

## INTRODUCTION

*Streptococcus pyogenes*, also known as toxin-producing group A streptococci (GAS) can cause mild to life-threatening. The past decade was characterised by a low incidence, yet there seems to be a resurgence of the number of severe infections. The aim of this study is to report on the number of invasive GAS infections in Belgium as reported by the sentinel network of laboratories by the National Reference Center together with the Belgian Public Health Surveillance (WIV-ISP).

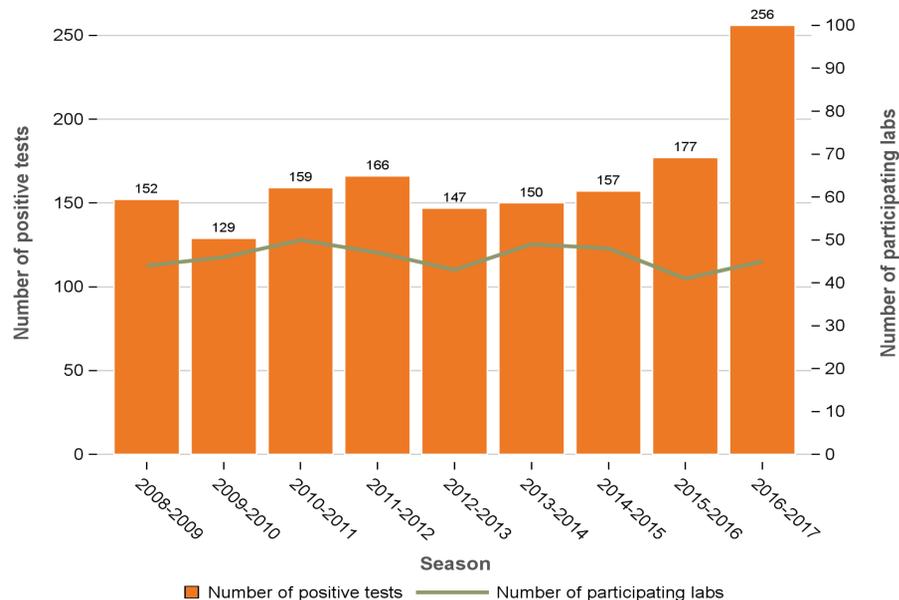


Figure 1. Number of invasive GAS infections per season

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## MATERIALS & METHODS

The number of invasive GAS infections per year, was compared over a time period of 10 years. Trends over time, regions, age-groups and inter-annual differences were analysed using a negative binomial regression with a random intercept for the laboratories.

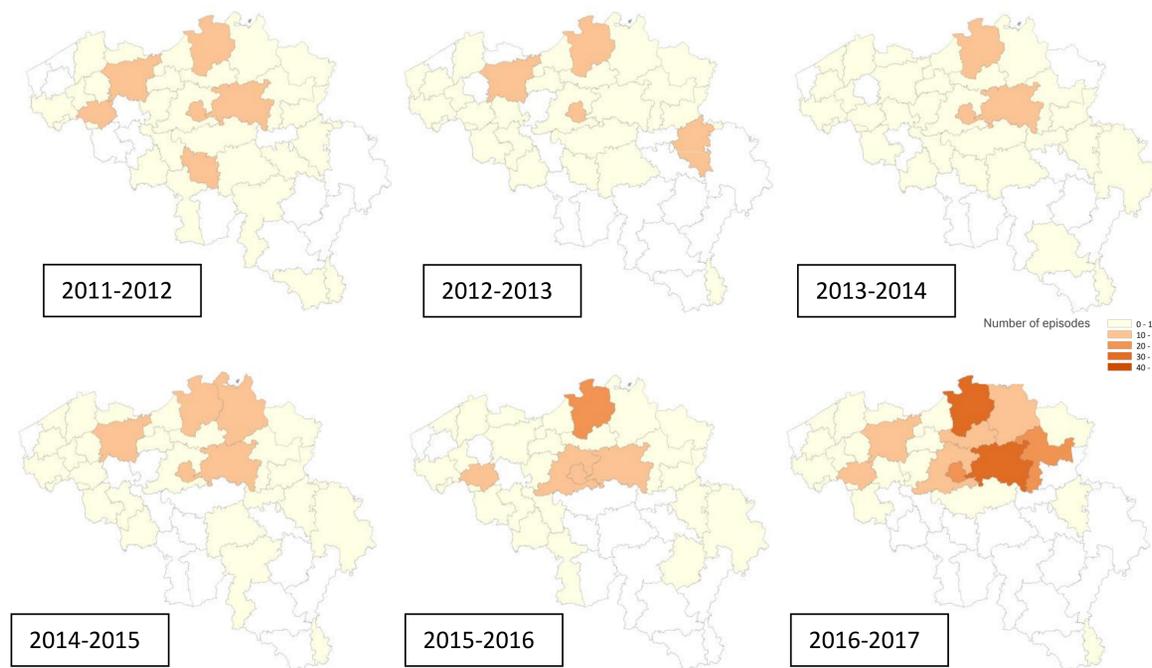


Figure 2. Spatiotemporal distribution of number of reported GAS episodes between 2011-2017

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## RESULTS

The number of participating laboratories that reported invasive GAS infections fluctuated between 41 to 50 over a time period of 10 years. In total they registered between 128 and 256 invasive GAS cases per season (Fig. 1). After a capture/recapture analysis, it was shown that the majority of the clinical laboratories send their invasive strains in a consequent way to the NRC. It is shown that the NRC receives strains from about 75% of all invasive cases.

The increasing trend in seasonally reported GAS cases was shown to be significant (regression coefficient=0.056; 95%CI 0.029-0.083;  $p < 0.001$ ) and mainly attributable to an increase in the Flemish region of Belgium ( $p < 0.05$ ) compared to the Wallonia and Brussels region (Fig, 2). The highest proportion of invasive infections was detected in the older age group, >65 years, i.e. 39.8%, followed by 15-65 years (38.9%). 20.7% of cases were detected in young children and preadolescents (0-14 years of age). The age distribution remained stable throughout the investigated time-period and was found to be significantly associated with the Flemish region. Emm-types most frequently found are emm1, emm3, emm89.

## CONCLUSIONS

The epidemiological surveillance in Belgium reveals a significant increase of number of reported cases of invasive GAS infections independent of the statutory duty since 2017 that medical practitioners in Flanders, but not in the other two regions of Belgium, have to report suspect cases of invasive GAS infections. Further extensive monitoring is warranted to closely follow-up on this potential public health threat.