv Data
- Hospitalizations

Data for England and Wales
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HES

Hospitalizations

Hospital occupancy

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Family doctor

Hospitalizations

Hospital occupancy

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Deaths

Data for England and Wales
Laboratory reports of S. Enteritidis PT4 (SE4) to PHLS

 IID (Population) study
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 GSurv Data
 IID study
 GSurv Data
 HES

 IID Study
 GSurv Data

 Family doctor
 Hospitalizations
 Hospital occupancy

 Costs

 All SE4 illness in England & Wales
 All indigenous SE4 illness
 Indigenous foodborne SE4

 Hospitalizations
 Deaths

 Data for England and Wales
Results - Illness due to IFSE4

Year

Number


0 50000 100000 150000 200000 250000 300000 350000 400000 450000 500000 550000 600000 650000 700000

900
Results - Illness due to IFSE4

Number

Year


12,000

0 10000 20000 30000 40000 50000 60000 70000
Results - Illness due to IFSE4

Number

Year


59,000
Results - Illness due to IFSE4

Vaccination of poultry flocks

Number

Year

Results - Illness due to IFSE4

Number

Year


586,000
Results - Health impact of IFSE4

- 419,000 patients presenting to family doctors
- 18,000 hospitalizations (acute phase)
- 104,000 patient days in hospital (acute phase)
- 1,300 deaths
Results - Illness due to IFSE4

Number

Year


0 10000 20000 30000 40000 50000 60000 70000
Results - Illness prevented

Prevented Cases

Number

Year


88,000
Results - Impact 1998 - 2000

Estimated prevention of:
- 80,000 illnesses
- 63,000 people presenting to family doctors
- 2,700 hospitalizations
- 16,000 bed days
- 190 deaths

Estimated cost saving of: $48,000,000 (1995 prices)
Conclusions

- IFSE4 - profound impact
- Sharp decline following interventions by the food industry
- Benefits to individuals
- Savings to the Health Service
Eggs follow hens
Hens follow eggs
Interventions should follow science
Science should follow interventions

Epi/micro

Intervention
Moral

Good science can make a difference.