Usage ciblé des antibiotiques en pédiatrie

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Infectiologie pédiatrique

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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

SURVEILLANCE REPORT

Antimicrobial consumption in the EU/EEA (ESAC-Net)

Annual Epidemiological Report for 2023

Table 2. Total consumption (community and hospital sectors combined) of antibacterials for systemic use (ATC group J01), EU/EEA countries, 2019–2023 (expressed as DDD per 1 000 inhabitants per day)

Country	2019	2020	2021	2022	2023	Trend 2019–2023		Progress towards 2030 target*			
								Change (%) 2019-2023	Recommended reduction (%) 2019-2030	2023	Target 2030
Austria	11.6	8.8	8.8	10.5	11.3			-3%	-3%	11.3	11.2
Belgium	21.4	16.7	17.4	20.5	20.6			-3%	-18%	20.6	17.5
Bulgaria	20.7	22.7	24.4	25.7	26.3		↑	+27%	-18%	26.3	17.0
Croatia	18.8	15.7	18.2	20.2	21.2			+13%	-9%	21.2	17.1
Cyprus	30.1	28.9	25.0	33.5			N/A	N/A	-27%	N/A	22.0
Czechia	16.9	13.4	13.7	17.1	18.1			+7%	-9%	18.1	15.4
Denmark	15.3	14.3	14.4	15.2	16.2			+6%	-9%	16.2	13.9
Estonia	11.8	10.5	10.1	12.4	12.7			+8%	-3%	12.7	11.4
Finland	14.7	11.9	11.3	12.5	12.9			-12%	-9%	12.9	13.4
France	25.1	20.3	21.5	24.3	24.1			-4%	-27%	24.1	18.3
Germany					13.3		N/A	N/A	-9%	13.3	11.5
Greece[a]	34.1	28.1	23.5	32.9	28.5		N/A	-16%	-27%	28.5	24.9
Hungary	14.4	11.2	11.9	14.4	14.2			-2%	-9%	14.2	13.1
Iceland	19.3	16.5	16.8	18.6	18.5			- 4%	N/A	18.5	N/A
Ireland	22.8	18.6	17.8	23.1	22.4			-2%	-27%	22.4	16.6
Italy	21.7	18.4	17.5	21.9	23.1			+6%	-18%	23.1	17.8
Latvia	13.9	11.9	11.6	14.9	14.9			+7%	-9%	14.9	12.6
Lithuania	16.3	14.2	14.1	18.5	18.7			+15%	-9%	18.7	14.7
Luxembourg[a]	21.1	16.1	15.9	19.1	20.2		N/A	-4%	-18%	20.2	17.3
Malta	20.7	16.6	15.8	24.0	22.9			+11%	-18%	22.9	17.0
Netherlands	9.5	8.5	8.3	9.1	9.6			+1%	-3%	9.6	9.2
Norway	14.9	13.9	14.0	15.3	15.5			+4%	N/A	15.5	N/A
Poland	23.6	18.5	20.2	23.6	23.2			-2%	-27%	23.2	17.2
Portugal	19.3	15.2	15.3	18.8	19.7			+2%	-9%	19.7	17.6
Romania	25.8	25.2	25.7	27.6	27.4			+6%	-27%	27.4	18.8
Slovakia	19.3	14.4	16.0	20.8	20.1			+4%	-9%	20.1	17.6
Slovenia	13.0	10.2	10.2	12.4	13.4			+3%	-9%	13.4	11.8
Spain	24.9	19.7	20.0	23.2	24.1			-3%	-27%	24.1	18.2
Sweden	11.8	10.3	10.1	11.2			N/A	N/A	-3%	N/A	11.4
EU/EEA**	**19.8**	**16.4**	**16.4**	**19.3**	**19.9**			**+1%**	**N/A**	**19.9**	**N/A**
EU***	**19.9**	**16.4**	**16.4**	**19.4**	**20.0**			**+1%**	**-20%**	**20.0**	**15.9**

Public health conclusions

• The poor progress towards the EU targets on antimicrobial consumption and the continued increase in the consumption of WHO ‘Reserve’ and ‘broad-spectrum’ antibiotics highlights the need to strengthen efforts to address unnecessary and inappropriate antimicrobial use at all levels of healthcare (i.e. community, hospital and long-term care sectors) in the EU/EEA.

•National action plans should include key elements to promote prudent use of antimicrobials, including antimicrobial stewardship programmes with good diagnostic practices and infection prevention and control activities.

Outpatient pediatric prescriptions of systemic antibiotics

- Annual antibiotic prescription rates per 1,000 person years (≤ 18 years)
  (2005-08, from the UK, the Netherlands, Denmark, Italy and Germany).
- Main results:

1/Wide variations across Europe in the prescribing of systemic antibiotics from 957/1000 person years in Italian region Emila Romana to 294 in the Netherlands

2/Seasonal increases in the winter months were most pronounced in countries with high utilisation.

3/Prescription rates were highest among children in the age group ≤4 years in all countries, predominantly due to high use of broad spectrum penicillins

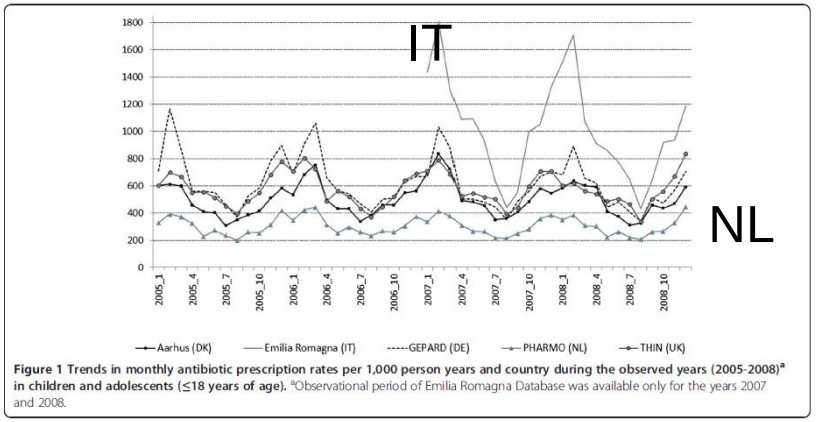


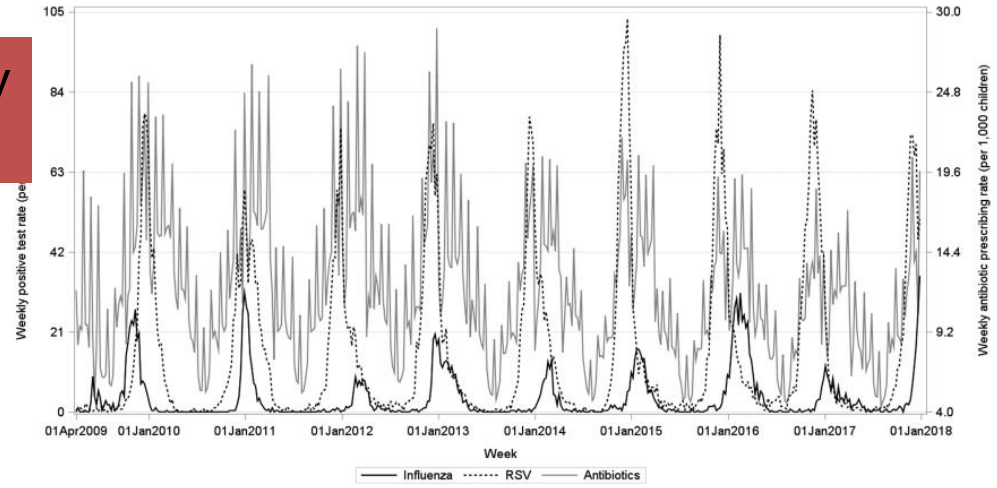
Figure 1 Trends in monthly antibiotic prescription rates per 1,000 person years and country during the observed years (2005-2008)[a] in children and adolescents (≤18 years of age). [a]Observational period of Emilia Romagna Database was available only for the years 2007 and 2008.

Thus, high prescribing of antibiotic agents to the pediatric population is a recognized indicator **for inappropriate prescribing patterns in primary care**

Holstiege *et al. BMC Pediatrics* 2014, **14**:174
http://www.biomedcentral.com/1471-2431/14/174

Community based Ab prescribing attributable to RSV

Weekly + test



Weekly Ab prescription rate

-6,9% of all antibiotic prescribed to Scottish children < 5 years of age were attributable to RSV, 2.4% to influenza and 2.3% to HMPV.
-Amoxy =61.9%;macrolides=12.8%

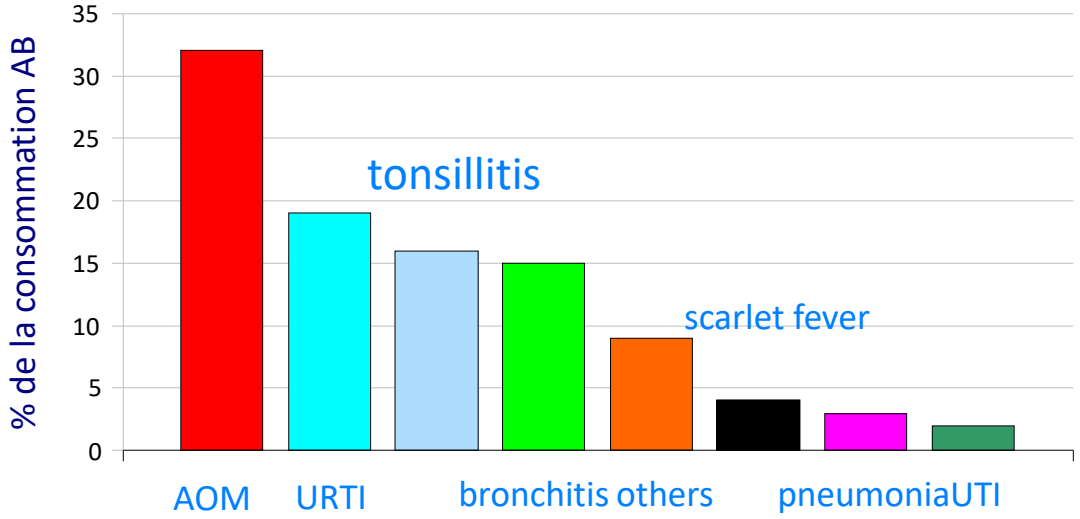
Figure 1. Weekly rates of antibiotic prescribing and positive viral specimen tests for influenza and RSV among Scottish children <5 years of age. Abbreviation: RSV, respiratory syncytial virus.

RSV was consistently associated with the highest proportion of prescribed antibiotics, particularly among children without chronic conditions and for amoxicillin and macrolide prescriptions.

Fitzpatrick et al Clinical Infectious Diseases® 2021;72(12):2144–53

Indication des prescriptions AB chez les enfants de 0-6 ans (Allemagne)

AOM-URTI-tonsillitis =>60% antibiotic prescription

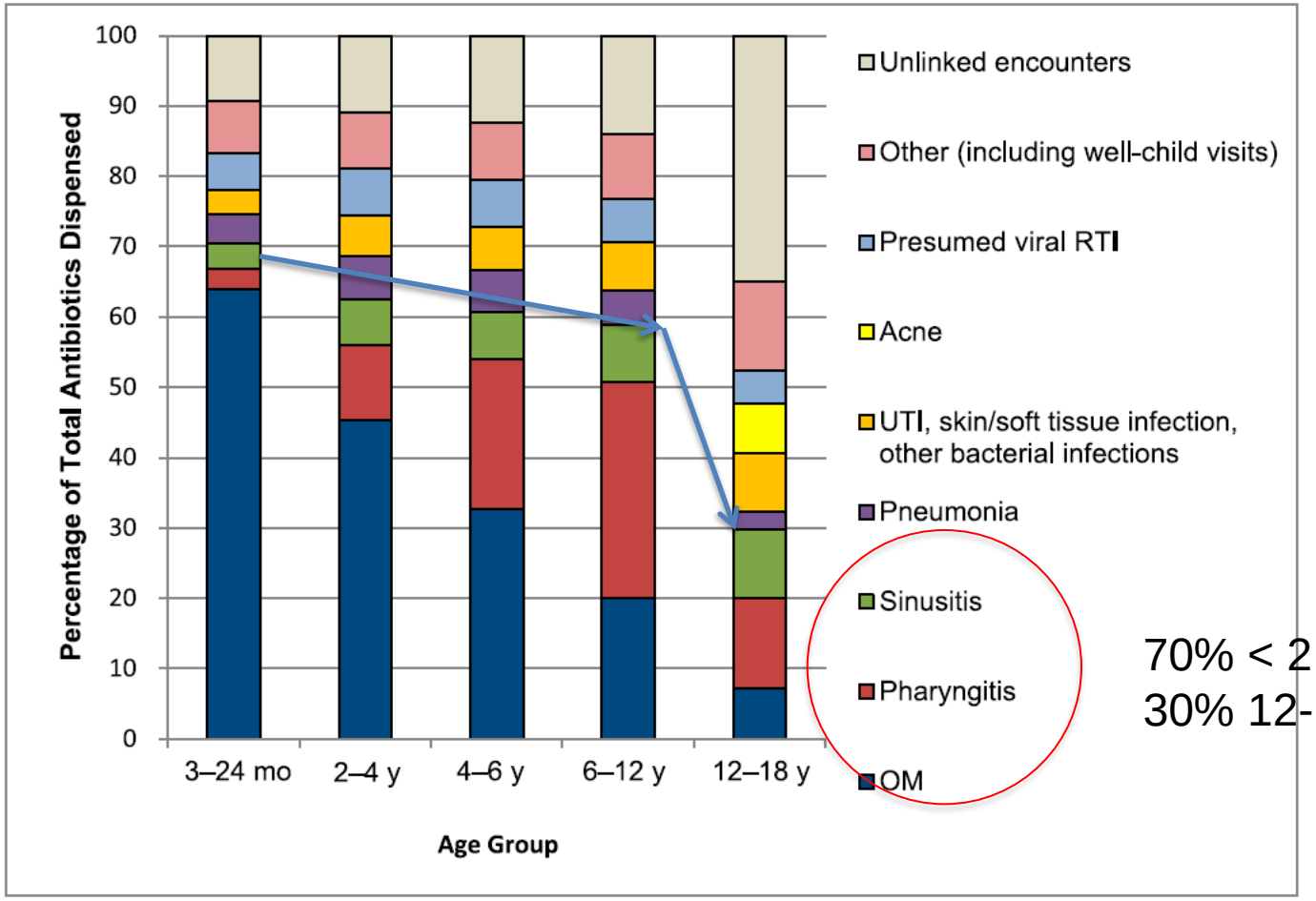


Schindler, Pharmacoepidemiol Drug Saf. 2003

- Dans une étude muticentrique (Sud et Est) Européenne, les prescriptions d'antibiotiques représentent de 11 à 43% des prescriptions chez les < 15 ans

Sanz EJ, Acta Paediatrica 2005

US



70% < 2 y
30% 12-18 y

FIGURE 2
Distribution of diagnoses and antibiotic prescriptions in 2009–2010 among 3 health plans. UTI, urinary tract infection.

Vaz et al Pediatrics 2014

INAMI

Comité d'évaluation des pratiques médicales en matière de médicaments

Réunion de consensus – 2 juin 2016

L'usage rationnel des antibiotiques chez l'enfant en ambulatoire

Antibiothérapie extra hospitalière Belgique

Nbr enfant ayant pris 1 antibiotique (2014)

	<1 an	1-2	2-6	7-11	12-15	Total
N absolu	28.291	77.327	329.733	194.558	134.692	765.231
% (âge)	**24**	**62**	**51**	**31**	**28**	**38**

M Van de Casteele INAMI

Type d'antibiotique

	<1 an	1-2	2-6	7-11	12-15	Total
Amoxy	22,702	64,130	229,044	112,567	60951	489,394 (24%)
Amoxy-clav	6,311	25,528	113,955	55,972	35,013	236,779 (12%)
Macrolides						175,315 (8,6%)
Azithro	2,522	9,033	43,661	24,248	19,949	99,413 (5%)
C1-C2						60,592 (3%)
Tetra	4	17	113	795	15,718	16,647
Fluoro	33	142	589	932	3,620	5,313

1/

2012

Recommendations

SYSTEMIC ANTIBIOTHERAPY IN ROUTINE PRACTICE FOR UPPER RESPIRATORY TRACT INFECTIONS IN ADULTS AND CHILDREN

2/

2017

Clinical Infectious Diseases

MAJOR ARTICLE

Impact of Implementing National Guidelines on Antibiotic Prescriptions for Acute Respiratory Tract Infections in Pediatric Emergency Departments: An Interrupted Time Series Analysis

Naïm Ouldali,[1,2] Xavier Bellêttre,[3] Karen Milcent,[4,5] Romain Guedj,[6] Loïc de Pontual,[7] Bogdan Cojocaru,[8] Valérie Soussan-Banini,[9] Irina Craiu,[10] David Skurnik,[11] Vincent Gajdos,[4,5] Gérard Chéron,[12] Robert Cohen,[13] Corinne Alberti,[1,2] and François Angoulvant[2,12]

1. English version

Summary

The SPILF recommends the use of antibiotherapy for upper respiratory tract infections as follows.
Antibiotics MUST NOT BE PRESCRIBED (because of their individual and collective impact) in the following cases:

- **Rhinopharyngitis,** even in case of nasal purulent or mucopurulent discharge
- **Pharyngitis with negative RDT** or if RDT was not used
- **Congestive otitis in children**
- **Seromucosal otitis in children**

Cases in which **IT IS RECOMMENDED** to prescribe an antibiotic:

- **Acute purulent otitis media:**
  - **in children under 2 years of age,**
  - **in children 2 years of age or more**: after re-evaluation at 48-72 hours if initial symptoms were mild, or initial antibiotic therapy in case of pyrexia, intense otalgia, or difficulty to understand tasks,
  - **in adults**

- **Acute adult sinusitis,** in the following cases:
  - frontal, ethmoid, or sphenoid sinusitis
  - acute maxillary sinusitis, or failure of initial symptomatic treatment , or complications
  - unilateral maxillary sinusitis associated to superior homolateral dental infection

- **Acute sinusitis in children**, presenting as:
  - severe acute maxillary or frontal sinusitis
  - symptoms of rhinopharyngitis present for more than 10 days without any sign of improvement, or worsening secondarily

- **Group A streptococcal pharyngitis**: with a positive RDT in children 3 years of age or more.

Amoxicillin is recommended as first line antibiotic for upper respiratory tract infections
The benefit/risk of other antibiotics is less favorable. They may be prescribed in specific cases.

Clinical Infectious Diseases

MAJOR ARTICLE

Impact of Implementing National Guidelines on Antibiotic Prescriptions for Acute Respiratory Tract Infections in Pediatric Emergency Departments: An Interrupted Time Series Analysis

2009-2014

Naïm Ouldali,[1,2] Xavier Bellêttre,[3] Karen Milcent,[4,5] Romain Guedj,[6] Loïc de Pontual,[7] Bogdan Cojocaru,[8] Valérie Soussan-Banini,[9] Irina Craiu,[10] David Skurnik,[11] Vincent Gajdos,[4,5] Gérard Chéron,[12] Robert Cohen,[13] Corinne Alberti,[1,2] and François Angoulvant[2,12]

Results

We included 242534 patients with an ARTI. The intervention was associated with a significant change in slope for the antibiotic prescription rate per 1000 PED visits (−0.4% per 15-day period, $P = .04$), and the cumulative effect at the end of the study was estimated to be −30.9%, (95% CI [−45.2 to −20.1]), representing 13136 avoided antibiotic prescriptions. The broad-spectrum antibiotic prescription relative percentage decreased dramatically (−62.7%, 95% CI [−92.8; −32.7]) and was replaced by amoxicillin.

Conclusion

Implementation of the 2011 national French guidelines led to a significant decrease in the antibiotic prescription rate for ARTI and a dramatic drop in broad-spectrum antibiotic prescriptions, in favor of amoxicillin.