



Gastroenteritis outbreak in Germany September 2012

Activities of the German Task Force for Food and Feed Safety

BVL - Bundesamt für Verbraucherschutz und Lebensmittelsicherheit
(Federal Office of Consumer Protection and Food Safety)

Berlin, Germany

How it all started: Outbreak detected, first actions

Robert Koch Institute (RKI) detects a food-borne outbreak at canteens in schools and kindergartens in five Eastern German Länder and immediately informs BVL (food safety side of the outbreak investigation)

INTEGRATED APPROACH

Depending on who first identifies an outbreak which affects more than one of the Federal States (Länder), the partners from the public health side (RKI) and food safety side (BVL, BfR) inform each other.

Sept.
2012



27	28	29	30	01	02	03	04	05	06	07	08	09
Do	Fr	Sa	So	Mo	Di	Mi	Do	Fr	Sa	So	Mo	Di

Oct.
2012

BVL situation
centre opens

Task Force
called into action
by Bund-Länder
crisis council

Task Force Gastroenteritis

- **Six** of the German Federal States (Länder) were affected and participated in the Task Force Gastroenteritis 
- Cases in five Länder in Eastern Germany: **Berlin, Brandenburg, Saxony, Saxony-Anhalt, and Thuringia** 
- **Hesse** as the responsible competent authority for the mainly involved catering company
- Federal (national) level participants: **BVL, BfR, RKI**



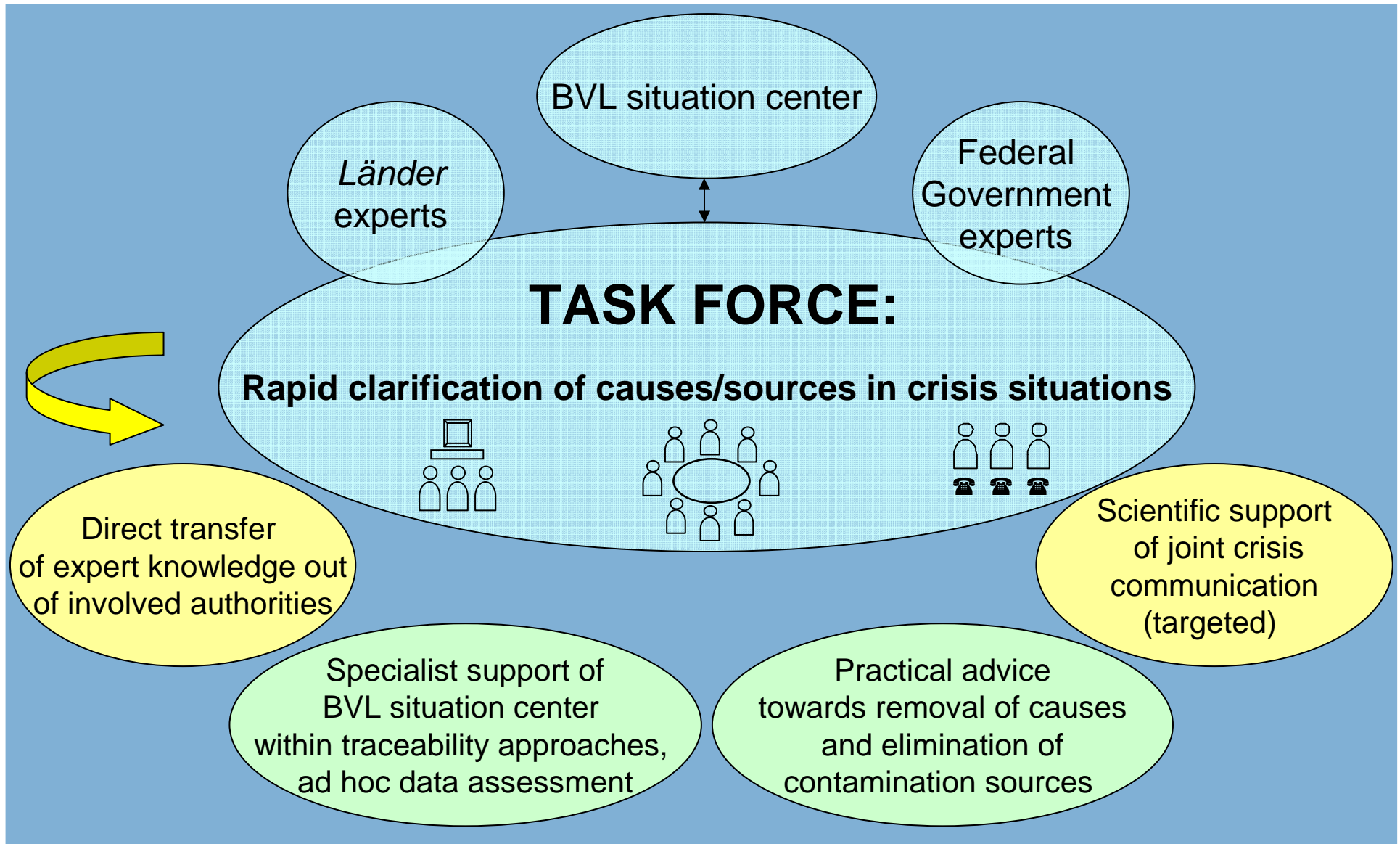
Federal Office of
Consumer Protection
and Food Safety



ROBERT KOCH INSTITUT



Structure and Tasks of the TF Food & Feed Safety

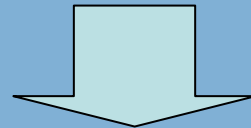


Available Information on 29. September 2012

- **8,365 cases** in more than **300** establishments (schools + kindergartens)
- **13 kitchens** had prepared and delivered the food for outbreak clusters, all belong to the **same catering company**
- **Agent** of disease is **unknown**
- Disease symptoms started quickly (within 24 hours)



points to norovirus or an intoxication. Up to now no reports of secondary infections



TF requests BfR for a risk assessment of toxins which might be the cause of disease (list of toxins to consider during the outbreak investigation)



Analyses performed on 29. September 2012

Basic questions: Differences and similarities?

- I. What was different between the regional kitchens that were associated with the outbreak, and the other kitchens of the catering company in Eastern Germany?
 - II. What are the similarities of the kitchens that were involved in the outbreak?
- ➔ In order to find the cause of the outbreak, the menus that had been prepared by 13 kitchens in week 39 were analysed. This analysis revealed that only two kinds of meals had been prepared by all of these outbreak related kitchens in week 39:
- a) Fish with potatoes and various side dishes
 - b) Semolina pudding with strawberry stew



TF Gastroenteritis: Hypothesis (30. Sept. 2012)

After evaluation and analysis of all available information



FIRST HYPOTHESIS

A contaminated food item (probably one batch of a food), maybe in combination with a process used for its preparation, is the cause of the outbreak.

Possible contaminations:

- Norovirus, *Bacillus cereus*, *Clostridium perfringens*, *Staphylococcus aureus*
- other toxins or toxinogenic substances

The contaminated food item most likely had been used to prepare one of two meals:

- a) fish with potatoes and various side dishes
- b) semolina pudding with strawberry stew

TF Gastroenteritis: Strategy (30. Sept. 2012)

Food chain analysis: Detailed **trace-back** for all food items (batches) that have been used to prepare the two suspicious meals in regional kitchens

Questionnaire for risk-based inspections in regional kitchens and canteens (e.g. cooking procedures, temperatures)

Identification of all foods (batches) that have been **given out additionally** at establishments (e.g. chocolate bars, soft drinks)

Recommendation for the laboratories on parameters for the testing of food
Bacillus cereus, *Clostridium perfringens*, *Staphylococcus aureus* and their toxins,
Norovirus



All data collected are reported to the crisis situation centre at BVL

Task Force members compile the data and perform data analysis



Outbreak Investigation Results

Trace back analysis



All kitchens involved in the outbreak **and some other kitchens** had used frozen strawberries of the same batch.

Preparation



In some kitchens strawberries **were cooked to high temperatures** when preparing the strawberry stew, while others used strawberries without cooking.

Contradiction?

Differences in preparation of the stew or the use of raw strawberries in foods

Heterogeneous contamination of the strawberry batch

RKI informs the Task Force about preliminary results from a second case control study performed at a school in a different Land:

This study as well shows a significant association between the disease and the consumption of strawberry stew

5th of October - Outbreak Investigation Results

RKI informs the Task Force about a second small outbreak wave.

The outbreak occurred in establishments, which had been delivered by **kitchens of two other catering companies**

Trace back analysis shows quickly, that the kitchens of these two other catering companies as well had used **frozen strawberries of the same batch.**

Frozen strawberries were delivered by wholesaler in Saxony, imported from China (44 tons à 10kg) (via Hamburg harbour).

RASFF notification and withdrawal.

Risk communication
(Joint Press Release)



8th of October - Outbreak Investigation Results

Laboratory detects norovirus in the suspicious batch of **frozen strawberries** (Link to PCR-Protocol: <http://www.crlcefas.org/softprotocol.asp>)



Outbreak is clarified

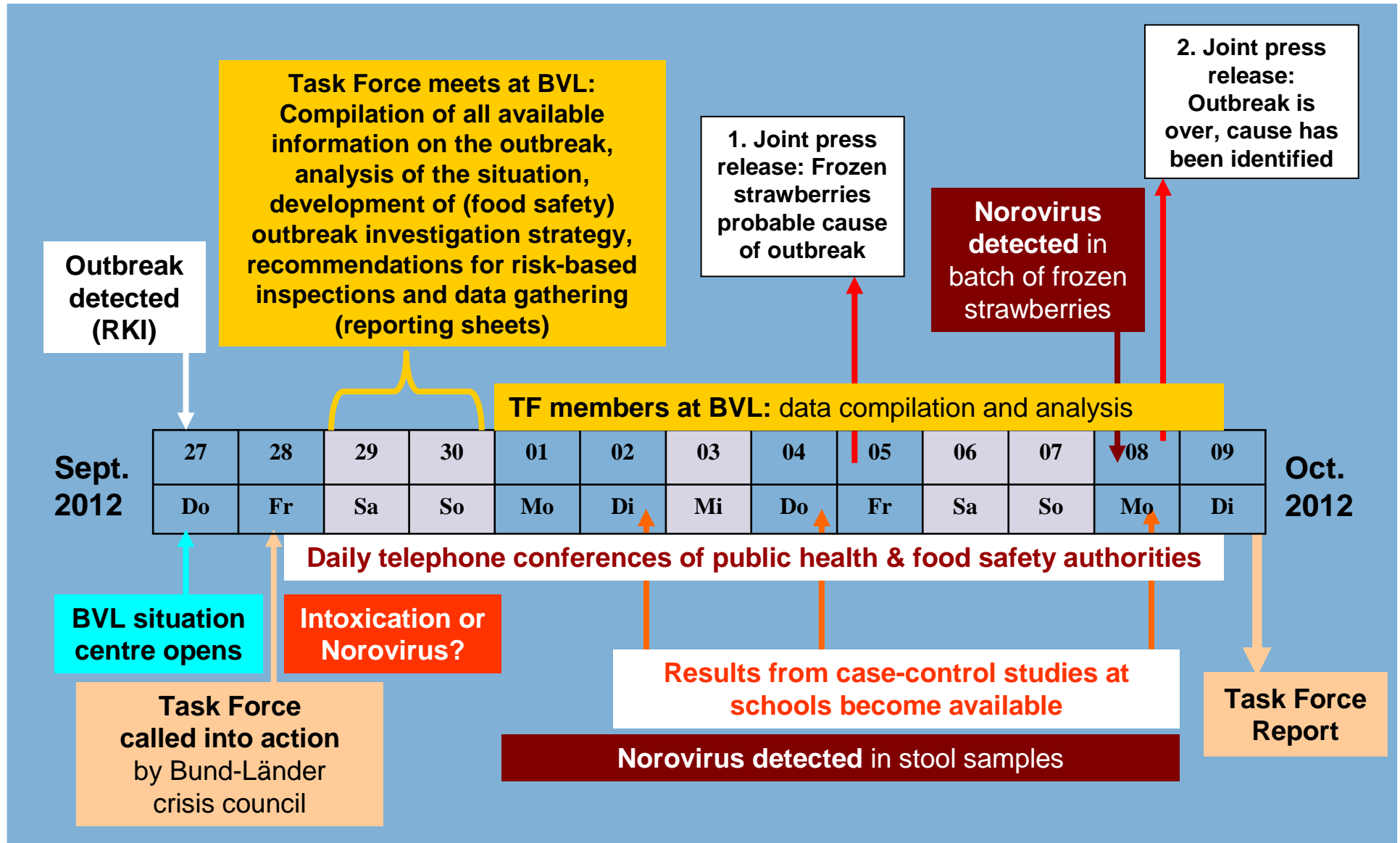
Risk communication
(Joint Press Release)



Task Force Gastroenteritis Activity Report

http://www.bvl.bund.de/EN/01_Food/06_Taskforce/02_Gastroenteritis/Gastroenteritis_node.html

Task Force Investigation of the Outbreak





Meanwhile, **norovirus** has been **isolated** from a total of **7 packages** of frozen strawberries (10 kg each) of the implicated batch. Six of these packages were unopened (original package). Packages had been collected for analysis from kitchens and from the wholesaler of frozen foods in Saxony.

Genotyping of virus RNA from **three** of the samples of frozen strawberries has shown identical sequences as in human cases:

Genotype II.16/II.13 found as well in stool samples of cases in Berlin and Brandenburg

Genotype I.3 found as well in stool samples of cases in Saxony, Brandenburg and Thuringia

