

BRUCELLOSIS: THE EVOLUTION OF THE DISEASE IN PORTUGAL OVER TWO DECADES

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Introduction

Over time, interactions between humans, animals and the environment have changed significantly. Human and animal health are closely linked, with this relationship being a potential source of diseases to humans, with brucellosis being a classic example.¹The emergence or re-emergence of diseases such as brucellosis can be driven by populational factors, such as urbanization, sociocultural behaviors, economic influences, and environmental factors such as agriculture and climate change.²

Several prevention strategies have been successfully implemented to control brucellosis, but the constant monitoring of the disease is an essential instrument for early implementation of prevention measures, in order to mitigate the impact that an increase in cases may have on the human and animal population.³

With the notion that human, animal and environmental health are closely interconnected, and that improvement in one of these areas depends on the interdependence of the three, the present study focuses on the human component of the equation - the evolution of Brucella cases in humans.

Objectives

Characterize the evolution of notified cases of human brucellosis in Portugal between 1998-2018.

Methods

- Retrospective observational study that included all reported cases of human brucellosis in Portugal, between 1998 and 2018 (last official public data available)
- Data was collected from reports made available by the Directorate-General for Health (DGS)
- Descriptive statistics (frequencies mean, median, proportions) by sex, age and geographic location were performed using Microsoft Excel® software

Results

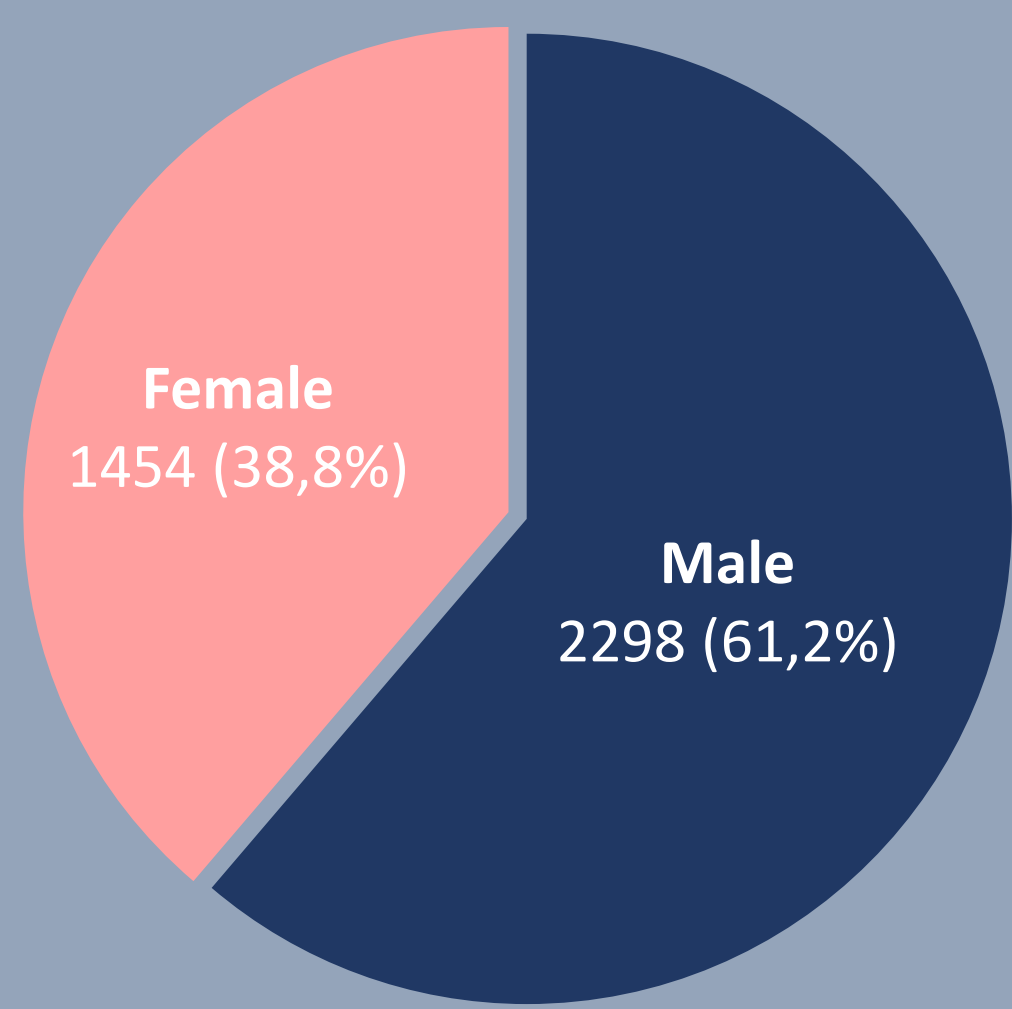


Figure 1. Notified cases of brucella by sex (1998-2018)

- 3752 cases of brucellosis were reported in Portugal between 1998 and 2018
- Majority of cases were male (61.2%) with ages between 25 and 54 years (49,8%)
- The regions with the most reported cases were the Center (n=1323; 35.3%) and North (n=1298; 34.6%) of Portugal
- North region was the most frequent region with higher number of cases (13 of the 21 years studied)
- Madeira autonomous region did not notified a human brucellosis case between 1998 and 2018
- With the exception of 2011, the number of cases reported in males was systematically higher than in females
- The number of cases decreased substantially between 1998 and 2004 (variation of -82.6%), with this decline being interrupted by a small increase in cases in 2005
- From 2005 onwards, the number of cases resumed its downward trend, although with some fluctuations and in a less pronounced way until 2018

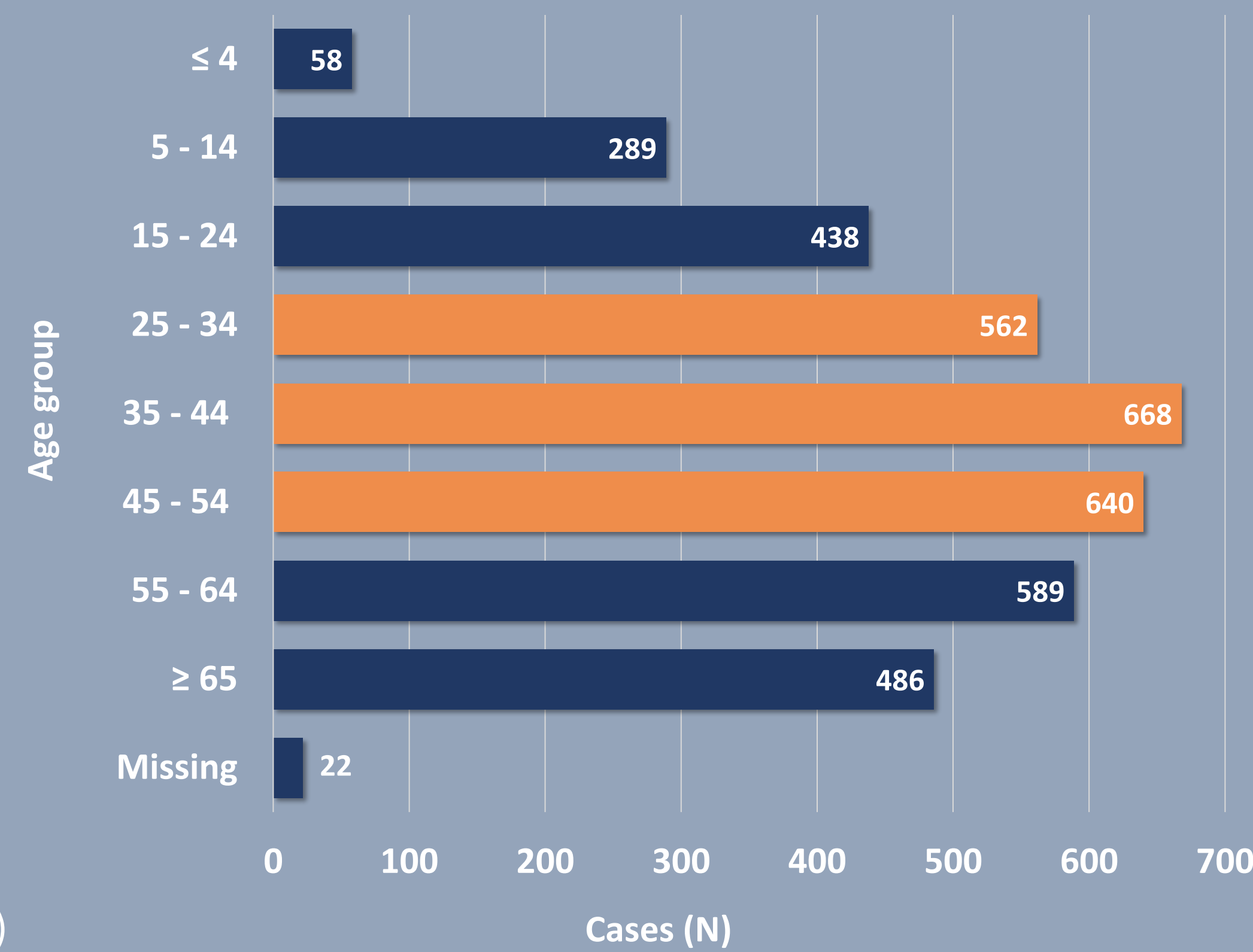


Figure 2. Notified cases of brucella by age group (1998-2018)

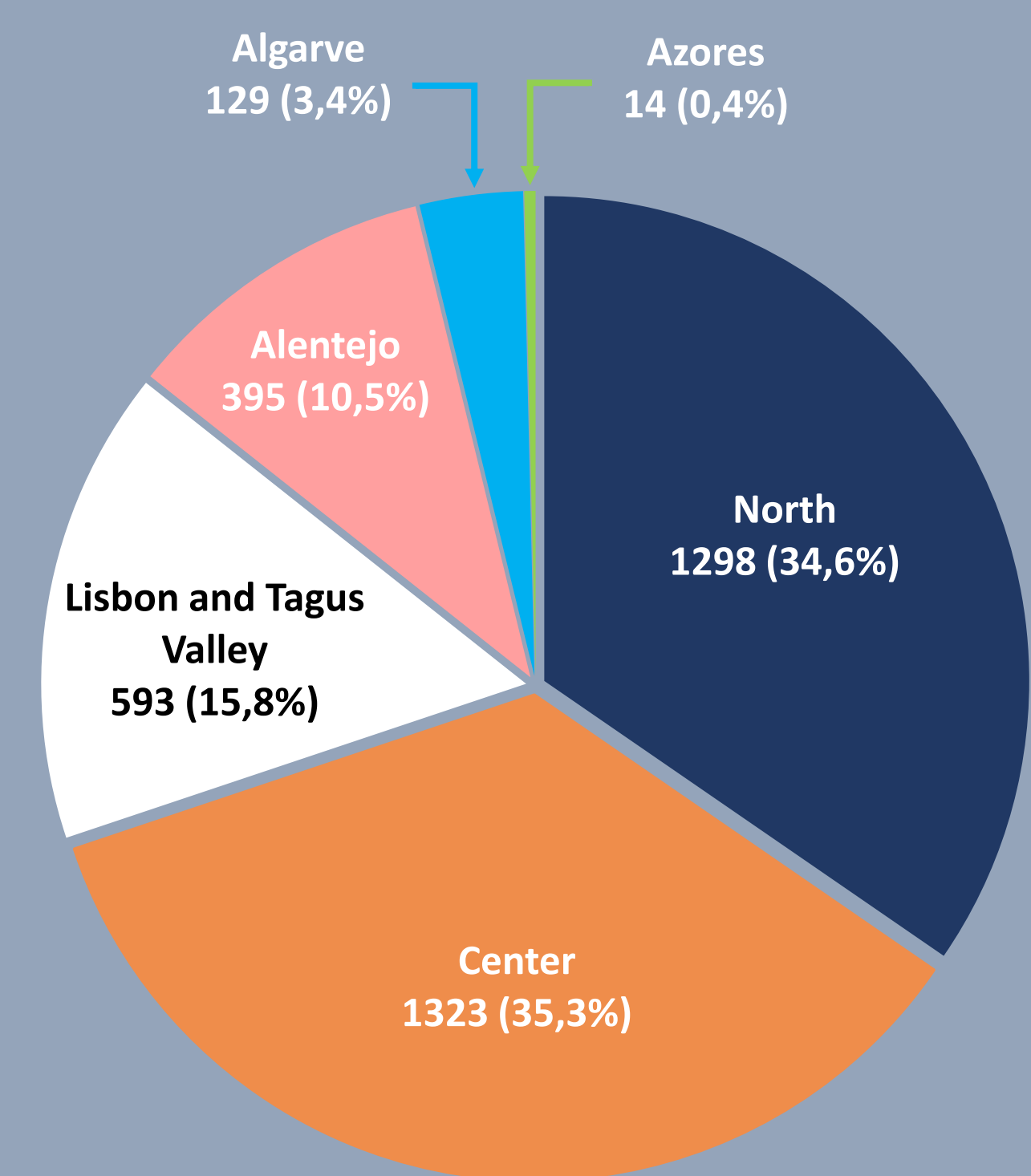


Figure 3. Notified cases of brucella by region (1998-2018)

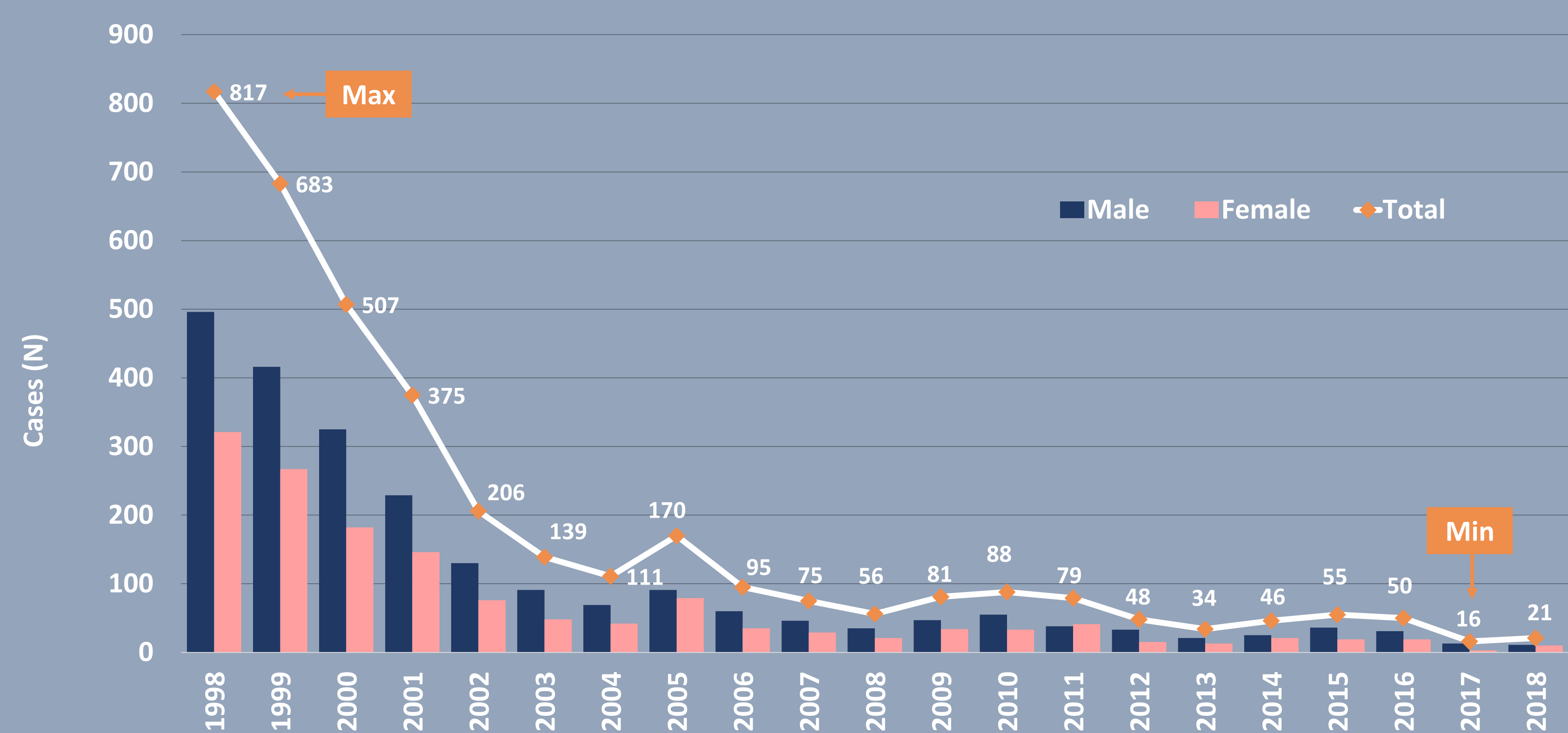


Figure 4. Annually notified cases of brucella by sex and total

Conclusion

In the last two decades, the number of reported cases of human brucellosis has decreased significantly. The improvement of the notification system, socioeconomic changes and animal brucellosis eradication programs are determining factors for this decrease. However, brucellosis is not eradicated in Portugal. Therefore, the surveillance of human cases is essential to develop timely strategies for controlling brucellosis, not only at human level but also at animal and environmental levels. Moreover, it is necessary to continue developing effective and targeted interventions that assist in the continuous prevention strategies through information/education of professionals in the human, animal and environmental health sectors.