Clostridioides difficile surveillance in Belgian hospitals since 2008: main incidence trends

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Introduction

- *Clostridioides difficile* infection (CDI) is a major cause of hospital-associated infections (HAI): 3.6% of HAI in European hospitals.[1]
- CDI results in a high clinical and economic burden.
- Incidence increased in the last decades due to
  - the emergence of hypervirulent strains,
  - the ageing of population,
  - the increase in antibiotic use.
- **Objective:** describe the main patterns and incidence trends of CDI in Belgian acute care hospitals between 2008 and 2018.

Methods

- We computed CDI incidence via two data source:
- **National surveillance system:**
  - Implemented in 2008.
  - Participation was mandatory for all Belgian acute care hospitals until 2014, now voluntary.
  - Includes reporting of all CDI episodes in hospitalised patients for at least one semester per year.
- **Hospital stay data**
  - Provided by the Federal Public Service.
  - We analysed all stays classified as "Enterocolitis due to *Clostridioides difficile*" by the International classification of diseases (ICD9-10), as primary or secondary diagnosis.
  - Comprehensive data:
    - ✓ better estimates of CDI burden
    - ✓ validation of surveillance data.

Results

- High participation rate in surveillance despite being voluntary (85% in 2017 and 2018).
- Hospital-associated (HA)-CDI incidence stable since 2015, highest in Wallonia and lowest in Flanders (Fig 2).
- Large variations between provinces and hospitals (Fig 1).

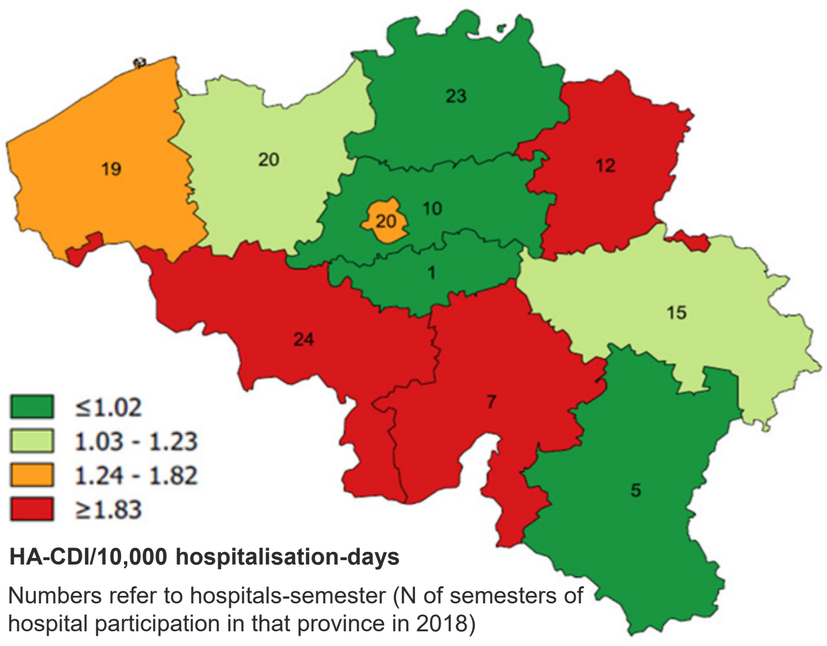

Fig 1: Mean incidence of HA-CDI/10,000 hospitalisation-days in acute care hospitals, per province, Belgium, 2018 (surveillance data)

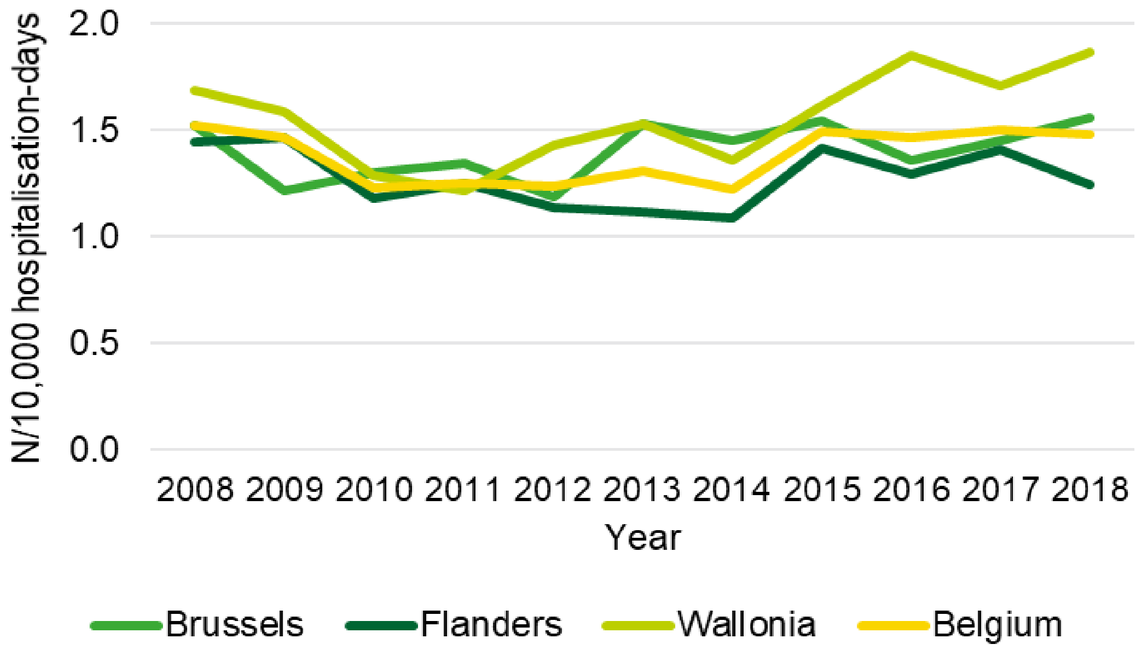

Fig 2: Mean incidence of HA-CDI/10,000 hospitalisation-days in acute care hospitals, per region, Belgium, 2008-2018 (surveillance data)

- Comparison of surveillance data versus hospital stay data (Fig 3):
  - Similar incidence trend.
  - Incidence computed via surveillance systematically lower than hospital stays.
- Decrease in the proportion of "hospital-associated" cases (HA-CDI, date of onset ≥ 2 days after admission):
  - 55.5% in 2018, compared to 64.8% in 2008.
- Increase in cases originating in the "community":
  - 27.5% in 2018, compared to 19.5% in 2008.

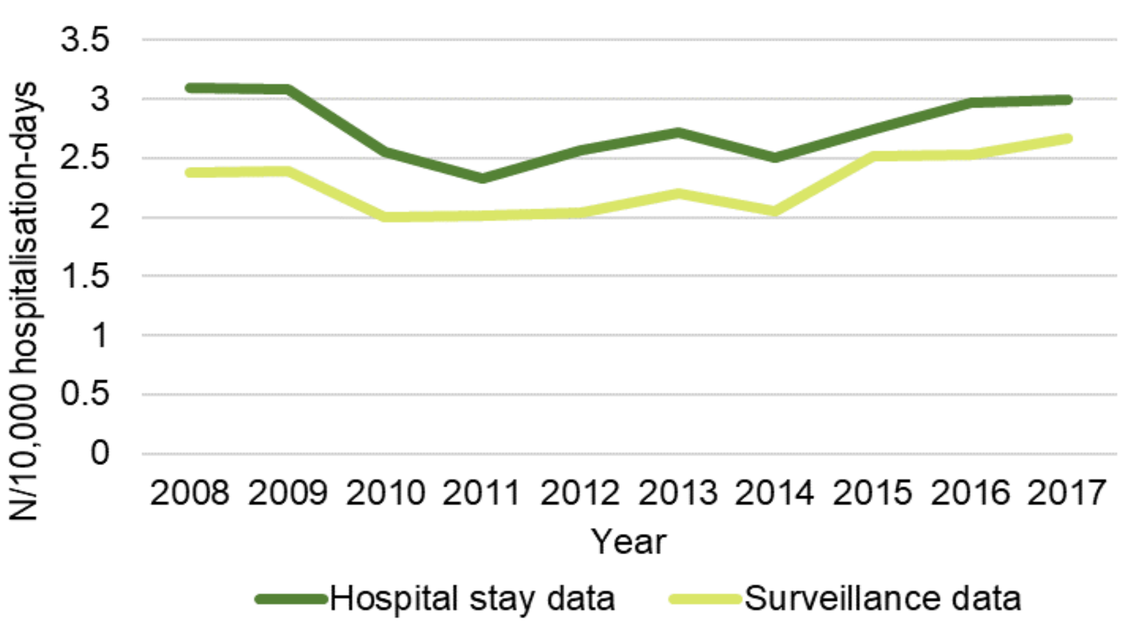

Fig 3: Incidence of total CDI/10,000 hospitalisation-days: comparison between hospital stay data and surveillance data. Belgium 2000-2017

REFERENCES

- European Centre for Disease Prevention and Control. Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals. Stockholm; 2013.

Conclusion:

- **Lower incidence during 2010 – 2014 and variations across the country and between hospitals suggest room for improvement!**
  - **Antibiotic stewardship**
  - **Promote participation in the surveillance**
  - **Investigate CDI in the community (one health approach)**
- **Investigate the differences in incidence measured via the two data sources.**

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