

RESEARCH OUTCOMES REGARDING NATURAL HISTORY OF FOODBORNE DISEASES IN TRANSYLVANIA, IN THE PERIOD OF 1993-2004

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BACKGROUND:

The objective of this study was to describe the epidemiological process of foodborne disease, in Transylvania, Romania, in a 12 years period (from 1993 to 2004)

- identify the **causes** and the **characteristics** of this epidemiological process
- estimate the **burden** of foodborne disease outbreaks
- obtain the main **trends** in the evolution of these illnesses

MATERIALS AND METHODS



Data sources:

- foodborne outbreaks reports from 10 counties of Transylvania

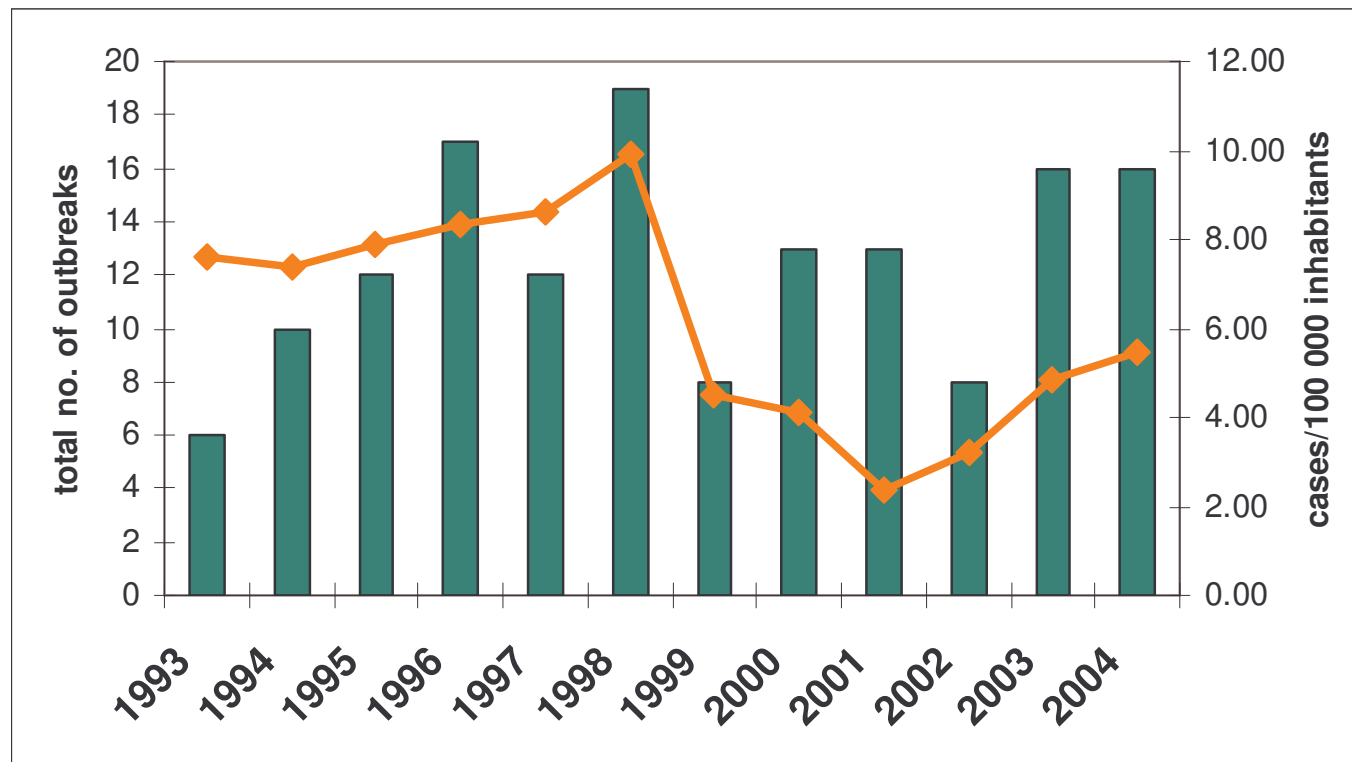
- for each outbreak report was fulfilled a questionnaire

MATERIALS AND METHODS

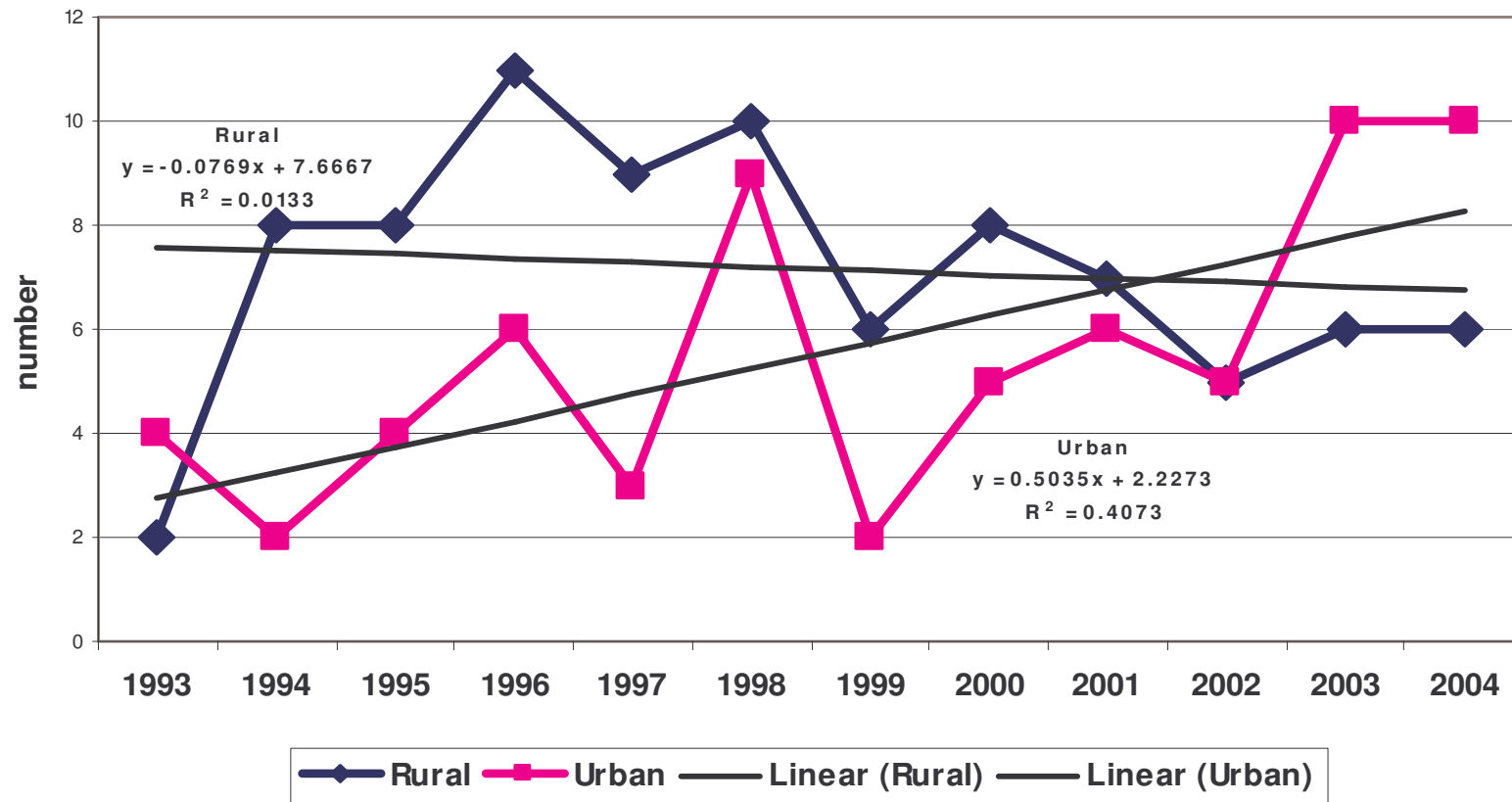
Type of data collected:

- **populational data** - number and size of foodborne disease outbreaks, number of consumers (persons at risk), ill persons and hospitalizations, geographical distribution, clinical manifestations
- data regarding **causative agents** (laboratory analysis for clinical specimens and food samples where was available)
- responsible **food vehicle** and **contributing factors**

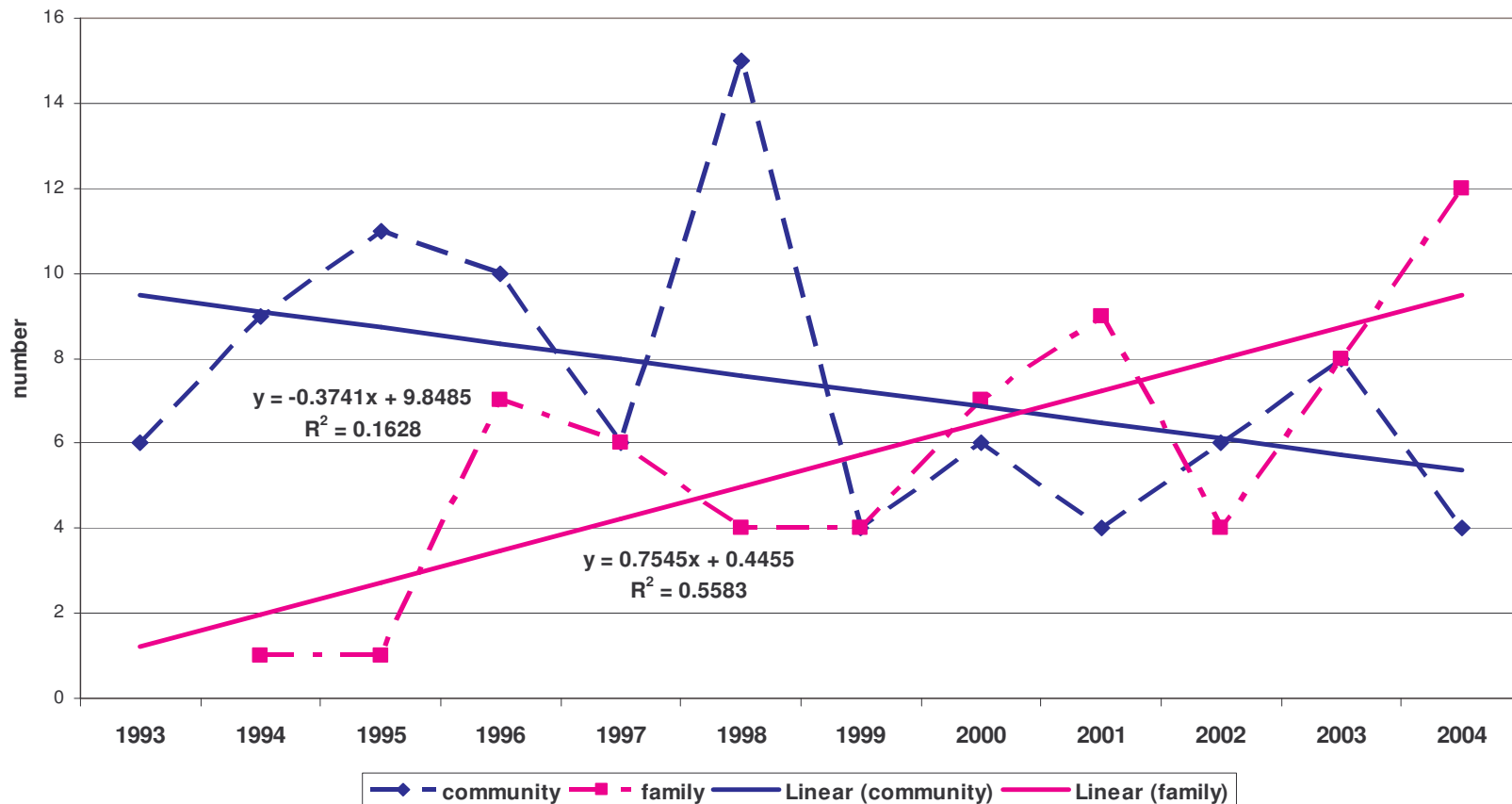
Foodborne diseases outbreaks and incidence, Transylvania 1993 – 2004



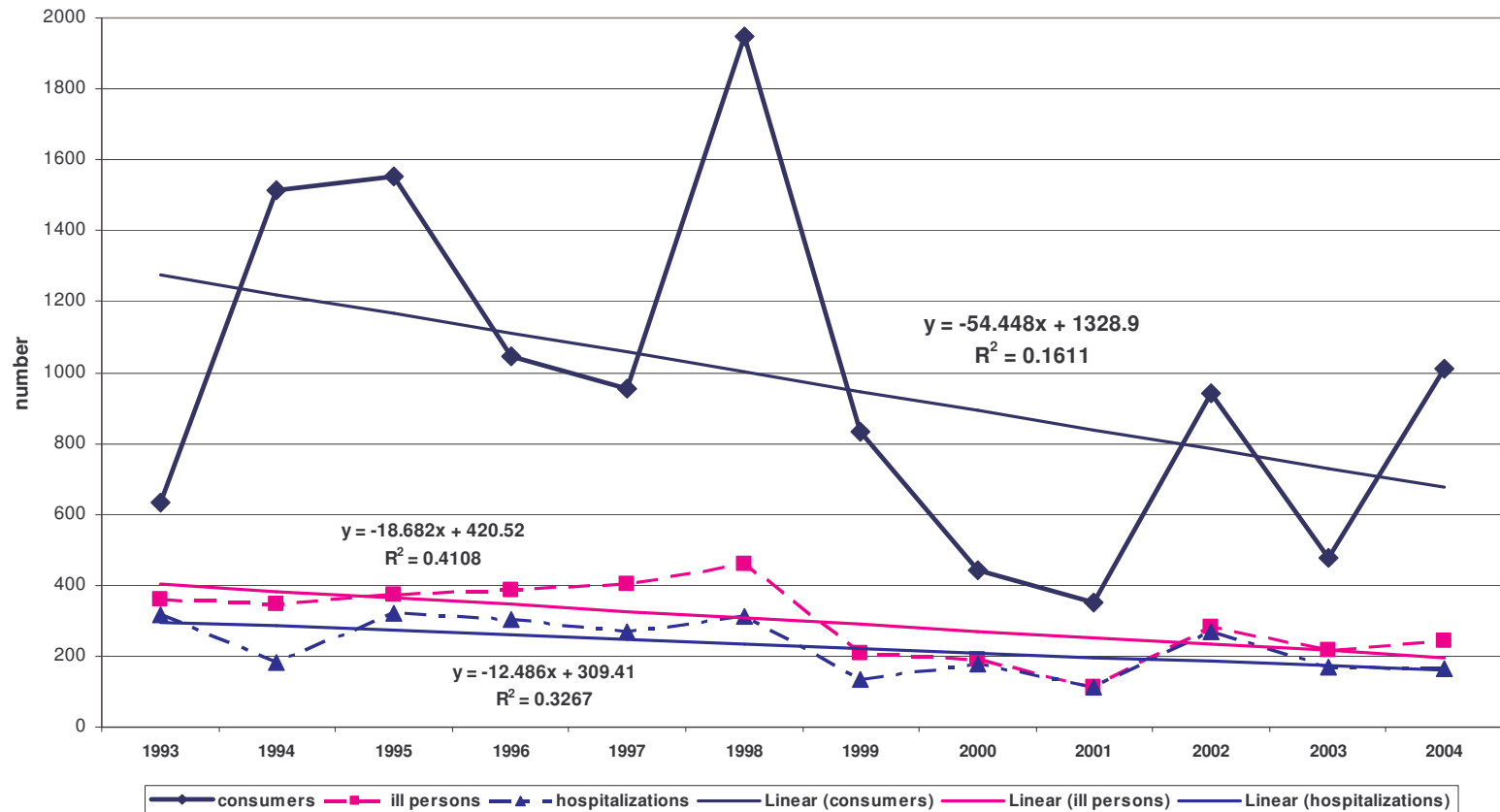
Annual evolution of urban and rural foodborne diseases outbreaks, Transylvania 1993 – 2004



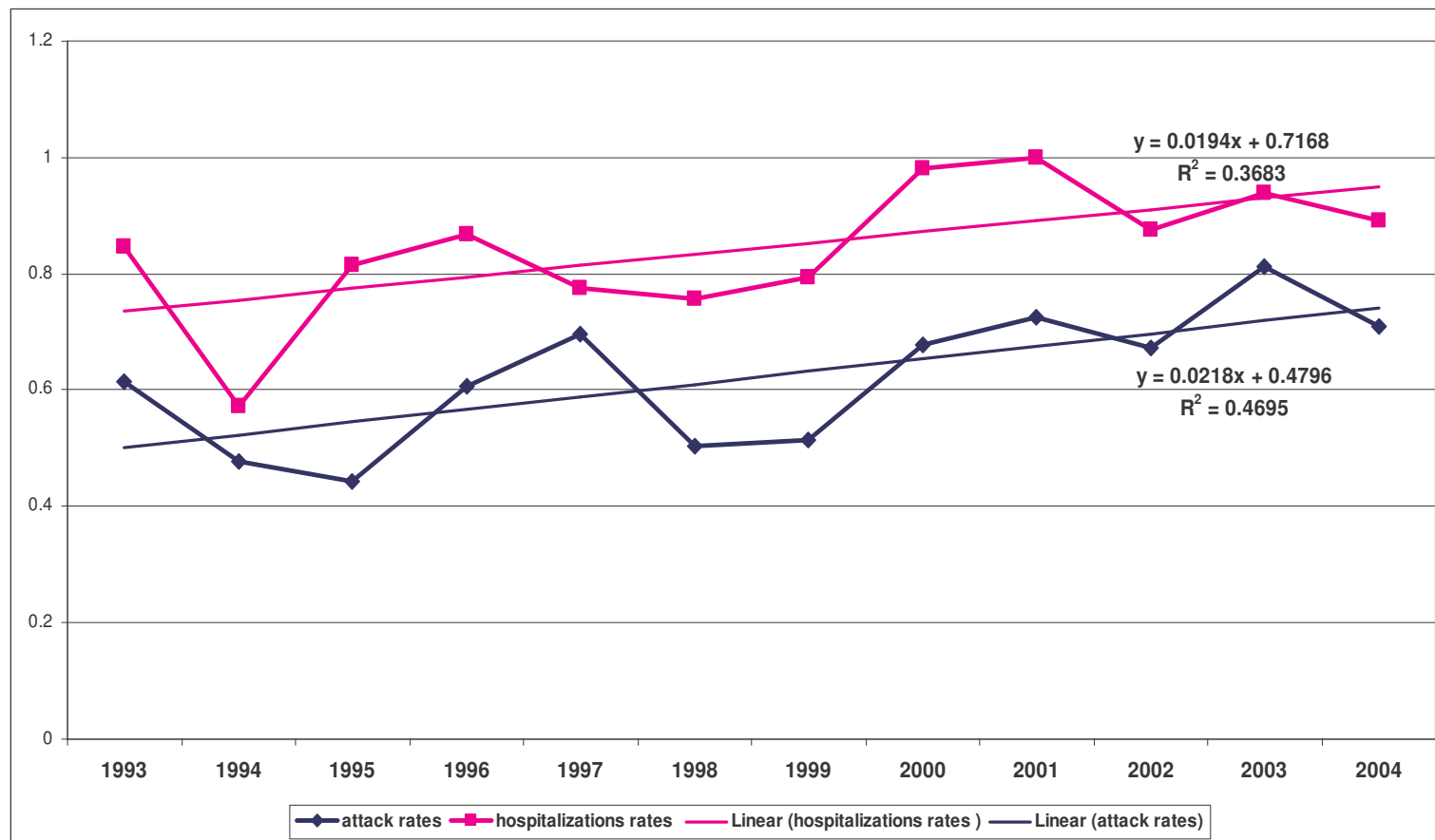
Annual evolution of community and family outbreaks, Transylvania 1993 – 2004



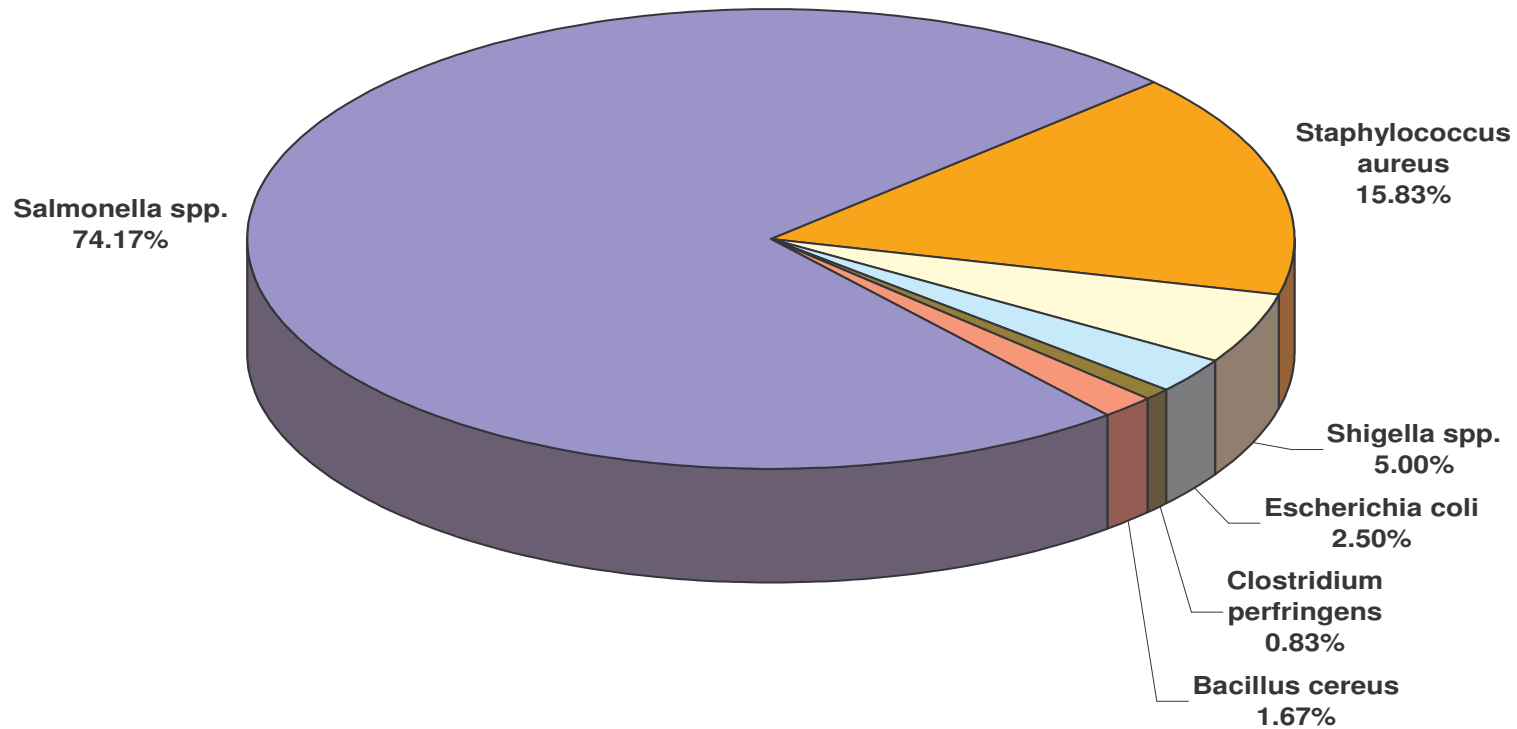
Annual evolution of consumers, ill persons and hospitalizations in foodborne diseases outbreaks, Transylvania 1993 – 2004



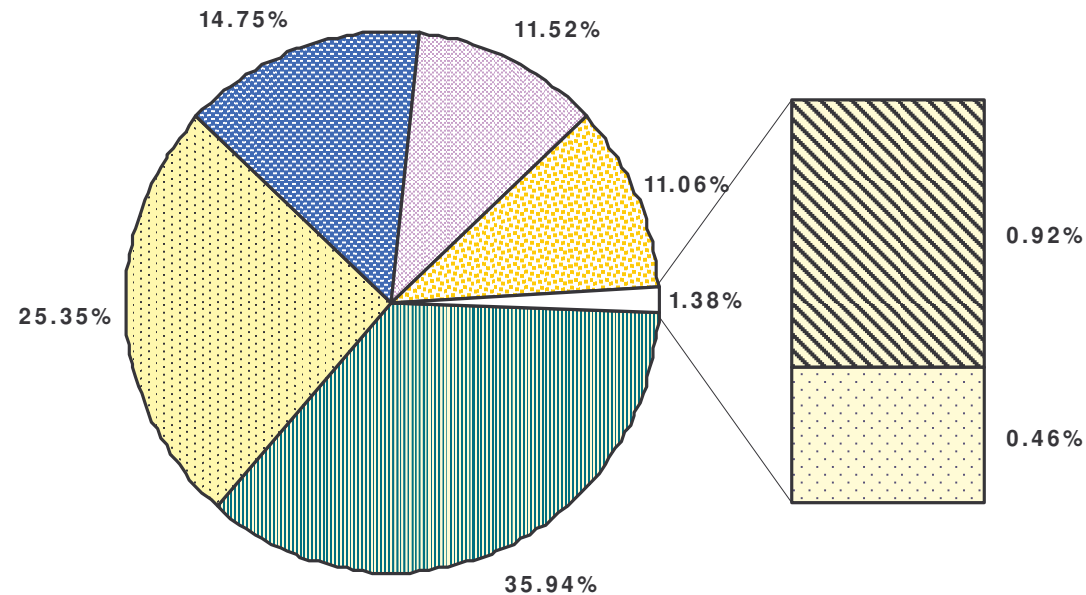
Annual average of attack and hospitalizations rates in foodborne diseases outbreaks, Transylvania 1993 – 2004



Foodborne diseases outbreaks by causative agents, Transylvania, 1993 – 2004



Food vehicle associated with the foodborne diseases outbreaks, Transylvania 1993 – 2004



■ Meat and products ■ Eggs and products ■ pastry ■ complex ready-to-use foods ■ dairy ■ icecream ■ fish

Foodborne diseases outbreaks by place of processing and consumption, Transylvania, 1993 – 2004

	Processing place		Place of consumption	
	No. of outbreaks	%	No. of outbreaks	%
Private home	109	71.71	87	57.24
Canteen	17	11.18	18	11.84
Restaurant	9	5.92	10	6.58
Confectionery	7	4.61	1	0.66
Improvised places	7	4.61	34	22.37
Food processing establishment	3	1.97	2	1.32
TOTAL	152	100	152	100

Contributing factors in foodborne diseases outbreaks, Transylvania 1993 – 2004

Contamination factors:

- improper conditions of the **preparation settings** - 55,92%
- **animal infections** - 21,05%
- food handling **personnel** - 7,24%

Proliferation factors

- **unsafe storage conditions** - 73,03%
- **time / temperature storage** - 62,5%

Survival factors

- **mishanling and improper preparation** - 67,11%
- **inadquate cooking** - 43,42%

Conclusions

- the populational characteristics analysis for foodborne outbreaks registered during the studied period, show a decreasing in intensity of the epidemiological process after 1998. Since 2001, the incidence curve resumed its rising tendency.
- the highest proportion was registered for community (general) outbreaks (58,55%), in comparison with family outbreaks; there is an inversion in annual evolution for types of outbreaks: number of community outbreaks decreases and, in the same time, the family outbreaks have an increasing trend.

Conclusions

- the reported foodborne outbreaks match with the so called “traditional scenario”; these episodes often follow a social event, affect a small local population, have a high attack rate, with limited distribution and involve locally prepared food products.
- the causative agents were identified in 77,63% of outbreaks and for 22,37% of all 152 outbreaks, the ethiology remained unknown; in outbreaks in which the causative agent was identified, salmonellas were the most frequently identified bacteria

Conclusions

- the microbiological analysis established the specific foods implicated in 34,87% outbreaks; meat products and eggs products, were the most often implicated food categories in outbreaks
- the improvements of the hygiene conditions for processing and storage foodstuffs are requested for the entire food chain, in order to reduce the microbiological hazard.
- the control of foodborne disease outbreaks requires a concerted effort on behalf of the three principal partners, namely governments, the food industry and consumers.



THANK YOU!