

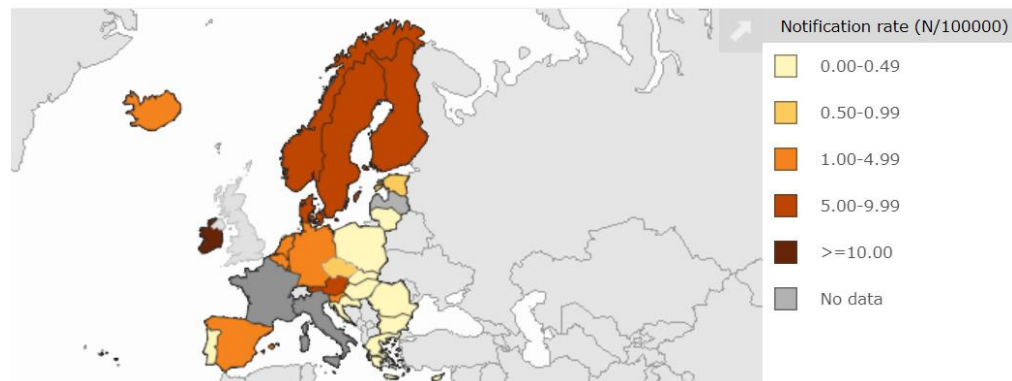
Update on STEC infections in the EU/EEA

18th Annual Workshop of the National Reference Laboratories for *E. coli* in the EU
5-6 October, 2023, Rome

Cecilia Jernberg, Expert microbiology and molecular surveillance

STEC cases in the EU/EEA 2022

- 8565 reported cases
- Notification rate 2,47 (per 100 000 population)
- 1280 hospitalisations
- 28 deaths



Highest notification rates in countries:

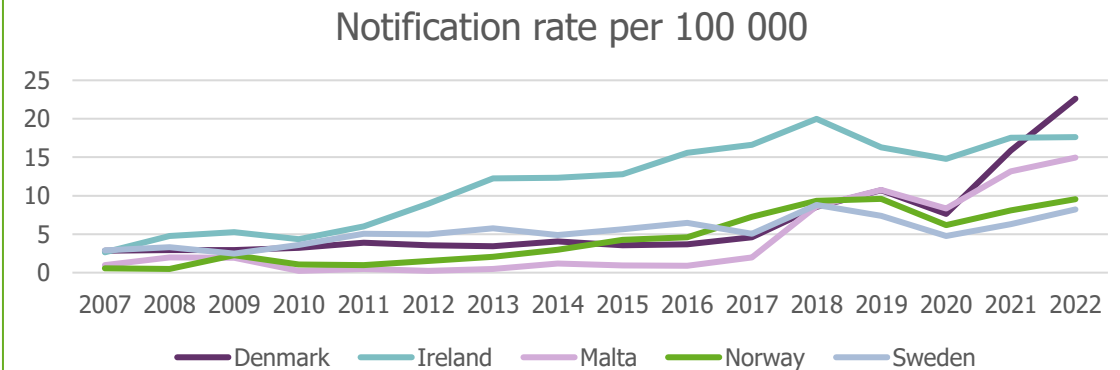
Denmark: 22.63 (change in diagnostic methods and more testing influence the increased rate)

Ireland: 17.63

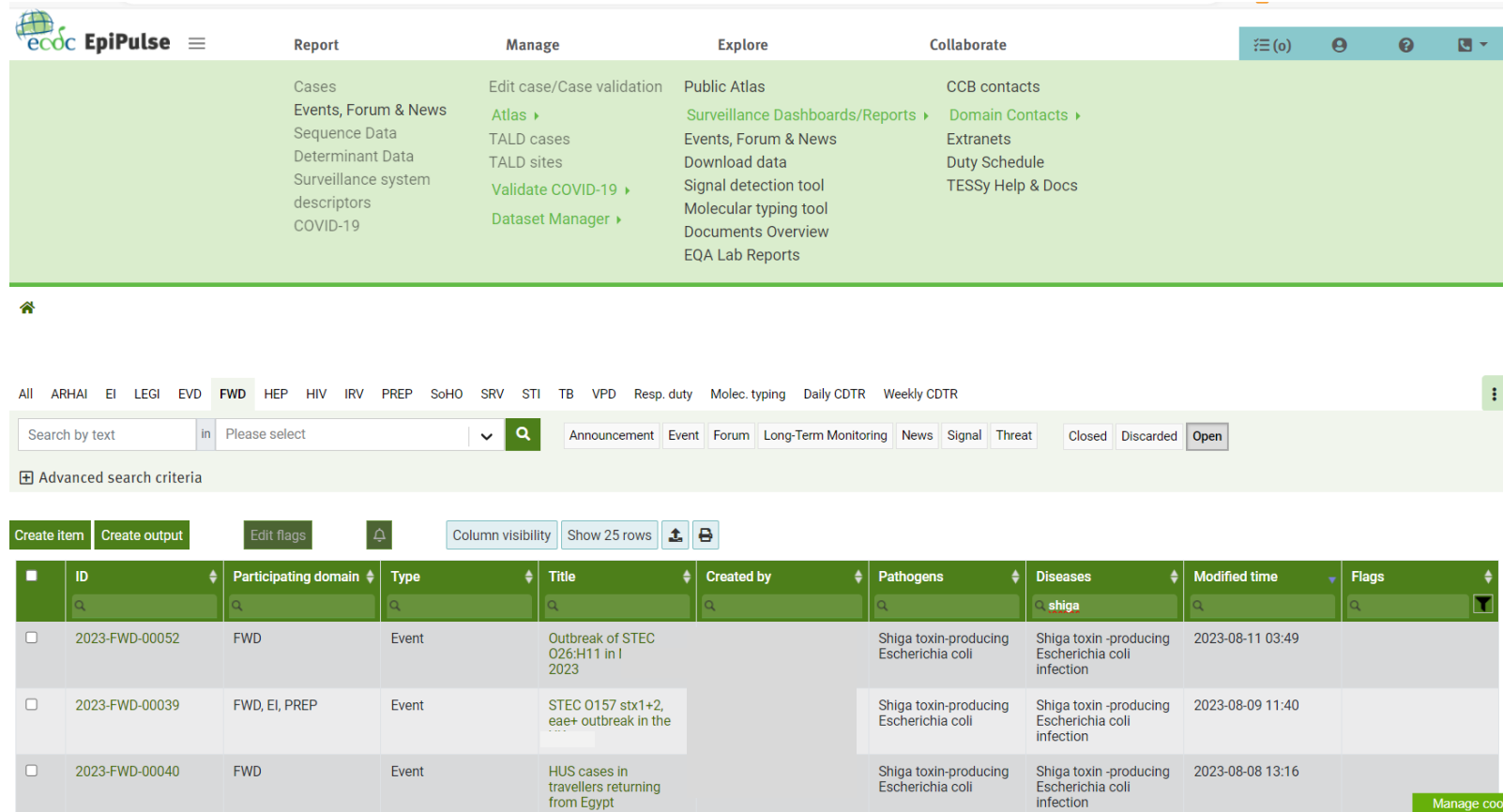
Malta: 14.97 (PCR panel introduced in 2018)

Norway: 9.55

Sweden: 8.2



STEC events launched by countries in the EpiPulse platform



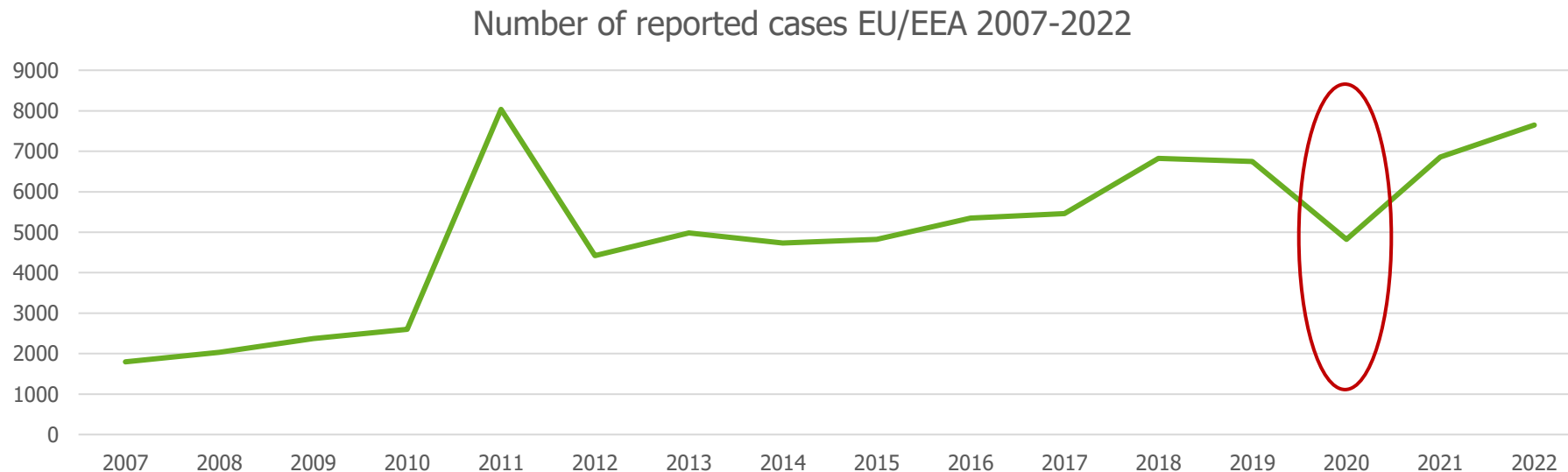
The screenshot shows the EpiPulse platform interface. At the top, there is a navigation menu with categories: Report, Manage, Explore, and Collaborate. Below the menu is a search bar with filters for various event types and statuses. A table displays a list of STEC events with columns for ID, Participating domain, Type, Title, Created by, Pathogens, Diseases, Modified time, and Flags.

ID	Participating domain	Type	Title	Created by	Pathogens	Diseases	Modified time	Flags
2023-FWD-00052	FWD	Event	Outbreak of STEC O26:H11 in I 2023		Shiga toxin-producing Escherichia coli	Shiga toxin -producing Escherichia coli infection	2023-08-11 03:49	
2023-FWD-00039	FWD, EI, PREP	Event	STEC O157 stx1+2, eae+ outbreak in the		Shiga toxin-producing Escherichia coli	Shiga toxin -producing Escherichia coli infection	2023-08-09 11:40	
2023-FWD-00040	FWD	Event	HUS cases in travellers returning from Egypt		Shiga toxin-producing Escherichia coli	Shiga toxin -producing Escherichia coli infection	2023-08-08 13:16	

SUMMARY: In total 12 STEC events were launched by countries in EpiPulse in 2022. One event was multi country. All events involved either of the serogroups O157 or O26.

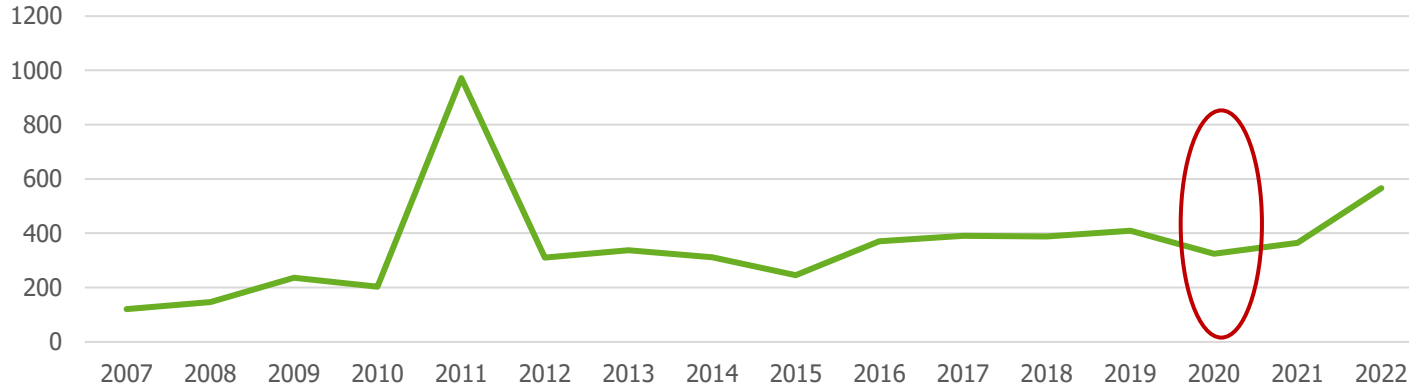
Interpret surveillance data with care

- Increased awareness after 2011 outbreak to test for STEC
- PCR panels slowly introduced in clinical labs starting around 2012 in many countries
- "All" fecal samples from GI cases can easily be tested for STEC, no selection based on e. g. age, season



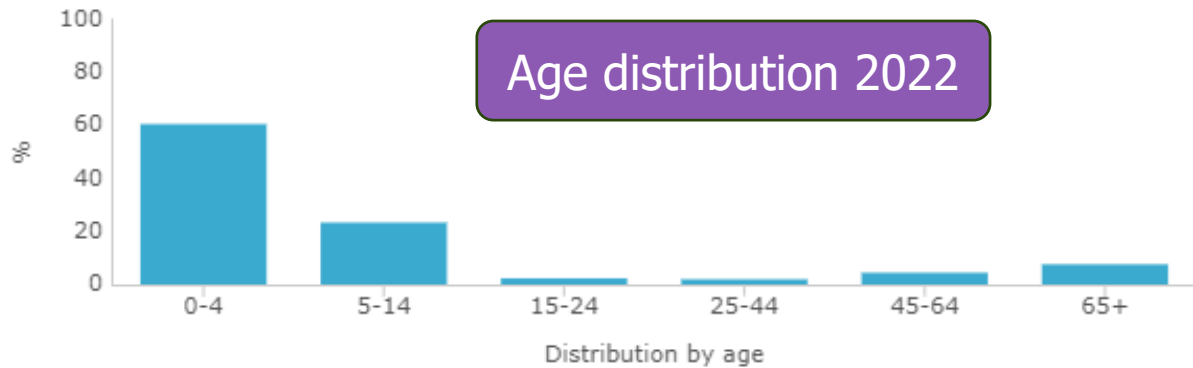
Reported number of HUS cases 2007-2022, EU/EEA

Number of reported cases of HUS EU/EEA 2007-2022

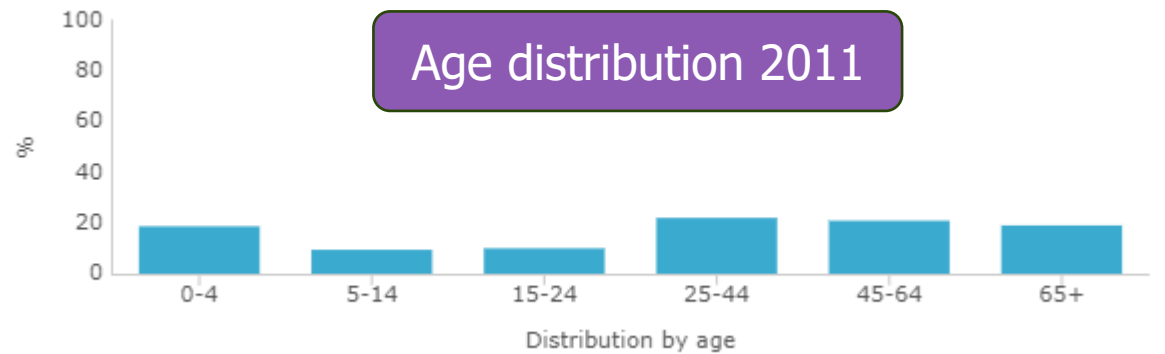


568 reported cases of STEC associated HUS in 2022.
20 deaths.

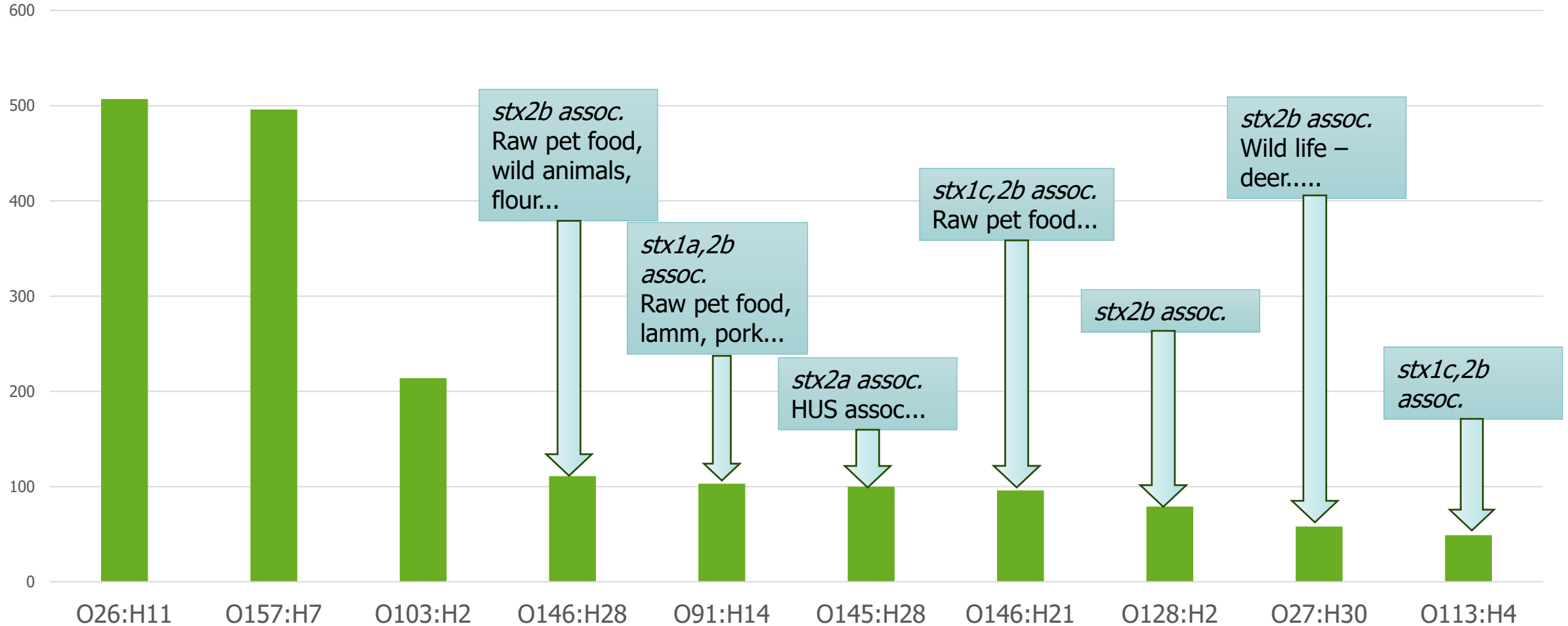
Age distribution 2022



Age distribution 2011



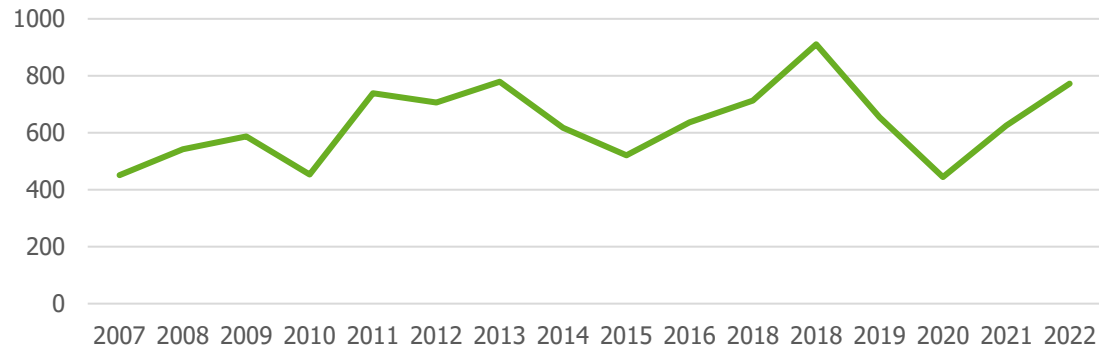
Ten most common serotypes in 2022, EU/EEA



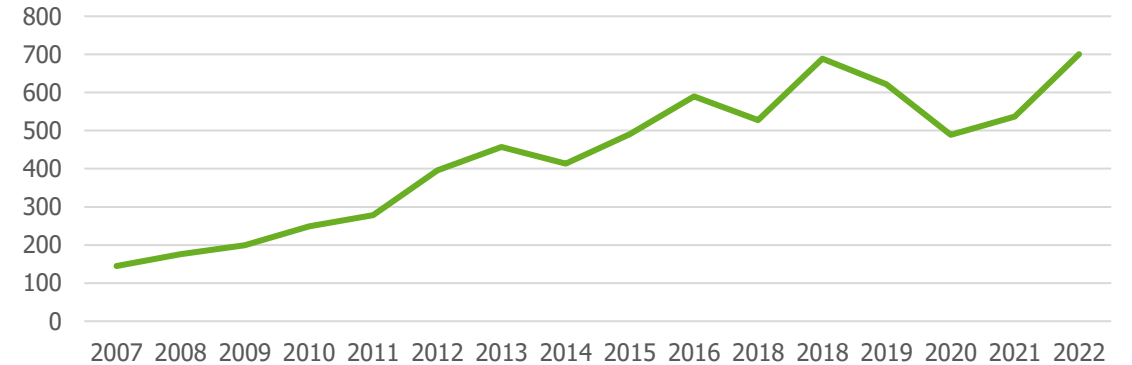
Reported number of cases with four of the largest serogroups, 2007-2022 EU/EEA



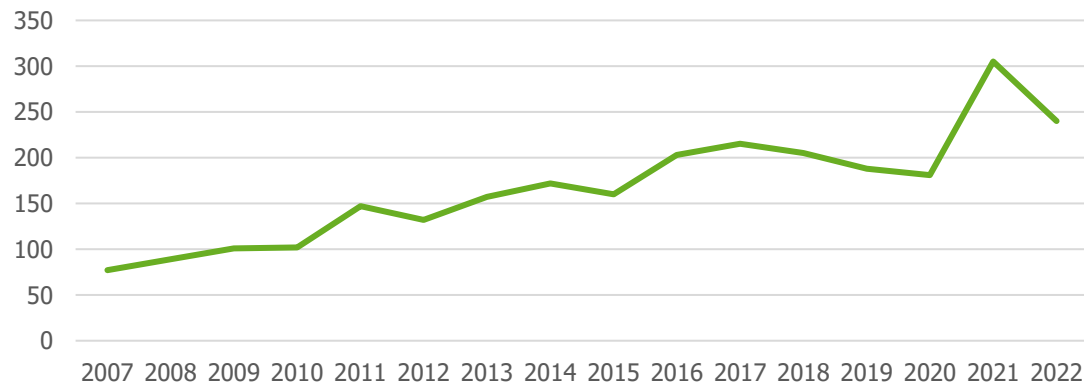
O157



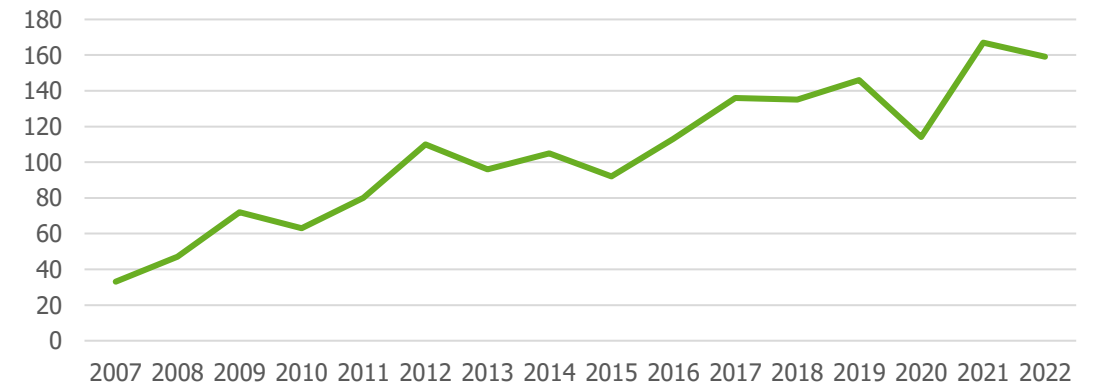
O26



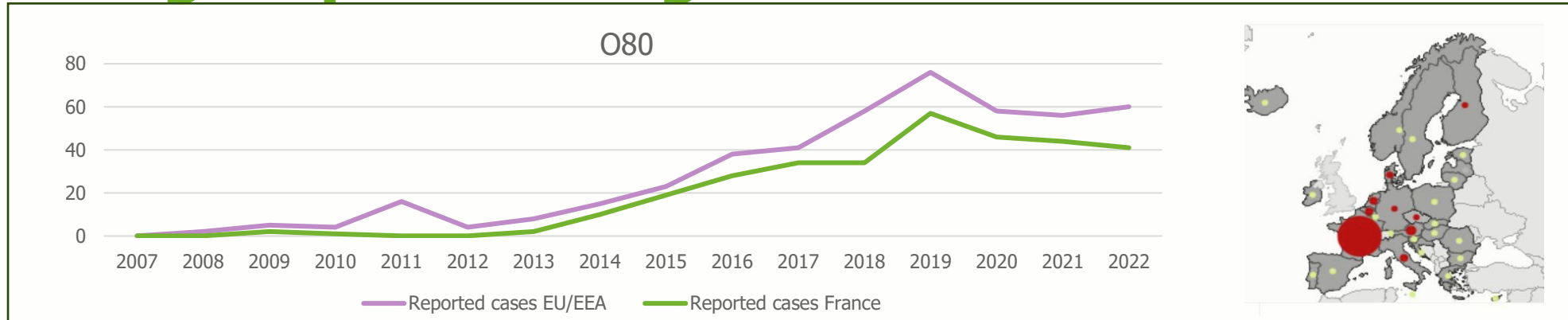
O103



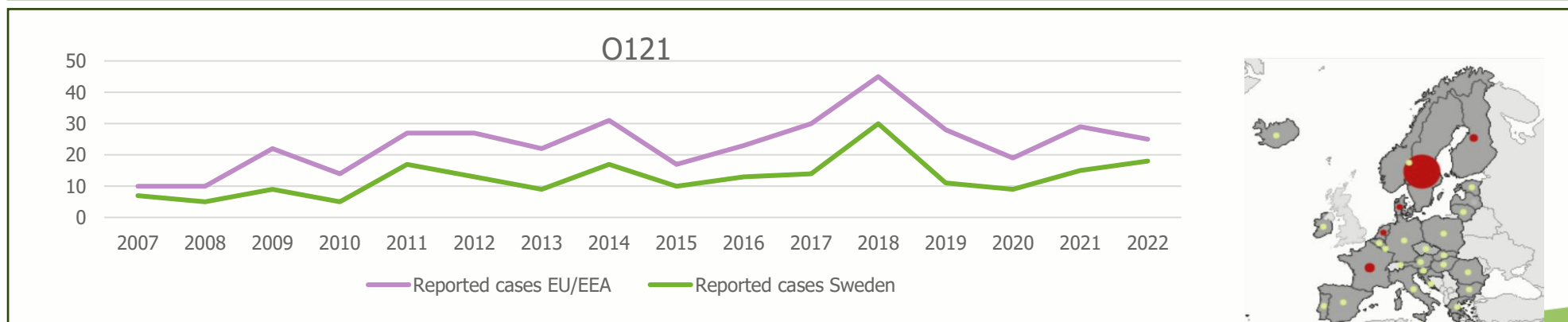
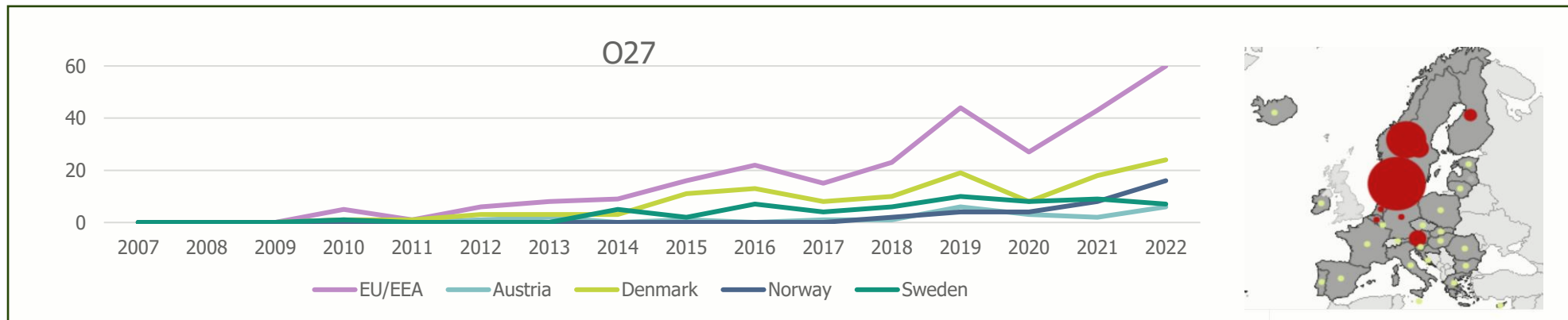
O145



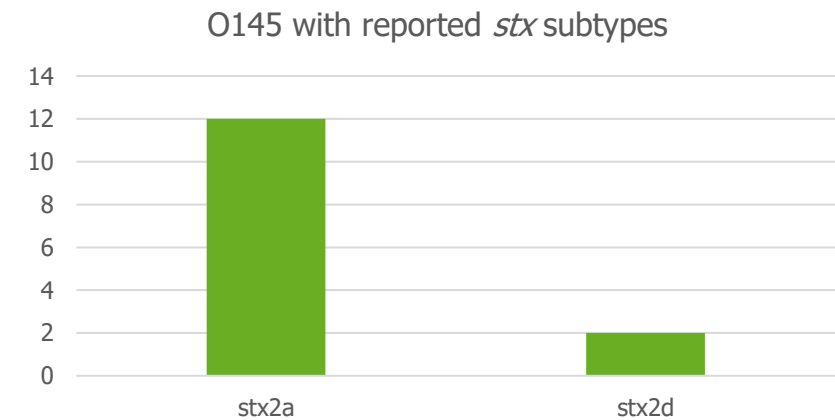
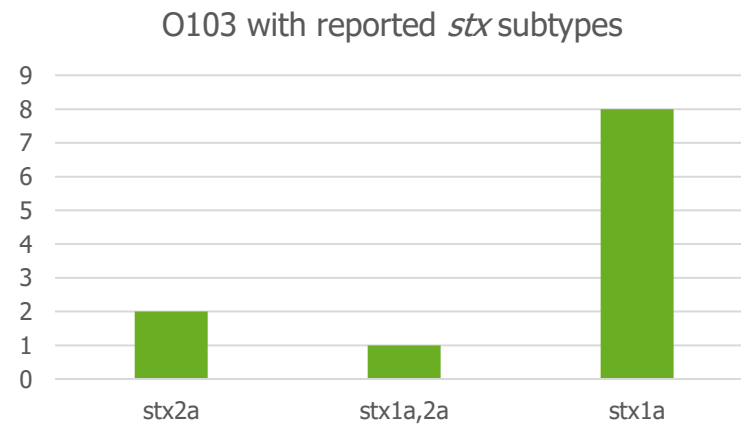
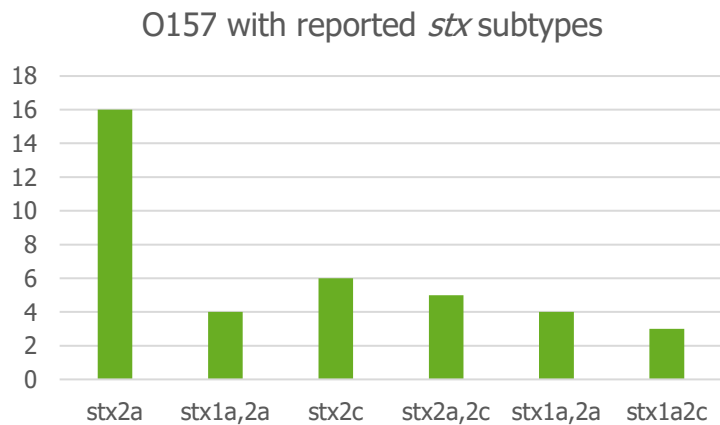
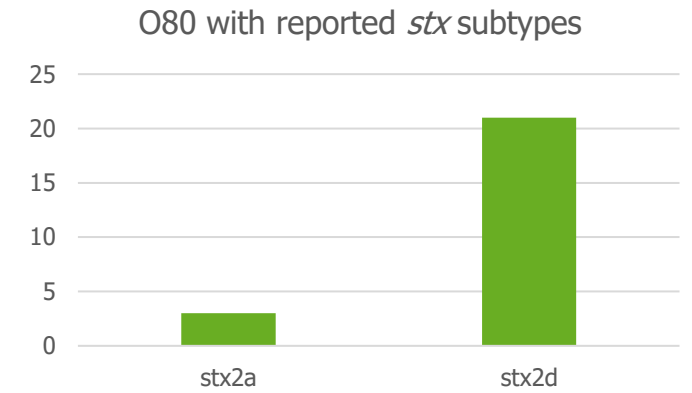
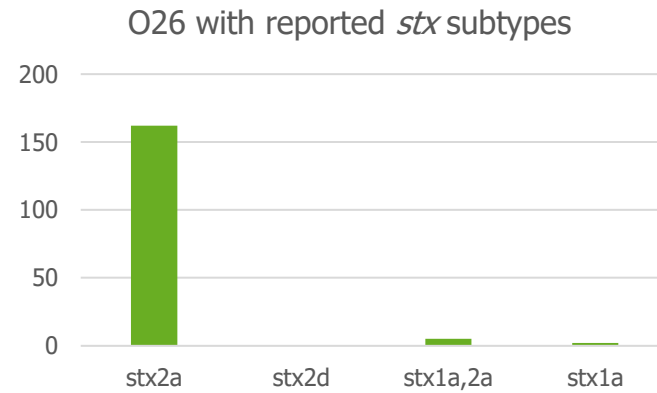
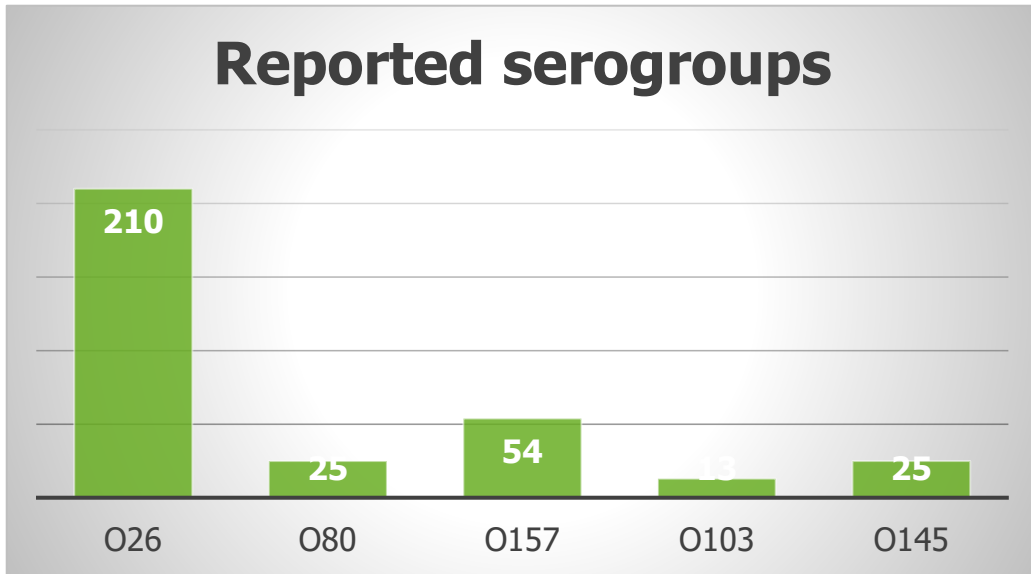
Serogroups with regional distribution?



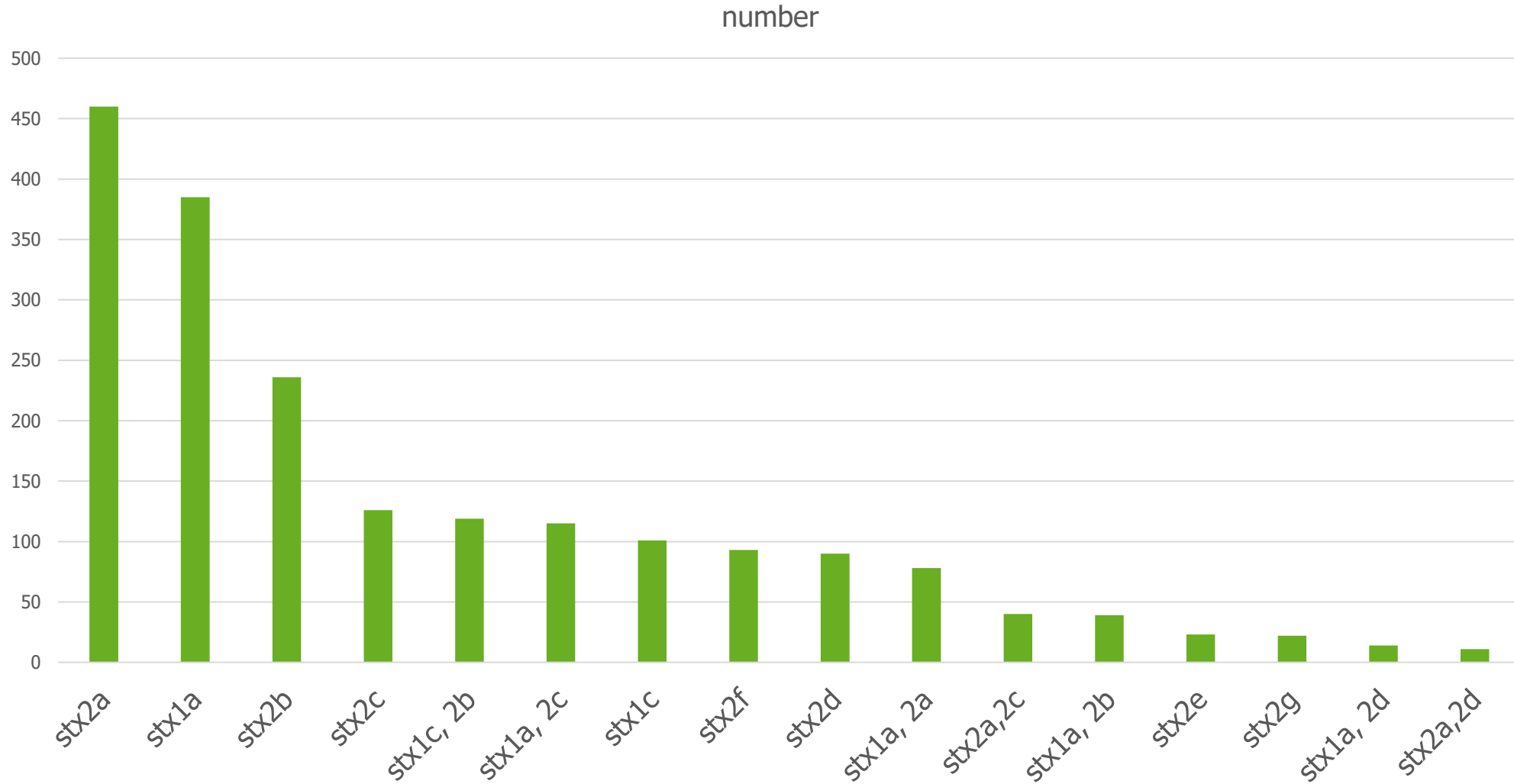
STEC ExPEC
hybrid.
Bacteremia



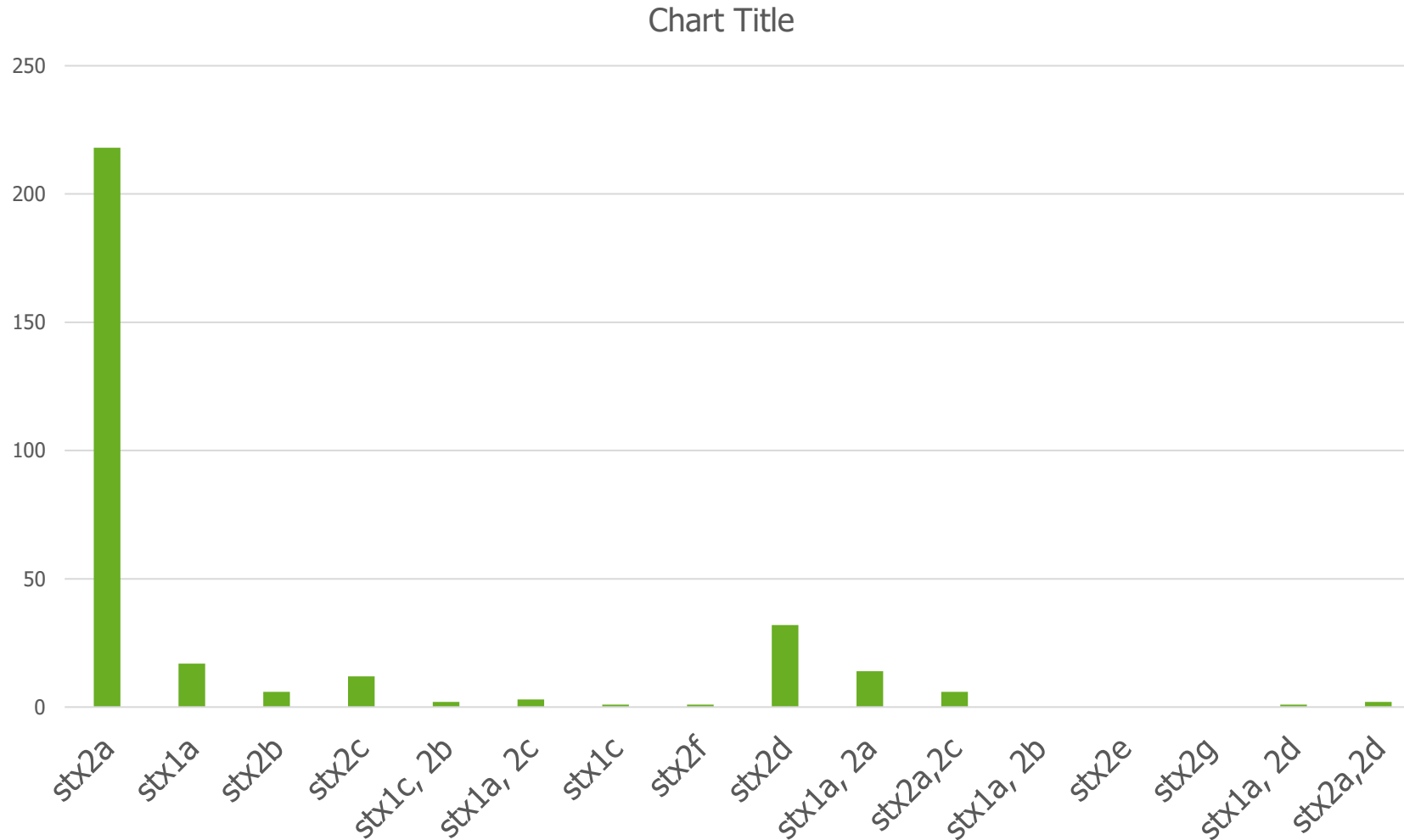
Five most common serogroups of HUS isolates reported in 2022, EU/EEA



Isolates with *stx* subtyping data in 2022 (n=1968)

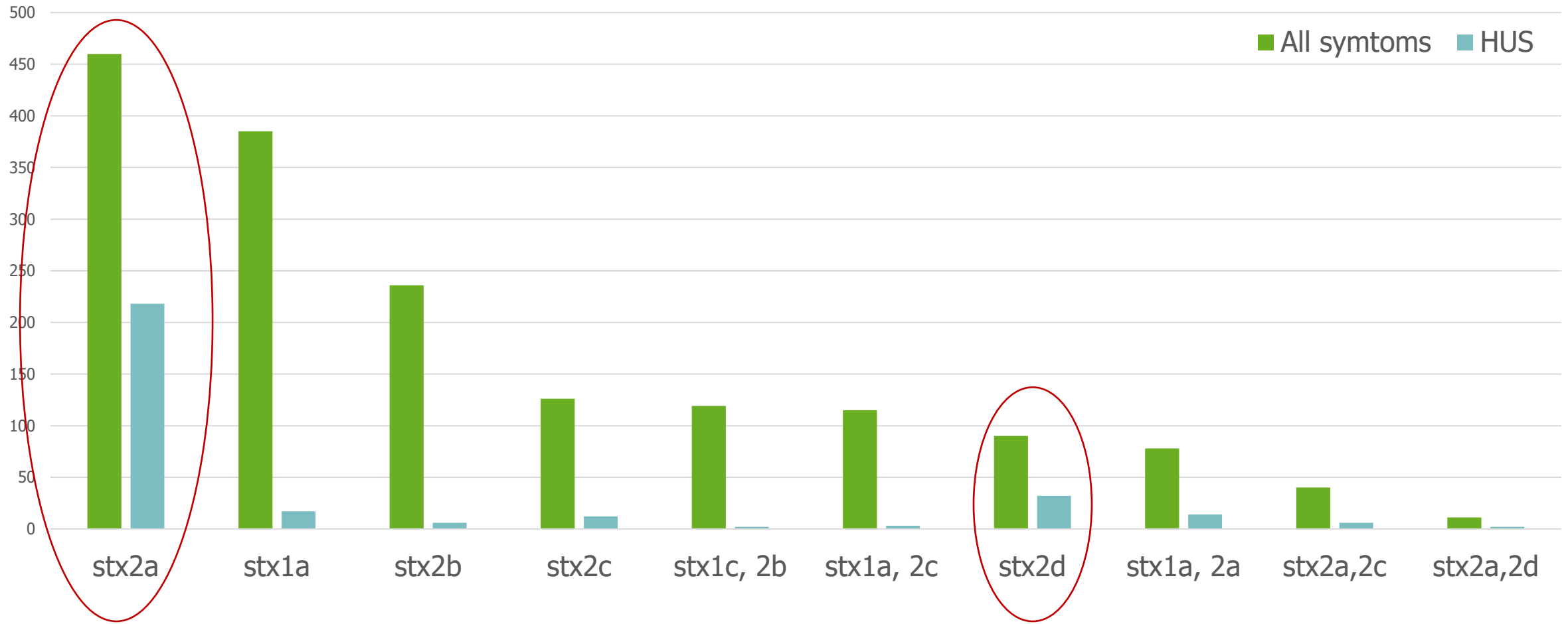


Isolates from HUS cases in 2022 with *stx* subtyping data (n=316)



Isolates with *stx* subtype variations with <5 isolates not included in the graph

Isolates with *stx* subtype data, HUS cases compared to all cases



.... “the wider adoption of Next Generation Sequencing..... Clearly, this typing technique enables a comprehensive characterisation of the isolates and should be encouraged in all sectors to promote a One Health approach to the assessment of the cases of disease in humans, the causative agent and the vehicles of infection. As a matter of fact, the fine characterisation of the isolates proved to be crucial in managing STEC outbreaks, particularly for the identification of the sources”

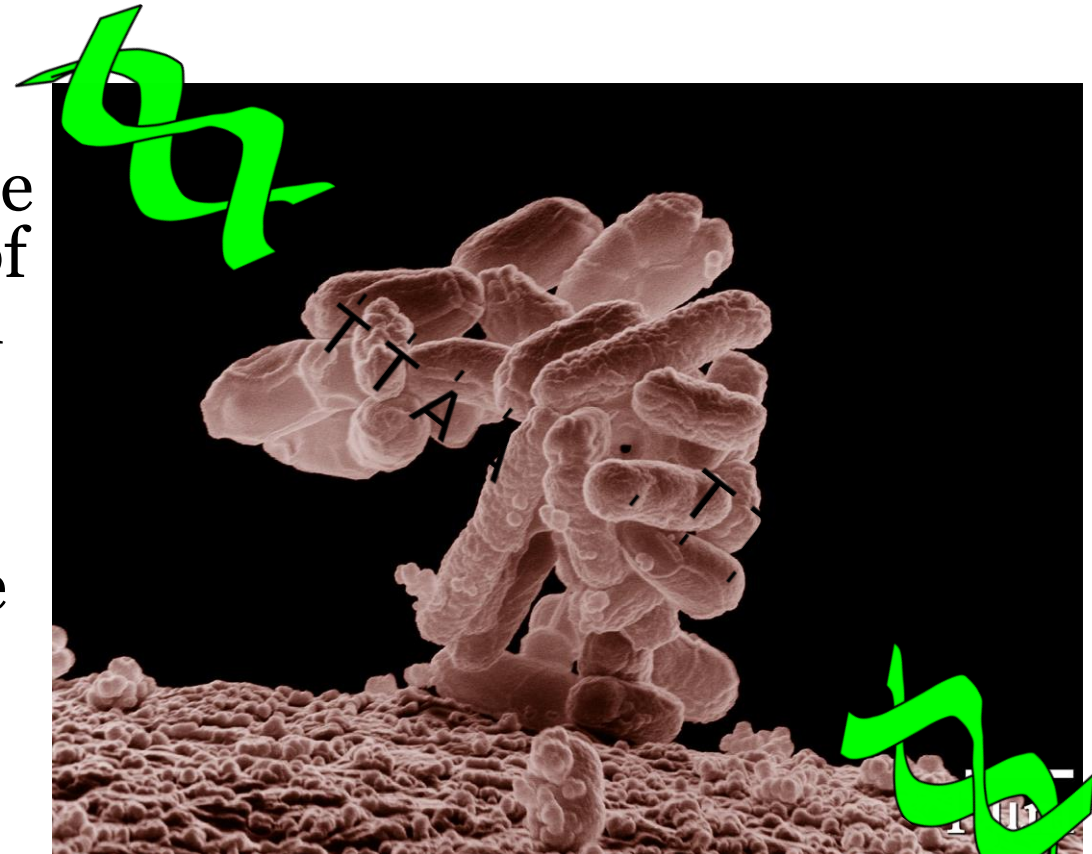


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