

The purpose of the study

Self-limiting viral infections are the main cause of fever in children. Nevertheless, fever is one of the main reasons for Emergency Department (ED) visits for paediatric patients around the world, and consequently for a series of tests, manipulations, and prescriptions of antibacterial medication.^{1, 2, 3}

The study aimed to describe a cohort of 9000 children with fever visiting Children's Clinical University Hospital (CCUH: the only tertiary paediatric hospital in Latvia with ~30000 total annual ED visits) Emergency Assistance and Observation Department, their treatment and treatment outcomes.

This cohort forms a comparison group for future study in 2024 with an intention to evaluate how the population has changed in 5 years and what improvements are needed

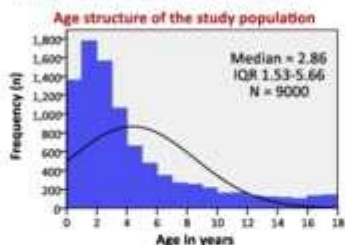
Study design and methods

Children aged 0-18 years presenting to CCUH ED with fever $\geq 38.0^{\circ}\text{C}$ or a history of fever (within 72 hours before ED visit) were recruited during 2017 (whole year) within MOFICHE study (Management and Outcome of Fever in Children in Europe), a substudy of PERFORM project (EU Horizon 2020 programme, grant agreement No. 668303).

The study collected and analyzed a part of data routinely recorded at ED. Descriptive statistics, Shapiro-Wilk normality test and nonparametric tests were used for data analysis.

Results

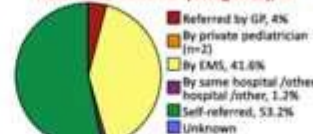
The majority of the patients were young (median age 2.86 years [IQR 1.53-5.66]), 52.1% of all population being younger than 3 and 76.5% - younger than 6 years. No gender heterogeneity was observed (53.9% male).



The majority of the population were otherwise healthy, comorbidities were reported in only 9.5% of patients, in patients older than 6 years of age comorbidities were observed more frequently than in younger ones (16.8% vs 8.8%). Median age of patients with comorbidities was higher than without: 3.9 vs 2.8 years ($p < 0.05$).

Patients were mostly self-referred (53.2%) or referred by Emergency medical services (41.6%) with a short duration of fever (<24 hours (29.8%), 24-48 hours (40.6%)).

Referral to CCUH ED (categories), %

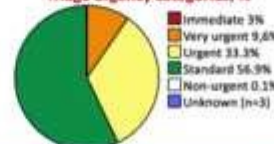


Duration of fever in days, %



Standard triage urgency category was assigned to 56.9%, urgent to 33.3%, very urgent to 9.6% of patients.

Triage urgency categories, %



Immediate lifesaving interventions were reported in 0.7% and oxygen therapy in 0.6% of patients.

Antibacterial therapy at ED level was prescribed in 34.5% of patients. Majority of the patients (71.1%) were discharged from ED, 27.9% were admitted to a general ward and 0.3% to intensive care unit.

Conclusion and discussion

More than a half of study population received non-urgent triage category and were self-referred young otherwise healthy children with a short duration of fever, and less than a third of population needed hospitalisation, demonstrating an overcrowding of ED with patients having mild illness.

These findings indicate a need for improvements in the care of young febrile children on primary healthcare level as well as for parental education about fever. We believe patient flow and patient assessment and management in ED can also be improved to promote higher-quality care and more focused specialists' attention to children with higher priority.

The comparative study started in 2024 will give an opportunity to acknowledge whether population characteristics are changing and will provide a possibility to identify persisting or emerging imperfections in evaluation and treatment of febrile children in the same ED.