

Hospital-origin antibiotic prescriptions dispensed in community pharmacies: national/regional overview and comparison with community consumption dynamics

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Background and Importance

Antibiotic consumption in both hospitals and community pharmacies is well documented and represents a major challenge for appropriate use.

However, **Hospital-origin prescriptions dispensed in community pharmacies (HPCP)** remain **underexplored**, although they may represent a **strategic lever for antimicrobial stewardship**.

Aim and Objectives

Quantify, characterize, and compare for **antibiotics (Anatomical, Therapeutic Chemical Classification System (ATC) J01)**, the contribution of **HPCP** to community consumption at :

- national and regional levels,
- In the **three largest university hospitals (UH) in France** :
 - Assistance Publique-Hôpitaux de Paris (**AP-HP**)
 - Assistance Publique-Hôpitaux de Marseille (**AP-HM**)
 - Hospices Civils de Lyon (**HCL**)

Materials and Methods

OPEN PHMEV Database
 Data type : Reimbursement
 Unit : Number of boxes
 Prescriber origins
 Public hospital

OPEN MEDIC Database
 Data type : Reimbursement
 Unit : Number of boxes
 Prescriber origins
 Hospital and community prescribers

STUDY SCOPE

2021-2024 Antibiotics (J01)

Conversion from unit boxes to defined daily doses (DDD)



DDD standards : assumed average maintenance dose per day for a drug used for its main indication for an adult

$$DDD = \frac{\text{number of units consumed} \times \text{dosis (g)}}{\text{DDD standards (WHO DDD index) in g}}$$

Conversion from DDD to DDD per 1,000 inhabitants

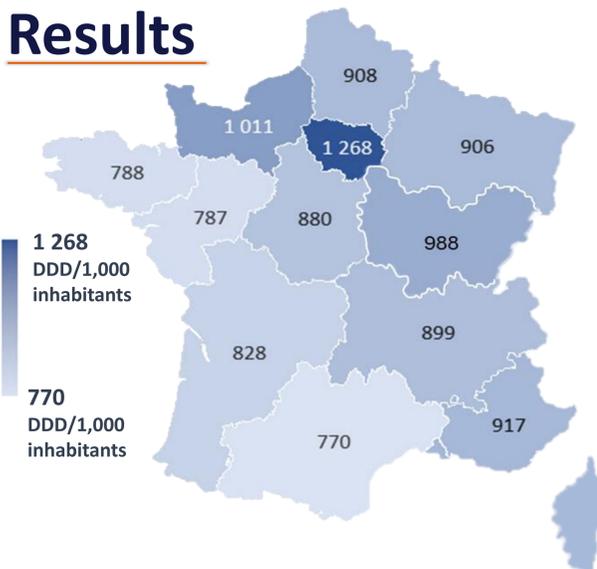


French organization collecting population data. Data from Île-de-France (IDF), Provence-Alpes-Côte d'Azur (PACA), and Auvergne-Rhône-Alpes (ARA) were collected.

$$DDD / 1,000 \text{ inhabitants} = 1\,000 \times \left(\frac{DDD}{\text{regional population}} \right)$$

- 2024 **National** analysis
- 2024 **Regional** analysis including the 3 UH
- 2021 -2024 **Focus on AP-HP, AP-HM, HCL**
 Temporal trends analysis for :
 - ✓ Quinolones,
 - ✓ Amoxicillin (AMX) and amoxicillin/ clav acid (AMC),
 - ✓ Macrolides,
 - ✓ Third generation cephalosporins (3GC),
 - ✓ Doxycycline

Results



✓ **HPCP** varied considerably across regions (cf. figure 1).

✓ **Overall, HPCP** accounted for **11.4% (64.5 M)** of the total DDD dispensed in community pharmacies (cf. figure 2).

✓ **AP-HP** ranks **first** among UH for DDD dispensed in community pharmacies (**7.6 M DDD**) (cf. figure 2).

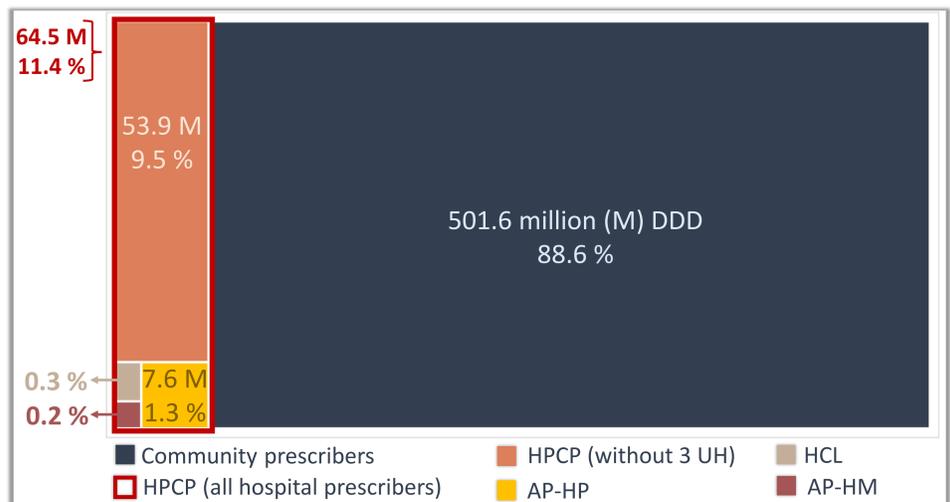


Figure 2 : Distribution of community-dispensed antibiotic consumption by prescriber origin (in DDD) in France for 2024

Figure 1 : Territorial distribution of HPCP in DDD per 1,000 inhabitants in 2024

Table 1 : Share of HPCP (in DDD per 1,000 inhabitants) for the three UH within community prescriptions in their respective regions in 2024

	IDF (AP-HP)		PACA (AP-HM)		ARA (HCL)	
	DDD	%	DDD	%	DDD	%
Community prescribers	8 685	85.4 %	9 430	89.7 %	7 439	87.9 %
HPCP (UH)	612	7.0 %	230	2.4 %	209	2.8 %
HPCP (without UH)	653	7.5 %	742	7.9 %	687	9.2 %

Nine molecules belonging to the **ATC J01** class accounted for **89.4%** of the HPCP (**57.6 million DDD**)

- ✓ AMX (17.8 M DDD)
- ✓ sulfamethoxazole/trimethoprim (5.8)
- ✓ azithromycine (3.2)
- ✓ doxycycline (9.8)
- ✓ ciprofloxacin (1.9)
- ✓ levofloxacin (1.7)
- ✓ clindamycine (1.4)

2021–2024 trends in community antibiotic use: focus on doxycycline and macrolides

Differences in prescribing patterns between **hospital** and **community prescribers**

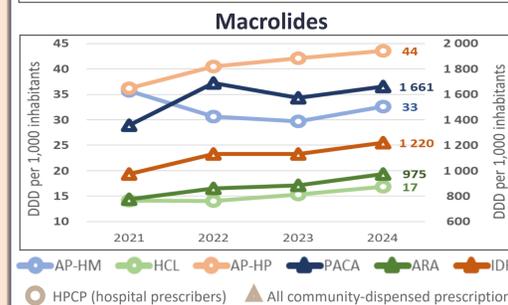
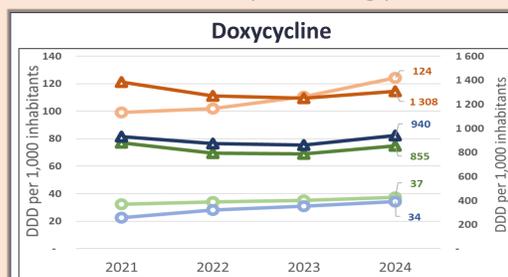


Figure 3 : Evolution of antibiotic consumption from HPCP and community prescriptions (in DDD per 1,000 inhabitants) for the three UH in their regions

⇒ HPCP **increased** for **AP-HP** while consumption **decreasing** in **IDF** region.

⇒ The **increase** of **AP-HP** HPCP was **more pronounced** than HPCP of **AP-HM** and **HCL**.

⇒ In 2022, HPCP **decreased** for **AP-HM** while consumption increasing in its region.



Temporal trends of

- ✓ AMX/AMC
- ✓ 3GC
- ✓ Quinolones

Conclusion and Relevance : Hospital prescribers have a major role to play in rationalizing outpatient antibiotic use.

Disseminating these results to local (**antimicrobial committees**) and regional (**regional antibiotic centers**) bodies could foster a joint dynamic, aimed at supporting **appropriate antibiotic prescribing** and improving **hospital-community coordination**.