



Ministry of Environment
and Food of Denmark
Danish Veterinary and
Food Administration

Codex-Standard on (micro)-biological Crisis and Outbreak Management

A
”need to have”
guidance

CCFH49
17-11-16
Zanne Dittlau

Food borne outbreaks – a matter that's concerns all of us

An estimated 600 million – almost 1 in 10 people in the world – fall ill after eating contaminated food and 420 000 die every year.

Foodborne diseases impede socioeconomic development by straining health care systems, and harming national economies, tourism and trade

Food supply chains now cross multiple national borders. Good collaboration between governments, producers and consumers helps ensure food safety

A cross-country and cross institutional network of efficient global preparedness against food borne diseases with standardized methods and standardized interpretation and exchange of results is essential.

A common Codex guideline is an essential step in the right direction



Ingrediens in a successful investigation and case handling

Denmark has a comprehensive system in place and the system is based on a large and necessary governmental cooperation as well as a good knowledge of and cooperation with companies and industries both nationally and internationally.

Competent health and food authorities handling:

- **Human surveillance / analyses data**
- **Food/veterinary surveillance / analyses data**
- **Laboratory capacity and methodology**
- **Epidemiological methods and means of data collection/ evaluation**
- **Knowledge on food technology and consumption patterns**
- **Food control systems and traceability (national and international)**
- **International trade and communication**

However there is always room for improvement



Outbreak of Listeriosis Denmark 2013 - 2014

28/4-2014

A sample of lamb meat roll sausage was taken in line with normal official control. The sample was found **positive** for **Listeria monocytogenes**.

6/5-2014

The **batch** of lamb meat roll sausage was **withdrawn** from the market. The product had “only” been sold to catering, institutions and to one establishment for further processing / slicing.



10/7-2014

State Serum Institute reports an **outbreak of listeriosis** with distinct type ST224. At the time of the outbreak SSI had 4 cases dating back to 2013 and 13 cases from May to July 2014.

10 of the cases were fatal

Interviews were ongoing at the time. **And new cases were expected.**



Outbreak of Listeriosis Denmark 2013 - 2014

SSI (human) and DTU (food) compared listeria isolates by WGS. **Initial comparison showed no match** between food isolates and human isolates however one food isolate seemed to be closer related than others.



16/7-2014

New analyses were started on this isolate towards the human isolates performed at the same equipment at SSI.

18/7-2014

Suspicion was raised by SSI that some of the cases had acquired the infection from **food served at institutions** to where they were admitted (hospital and/or nursing home). Information on the locations were forwarded to DVFA for further tracing in the period between 18/7 and 25/7-2014. At this time **the outbreak counted 29 cases and was growing**



Outbreak of Listeriosis Denmark 2013 - 2014

28/7-2014 to 7/8-2014

Interviews revealed that “suspicious” food items was served at 4 institutions where the patients had been hospitalized and that they related to FBO “X” and “Y” directly og indirectly. **Evidence was found that products from two establishments could be the source of contamination: Products from FBO “X” and products from FBO “Y”.** “Y” received products from “X” for further slicing besides their own production.



7/8-2014

Result of the new analyses on isolates was ready – **A match between the lambs meat roll sausage and cases was found and reported by SSI.**

8/8-2014

Inspection with sampling of products and environment was performed at FBO “X” . **Until that date only on sample had shown Listeria monocytogenes in the period from 2012 to 7/8 2014.**



Outbreak of Listeriosis Denmark 2013 - 2014

11/8-2014

Results of samples were received: **1 environment sample was positive and samples from 9 products showed presence of *Listeria monocytogenes*.**

11/8- 2014

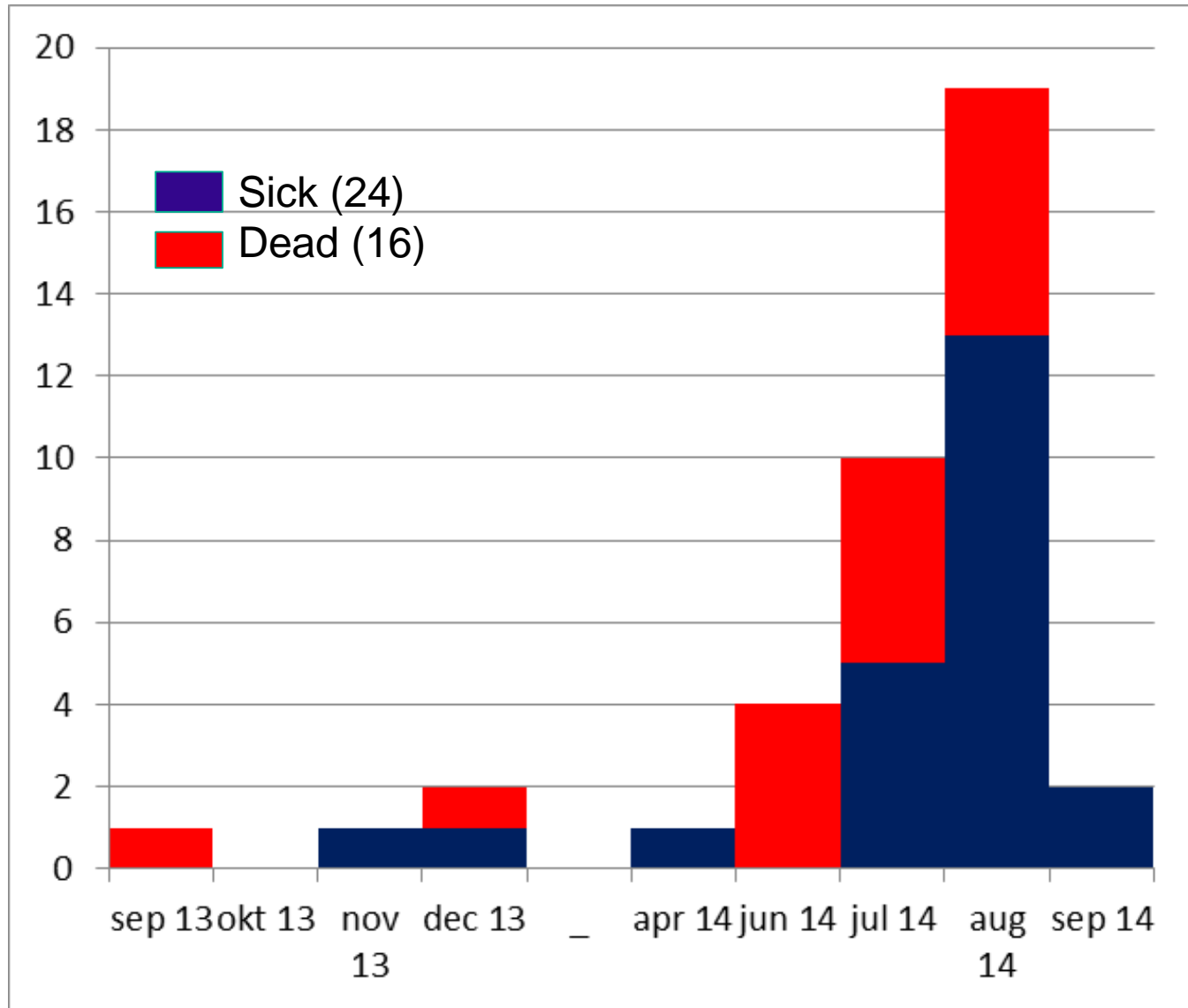
Sampling was performed at FBO “Y” and two establishments more which initially had received products from FBO “X” for further packing or processing.

The recall was initiated on the 11/8 including all FBO’s which had received products from FBO “X” and all products produced at FBO “X” from the 28th of April to the 11th of August 2014 (everything on the market , stored and frozen). Inspection at all recipients was performed (> 6000 establishments)

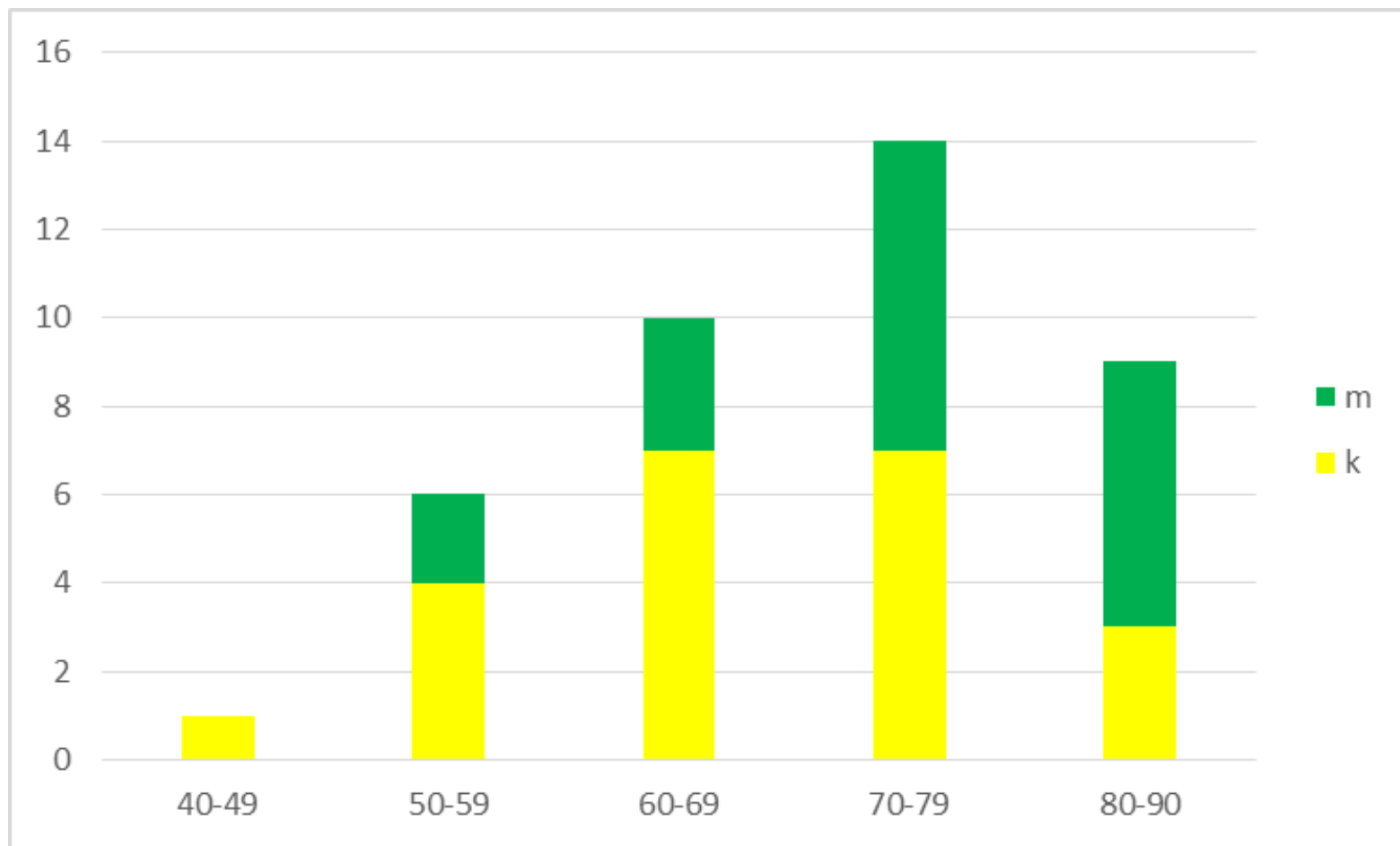
The recall was proved effective - the outbreak stopped.



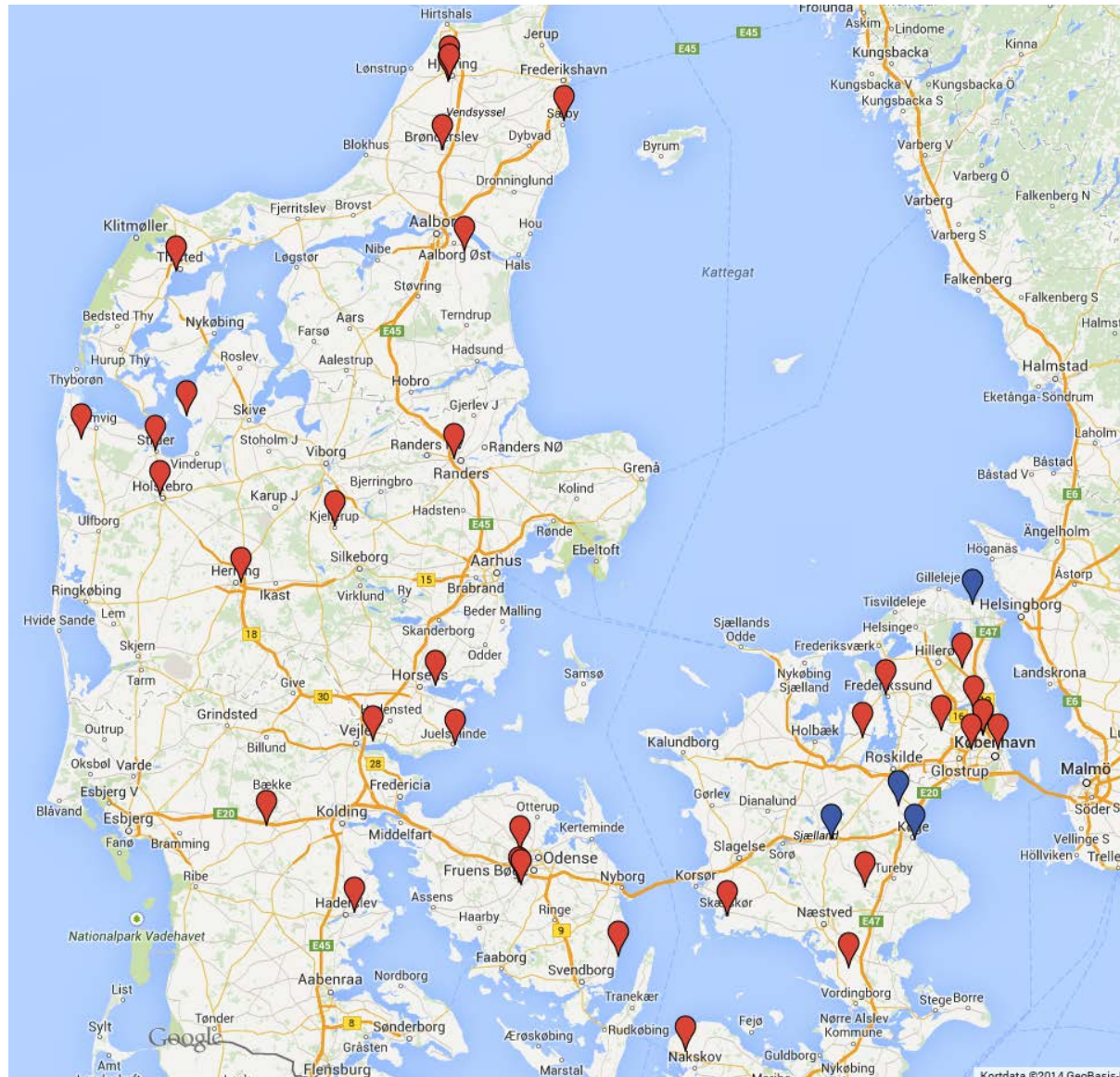
Epicurve september 2013 – september 2014



Gender and age N=40



Geografi september 2013 - september 2014 N=40



2014: 36
2013: 4



Listeria-udbrud i Danmark: 12 personer er døde

12. aug. 2014 12:04 Opl. 12. aug. 2014 12:51



JydskeVestkysten

SAMMEN OM DET LOKALE

BILLUND ESBJERG HADERSLEV KOLDING SØNDERBORG TØNDER VARSBO

INDLAND

Fødevareminister kalder listeria-dødsfald »dybt tragiske«

AF JAN BIERRE LAURIDSEN, BERLINGSKE NYHEDSBUREAU

Publiceret 12. august 2014 kl. 15:35

0 kommentarer Facebook Twitter Print Send

Sagen om 12 danskere, der er døde efter infektion med listeria-bakterier, får et efterspil, lyder det fra fødevareminister Dan Jørgensen, der har bedt om en redegørelse fra Fødevarestyrelsen.

Fødevareminister Dan Jørgensen

13 bilder der viser hvordan det ser ud

Berlingske NATIONALT

Serum Institut: Risiko for flere listeria-dødsfald

TRUDDA D. 19. AUGUST 2014 KL. 10:38

f t

Den farlige listeria-sygge vil fortsætte med at hænge og muligvis også kræve flere dødsfald.

Det vurderer Statens Serum Institut (SSI) i et interview med politiken.dk.

Udbruddet har foreløbig kostet 13 danskere livet, men ifølge Steen Hilleberg, seniorforsker ved SSI, kan det tal vokse yderligere, da det først er seks uger efter, at bakterien er blevet opdaget, at man forventer at have fuldt overblik over alle smittede.

Få avisen leveret hver dag - første måned for 199 kr.

BESTIL HER

Hvorfor er det fordelagtigt for dig at have en langsigtet pensionsplan?

Har du investeringer for mere end 2,5 mio. kr., bør du downloade denne guide til pensionsplanlægning.

ANDERSEN ERHVERV

BT

Få fuld adgang til bt.dk i 7 dage - helt gratis og uden binding!

SPORT BT PLUS MERE

NYHEDER 12. AUG. 2014 - 18.23

Ekspert er uenige efter rullepølse-dødsfald: "Listeria er ufarligt" - nej det er det ikke!

f t

12 danskere døde af bakterie i rullepølse

Fødevarestyrelsen advarer mod den livstruende bakterie listeria, som fundet hos rullepølsevirksomhed i Hedehusene.



Listeriabakterier koster endnu et dødsfald - 15 er døde

15 mennesker er nu døde som følge af listeriasmitte. 38 er smittet - 18 mænd og 20 kvinder.

DANMARK 8. september 2014 16:57 - Opdateret 8. september 2014 17



Institut for Veterinær- og Husdyrvidenskab

15 mennesker er nu døde som følge af smitte fra listeria. A. Rullepølse. Samtidig fortsætter antallet af smittede.

Institut for Veterinær- og Husdyrvidenskab

IVH > NYHEDER > ARKIV > 2014 > Danmark har relativt mange listeria-udbrud

13. august 2014

Danmark har relativt mange listeria-udbrud

Hanne Ingmer, professor ved Institut for Veterinær- og Husdyrvidenskab, fortæller hvordan den farlige bakterie har kunnet brede sig, og hvordan man kan bremse bakterien.

Fødevarestyrelsen efterforsker i øjeblikket et udbrud af bakterien listeria, som er blevet fundet i rullepølse.

BT

Få fuld adgang til bt.dk i 7 dage - helt gratis og uden binding!

SPORT BT PLUS MERE

DANMARK 17. AUG. 2014 - 18.30

Minister vred: Styrelse fjerner beredskabschef efter listeria-dødsfald

f t

FÅ BT'S NYHEDSBREV

OK



Consequences of the listeriosis outbreak

Press and political level

During the process the political level was informed multiple times including at the 8/8-2014.

The Ministry and Minister of Agriculture at the time were not satisfied with the work performed by the DVFA at the beginning of the outbreak investigation.

Especially the media interest in the outbreak put pressure on the ministry to solve the case.

By the 15/8-2014 this resulted in the removal of the responsible head of section in the DVFA.

This was actually put forward to the media by the Minister himself.

A largescale investigation and redrafting of the Listeria control system was performed. **Better options for control and better tools were created and are still being developed.**



Consequences of the listeriosis outbreak

What happened to the establishments involved?

A case like this is very costly for an establishment. In this case the FBO “X” did never recover and was closed down.

The premises were sold and a new establishment started production under another name , but existed for less than a year. It seemed that the very address was connected with the possibility of Listeria contamination.

The second establishment FBO “Y” survived the incident and has later been moved to other premises.

Resources used at the DVFA

2 primary part inspections incl. sampling

22 secondary part inspections incl. sampling in 5 FBO's

>6000 inspections in 3-5. part inspections

A total of approx. 6100 hours in one week eq. of the entire national official control in 3 days



Conclusions from the 2013-2014 outbreak on Listeria

More focus on early detection and improved preparedness

- ★ Sampling at FBO "X" could have been instigated already in the beginning of July 2014 - we might have been able to see the problem already then.
- ★ Tracing as a response to the suspicion raised by the SSI on food items served at institutions was not fast enough
- ★ The information provided was not sufficient to pinpoint the correct period for tracing. Better reporting schemes needed between authorities.
- ★ Corrections to the information already provided by both SSI and establishments took time.
- ★ Sampling at FBO "Y" could have been instigated already in the end of July on suspicion raised during the initial tracing information from the items served at institutions.
- ★ Better communication and fixed procedures internally in the DVFA and between Authorities
- ★ Coordinated Communication to the media, public, stakeholders, trade partners etc.

Working tools – Handbooks on Outbreaks, recall and withdrawal

The screenshot shows a web browser displaying a handbook page. At the top, logos for 'STATENS SERUM INSTITUT', 'Miljø- og Fødevarerministeriet', 'Sundhedsstyrelsen', and 'DTU' are visible. The main heading reads 'Håndbog i opklaring af fødevarer- eller vandbårne sygdomsudbrud'. Below this, the browser address bar shows 'foedevarestyrelsen.dk/8000/Selvbetjening...'. The page title is 'Tilbagetrækningsvejledningen'. A left sidebar contains navigation links: 'Selvbetjening', 'Vejledninger', 'Tilbagetrækningsvejledningen', '2600 mails (intern)', 'Guides (intern)', 'Hvem kan du kontakte? (intern)', 'Læs mere', 'RASFF vejledning og skemaer (intern)', and 'Skabeloner'. The main content area starts with the text: 'På dette site kan du finde vejledning om - og en praktisk guide til - reglerne for tilbagetrækning og tilbagekaldelse af fødevarer, foder og fødevarerkontaktmaterialer (FKM). Du kommer ind i vejledningen ved at klikke på "Fødevarer", "Foder", "FKM" eller "Hvad siger reglerne" nedenfor.' Below this is a section titled 'Du får nu fire valgmuligheder, hvor du skal vælge efter virksomhedens situation. Vælg fx: "Har din virksomhed selv produceret varen?", hvis du er slagter i et supermarked, som selv producerer/hakker kød til hakket kød. Igen kan du vælge mellem fire nye situationer. Se hvad forskellen er på "salgsstop", "tilbagetrækning" og "tilbagekaldelse" her.' A search bar with the placeholder 'Søg...' and a magnifying glass icon is present. Below the search bar are four buttons: 'Fødevarer', 'Foder', 'FKM', and 'Hvad siger reglerne?'. A 'Giv os din feedback' button is at the bottom right.

The image shows the cover of a handbook. At the top right is the logo for 'Miljø- og Fødevarerministeriet Fødevarestyrelsen'. The title is 'Vejledning om tilbagetrækning og tilbagekaldelse af fødevarer, foder og fødevarerkontaktmaterialer'. Below the title, in parentheses, is '(Tilbagetrækningsvejledningen)'. The date '13. oktober 2016' and the reference number 'J.nr. 2015-28-33-00077' are printed at the bottom.



Outbreak of *Listeria monocytogenes* ST8 from cold-smoked salmon in 2017

July 2017

***Listeria monocytogenes* is detected in one sample of cold smoked salmon taken during a retail sampling project.**

Follow up sampling on more lots was performed by the DVFA to assess if this was a single incident or could be a more widespread problem.

23. August 2017

The health authorities (SSI) reports an outbreak of *Listeria monocytogenes* ST8 with 5 patients

Comparison of human and food isolates showed clustering with the listeria strain found in the first food isolate and patient isolates.

30 August 2017

Follow up samples taken at the central storage of the retailer showed 3 positive samples from the same producer.

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Outbreak of *Listeria monocytogenes* ST8 from cold-smoked salmon in 2017

30. August 2017

Recall of all cold smoked and gravad salmon from the producer was performed by the retail chain.

30. August 2017

Results were reported in the European warning systems (RASFF and EWRS/EPIS).

26. October 2017

France responded to these notifications – one patient had been seen in 2016 in France and also a food isolate from September 2017 from the same establishment.

Response from the competent authorities of the producer of the product is still awaited.

The Danish retail chain has temporarily stopped marketing products from this producer. When marketing is resumed the DVFA will consider taking follow up samples to assess if the products are safe.



Why is the new work proposed important?

- **No single Codex standard exist covering all aspects of handling a food crisis / food borne outbreak.**
- **The development world wide in trade and means of communication creates greater demands for rapid and solid information in cases concerning food crises – in order to control the situation and diminish eventual losses (lives and monetary).**
- **The development in means of analyses and comparative analyses creates greater possibilities for detecting and solving food crises but also puts pressure on the authorities.**



What are the ingredients in a successful investigation and case handling – Danish experiences

A network of representatives with "hands on experience" from all competent authorities involved in solving and handling food crises / outbreaks enabling access to:

- Human surveillance / analyses data
- Food/veterinary surveillance / analyses data
- Laboratory capacity and methodology
- Epidemiological methods and means of data collection/ evaluation
- Knowledge on food technology and consumption patterns
- Food control systems and traceability (national and international)
- International trade and communication

The possibility to build up experience and develop effective and coordinated procedures for handling, containing and communicating a food crisis.



How may a successful investigation and case handling be achieved?

Our experience is

- that crises/outbreaks handled in cooperation between relevant authorities in a coordinated way often results in the cases being solved and contained with the lowest costs for all parties.
- that crises are best handled by the responsible authorities within their existing structural framework at the lowest possible level
- that it is essential to know your partners and their capacities before a crisis occur
- that the work must be performed in mutual respect of the responsibilities of each participant/authority



How may a successful investigation and case handling be achieved?

- that communication to the public, stakeholders, establishments, trade partners etc. should be done in a coordinated way and in a timely manner to avoid confusion and obstructions in the trade.

In order to achieve this – we need common guidelines!

