Epidemiologic Investigation of Foodborne Outbreaks in Pharmacies: A Pilot Study

Carla Torre[1], Roberto Brazão[2], José Guerreiro[1], Marta Gomes[1] Suzete Costa[1] Luísa Oliveira [2], Silvia Viegas [2]

[1]Centre for Health Evaluation & Research (CEFAR), National Association of Pharmacies (ANF)
[2] Surveillance Unit, Food and Nutrition Department, Instituto Nacional de Saúde Doutor Ricardo Jorge, IP (INSA , IP). Av. Padre Cruz 1649- 016 Lisboa, Portugal
Email: silvia.viegas@insa.min-saude.pt

Introduction

The analysis of Foodborne Outbreaks (FBO) investigation data provides knowledge on food vehicles and contributive factors of human infections allowing their risk management. However, FBO are commonly underreported and alternative sources of information may prove useful.

The PortFIR (Portuguese Food Information Resource) Foodborne Outbreaks Working Group conducted an epidemiologic research and developed a questionnaire, together with CEFAR (Centre for Health Evaluation & Research of the Portuguese National Association of Pharmacies)/ANF to be used among subjects with FBO suggestive symptoms who used community pharmacy services.

Purpose

The aim of this work was to assess the adequacy of community pharmacies as an information source to identify food involved in FBO, its confection type and acquisition place as well as the main symptoms reported by patients and pharmacological treatment.

Methods

A cross sectional inquiry was conducted between 18th August and 15th de November 2014. All community pharmacies belonging to the National Association of Pharmacies (ANF) were invited by CEFAR to participate (n=2767), representing about 95% of all Portuguese pharmacies. Pharmacy users with FBO suggestive symptoms that consented to participate were consecutively recruited through participant pharmacies. Data was collected by a pharmacist during a face-to-face interview using the FBO questionnaire developed. Data was inserted by the participant pharmacies using a web platform – ANFonline, an intranet communication chanel of ANF – and captured by CEFAR.

Descriptive statistical analysis included absolute and relative counts. Continuous variables were summarized using central tendency measures and dispersion (mean and standard deviation and median). Analysis was performed using SAS Enterprise Guide v4.1.

Results

• A total of 249 community pharmacies accepted to participate in the study, of those, 87 recruited at least one subject. A total of 527 subjects were recruited, amongst those about 2/3 were enrolled over the summer period.

• The mean age was 44.4 years old (SD=21.9%; min=1; max=91). The majority of participants were women (61.3%) and 1.3% of them were pregnant at the time of recruitment.

The sum of the results expressed in percentage may be higher than 100% due to the existence of questions with multiple choice.

• The majority of the participants (55.9%) reported moderate symptoms, namely diarrhoea (86.0%), abdominal pain (47.6%), vomiting (25.6%) and nausea (25.0%).
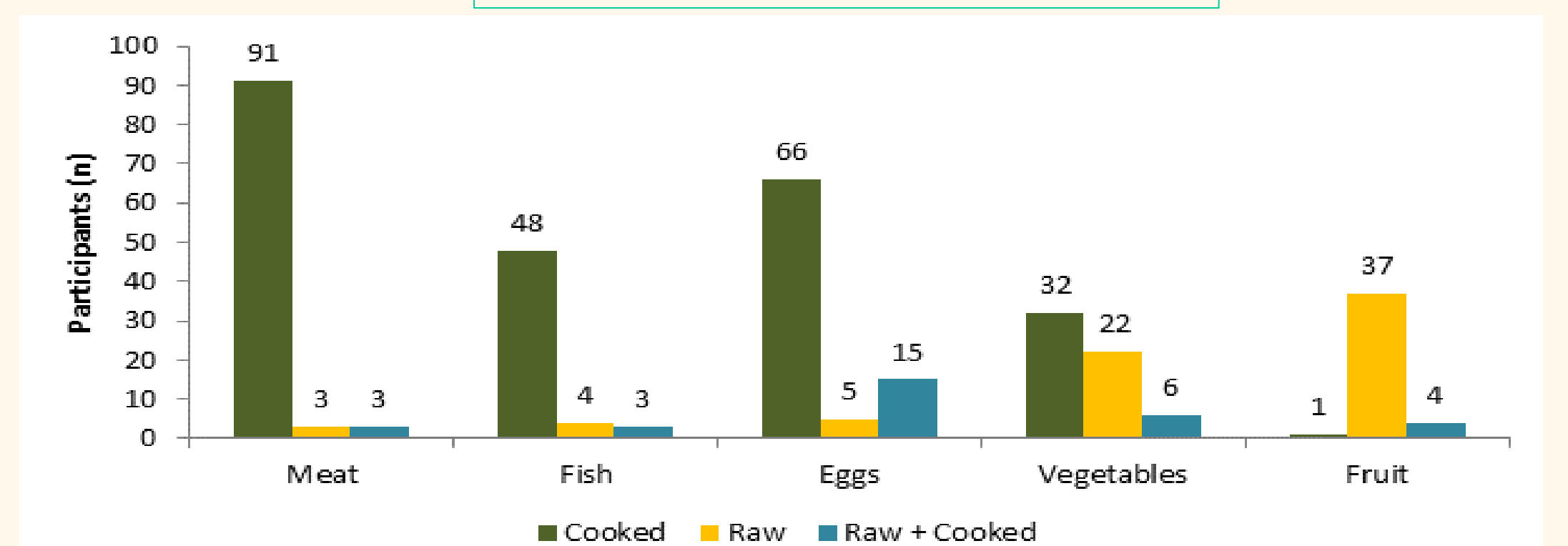

Reported Symptoms and Severity
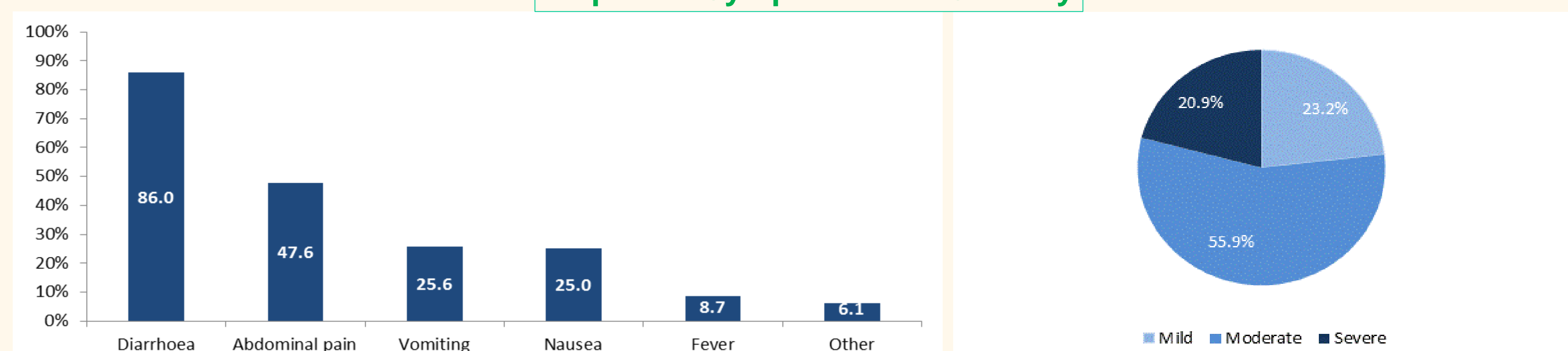
• Participants reported meat as main cause of the FBO (25.0%), followed by eggs (18.7%), vegetables (15.5%) and fish (13.8%). Fruit accounted for 11.9% of the reported cases and seafood 7.0%. Mainly, these episodes occurred with cooked meals, except when the reported food ingested was fruit.
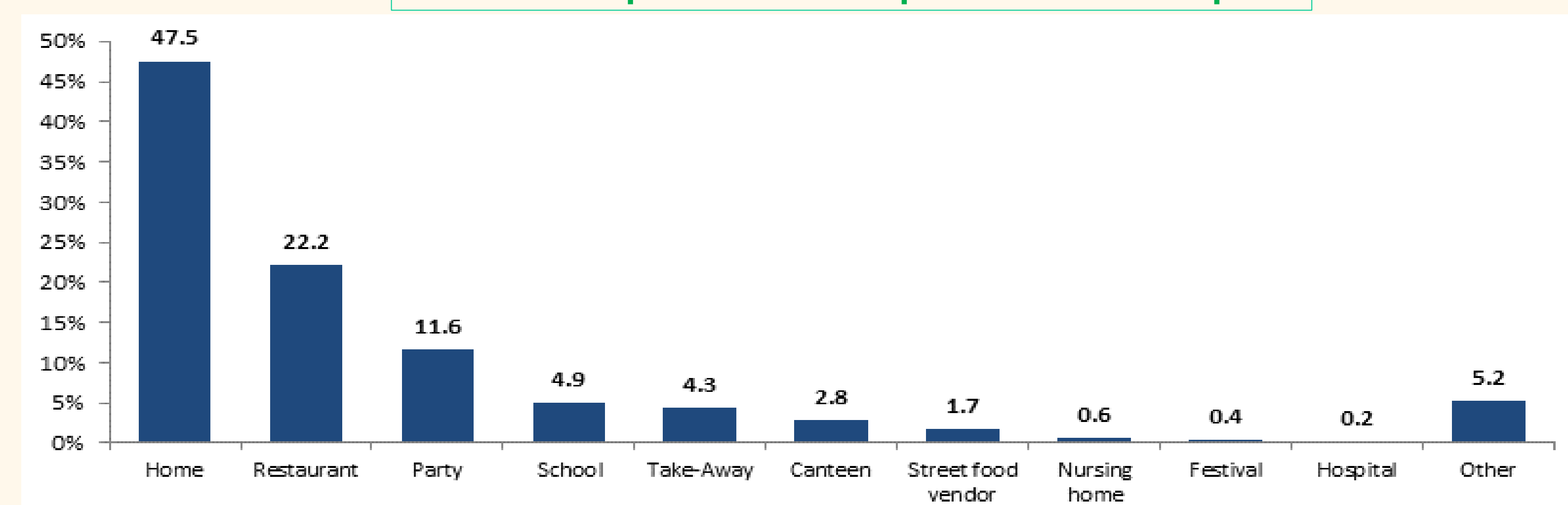

Suspected food involved
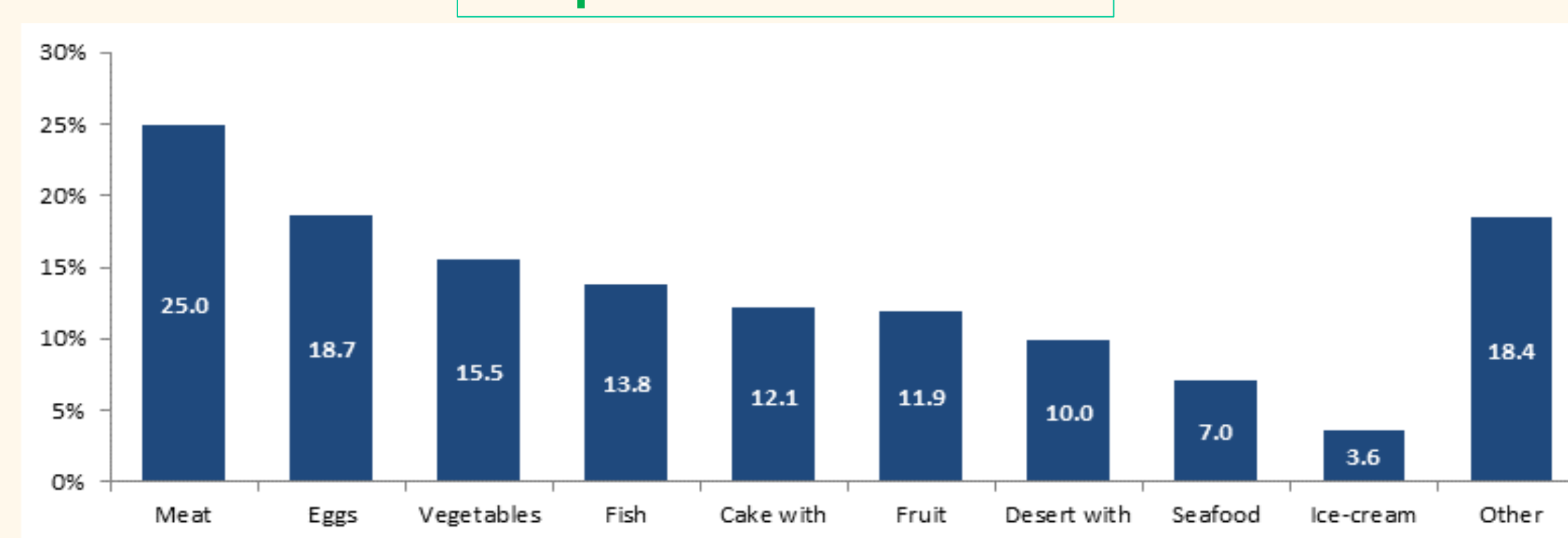
Suspected food preparation

• Almost half of the participants (47.5%) reported to have consumed / prepared the suspect food at home, 22.2% in restaurants and 11.6% in parties.
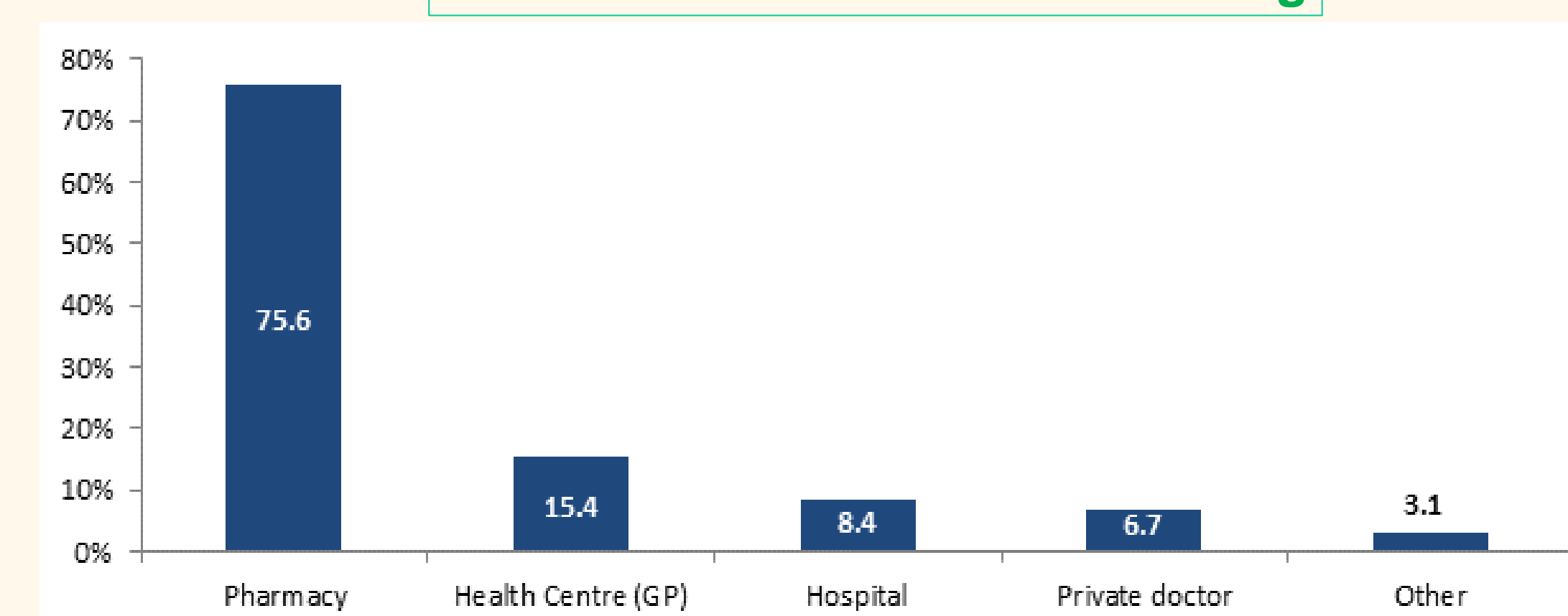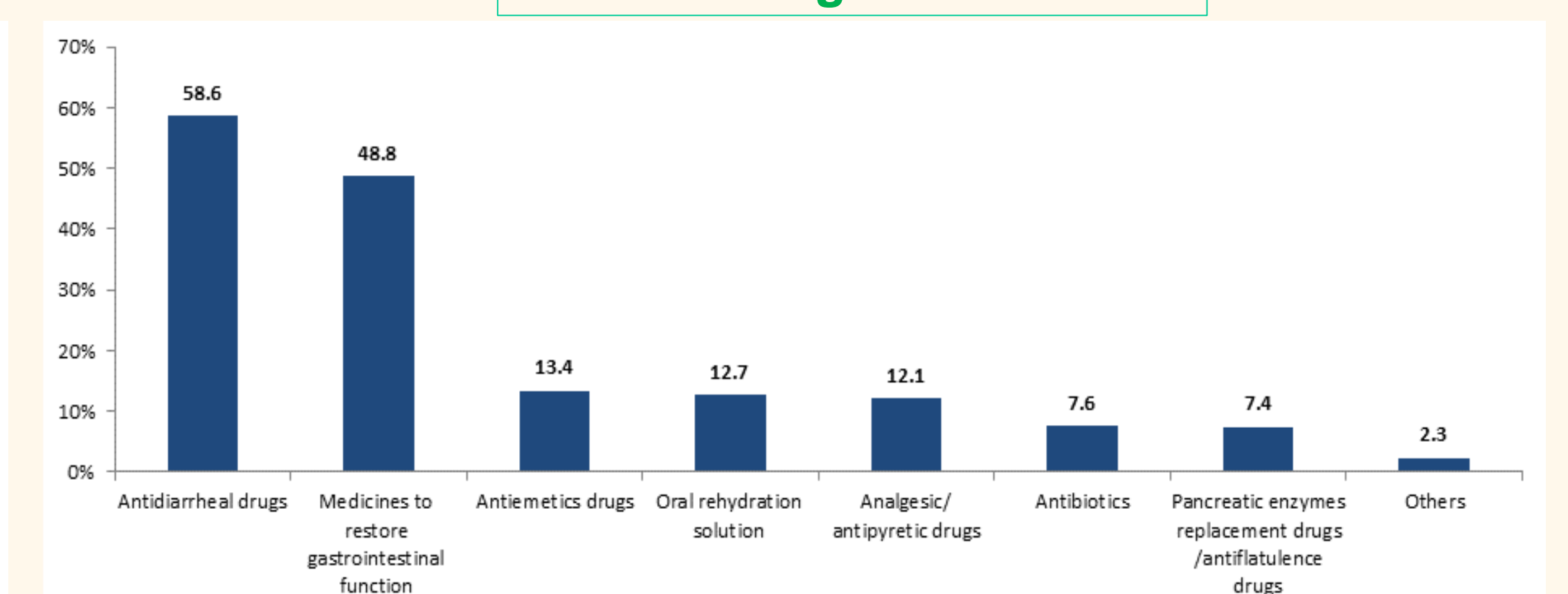

Local of suspected food acquisition / consumption

• About 75.6% of the participants resorted to the pharmacy when the first symptoms occurred. The majority took antidiarrheal drugs (58.6%) and 48.8% took medicines to restore gastrointestinal function.
• 63.9% of the participants reported that, on average, that other 13 subjects were exposed to the same food and 37.7% of them had the same symptoms.

Treatment and health care setting

Pharmacological Treatment

Significance

❑ Although the results of this study are exclusively from individuals with FBO self-reported symptoms that went to Pharmacies, no confirmatory laboratory analyses were made with biological or food samples, the findings are consistent with the Portuguese FBO investigation data over the last 5 years[1].

❑ In order to overcome the lack of FBO epidemiological information, it is crucial to identify the critical points that are contributing to outbreak occurrence and to scientifically evidence the continuous updating of education targets. Pharmacies can be a valuable source of information and also a vehicle for food safety education supporting the prevention of FBO.

References
(1) Silvia Viegas et al. Investigação laboratorial de toxinfeções alimentares. 2013. Boletim Epidemiológico Volume 3 - Número 7, Janeiro - Março 2014 . ISSN: 0874-2928 | ISSN: 2182-8873.