Risk Factors of Longer Hospital Stays in Paediatric Bone and Joint Infections in France, 2013

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CHRU TOURS FRANCE

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NO CONFLICT OF INTEREST

BACKGROUND

▶ **Incidence of Paediatric Bone and Joint Infection (PBJI) in France**

– Estimation in 2008 using an algorithm based on National Hospital Discharge Database (NHDD)

– Rare disease : 22/100 000 children.

Grammatico-Guillon L. et Al, Acta Paediatr. 2013 Mar;102(3):120-5

▶ **Recent studies suggest a short intravenous treatment (2-5 days) in PBJI**

– Efficient
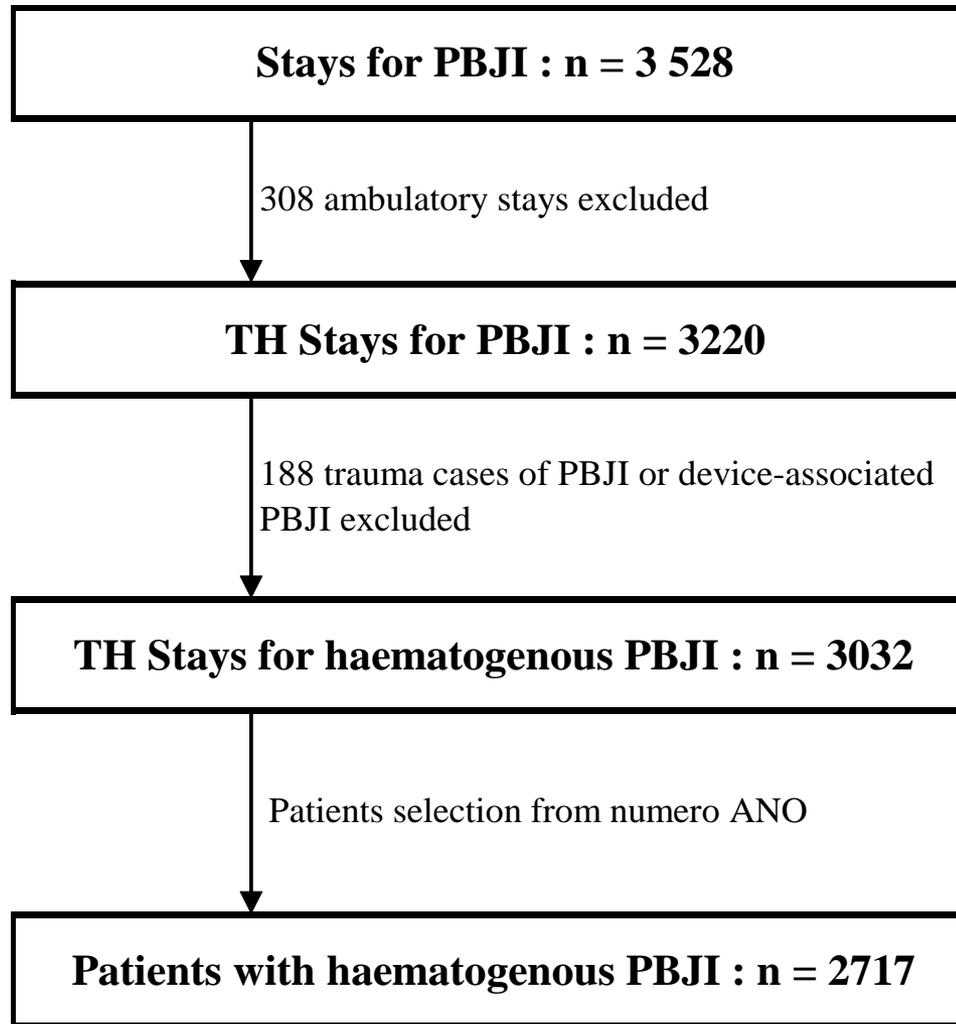
– Earlier home discharge

Peltola H. et Al, Clin Infect Dis Off Publ Infect Dis Soc Am. 2009 Mai;48(9):1201-10.

Pääkkönen M. et Al, Int J Antimicrob Agents. 2011 Oct;38(4):273-80

AIM

▶ **Identify the factors associated with longer hospital stays**

**French Hospital Discharge Database (2013)**

METHODS

Stays for PBJI : n = 3 528

308 ambulatory stays excluded

TH Stays for PBJI : n = 3220

188 trauma cases of PBJI or device-associated PBJI excluded

TH Stays for haematogenous PBJI : n = 3032

Patients selection from numero ANO

Patients with haematogenous PBJI : n = 2717

* TH : Traditional Hospitalization

METHODS

▶ Study variables

- Demographic characteristics and comorbidities
- Type of PBJI
- Orthopaedic procedures (ponction, drainage, biopsy)
- Microbiology
- Type of hospital, surgical or medical stay

▶ Risk factors of stay >5 days were analysed using multivariate logistic regression

RESULTS: Epidemiology

Incidence of PBJI : 22/100,000

▶ Stable between 2008 and 2013

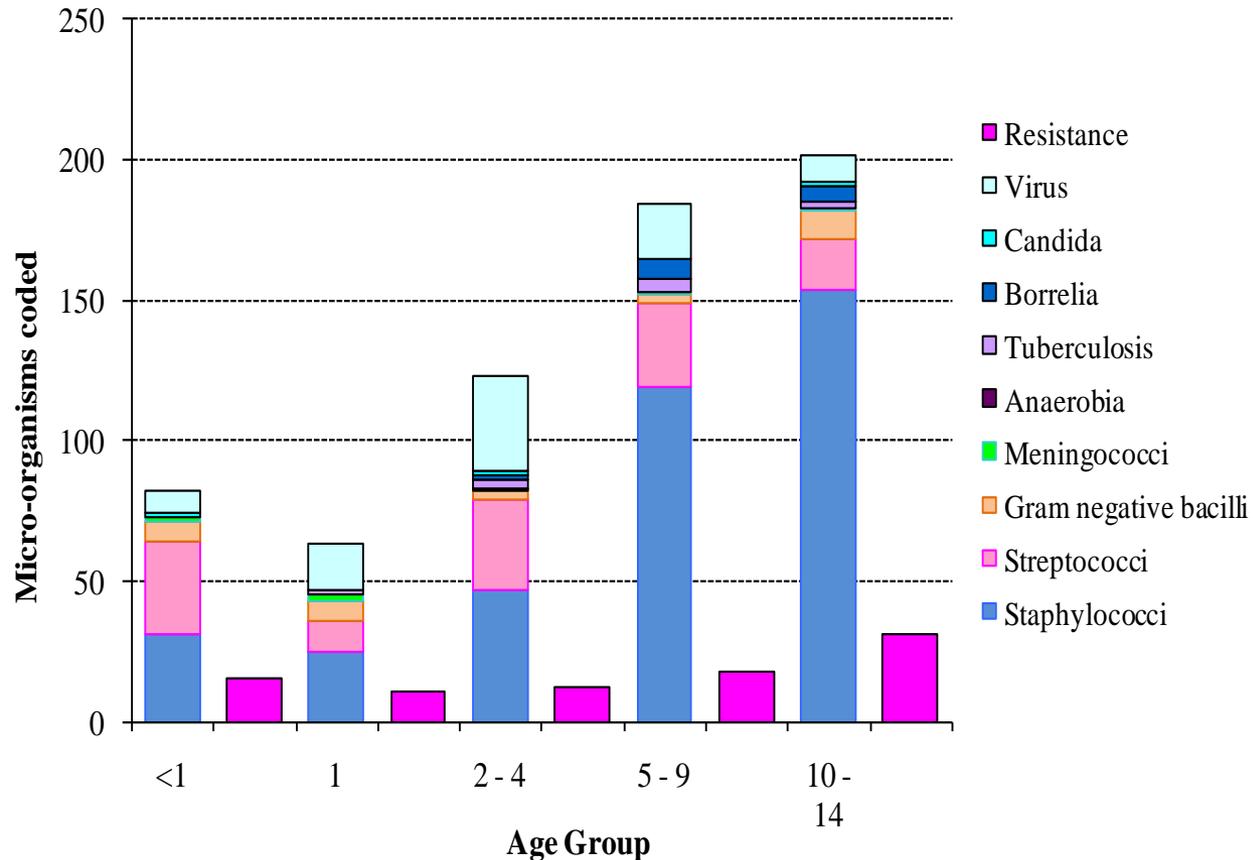▶ Higher in boys (26/100,000) and children ≤1 year (59/100,000)
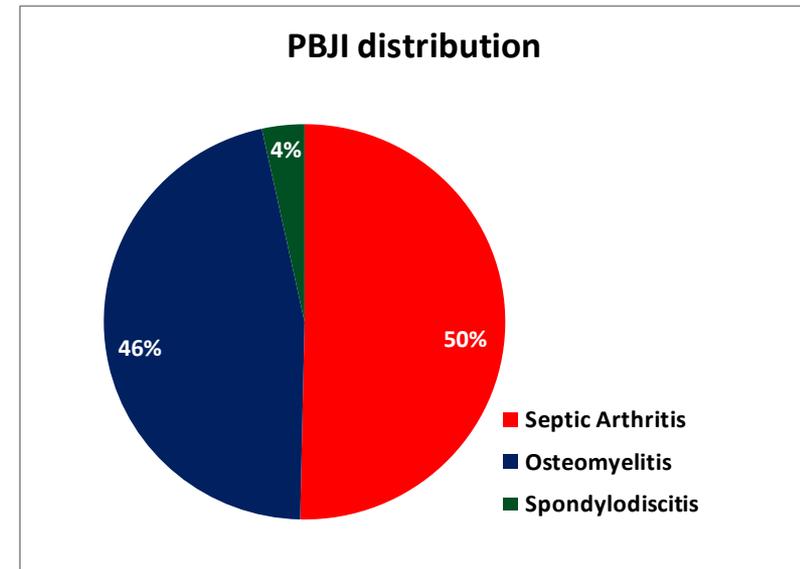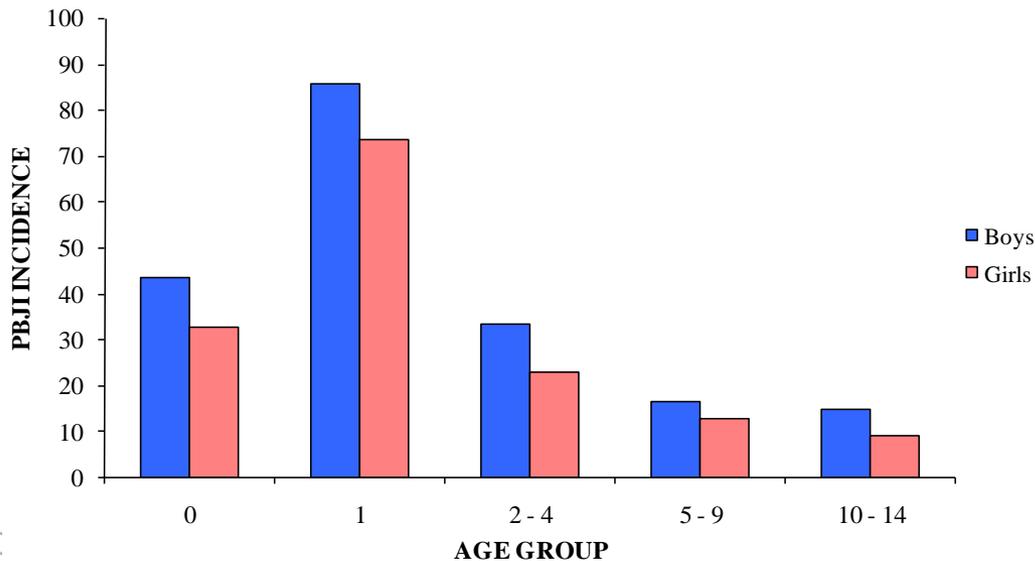
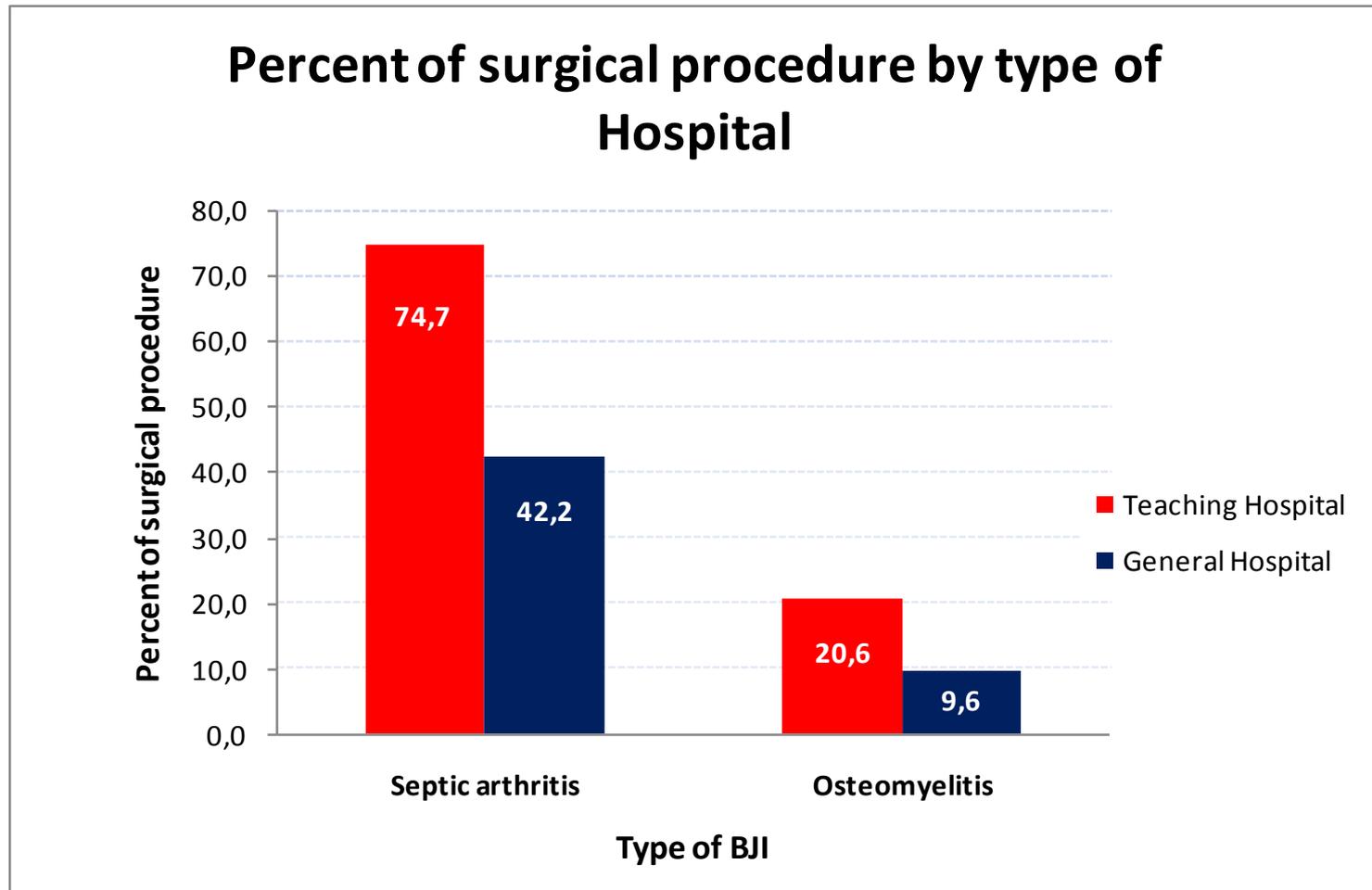# RESULTS: Microbiology

- Micro-organism coded: 28% of patients

- *Streptococci > Staphylococci* in infants

- Progressive increase of *Staphylococci* with older age

- Limit: no code for *Kingella kingae*

RESULTS: Surgical procedure

Percent of surgical procedure by type of Hospital

RESULTS: Multivariate regression model

PATIENTS TH 2013	Bivariate p-value	Multivariate OR	CI95%
Patients			
Sex	0,5		
Boys		1	
Girls			
Age group	<0,01		
<1 year		1	
1 year		0,73	0,55 - 0,97
2-4 years		0,70	0,53 - 0,93
5-9 years		0,88	0,66 - 1,18
10-14 years		0,89	0,65 - 1,21
Type of PBJI	0,02		
Septic arthritis		1	
Osteomyelitis		0,94	0,80 - 1,11
Spondylodiscitis		2,21	1,42 - 3,45
Type of hospital	<0,01		
Teaching hospital		1	
General hospital		1,61	1,36 - 1,91
Surgical Stays	0,4	-	
Comorbidities			
Sickle cells	<0,01	7,00	2,89 - 16,94
Microbiology			
Staphylococci	<0,01	4,3	3,29 - 5,62
Streptococci	<0,01	4,61	2,94 - 7,22

Factors associated with stays > 5 days (49%) :

- Spondylodiscitis

- Coded *Staphylococci* or *Streptococci (about 30%)*

- Coded sickle cell disease (4%)

- **Stays in General Hospital**

DISCUSSION

▶ **Stable incidence 2008-2013 of PBJI**

▶ **50% of initial stays >5 days**

▶ **Stays in General Hospitals longer than in Teaching Hospitals**

- Lack of information about recent guidelines?
- Units less comfortable with children bone and joint infection management?
- Delay in performing diagnostic tests (scan/microbiology)?

CONCLUSION

Perspectives

- Identify reasons of longer mean length of stay in General Hospitals
- Withspread information and training in General Hospitals

Acknowledgment:

Selection algorithm

Classification of BJI case definition

BJI	Primary Diagnosis	Secondary Diagnosis	Procedure Code
Definite case	BJI	-	-
	Infection	BJI	-
	-	BJI + infection	-
	-	BJI	Specific BJI surgical procedures
Possible case	-	BJI	-

Code extraction and case definition ➜ validated algorithm