



# Pneumopathies aiguës communautaires (PAC): Les actualités de l'année

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# Liens d'Intérêt 2013-2015

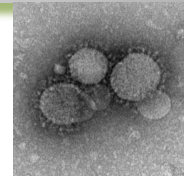
- **Consultant ou membre d'un conseil scientifique**  
**Basiléa, The Medicines company, Janssen & Janssen, AstraZeneca, Astellas**
- **Orateur rémunéré**  
**AstraZeneca, Astellas, Gilead, MSD**
- **Subventions pour congrès**  
**MSD, Pfizer, Janssen & Janssen, AstraZeneca, Astellas**

# Actualités: 'Ce qu'on a appris sur les PAC en 2015'

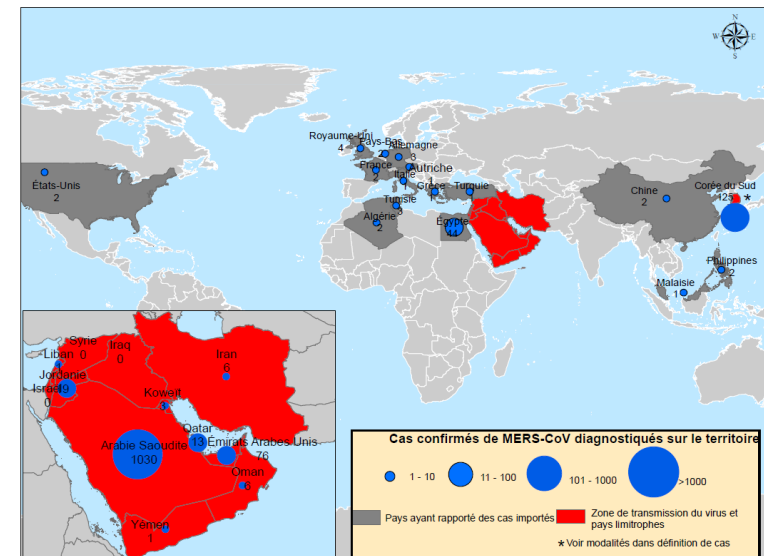
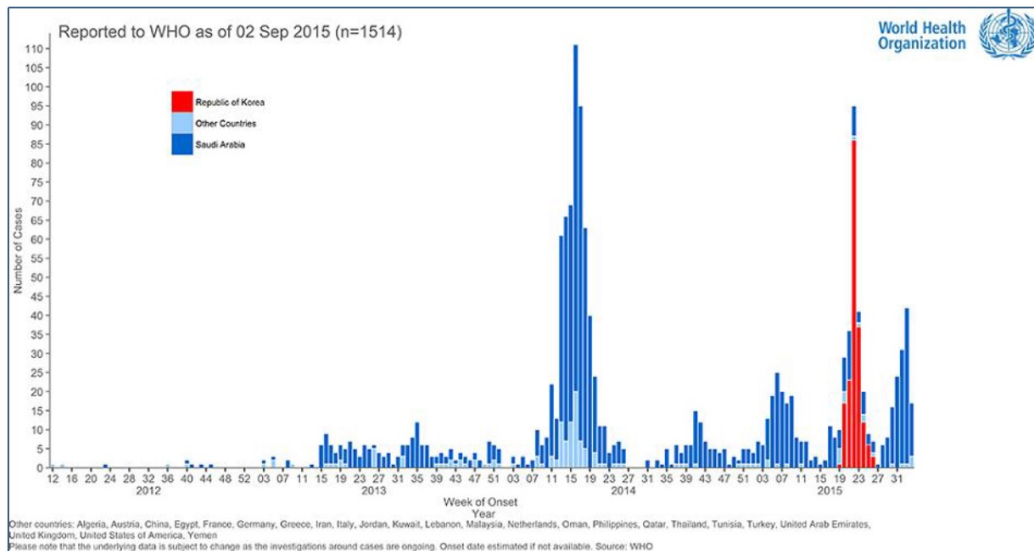
- Epidémiologie
- Prévention
- Stratégies thérapeutiques

*NB. Corticoïdes/PAC & Grippe exclus*

# Middle East Respiratory Syndrome-Coronavirus (MERS-CoV)



- 2012-2015: 1611 cas => 575 décès (35%)
- Y penser si pneumopathie retour péninsule Arabique (< 14 j)
  - Surtout adultes (30-60 ans), hommes
  - Contacts hospitaliers (ou dromadaires)





### Community-Acquired Pneumonia Requiring Hospitalization among U.S. Adults

S. Jain, W.H. Self, R.G. Wunderink, S. Fakhran, R. Balk, A.M. Bramley, C. Reed,



- **Objectifs:** Mettre 'à jour' l'épidémiologie des PAC hospitalisées
  - Tests diagnostiques '**modernes**' (PCR, virus)
  - Impact de la vaccination systématique des enfants (**PCQ conjugué**)
- **Méthodes:**
  - 5 Hôpitaux US (Chicago, Nashville), 2010-2012
  - Recrutement actif (**18 h/j, 7/7**) des PAC hospitalisées
  - Tests sang, urine, ECBC, naso/oropharynx, **PCR, sérologies** (J0, S3-S10)
  - **Contrôles** (hospitalisés sans fièvre ni signe respiratoire)



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- **Critères inclusions:**
  1. Signe(s) infectieux +
  2. Signe(s) respiratoire(s) aigu(s) +
  3. Anomalies radiologiques confirmées par radiologue thoracique
- **Critères exclusions:**
  - Hospitalisation récente
  - Long séjour
  - Immunodéprimés lourds (VIH CD4 < 200, greffe < 3 mois, neutropénie)

**Table 1. Characteristics of Adults with Community-Acquired Pneumonia Requiring Hospitalization.**

Characteristic	Adults with Radiographic Evidence of Pneumonia (N = 2320)
Age group — no. (%)	
18–49 yr	701 (30)
50–64 yr	787 (34)
65–79 yr	517 (22)
≥80 yr	315 (14)
Any underlying condition — no. (%)‡	1817 (78)
Chronic lung disease	968 (42)
Chronic heart disease	810 (35)
Immunosuppression	685 (30)
Diabetes mellitus	597 (26)
Status regarding receipt of vaccine or treatment — no./total no. (%)§	
Seasonal influenza vaccination	448/1898 (24)
Pneumococcal vaccination in adults ≥65 yr of age	308/704 (44)
Radiographic finding — no. (%)¶	
Consolidation	1447 (62)
Alveolar or interstitial infiltrate	920 (40)
Pleural effusion	714 (31)

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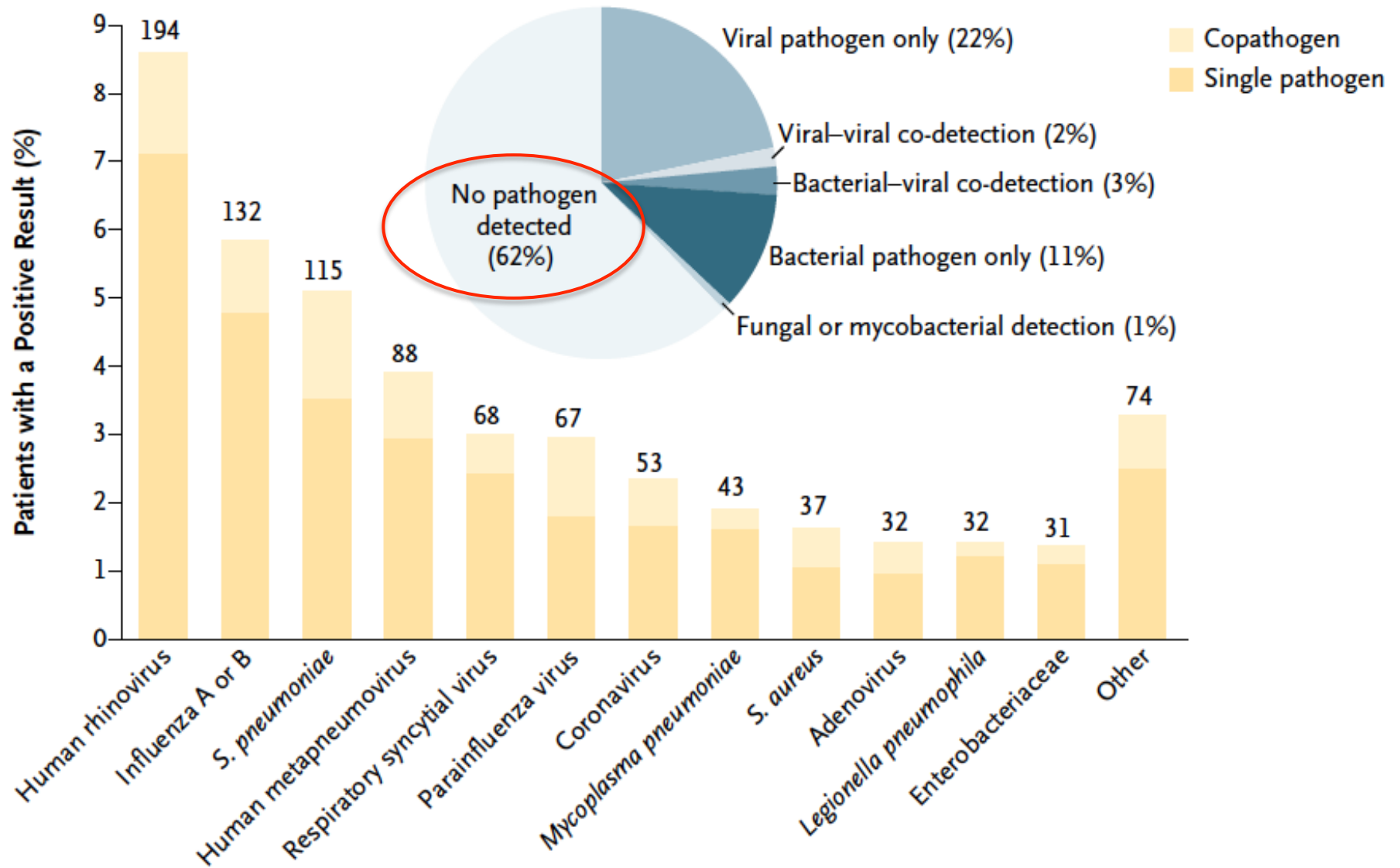


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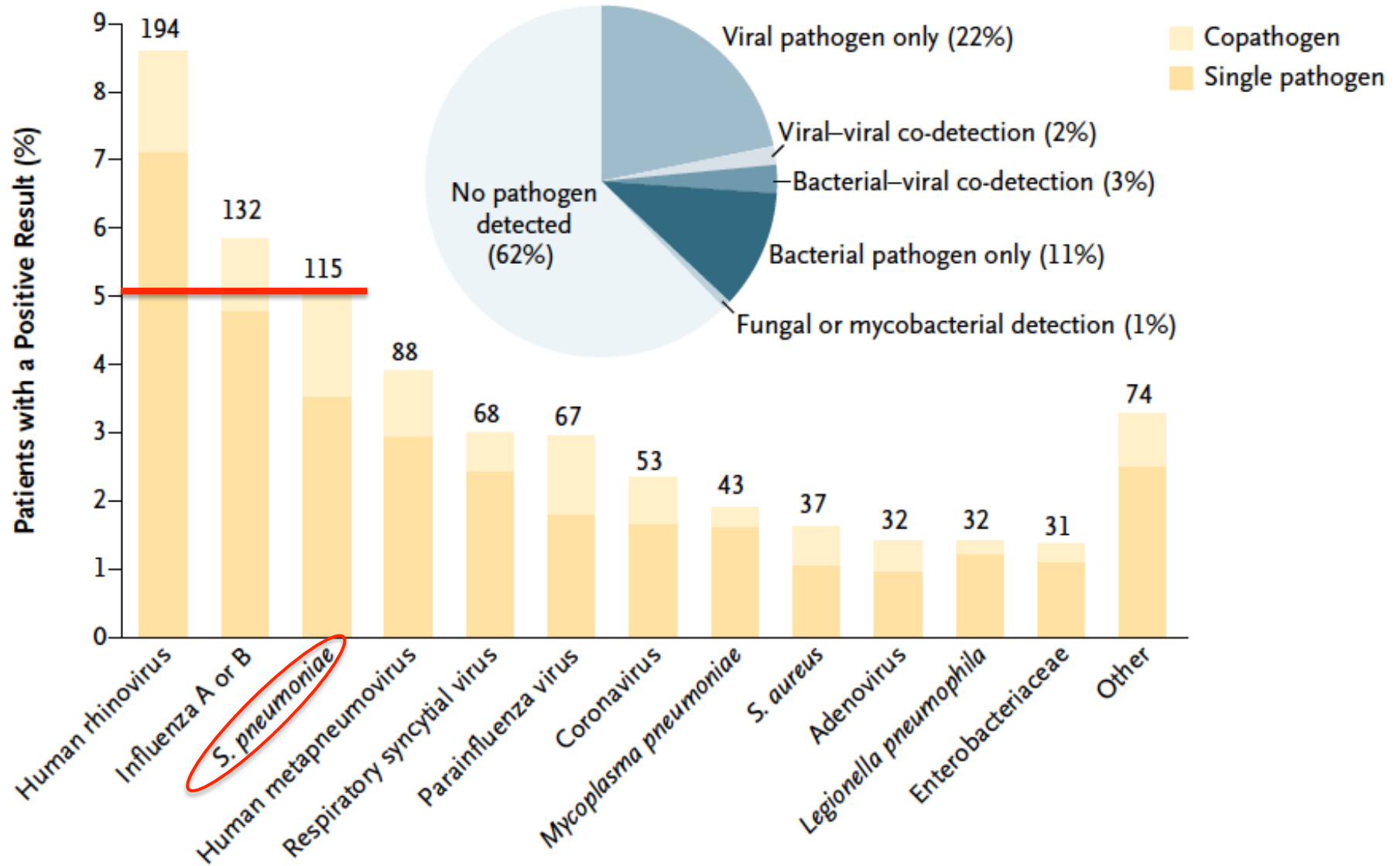


Specific Pathogens Detected



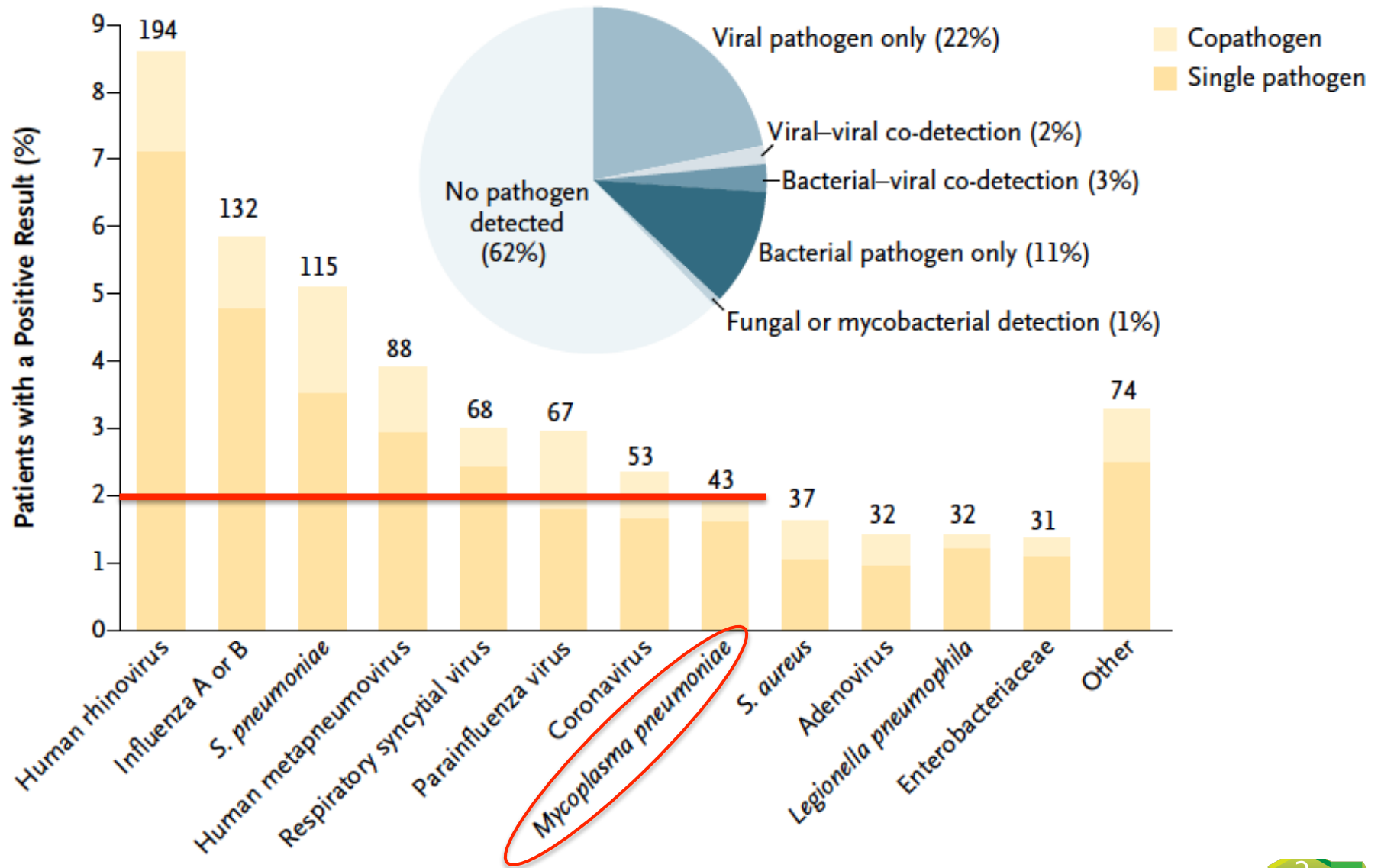


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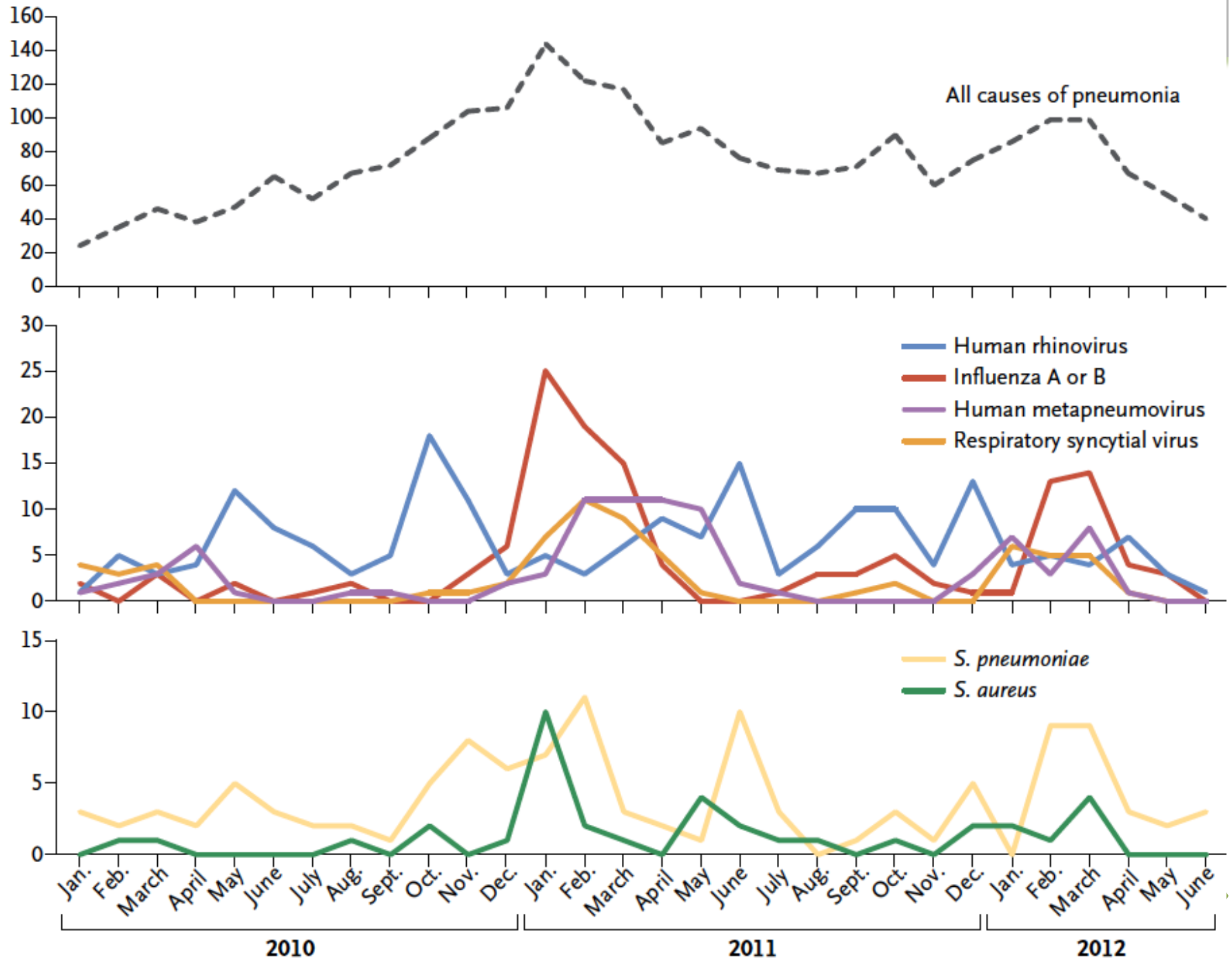




Specific Pathogens Detected



Pathogens Detected, According to Month and Year





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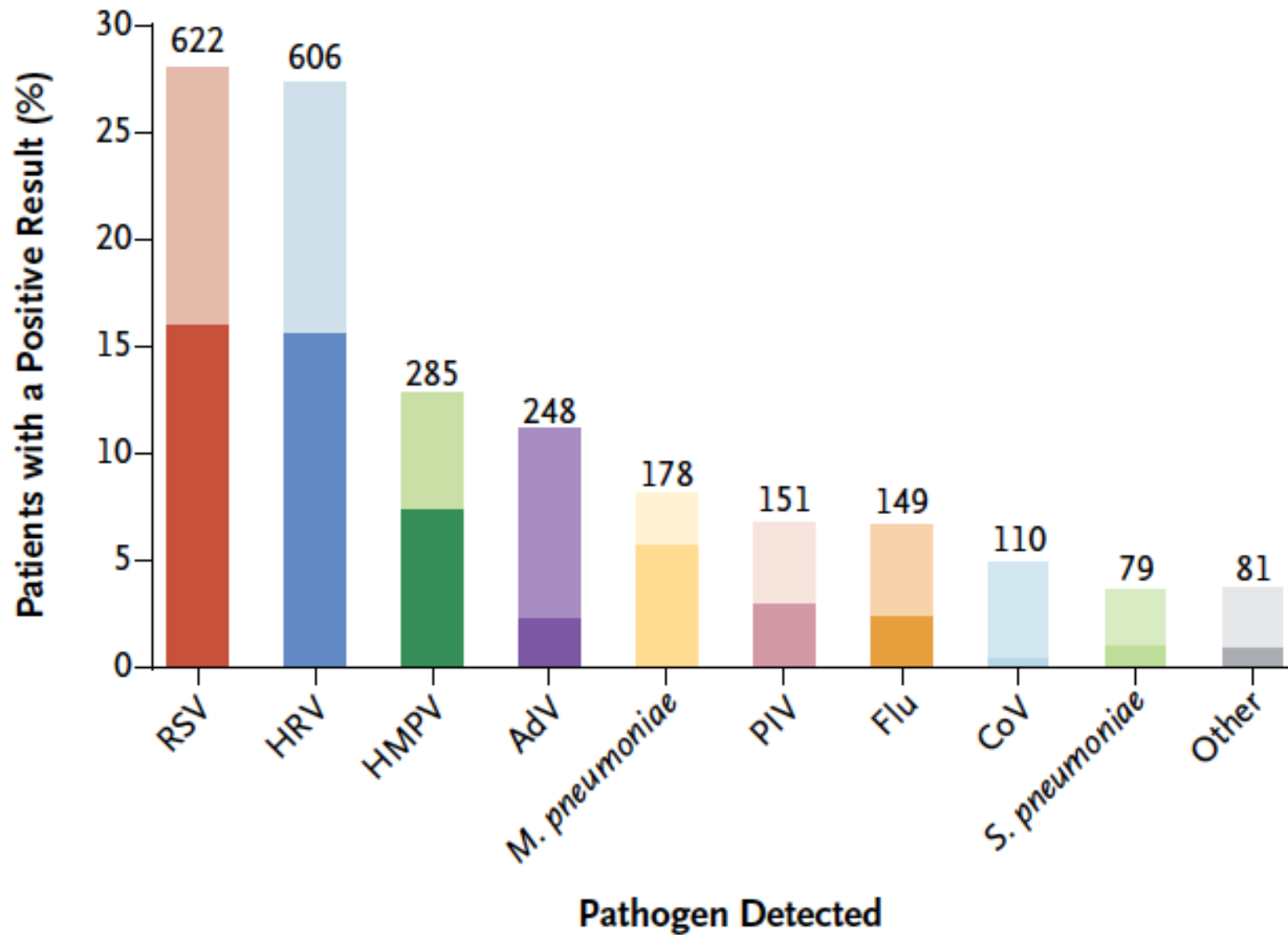
- **Et les PAC graves ? => 3 pathogènes sur-représentés**
  - Pneumocoque (8%)
  - *S. aureus* (5%)
  - Entérobactéries (3%)
- **Conclusions: la vraie épidémiologie des PAC (USA, 2010-12)**
  - Rhinovirus = pathogène n°1 (tout âge), **27% des PAC documentées !**
  - Rarement retrouvé chez les contrôles (2%)
  - Pneumocoque 'minoritaire' (5% des PAC de l'adulte)

# Community-Acquired Pneumonia Requiring Hospitalization among U.S. Children

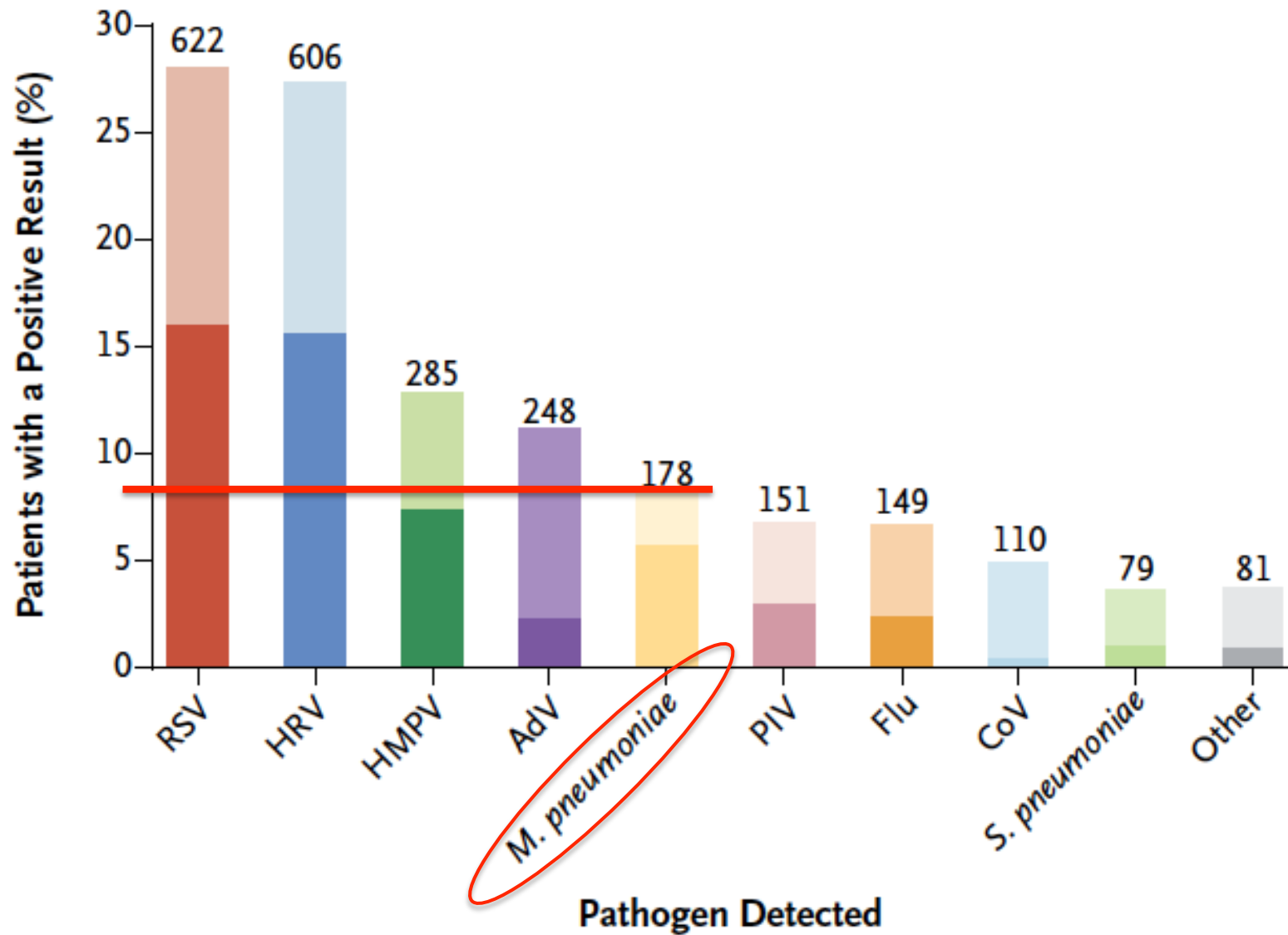
Seema Jain, M.D., Derek J. Williams, M.D., M.P.H., Sandra R. Arnold, M.D.,

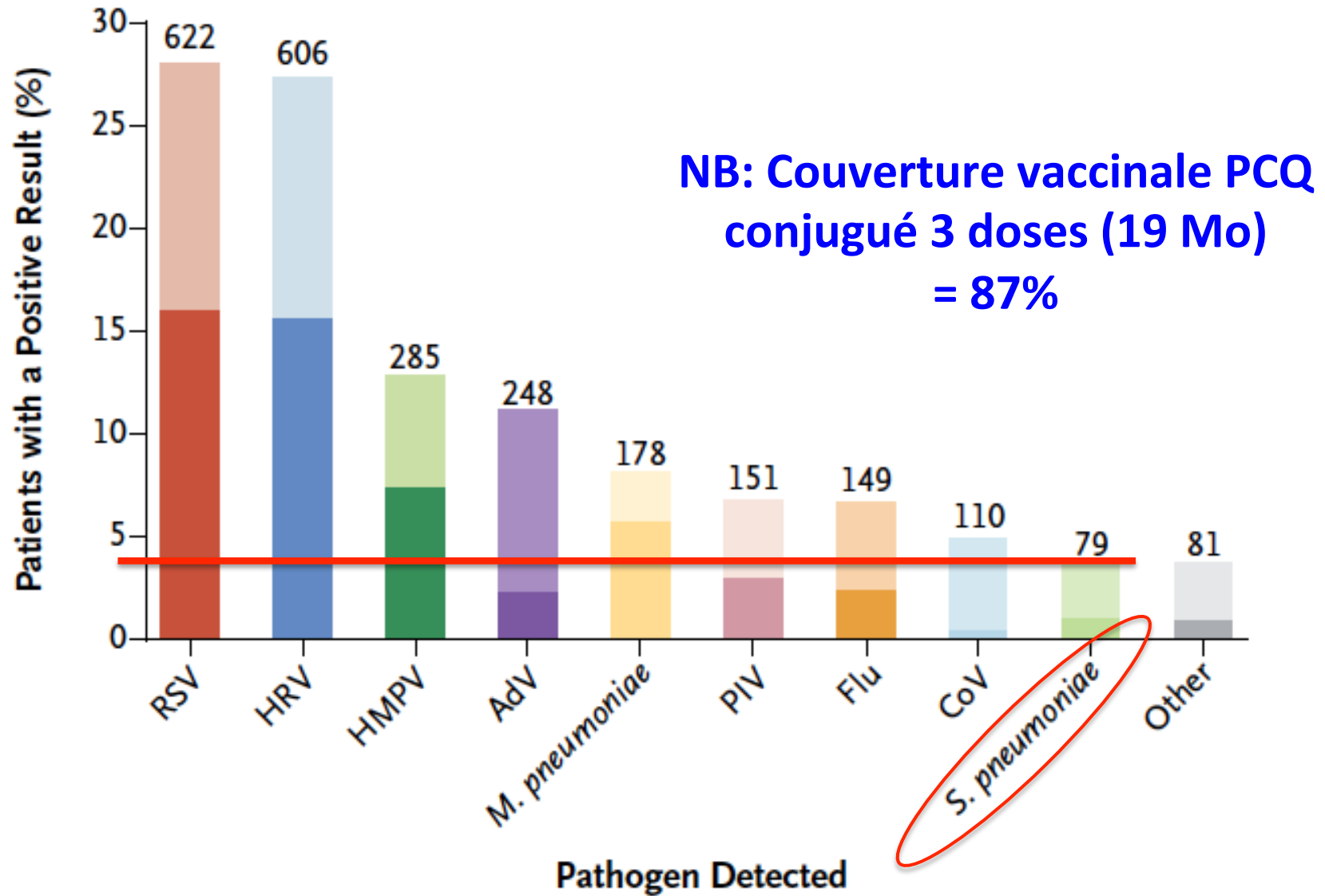


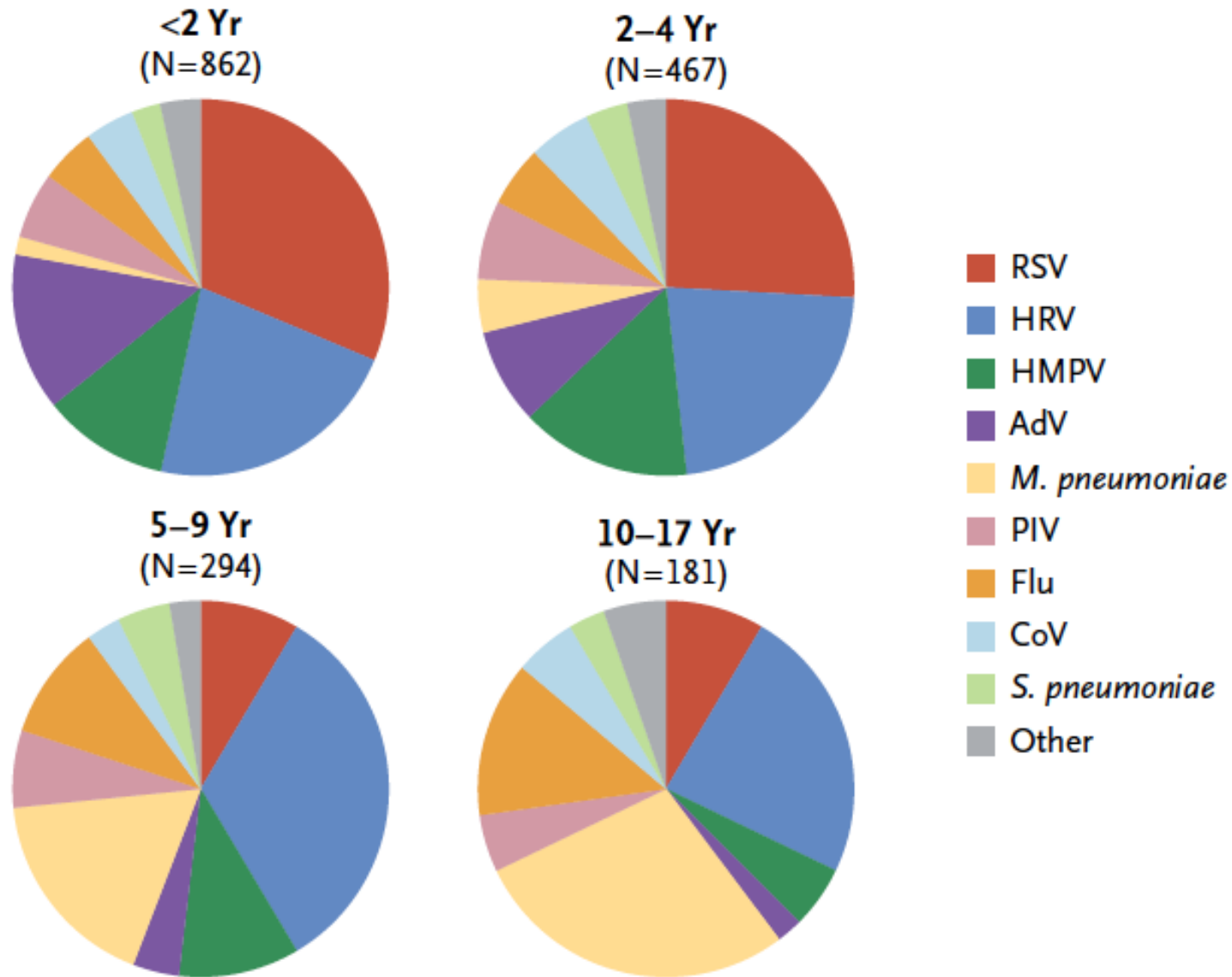
Characteristic	Children with Radiographic Evidence of Pneumonia (N= 2358)
Age group — no. (%)	
<2 yr	1055 (45)
2–4 yr	595 (25)
5–9 yr	422 (18)
10–17 yr	286 (12)
Radiographic finding — no. (%) <sup>†</sup>	
Consolidation	1376 (58)
Alveolar or interstitial infiltrate	1195 (51)
Pleural effusion	314 (13)
Intensive care unit admission — no. (%)	497 (21)
Invasive mechanical ventilation — no. (%)	166 (7)
Death in the hospital — no. (%)	3 (<1)

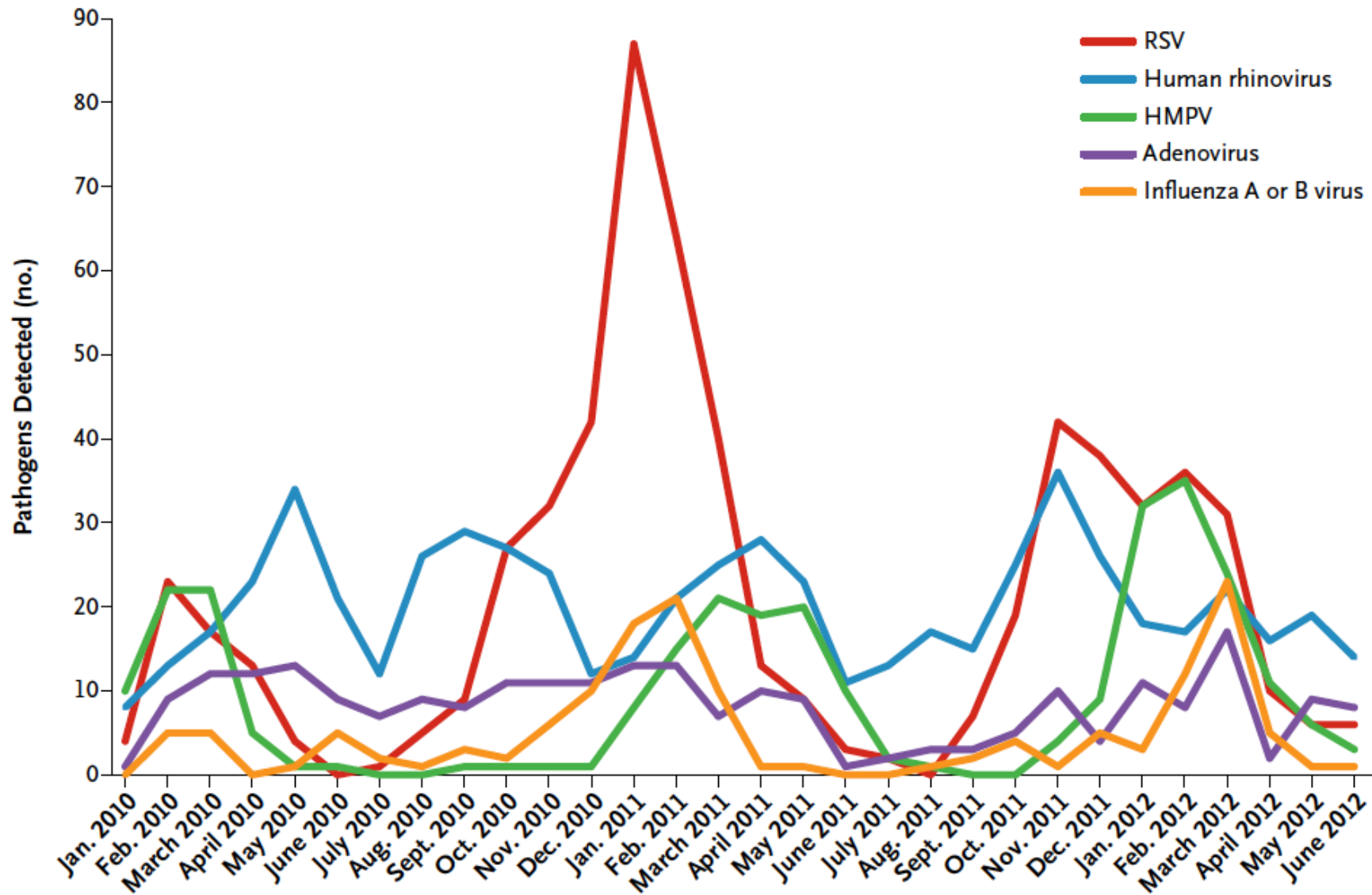












# Prévention des PAC => Vaccin PCQ conjugué après 65 ans

ORIGINAL ARTICLE

## Polysaccharide Conjugate Vaccine against Pneumococcal Pneumonia in Adults

M.J.M. Bonten, S.M. Huijts, M. Bolkenbaas, C. Webber, S. Patterson, S. Gault,



- **Rationnel**
  - Vaccin PCQ conjugué + efficace que le PS chez enfants et IDP
  - Sujet âgé = FDR d'infection invasive à PCQ / IDP ↔ âge
- **Méthodes**
  - **Essai randomisé, double aveugle, PCV13 vs. placebo, n > 82 000**
  - Âge > 65 ans, suivi moyen 4 ans (2008-2013)
  - Test Ag U PCQ **avec diagnostic de sérotype**

# Prévention des PAC => Vaccin PCQ conjugué après 65 ans

End Point and Analysis†	Episodes‡	PCV13 (N = 42,240) <i>number</i>	Placebo (N = 42,256)	Percent Vaccine Efficacy (CI)§	P Value¶
<b>First episode</b>					
Infection with vaccine-type strain					
Confirmed community-acquired pneumonia					
Per-protocol analysis	139	49	90	45.6 (21.8 to 62.5)	<0.001
Modified intention-to-treat analysis	172	66	106	37.7 (14.3 to 55.1)	0.003
Confirmed nonbacteremic and noninvasive community-acquired pneumonia					
Per-protocol analysis	93	33	60	45.0 (14.2 to 65.3)	0.007
Modified intention-to-treat analysis	116	43	73	41.1 (12.7 to 60.7)	0.007
Invasive pneumococcal disease					
Per-protocol analysis	35	7	28	75.0 (41.4 to 90.8)	<0.001
Modified intention-to-treat analysis	41	8	33	75.8 (46.5 to 90.3)	<0.001

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Community-acquired pneumonia Modified intention-to-treat analysis	1534	747	787	5.1 (-5.1 to 14.2)	0.32
<b>Death  </b>					
From confirmed vaccine-type pneumococcal community-acquired pneumonia or vaccine-type invasive pneumococcal disease	4	2	2	0 (-1279.6 to 92.8)	>0.999
From confirmed pneumococcal community-acquired pneumonia or invasive pneumococcal disease	13	6	7	14.3 (-197.9 to 76.2)	>0.999



# Prévention des PAC => Vaccin PCQ conjugué après 65 ans



- **Bons résultats**

- **Efficacité vaccinale** sur les pneumonies à PCQ de sérotype vaccinal = **46% (22-62%) (P<0,001)**
- **Efficacité vaccinale** sur les infections invasives à PCQ de sérotype vaccinal = **75% (41-91%) (P<0,001)**
- Pas de réduction d'efficacité jusqu'à 4 ans
- **Tolérance OK (n=42 240)**



- **Moins bons**

- **Pas d'impact sur l'incidence des PAC, ni sur le décès**
- Il faut **vacciner 1030 sujets pour éviter une PAC en 4 ans, et 2050 sujets pour éviter une infection invasive à PCQ**

# Prévention des PAC => Vaccin PCQ conjugué après 65 ans

- **L'efficacité du PCV13**
  - Nourrissons tous vaccinés aux Pays-Bas depuis 2006
  - Effet 'troupeau'
  - Baisse d'incidence des PAC à PCQ de sérotype vaccinal
- **Polémique sur son prix**
  - 55 € en France
  - 150 USD aux USA
  - 10 USD les 3 doses dans les PED



**THE RIGHT SHOT:**  
GÉNÉRALISER L'ACCÈS  
À DES VACCINS PLUS ABORDABLES  
ET MIEUX ADAPTÉS

2<sup>e</sup> édition – janvier 2015

[www.msfacecess.org](http://www.msfacecess.org)



## Antibiotic Treatment Strategies for Community-Acquired Pneumonia in Adults

Douwe F. Postma, M.D., Cornelis H. van Werkhoven, M.D.,



- **Objectifs:** Comparaison de 3 'stratégies' d'ATB empirique
  - Bêta-lactamine
  - Bêta-lactamine + macrolide
  - Fluoroquinolone
- **Méthodes:** Essai 'pragmatique'
  - **Adultes, PAC => hospitalisation** (pas en réanimation)
  - **Critère principal = mortalité J90**
  - Etude non-infériorité (marge IC90  $\leq$  3%)

# Antibiothérapie des PAC

ORIGINAL ARTICLE

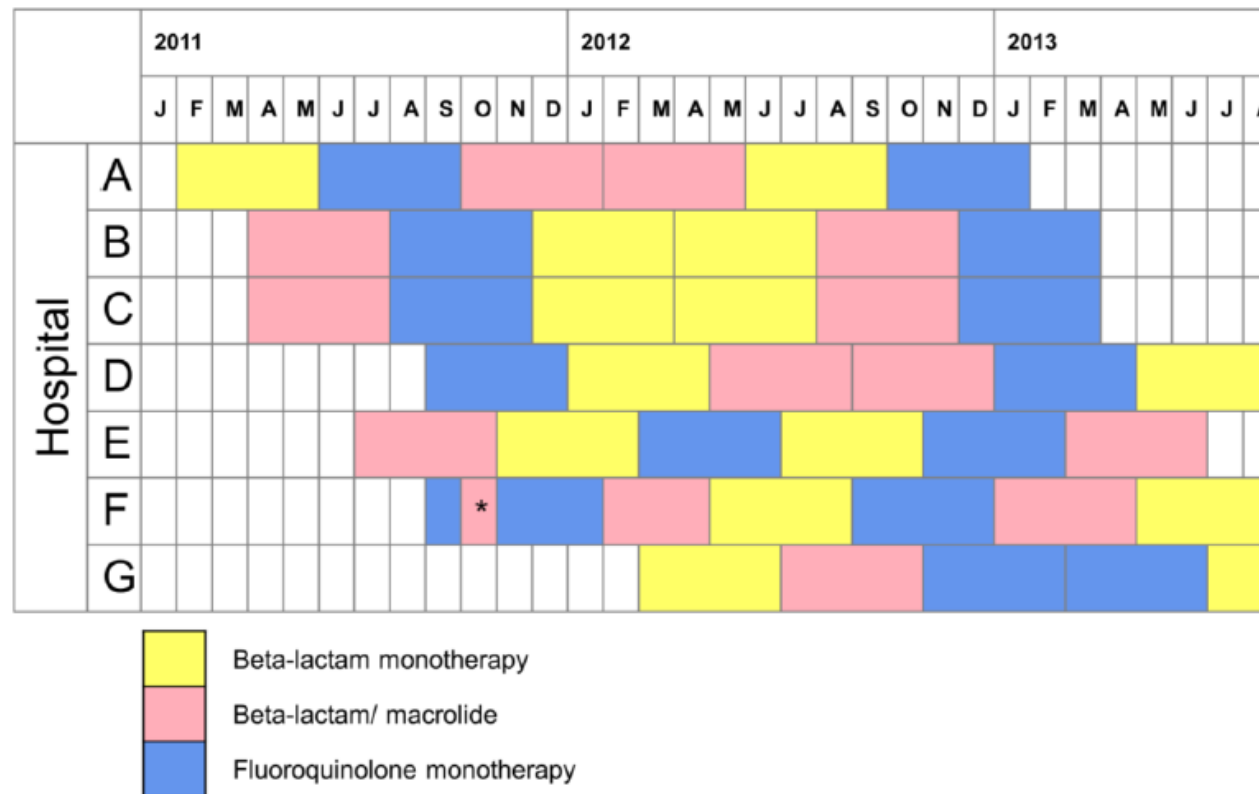
## Antibiotic Treatment Strategies for Community-Acquired Pneumonia in Adults

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- Randomisation en cluster (à l'échelle de l'hôpital) avec cross over

Figure S1: Randomization chart



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- **Résultats:**
  - PCQ (16%), *H. influenzae* (7%), atypiques (2%)

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**Table 2. Baseline Characteristics of Patients in the Intention-to-Treat Population.\***

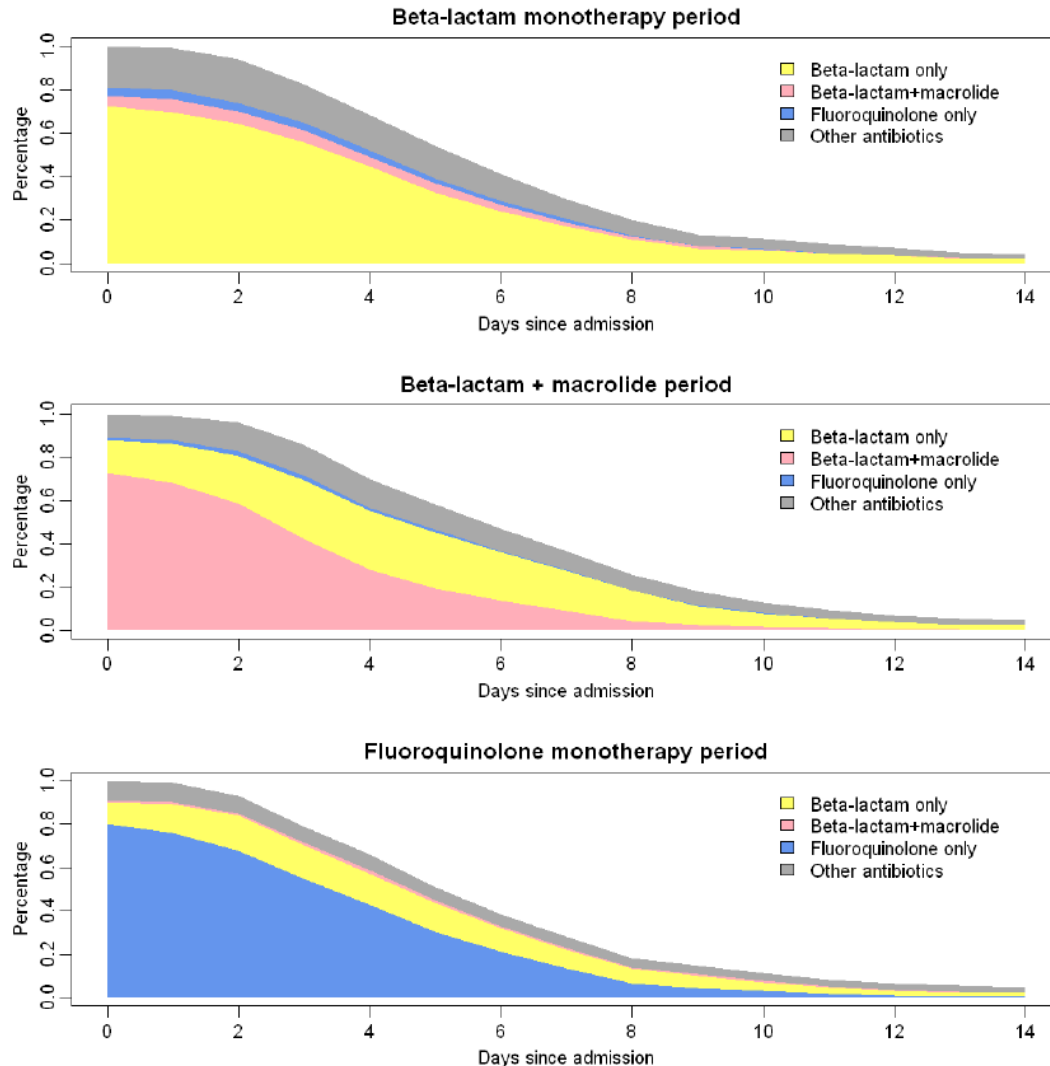
Characteristic	Antibiotic Treatment Strategy		
	Beta-Lactam (N = 656)	Beta-Lactam–Macrolide (N = 739)	Fluoroquinolone (N = 888)
Median age (interquartile range) — yr	70 (60–79)	70 (59–80)	71 (59–79)
Male sex — no. (%)	381 (58.1)	431 (58.3)	505 (56.9)
Median duration of symptoms (interquartile range) — days	3 (1–7)	3 (1–7)	3 (1–7)
Received antibiotics before admission — no./total no. (%)	219/637 (34.4)	227/721 (31.5)	303/873 (34.7)
Current smoker — no./total no. (%)	109/627 (17.4)	154/723 (21.3)	196/872 (22.5)
Past smoker — no./total no. (%)	379/627 (60.4)	398/723 (55.0)	490/872 (56.2)
Received influenza vaccination — no./total no. (%)	453/624 (72.6)	466/700 (66.6)	572/847 (67.5)
Received pneumococcal vaccination — no./total no. (%)			
PPSV23	16/594 (2.7)	18/671 (2.7)	13/822 (1.6)
PCV13	19/656 (2.9)	7/739 (0.9)	10/888 (1.1)

# Antibiothérapie des PAC

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## Respect des consignes de randomisation

- **BL:**
  - amox/clav 48%
  - amox 30%
  - ceftriaxone 20%
- **Macrolides:**
  - érythro 35%
  - clarithro 30%
  - azithro 25%
- **FQ:**
  - moxiflo 60%
  - lévoflo 25%

# Antibiothérapie des PAC

ORIGINAL ARTICLE

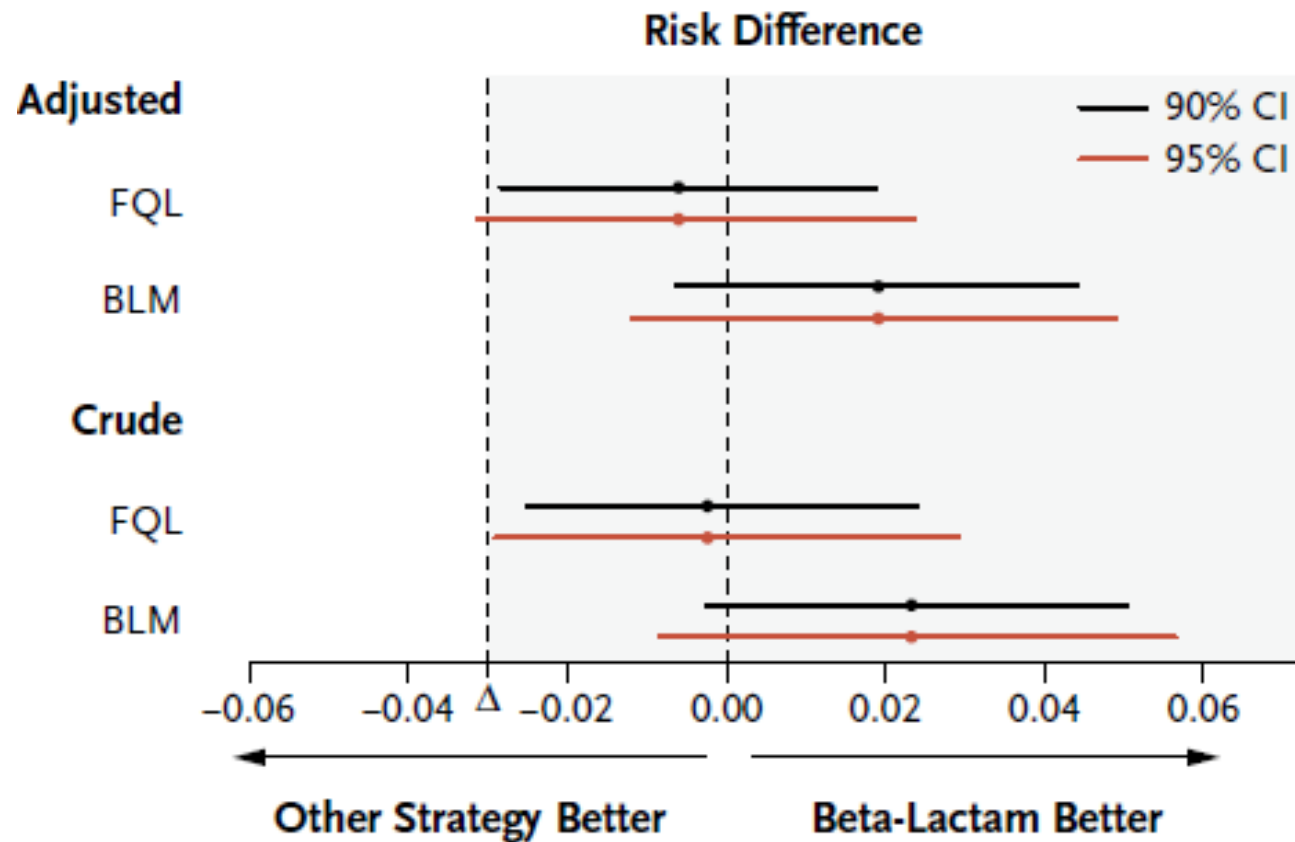
Antibiotic Treatment Strategies for  
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- **Résultats:**
  - **Non-infériorité démontrée de la monothérapie BL**

## Intention-to-Treat Analysis





# Antibiothérapie des PAC

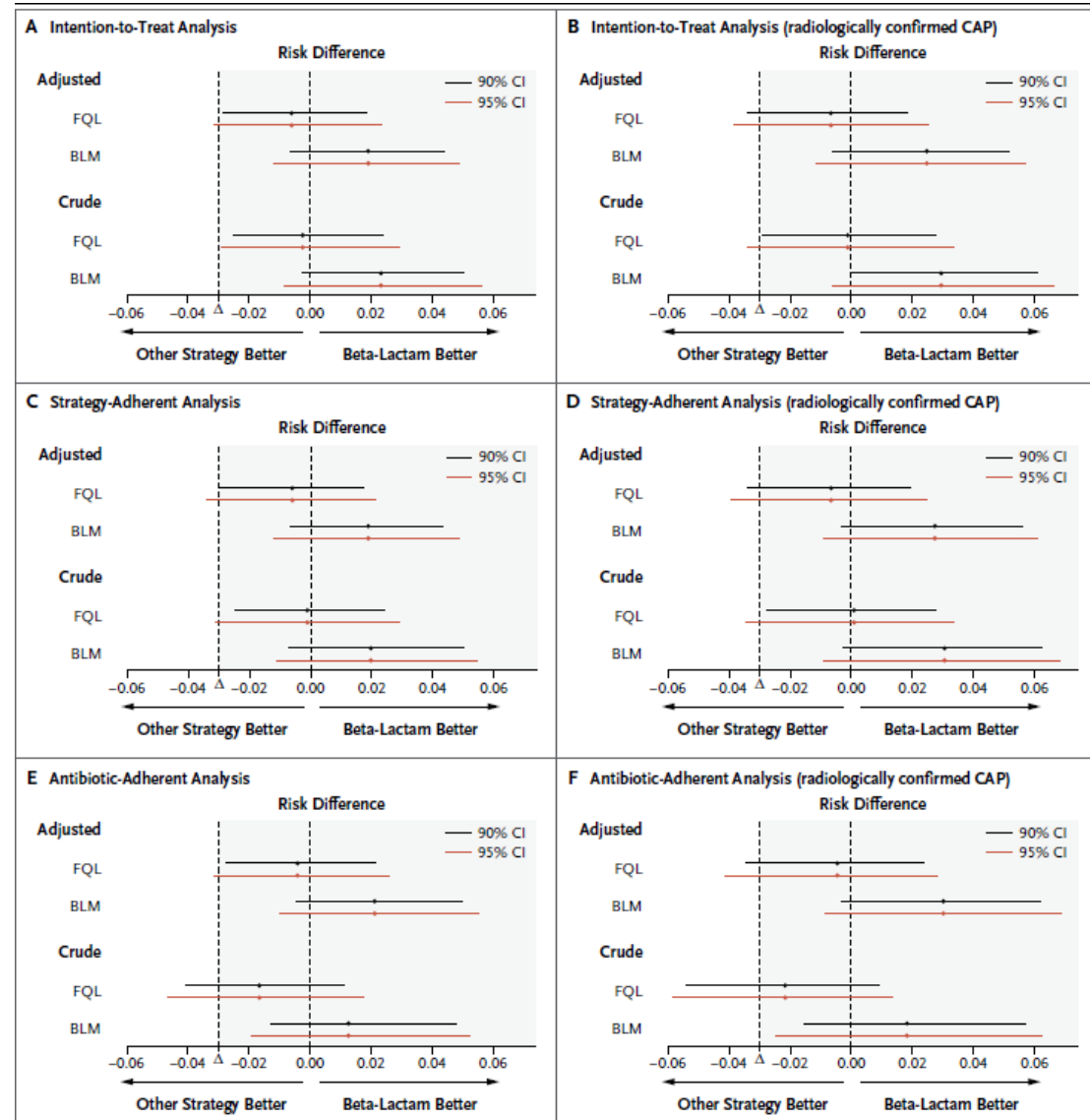
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- Résultats:
  - Analyses de sensibilité



# Antibiothérapie des PAC

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- **Résultats:**

- Selon sévérité

**Table 1. Antibiotic Adherence and 90-Day Mortality for CURB-65 and PSI Risk Strata.\***

Level of Risk	Beta-Lactam		Beta-Lactam Macrolide		Fluoroquinolone	
	Adherence %	Mortality no./total no. (%)	Adherence %	Mortality no./total no. (%)	Adherence %	Mortality no./total no. (%)
<b>CURB-65 score</b>						
≤2	72.5	45/562 (8.0)	73.4	62/634 (9.8)	81.1	50/751 (6.7)
>2	64.1	14/92 (15.2)	69.2	20/104 (19.2)	75.0	28/136 (20.6)
<b>PSI risk class</b>						
I or II	65.1	3/194 (1.5)	73.6	6/226 (2.7)	83.5	1/253 (0.4)
III or IV	74.5	41/415 (9.9)	73.6	65/478 (13.6)	79.0	60/582 (10.3)
V	68.9	15/45 (33.3)	55.9	11/34 (32.4)	76.9	17/52 (32.7)



- **Conclusions**

- Pour les adultes avec PAC nécessitant une **hospitalisation (hors réa)**
- La monothérapie par BL fait **au moins aussi bien** que BL + M, ou FQ ‘anti-pneumococciques’
- Y compris **formes graves (PSI V ou CURB-65 > 2)**

# Actualités PAC 2015: Conclusions

- **Epidémiologie**
  - **Rhinovirus**: net 1<sup>er</sup> chez l'adulte, 1<sup>er</sup> ex-aequo (avec VRS) chez l'enfant
  - Le **PCQ en perte de vitesse**: 5% des PAC de l'adulte (enfant 3%)
  - *M. pneumoniae*: 8% (enfant), 2% (adulte)
  - *C. pneumoniae*: une blague ?
- **Vaccin conjugué PCV13 c/o âge > 65 ans**
  - **Efficacité vaccinale 46%** sur PCQ sérotypes vaccinaux (**13% des PAC**)
- **Traitement PAC adultes hospitalisés hors réa**
  - Monothérapie amox ou amox/clav



- Merci de votre attention !

