Epidemic of *Chlamydia pneumoniae* infections in France in 2024

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ESCMID Global

Congress of the European Society of Clinical Microbiology and Infectious Diseases

Chlamydia pneumoniae – Clinical presentation

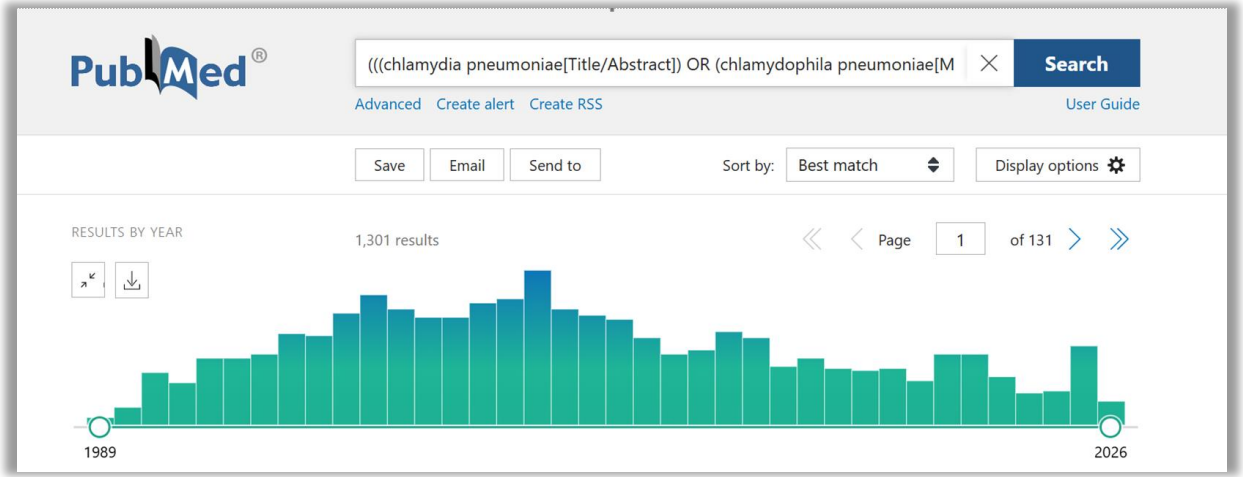
- **Clinical presentation**
  - Asymptomatic ++
  - Upper respiratory tract infection
  - Asthma
  - CAP: < 5%
- **Population**
  - Children > adults
  - First infection in children over 5 years
- **Transmission**
  - Direct: respiratory droplets
  - Indirect possible : inanimate surfaces for up to 30 h
- **Incubation**
  - 3 to 4 weeks
- **Short term immunity**

Chlamydia pneumoniae – Number of publications

- **A poorly described pathogen**

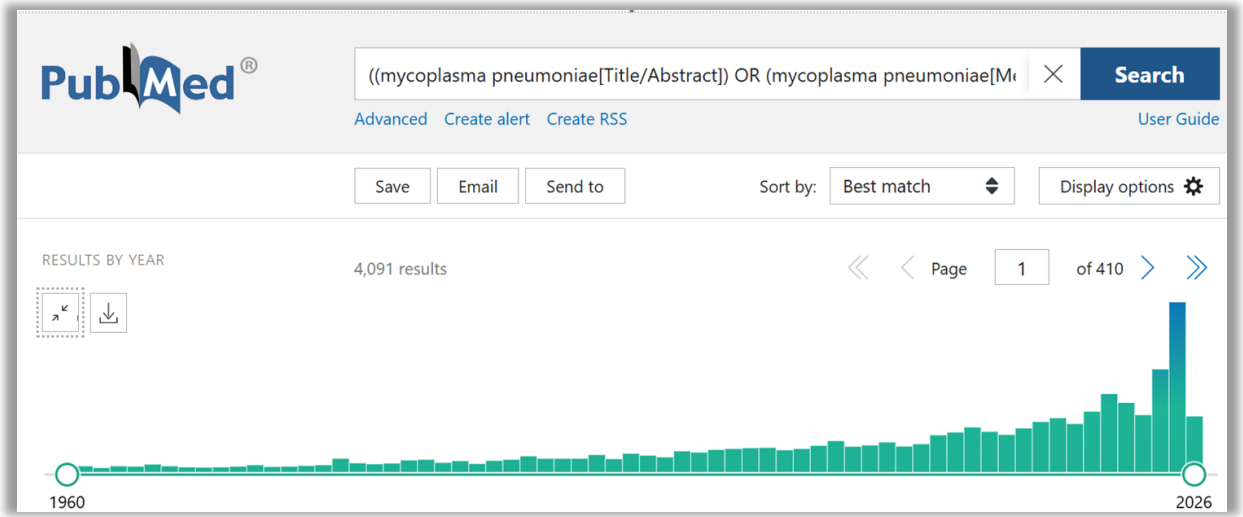
  - ***Chlamydia pneumoniae* and respiratory infections**
    - 1,301 results
    - A constant decrease since the 90's

    (((chlamydia pneumoniae[Title/Abstract]) OR (chlamydophila pneumoniae[MeSH Terms])) OR (chlamydophila pneumoniae[Title/Abstract])) AND (respiratory tract infections[Title/Abstract] OR pneumonia[Title/Abstract] OR pulmonary disease[Title/Abstract])



  - ***Mycoplasma pneumoniae* and respiratory infections**
    - 4,091 results
    - An increasing number of publications
    - Boosted by the last epidemic

    ((mycoplasma pneumoniae[Title/Abstract]) OR (mycoplasma pneumoniae[MeSH Terms])) AND (respiratory tract infections[Title/Abstract] OR pneumonia[Title/Abstract] OR pulmonary disease[Title/Abstract])



Respiratory infections due to *Chlamydia pneumoniae*

- A pathogenic role still to be established

Case Reports > Clin Infect Dis. 2011 Oct;53(8):847-8. doi: 10.1093/cid/cir515.

Does respiratory infection due to Chlamydia pneumoniae still exist?

Laurence Senn, Katia Jaton, Jean-William Fitting, Gilbert Greub

Chlamydia pneumoniae - Epidemiology

- **Re-emergence described in Switzerland from 2014**

Chlamydia pneumoniae Upsurge at Tertiary Hospital, Lausanne, Switzerland

Florian Tagini, Onya Opota, Gilbert Greub

Author affiliation: Institute of Microbiology, Lausanne University Hospital, Lausanne, Switzerland

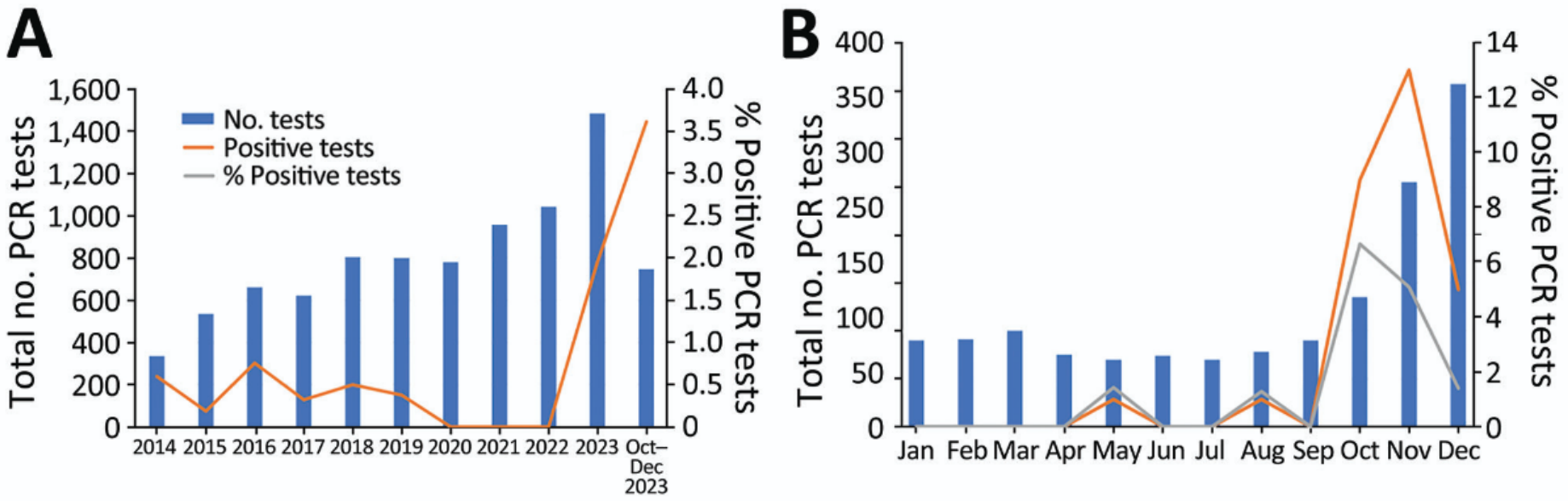
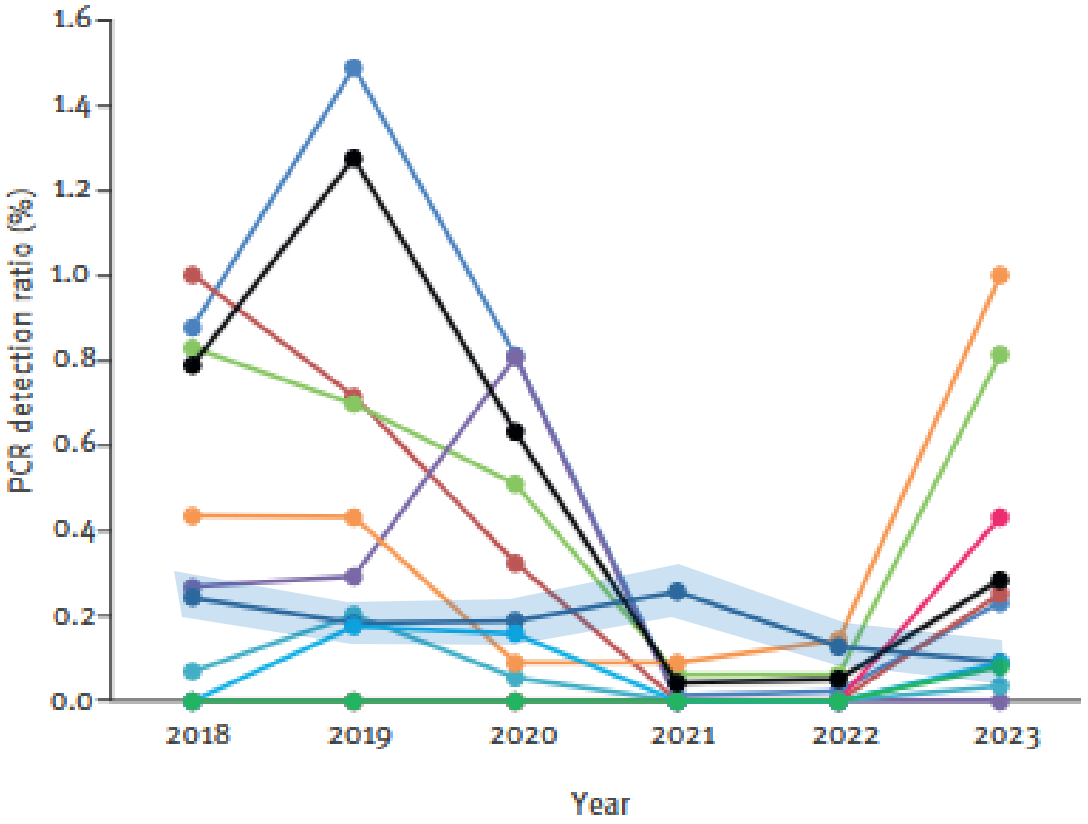


Figure 1. Positivity rate of *Chlamydia pneumoniae* PCRs in a tertiary care hospital, Lausanne, Switzerland. A) Yearly number of *C. pneumoniae* PCR tests conducted during 2014-2023. The final bar shows the last quarter of 2023, when the positivity rate exhibited a notable increase to 3.61%. B) Monthly numbers of *C. pneumoniae* PCR tests performed in 2023, showcasing positive tests and corresponding positivity rates. The data reveal a peak in the percentage of positivity of 6.66% in October.

Chlamydia pneumoniae - Epidemiology

- **2018 to 2023 – Europe and Taïwan**



Epidemiological changes in *Chlamydia pneumoniae* molecular detections before, during and after the COVID-19 pandemic in 27 European sites and Taiwan, 2018 to 2023

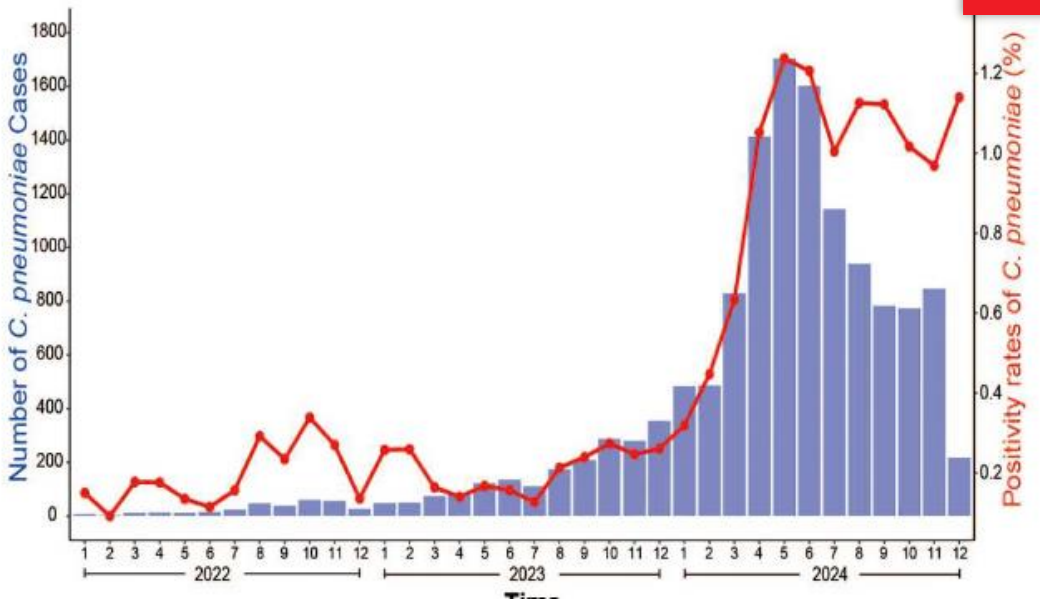
Denmark (515,714)
Finland (3,187)
Slovenia (10,954)
Belgium (1,791)
Czechia (12,696)
Switzerland (56,135)
France (85,000)
Netherlands (2,386)
Spain (3,896)
Taiwan (1,347)
Overall (693,106)

Chlamydia pneumoniae - Epidemiology

- **An outbreak in 2024**

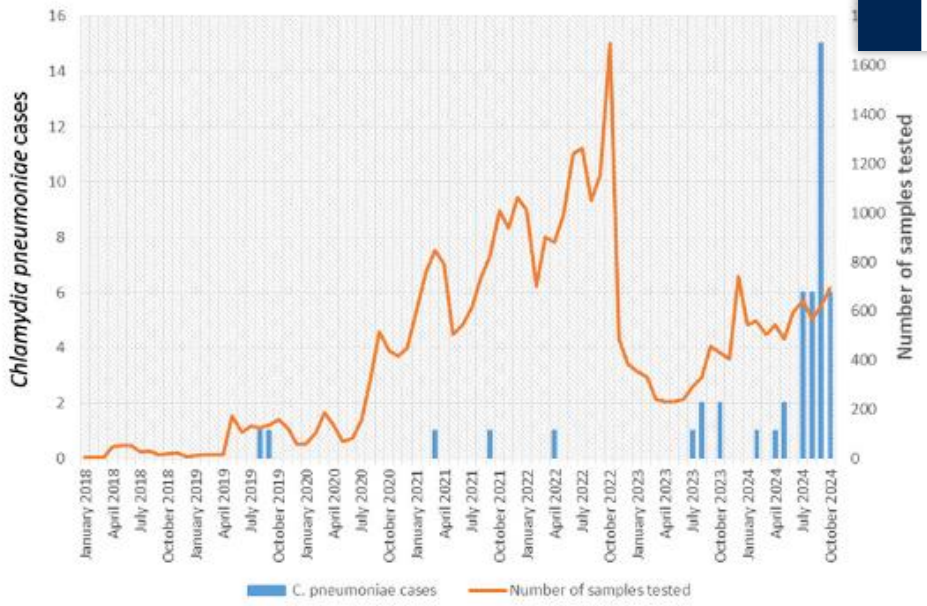
Surge in *Chlamydia pneumoniae* infections in China: insights from 2022 to 2024

Tian Qin[a]*, Xin-Cheng Qin[a]*, Yamin Sun[b]*, Wen Wang[a] and Jianguo Xu[a]



Significant rise of *Chlamydia pneumoniae* infection in 2024 in Marseille, France

Sophie Edouard[1,2,3,#], Rayane Attamna[1,2], Matthieu Million[1,2,4], Céline Boschi[1,2,4], Jeremy Delerce[1,3], Aurélia Caputo[1,3], Didier Stoupan[1,2], Seydina Diene[1,4], Idir Kacel[1,3], Claudia Andrieu[1,2], Anthony Levasseur[1,3], Hervé Chaudet[1,2,3,5], Jean-Marc Rolain[1,2,4], Lucile Lesage[6], Aurélie Morand[4,6,7,8], Pierre-Edouard Fournier[1,2,3], Jean-Christophe Lagier[1,2,4], Florence Fenollar[1,2,3], Bernard La Scola[1,2,4], Philippe Colson[1,2,4,#,*]

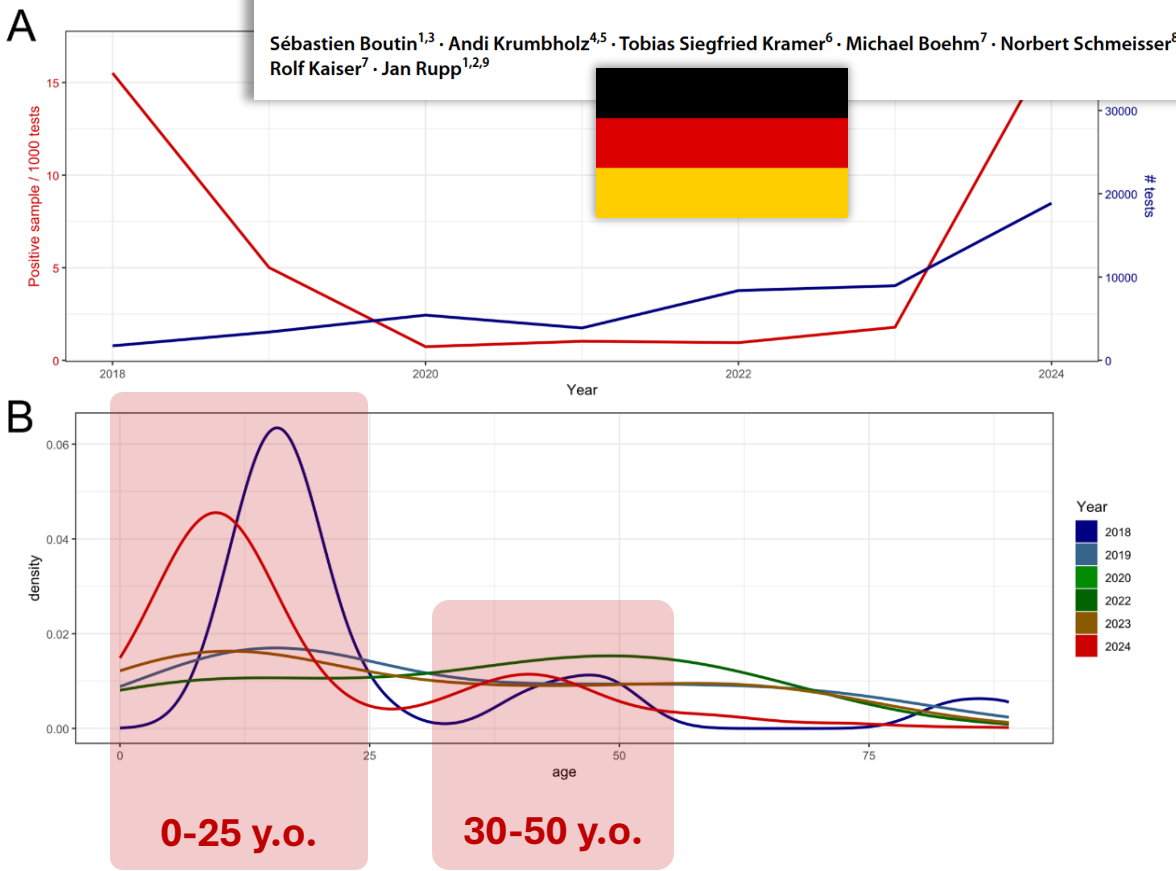


Chlamydia pneumoniae - Epidemiology

- **Age distribution**

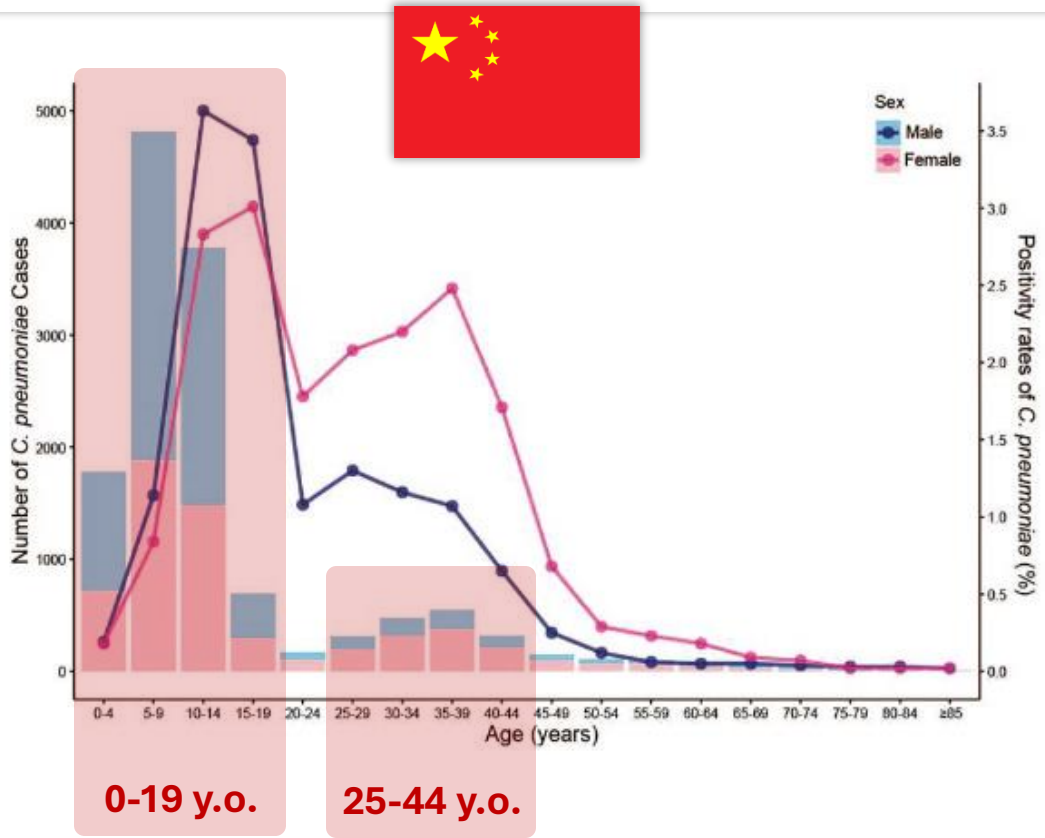
Sharp increase in *Chlamydia pneumoniae* infections in 2024 in Germany

Sébastien Boutin[1,3] · Andi Krumbholz[4,5] · Tobias Siegfried Kramer[6] · Michael Boehm[7] · Norbert Schmeisser[8] Rolf Kaiser[7] · Jan Rupp[1,2,9]



Surge in *Chlamydia pneumoniae* infections in China: insights from 2022 to 2024

Tian Qin[a*], Xin-Cheng Qin[a*], Yamin Sun[b*], Wen Wang[a] and Jianguo Xu[a]



Method

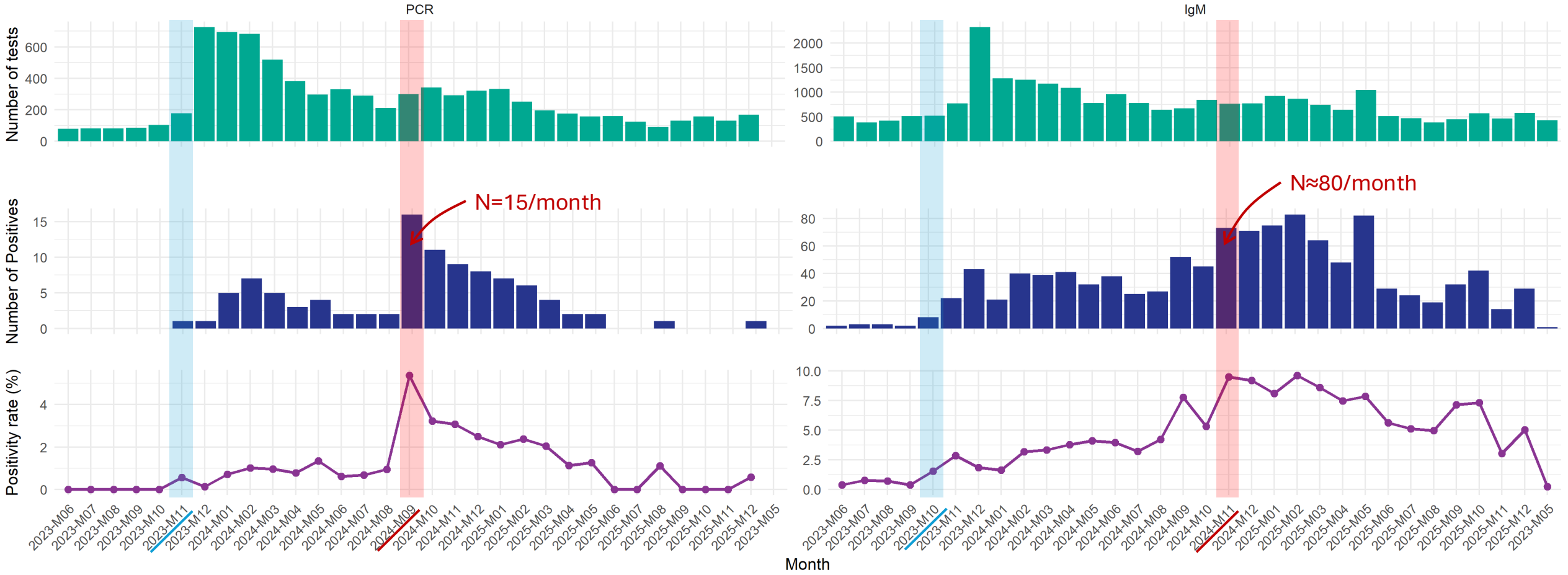
- **Cerba laboratory:**
  - Nationwide centralized lab for specialty biology
  - Conducting assays for **both hospital and community patients**

- **Study period**
  - From January 1, 2023, to December 31, 2025

- **Detection methods**
  - **PCR**
    - Allplex™ PneumoBacter Assay (Seegene) kit
    - For all demand of respiratory bacteria :
      C.pneumoniae, M.pneumoniae, L.pneumophila, B.pertussis, B.parapertussis
  - **IgM antibodies**
    - Chlamydia IgM SeroFIA™ kit (immunofluorescence)
    - Only test reimbursed in community settings in France

Results

- **Description of the 2024 outbreak**

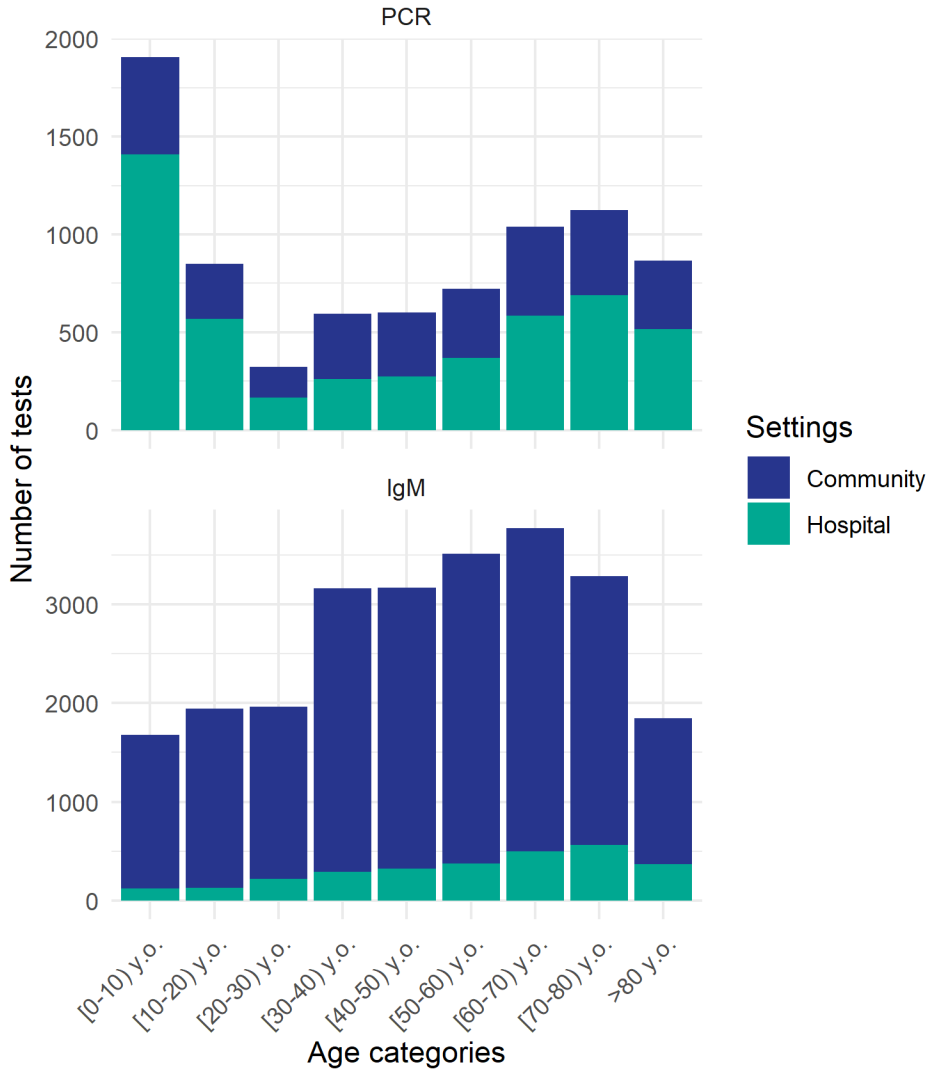


Results

- **Patient's description:**
  - 32 565 tests (30 838 patients)

	N	Median age [IQR]	Male ratio (%)	Positivity rates (%)	Hospital patients (%)
PCR	8068	45 [10-69]	51.1	1.2	60.2
IgM	24497	50 [31-67]	42.9	4.6	9.0

- **PCR:**
  - Largely prescribed in **hospital settings** (no reimbursement in community)
  - **Lower positivity rates** (non targeted assay)
  - Higher **male sex ratio**
  - Large representation of **young patients**

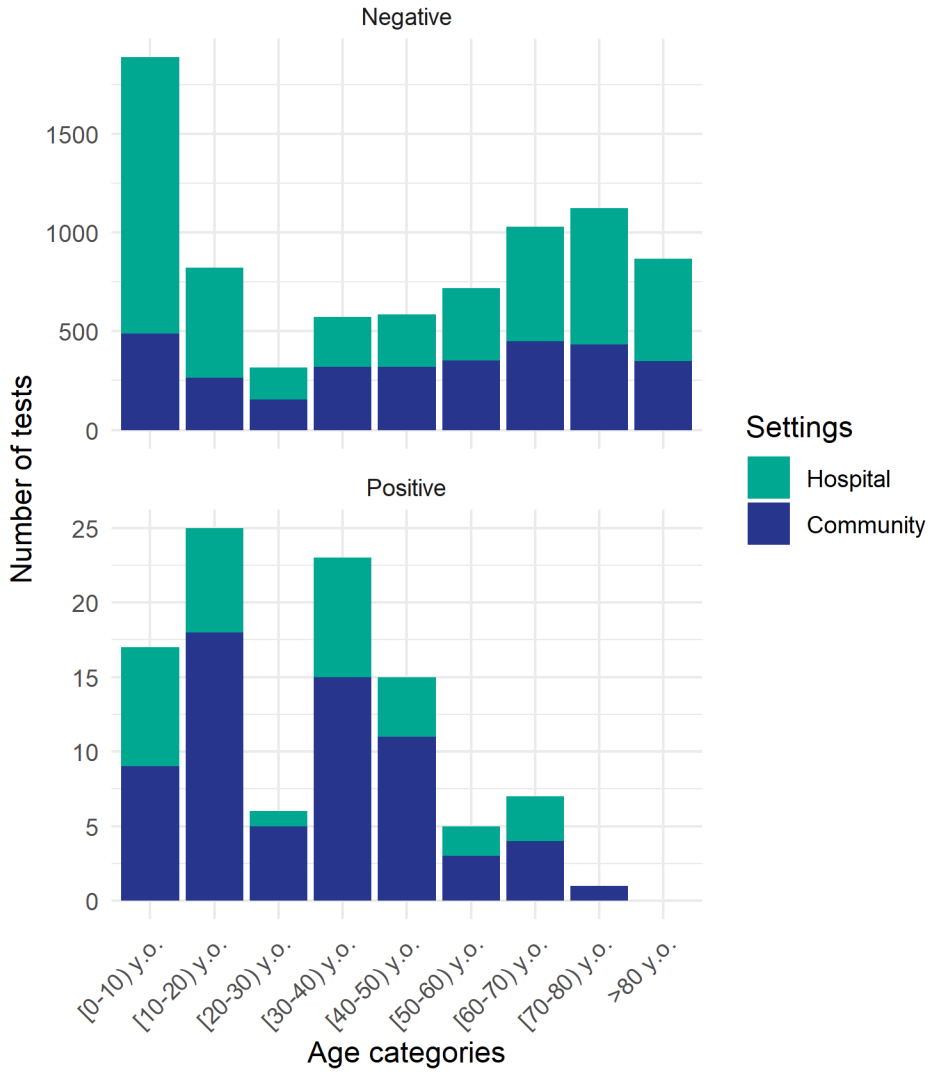


Results

- **PCR tests**

PCR	N	Median age [IQR]	Male ratio (%)	Hospital rate (%)
Positive	99	30 [12-42]	49.5	33.3
Negative	7969	45 [10-70]	51.1	60.5

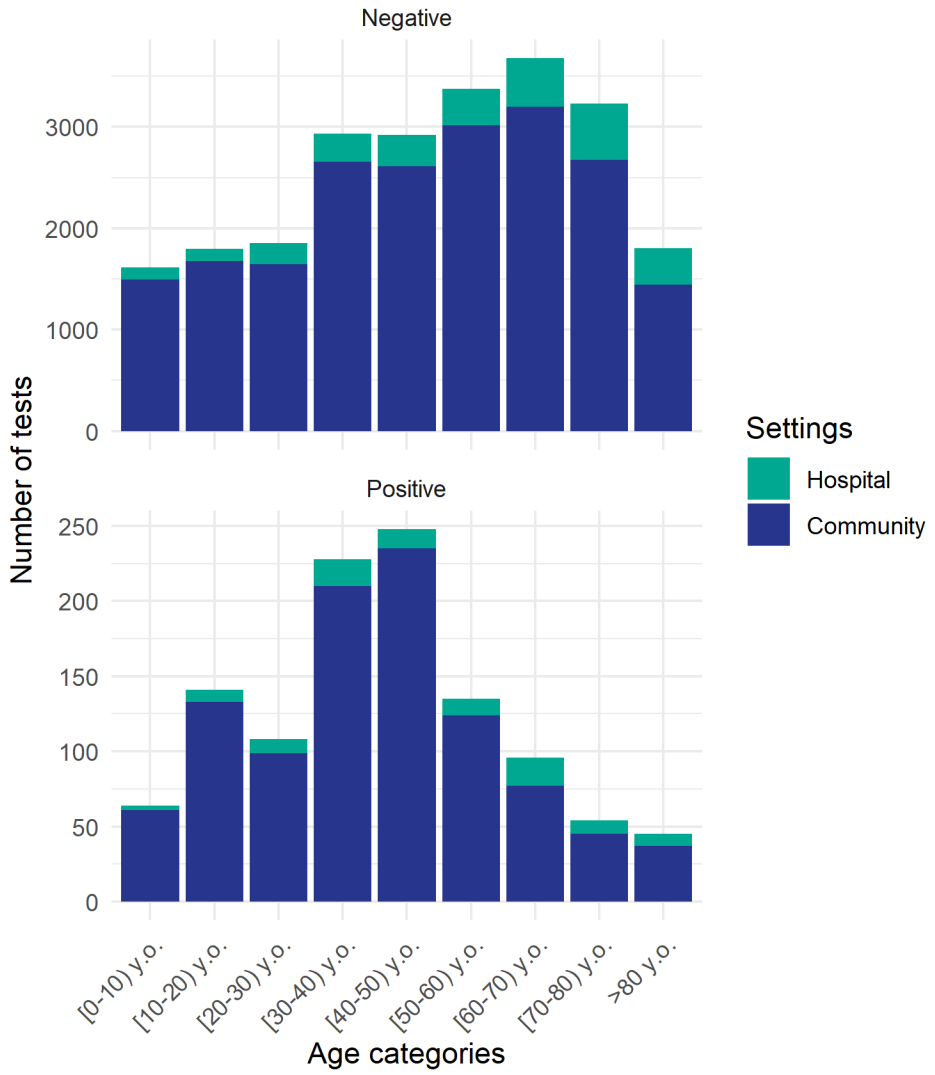
- **Positive cases**
  - A rare disease
  - Mainly in community settings
  - Mainly among patients < 50 y.o.
    (despite large testing of older patients)



Results

- **IgM tests**

IgM	N	Median age [IQR]	Male ratio (%)	Hospital rate (%)
Positive	1129	40 [32-67]	42.1	8.9
Negative	23368	51 [26-53]	42.9	12.0



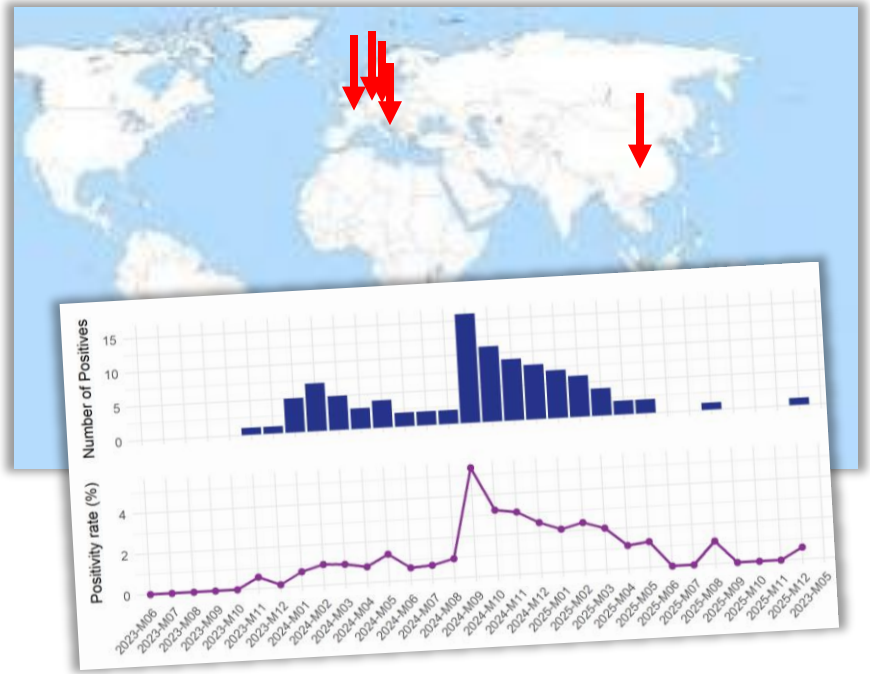
- **Positive cases**
  - Still a rare disease (sligthly >1 000 cases over 3 years)
  - Mostly in community settings
  - Mainly among patients from 10 to 70 y.o.

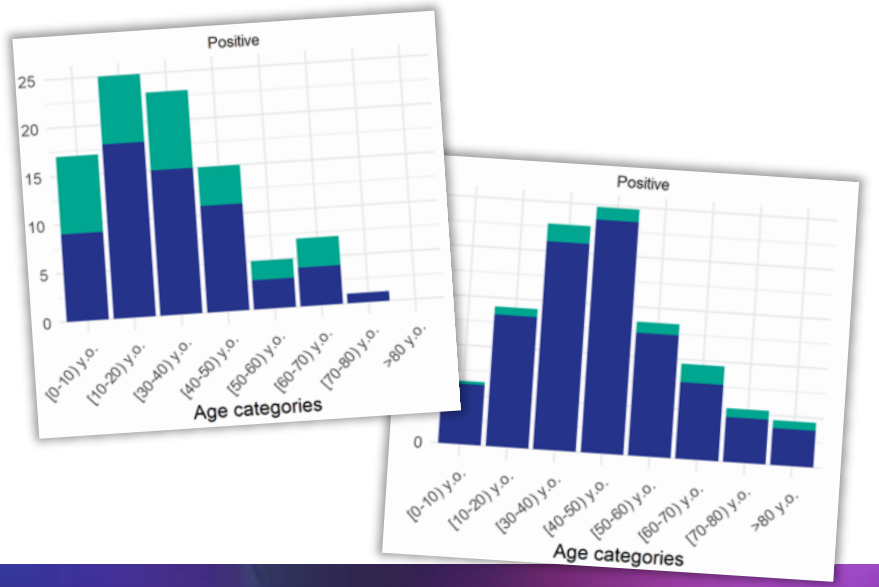
Discussion

- **Re-emergence of *Chlamydia pneumoniae***
  - Described after non pharmaceutical intervention's relaxation in Europe and China
  - In France :
    - From Nov. 2023 to Apr. 2025
    - Two peaks: Feb. 2024 and Sep. 2024

- **Infected patients:**
  - No elderly patients (<70 y.o.)
  - Mostly in community settings

- **Is it a real disease?**
  - A few patients hospitalized
  - **Further studies are needed for clinical data** (ongoing: ChlamPAC study in France and Switzerland)





Radhika
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ChlamPAC study team

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