

Infections à *Clostridium difficile* chez le sujet âgé

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Liens d'intérêts

Participation à des travaux de recherche et/ou des groupe de réflexion/conseil
Laboratoires

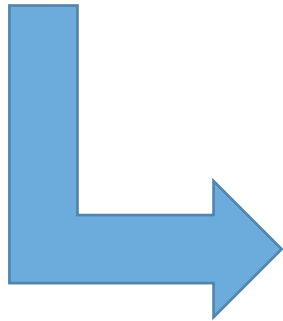
- ASTELLAS
- MSD
- GILEAD
- BIOMERIEUX
- SANOFI

Infection à *C. Difficile*. Les problématiques

Fréquence

Récidives

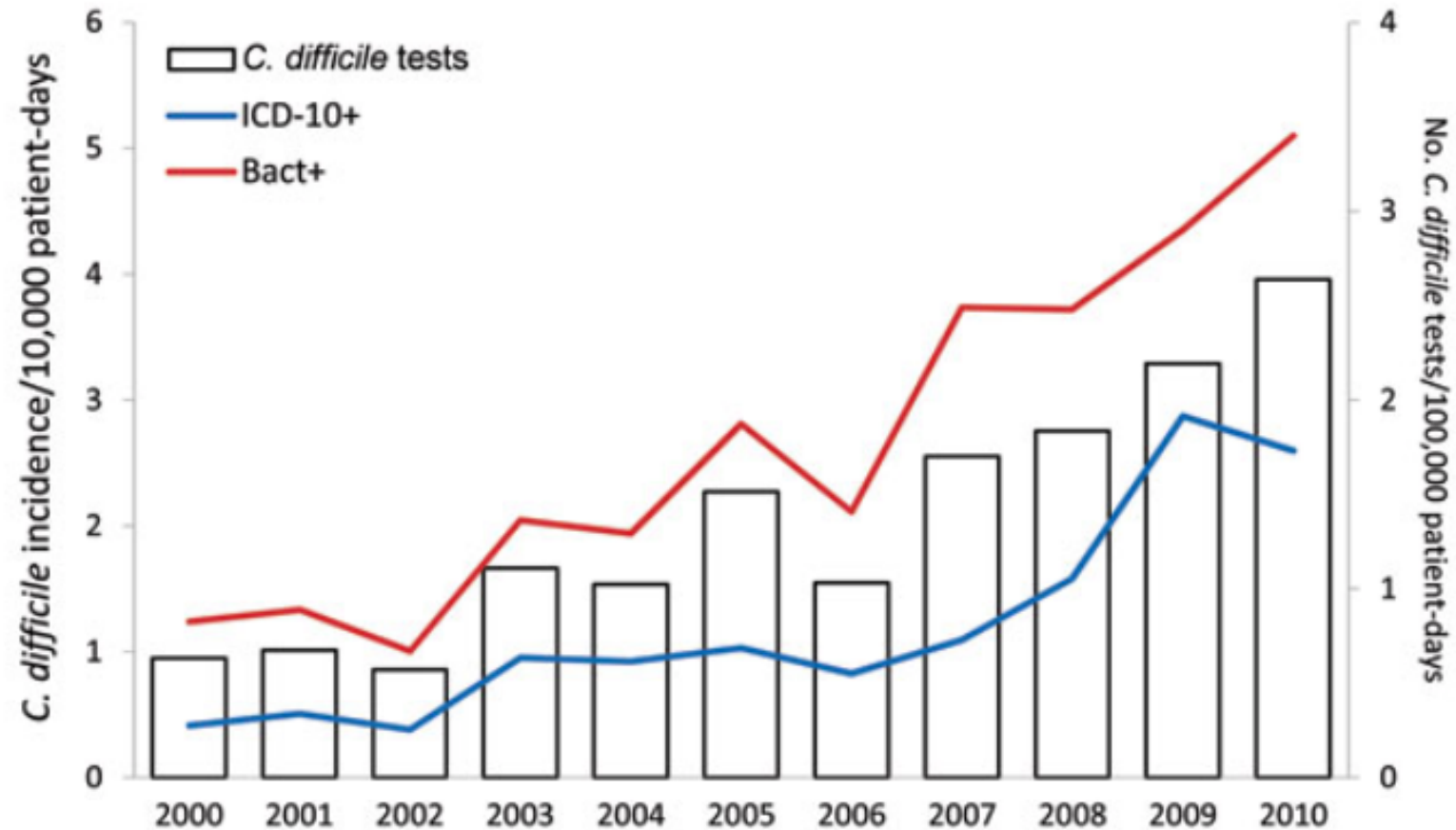
Gravité



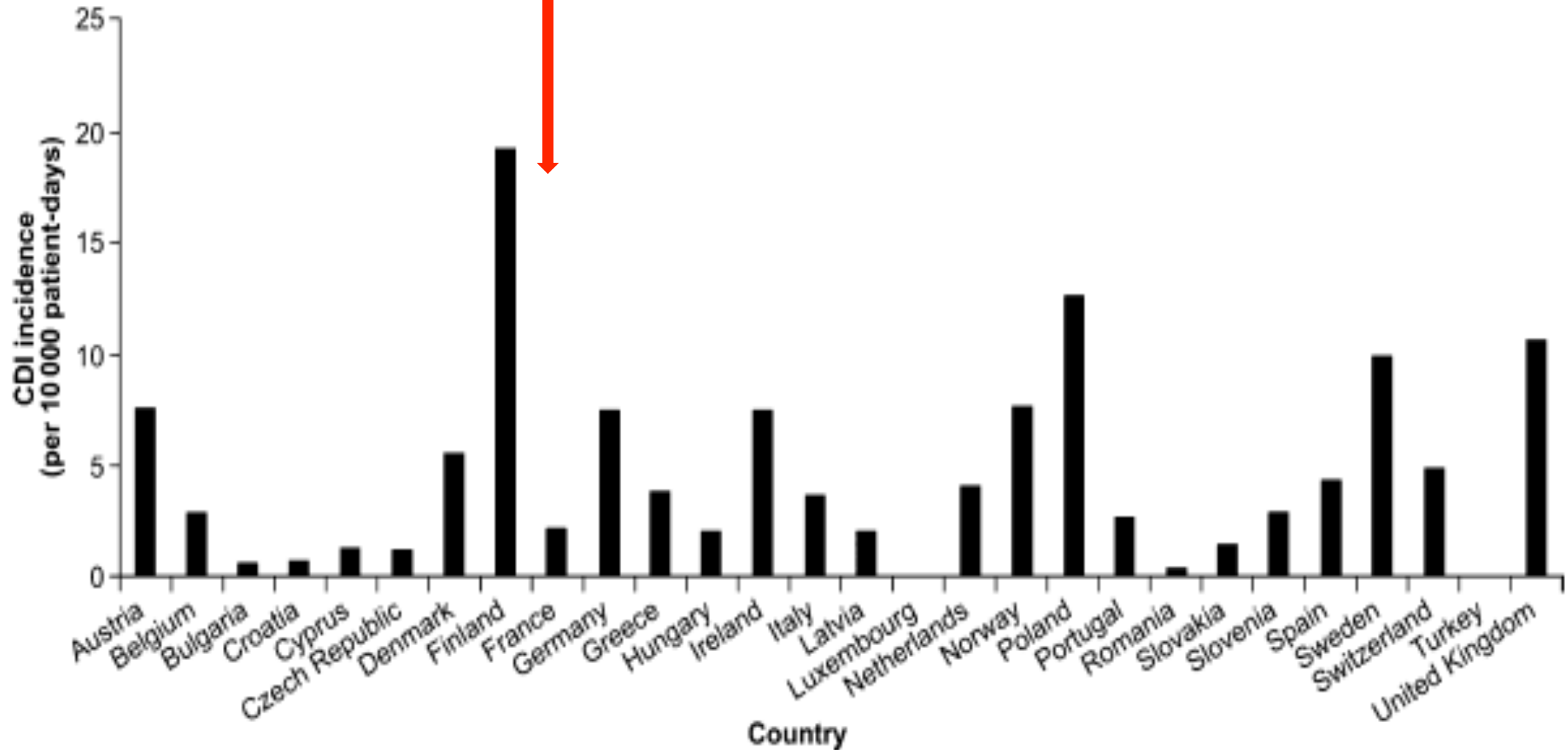
Conséquences pour la prise en charge du sujet âgé

Infection à *C. Difficile*. La fréquence

ICD évolution de l'Incidence en France



Infection à *C. Difficile*. La fréquence



Infection à *C. Difficile*. La fréquence chez le sujet âgé

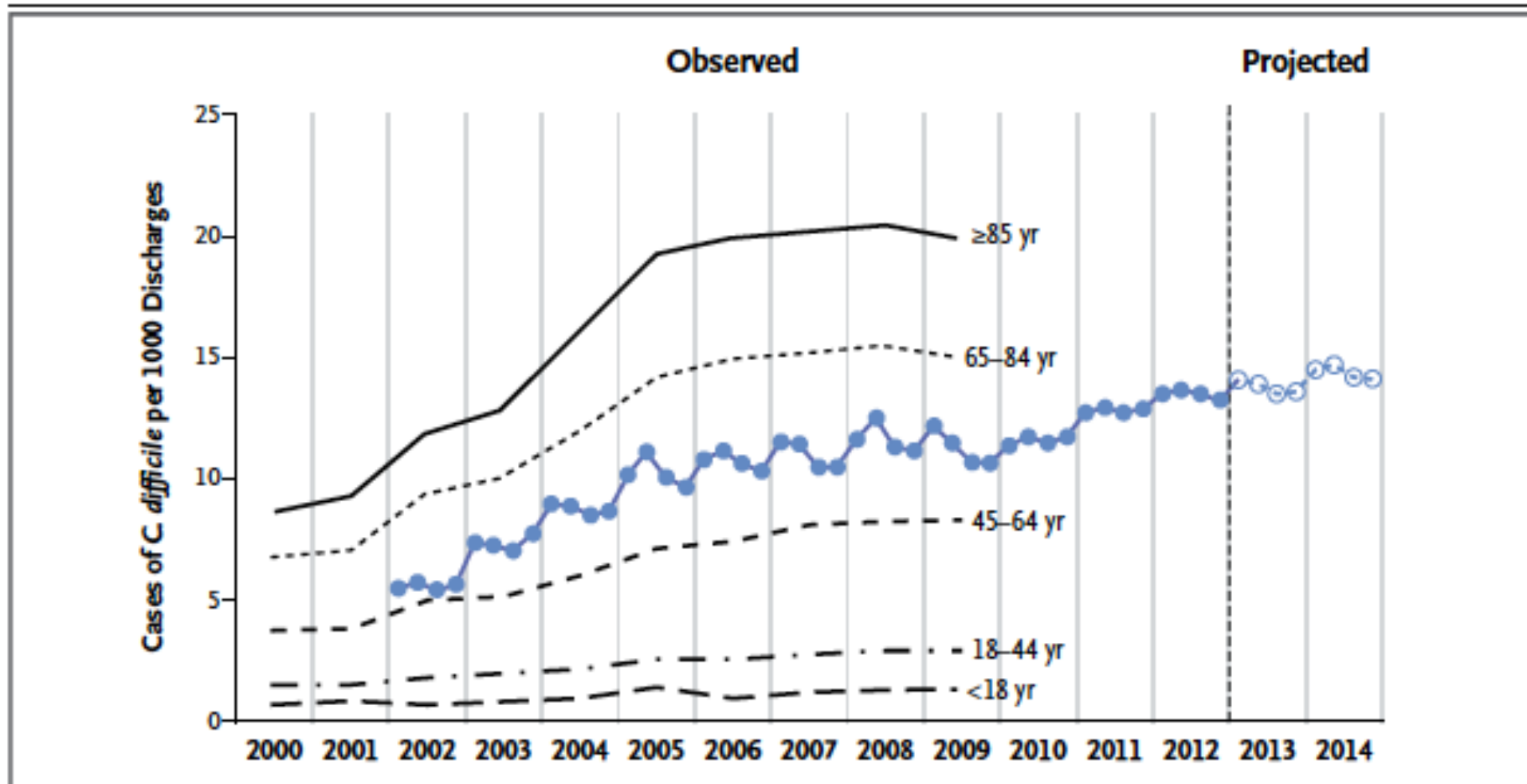


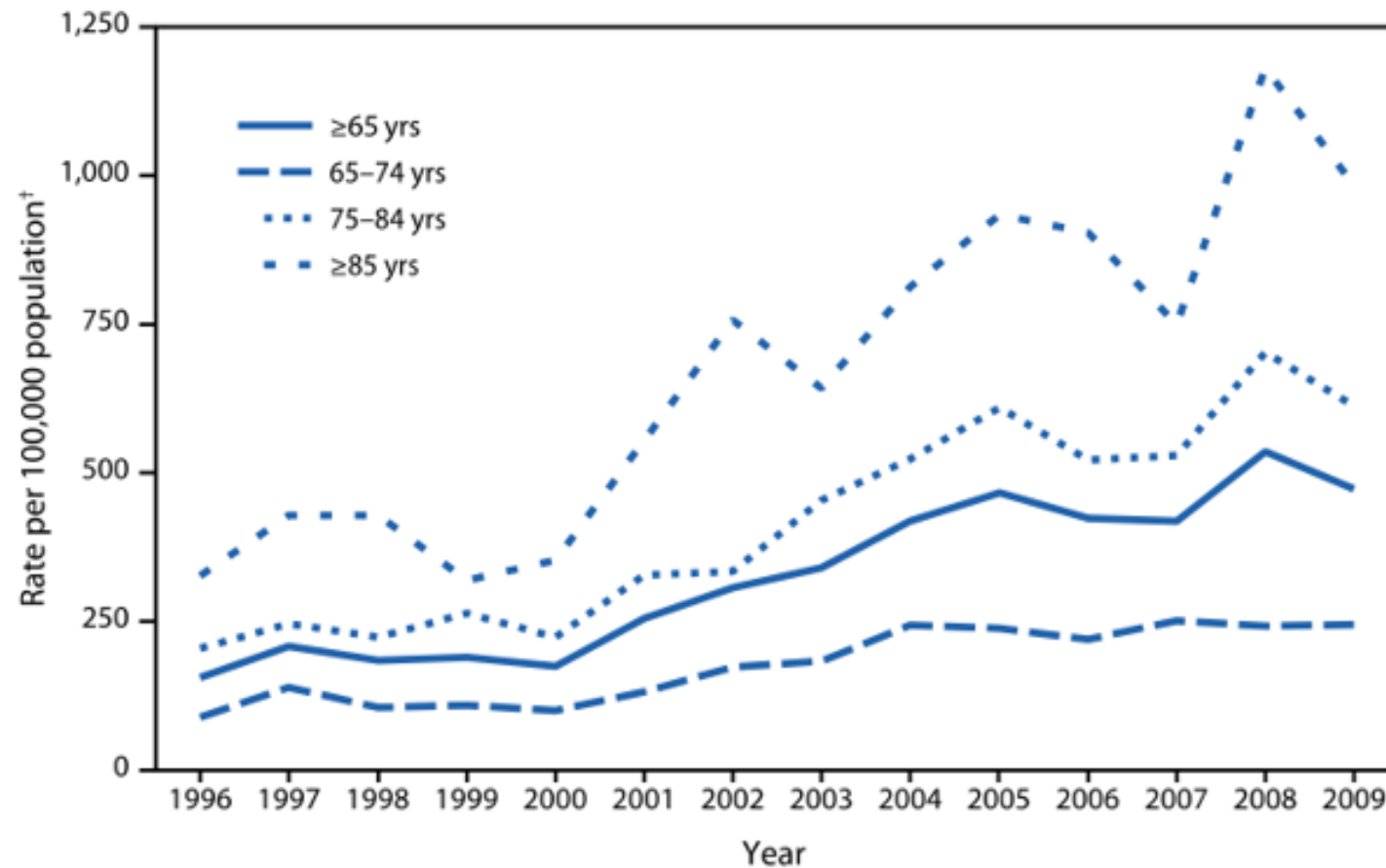
Figure 2. Incidence of Nosocomial *Clostridium difficile* Infection.

The overall incidence of nosocomial *C. difficile* infection is shown by year (blue), as is the incidence according to patient age (black). Data are from Steiner et al.¹⁸ and Lessa et al.²⁴

Daniel A. Leffler,
[N Engl J Med](#)
[2015;372:1539-48.](#)

Infection à *C. Difficile*. La fréquence chez le sujet âgé

Rates of *Clostridium difficile* Infection Among Hospitalized Patients Aged ≥ 65 Years,* by Age Group — National Hospital Discharge Survey, United States, 1996–2009



Infection à *C. Difficile*. La fréquence chez le sujet âgé

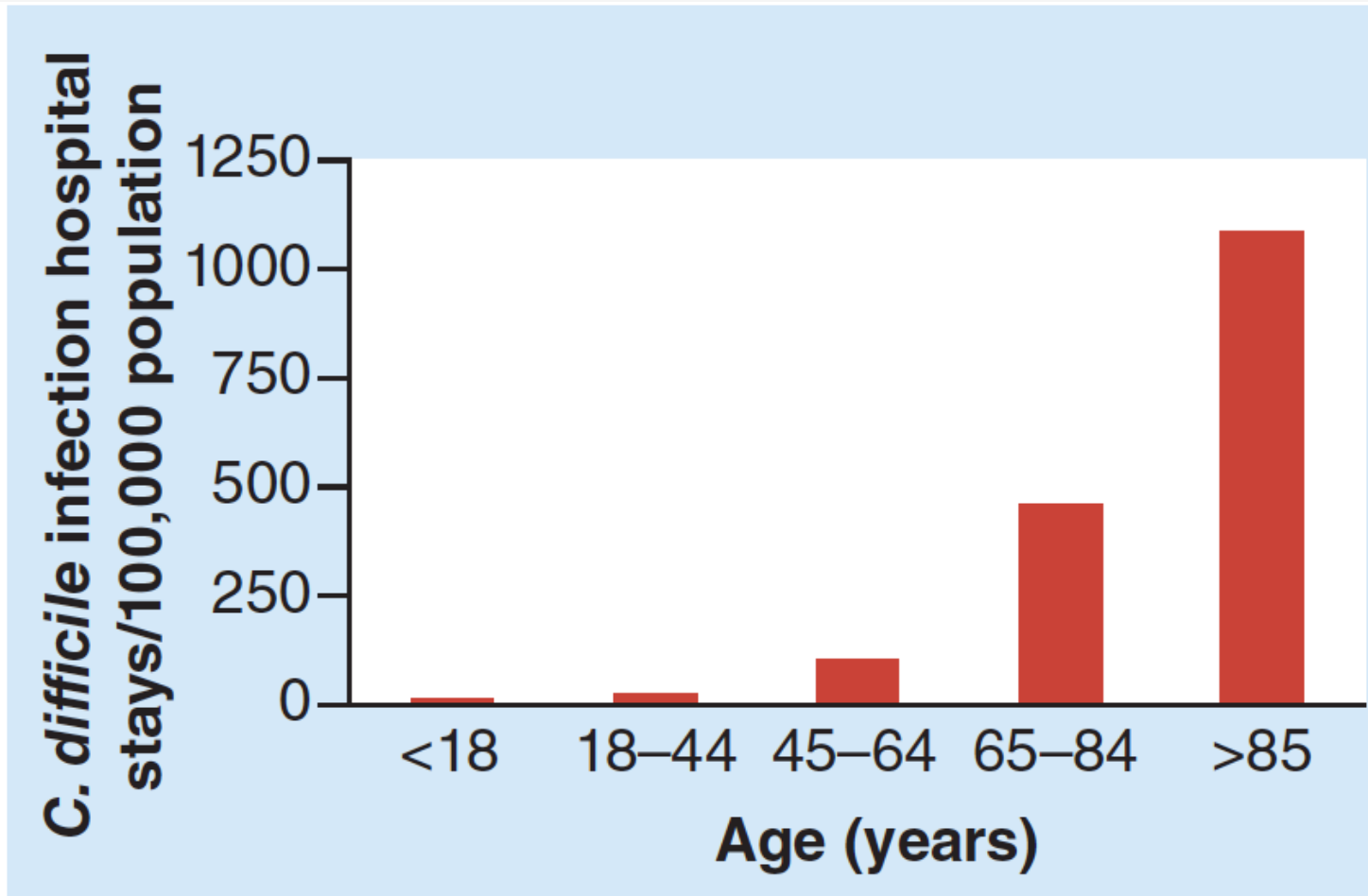


Figure 1. The risk of hospitalization associated with a *Clostridium difficile* infection increases with age.

Robin LP Jump
Aging Health
(2013) 9(4), 403–414

Lucado J, *Clostridium difficile Infections In Hospital Stays, 2009* –Agency for Healthcare Research and Quality, Rockville, MD, USA.

Infection à *C. Difficile*. La fréquence chez le sujet âgé

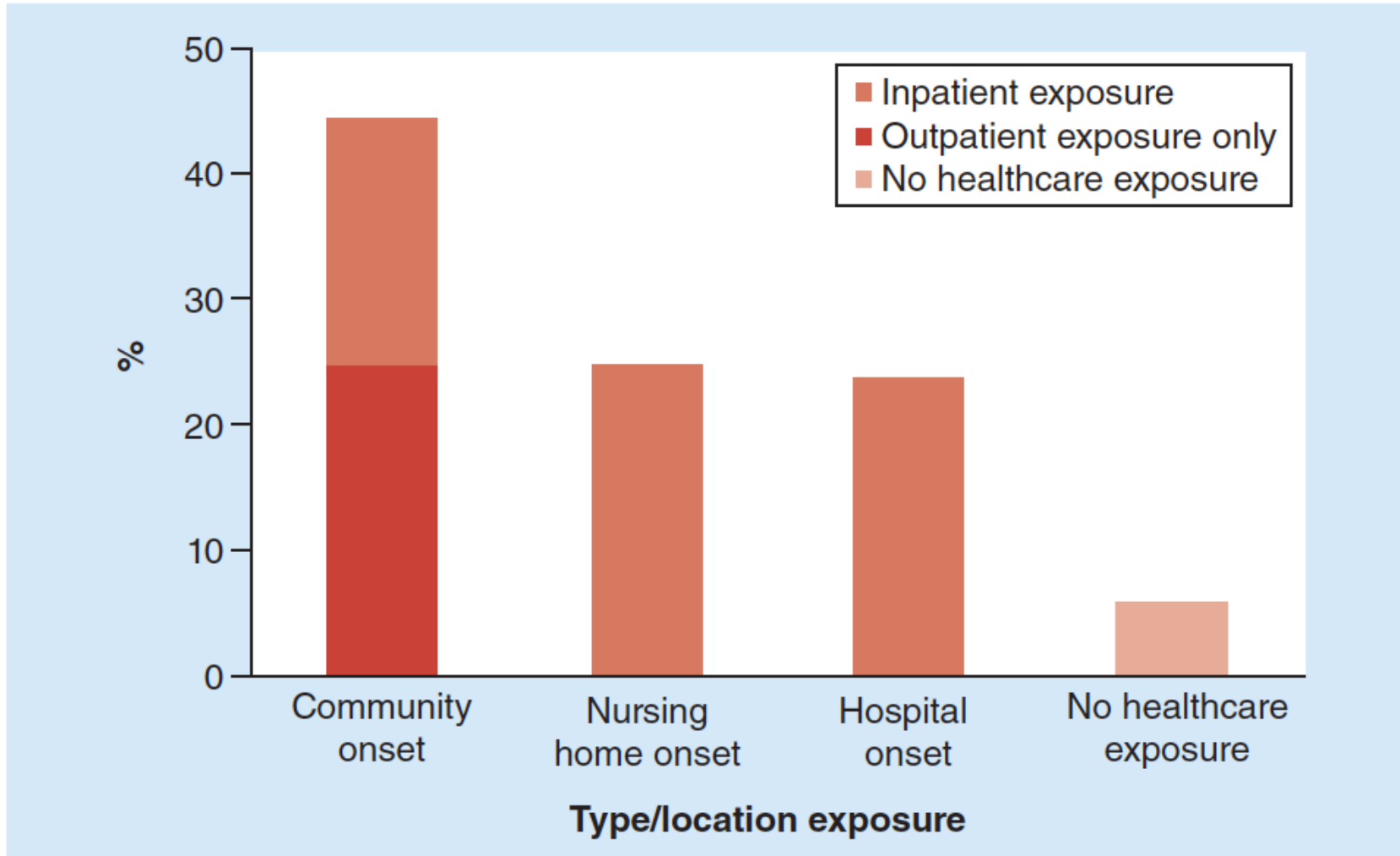
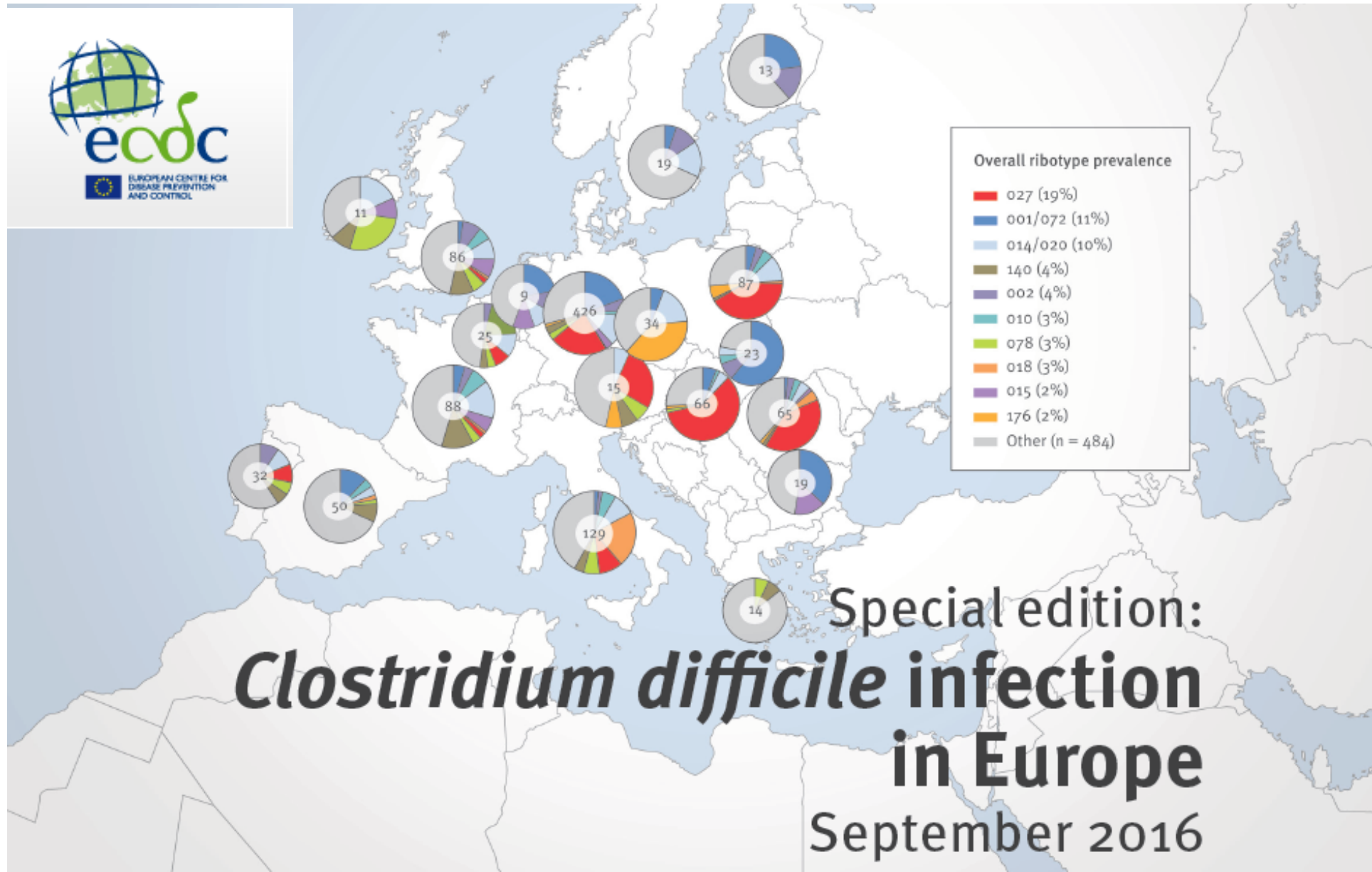


Figure 2. Percentage of *Clostridium difficile* infection cases by inpatient or outpatient status at the time of stool collection and type/location of exposures.

Robin LP Jump
Aging Health
(2013) **9**(4), 403–414

McDonald LC,
Morb. Mortal Wkly Rep.
61(9), 157–162 (2012).

ICD La Fréquence : Distribution des ribotypes en Europe

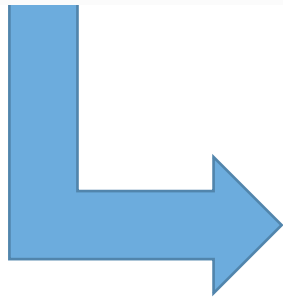


Infection à *C. Difficile*. Les problématiques

Fréquence

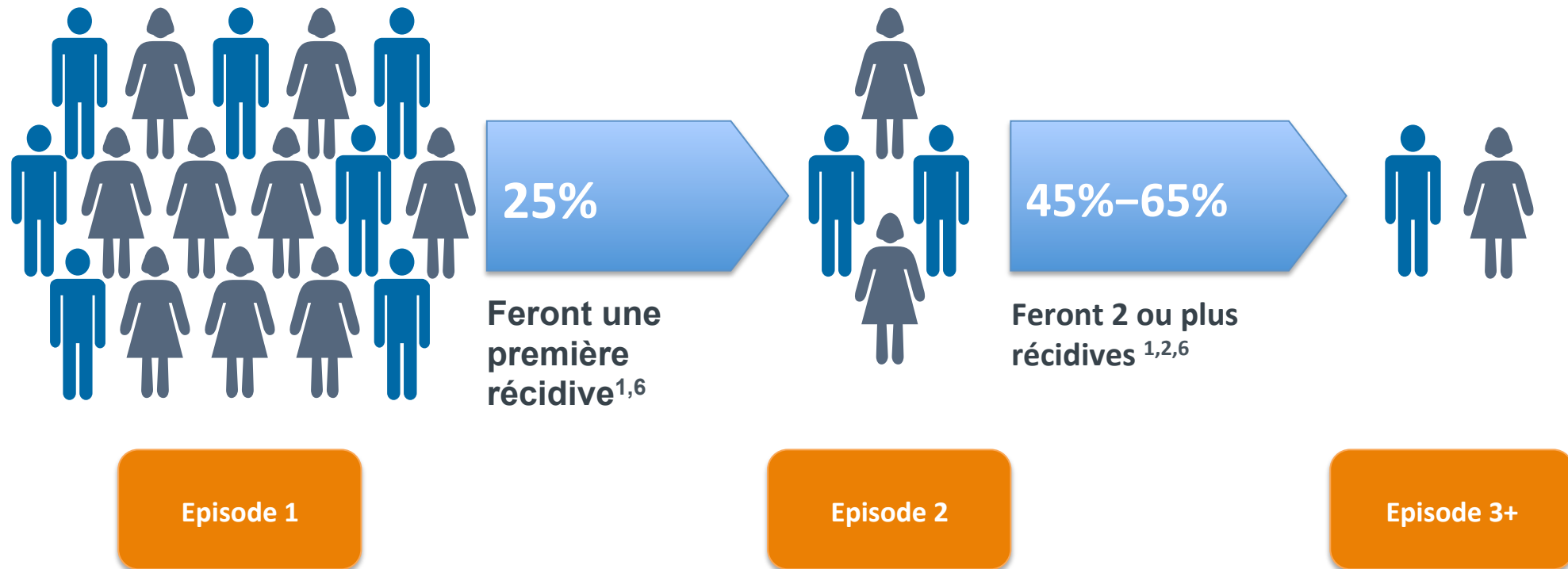
Récidives

Gravité



Conséquences pour la prise en charge du sujet âgé

ICD Le risque de récurrence



1. McFarland LV et al. *JAMA*. 1994;271(24):1913–1918. 2. McFarland LV et al. *Am J Gastroenterol*. 2002;97(7):1769–1775. 3. Lessa FC et al. *N Engl J Med*. 2015;372:825–834. 4. Huang AM et al. *Transpl Infect Dis*. 2014;16(5):744–750. doi:10.1111/tid.12267. 5. Abou Chakra CN et al. *PLoS One*. 2014;9(6):e98400. 6. Sheitoyan-Pesant, et al *Clinical Infectious Diseases* 2016;62(5):574–80

ICD Le risque de récurrence

Table 1. Risk of Recurrences According to Year of Diagnosis of *Clostridium difficile* Infection

Year of Diagnosis	Initial <i>Clostridium difficile</i> Infection Episode	First Recurrence	Second Recurrence	Third Recurrence	Fourth Recurrence or More
1998–2001	253	31/242 (12.8%)	11/29 (37.9%)	3/10 (30.0%)	0/3 (0%)
2002–2005	727	198/655 (30.2%)	70/183 (38.3%)	19/65 (29.2%)	5/18 (27.8%)
2006–2009	332	63/319 (19.7%)	25/63 (39.7%)	9/24 (37.5%)	2/8 (25.0%)
2010–2013	215	62/202 (30.7%)	22/59 (37.3%)	4/22 (18.2%)	2/4 (50.0%)
Total	1527	354/1418 (24.9%)	128/334 (38.3%)	35/121 (28.9%)	9/33 (27.3)

Nb total de récurrences après ICD : 526 (37%)

ICD Facteurs associés avec la récurrence (ou l'augmentation du risque de récurrence)



Actualisation des recommandations pour le traitement des infections à *Clostridium difficile*



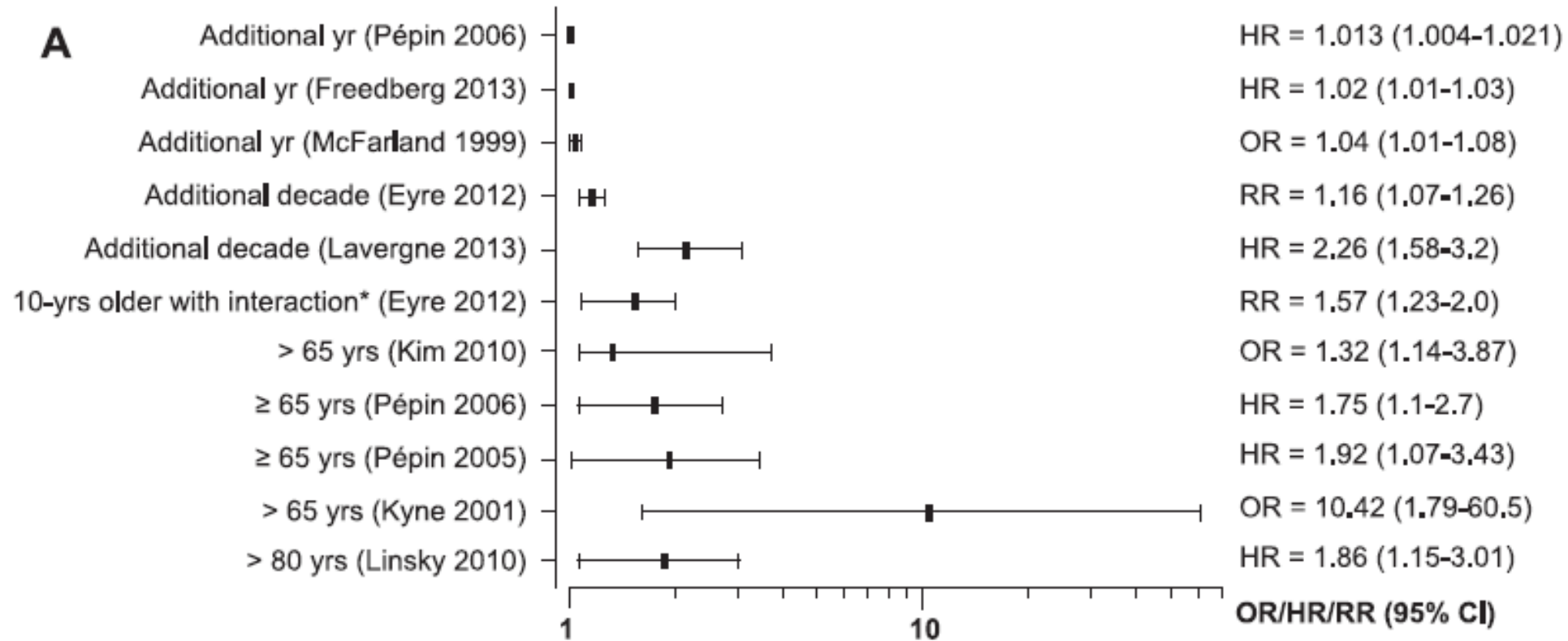
Caractéristiques	Niveau de recommandation
Age $\geq$ 65 ans	A
Poursuite d'une antibiothérapie	A
Co-morbidité	A
Antécédent d'ICD	A
Utilisation d'anti-acides (IPP)	B
Gravité initiale	B

Diapositives à partir des Recommandations de l'ESCMID mars 2014

Validation diapositives Groupe recommandation le 28/09/2016

<http://www.infectiologie.com/fr/diaporamas-recommandations.html>

ICD. Récidives : risque chez le sujet âgé



Forest plots of associations of age, antibiotic use and PPIs with recurrence of CDI.

ICD. Récidives : risque chez le sujet âgé

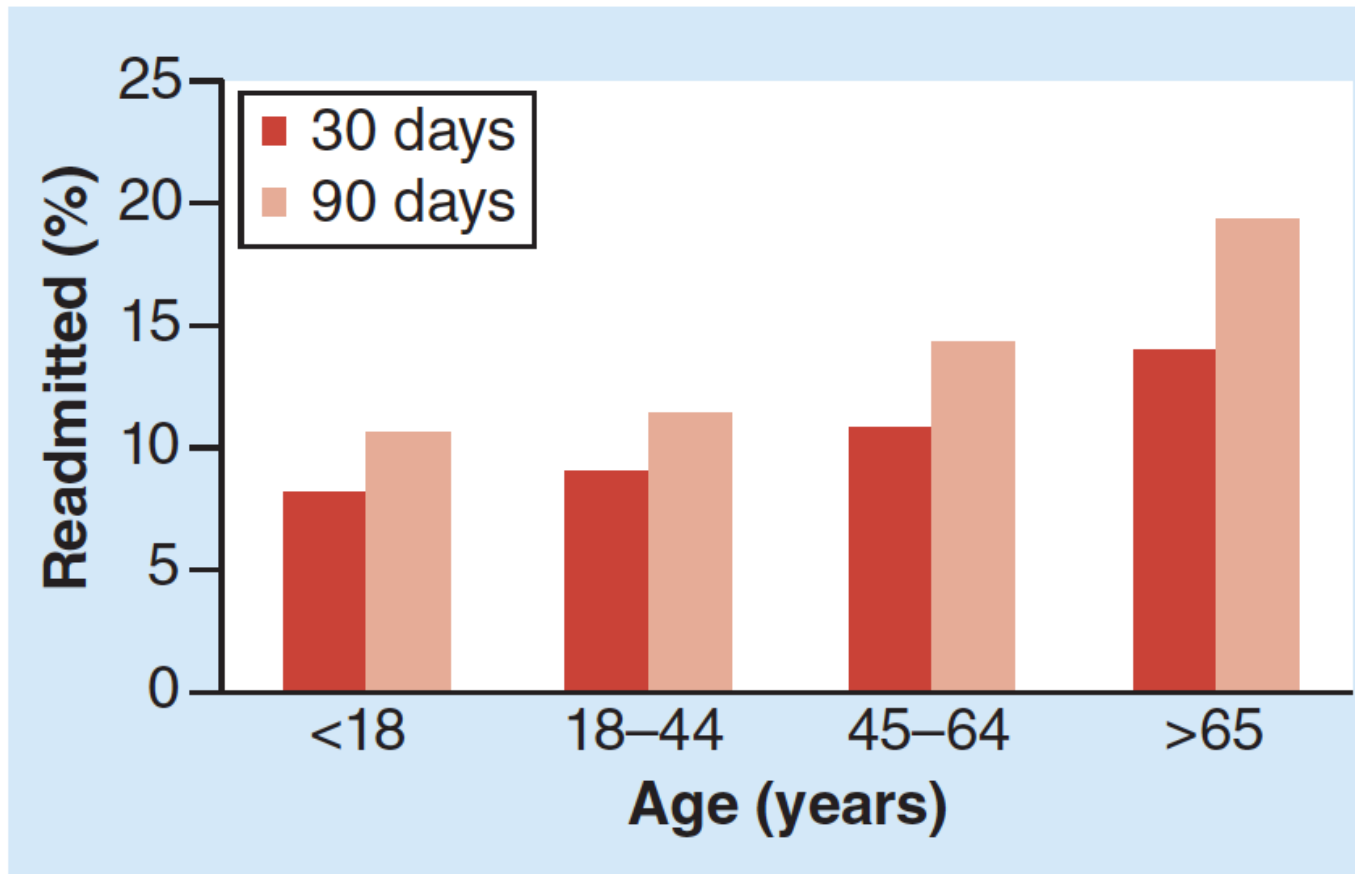


Figure 3. Following a *Clostridium difficile* infection-related hospital stay, the risk of readmission at 30 and 90 days due to *C. difficile* infection increases with age.

Robin LP Jump
Aging Health
(2013) **9**(4), 403–414

Elixhauser A,
Agency for Healthcare Research
and Quality, Rockville, MD, USA
(2012)

ICD. Récidives : risque chez le sujet âgé

Risk Estimation for Recurrent *Clostridium difficile* Infection Based on Clinical Factors

[Ralph B. D’Agostino Sr, Clinical Infectious Diseases 2014;58\(10\):1386–93](#)

Table 4. Predicted Risk of *Clostridium difficile* Infection Recurrence^a

No. of Risk Factors	Points for Each Risk Factor			Predicted Risk of Recurrence	
	Age ≥75 y	UBM ≥10/d	Cr ≥1.2 mg/dL	FDX	VAN
(A) Score sheet for people with no prior episode					
No risk factors	0	0	0	10%	18%
1 Risk factor					
Age	1	0	0	13%	24%
UBM	0	1	0	13%	24%
Cr	0	0	2	17%	29%
2 Risk factors					
Age and UBM	1	1	0	17%	29%
Age and Cr	1	0	2	21%	35%
UBM and Cr	0	1	2	21%	35%
3 Risk factors					
Age, UBM, and Cr	1	1	2	28%	44%
(B) Score sheet for people with prior episode					
No risk factors	0	0	0	14%	25%
1 Risk factor					
Age	1	0	0	19%	32%
UBM	0	1	0	19%	32%
Cr	0	0	2	24%	39%
2 Risk factors					
Age and UBM	1	1	0	24%	39%
Age and Cr	1	0	2	29%	45%
UBM and Cr	0	1	2	29%	45%
3 Risk factors					
Age, UBM, and Cr	1	1	2	37%	54%

Cr, creatinine
FDX, fidaxomicin
UBM unformed bowel movement
VAN vancomycin.

ICD. Récidives : risque chez le sujet âgé

Table 3. Adjusted U.S. National Estimates of Recurrences and Deaths Associated with CDI, According to Epidemiologic Category, 2011.*

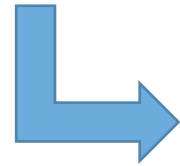
Characteristic	Estimated Recurrences		Recurrence Rate		Estimated Deaths		Death Rate	
	CA CDI	HCA CDI	CA CDI	HCA CDI	CA CDI	HCA CDI	CA CDI	HCA CDI
	no. (95% CI)		no. per 100,000 persons (95% CI)		no. (95% CI)		no. per 100,000 persons (95% CI)	
All cases	21,600 (16,900–26,300)	61,400 (40,200–82,600)	7.0 (5.5–8.6)	19.9 (13.0–26.9)	2000 (1200–2800)	27,300 (15,300–39,300)	0.7 (0.4–0.9)	8.9 (5.0–12.8)
Age group								
1–17 yr	1400 (900–1900)	300 (100–500)	2.0 (1.3–2.7)	0.4 (0.1–0.7)	NA	NA	NA	NA
18–44 yr	2600 (1300–3900)	3400 (1000–5700)	2.3 (1.1–3.4)	3.0 (0.9–5.0)	50 (0–120)	NA	<0.1 (0–0.1)	NA
45–64 yr	6200 (4000–8300)	9000 (4400–13,700)	7.5 (4.8–10.0)	10.9 (5.3–16.6)	420 (120–720)	4500 (1020–8000)	0.5 (0.1–0.9)	5.4 (1.2–9.7)
≥65 yr	11,400 (7400–15,400)	48,700 (28,100–69,200)	27.5 (17.9–37.2)	117.6 (67.9–167.2)	1500 (750–2200)	22,800 (11,300–34,200)	3.6 (1.8–5.3)	55.1 (27.3–82.6)

Burden of Clostridium difficile Infection in the United States

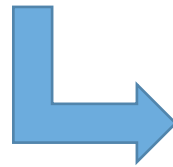
ICD. Récidives : risque chez le sujet âgé

âge > 75 ans

100 ICD Standard de soin



24 1^{ères} récurrences



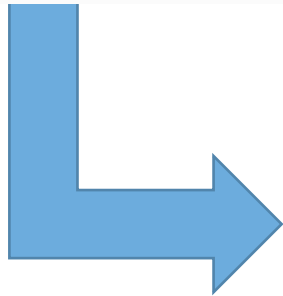
37 épisodes de récurrence

Infection à *C. Difficile*. Les problématiques

Fréquence

Récidives

Gravité



Conséquences pour la prise en charge du sujet âgé

ICD Facteurs associés avec la gravité (ou l'augmentation du risque de développer une forme grave)



Actualisation des recommandations pour le traitement des infections à *Clostridium difficile*



Caractéristiques	Niveau de recommandation
Age $\geq$ 65 ans	A
Hyperleucocytose ($>15 \cdot 10^9/L$)	A
Albuminémie < 30 g/L	A
Elévation de la créatininémie > 133 mcM	A
Co-morbidité	B

Diapositives à partir des Recommandations de l'ESCMID mars 2014

Validation diapositives Groupe recommandation le 28/09/2016

<http://www.infectiologie.com/fr/diaporamas-recommandations.html>

ICD La gravité

Table 2. Severity, Complications, and Mortality for Each Episode of *Clostridium difficile* Infection

Outcome	Initial Episode (N = 1527)	First Recurrence (n = 354)	Second Recurrence (n = 128)	Third Recurrence (n = 35)
Severe episodes	710 (46.5%)	108 (30.5%)	32 (25.0%)	6 (17.1%)
Leukocytosis ^a	571 (37.4%)	90 (25.4%)	30 (23.4%)	5 (14.3%)
Acute renal failure ^b	256 (16.8%)	33 (9.3%)	9 (7.0%)	1 (2.8%)
Complicated episodes	89 (5.8%)	15 (4.2%)	6 (4.7%)	1 (2.8%)
<i>Clostridium difficile</i> Infection – related intensive care unit admission	87 (5.7%)	16 (4.5%)	4 (3.1%)	1 (2.8%)
Vasopressors	33 (2.2%)	4 (1.1%)	1 (0.8%)	1 (2.8%)
Ileus	32 (2.1%)	9 (2.5%)	2 (1.6%)	0
Toxic megacolon	23 (1.5%)	0	3 (2.3%)	0
Perforation	5 (0.3%)	0	0	0
Colectomy	18 (1.2%)	2 (0.6%)	2 (1.6%)	0
All-cause 30-day mortality	166 (10.9%)	27 (7.6%)	9 (7.0%)	2 (5.7%)

^a White blood cell count $\geq 15 \times 10^3/\mu\text{L}$ within 48 hours of diagnosis.

^b Increase in creatinine 1.5 times the normal value within 48 hours of diagnosis.

ICD La gravité sujet âgé

Les complications

Table 4. Independent Risk Factors for Complicated *Clostridium difficile* Infection on Multivariable Logistic Regression
1333 pts

Complications :
colonic perforation,
toxic megacolon,
colectomy,
Admission to ICU for cCDI,
CDI contributed to death
within 30 days

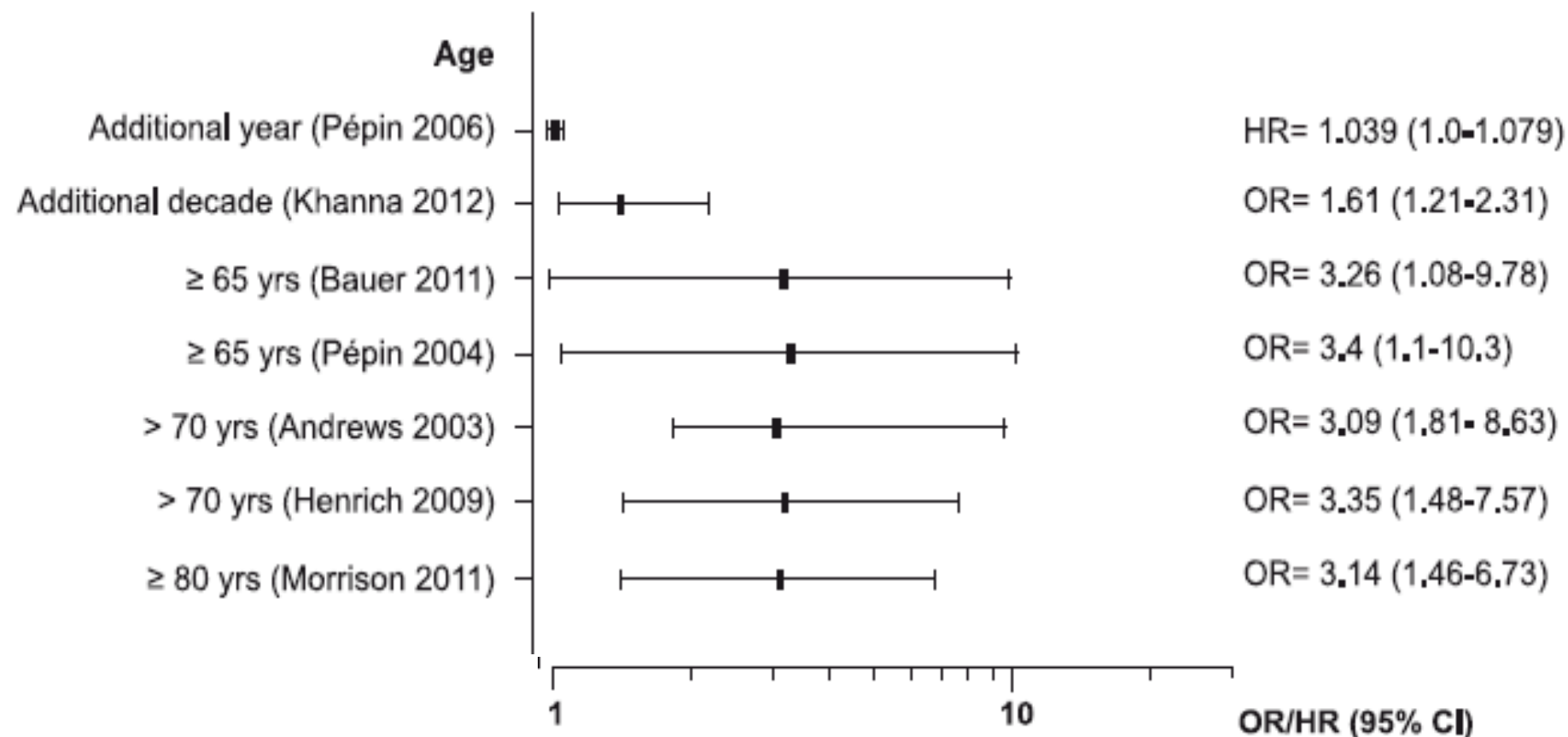
Variable	No. Complicated <i>Clostridium difficile</i> Infections/ Total (%)	Odds Ratio (95% Confidence Interval)	P Value
Age (y)			
18–64	27/511 (5.3)	...	.67
65–79	39/504 (7.7)	1.50 (.94–2.50)	.12
≥80	42/342 (12.3)	2.51 (1.52–4.16)	<.001
C-reactive protein (mg/L)			
<50		...	.61
50–149.9		1.18 (.63–2.23)	.61
≥150		3.61 (1.81–7.20)	<.001
Missing		1.44 (.75–2.77)	.28
Blood urea nitrogen (mmol/L)			
<7		...	.006
7–10.9		2.61 (1.32–5.17)	.006
≥11		4.88 (2.81–8.48)	<.001
Dialysis		4.03 (1.02–15.90)	.046
Missing		3.70 (1.59–8.60)	.002

Variable	Adjusted Odds Ratio (95% Confidence Interval)	P Value
Age (y)		
18–64		.67
65–79	1.50 (.94–2.50)	.12
≥80	2.51 (1.52–4.16)	<.001
C-reactive protein (mg/L)		
<50	...	.61
50–149.9	1.18 (.63–2.23)	.61
≥150	3.61 (1.81–7.20)	<.001
Missing	1.44 (.75–2.77)	.28
Blood urea nitrogen (mmol/L)		
<7	...	.006
7–10.9	2.61 (1.32–5.17)	.006
≥11	4.88 (2.81–8.48)	<.001
Dialysis	4.03 (1.02–15.90)	.046
Missing	3.70 (1.59–8.60)	.002

ICD La gravité sujet âgé. Les complications

**Figure 4. Forest plots
of reported
associations with
complicated CDI: age**

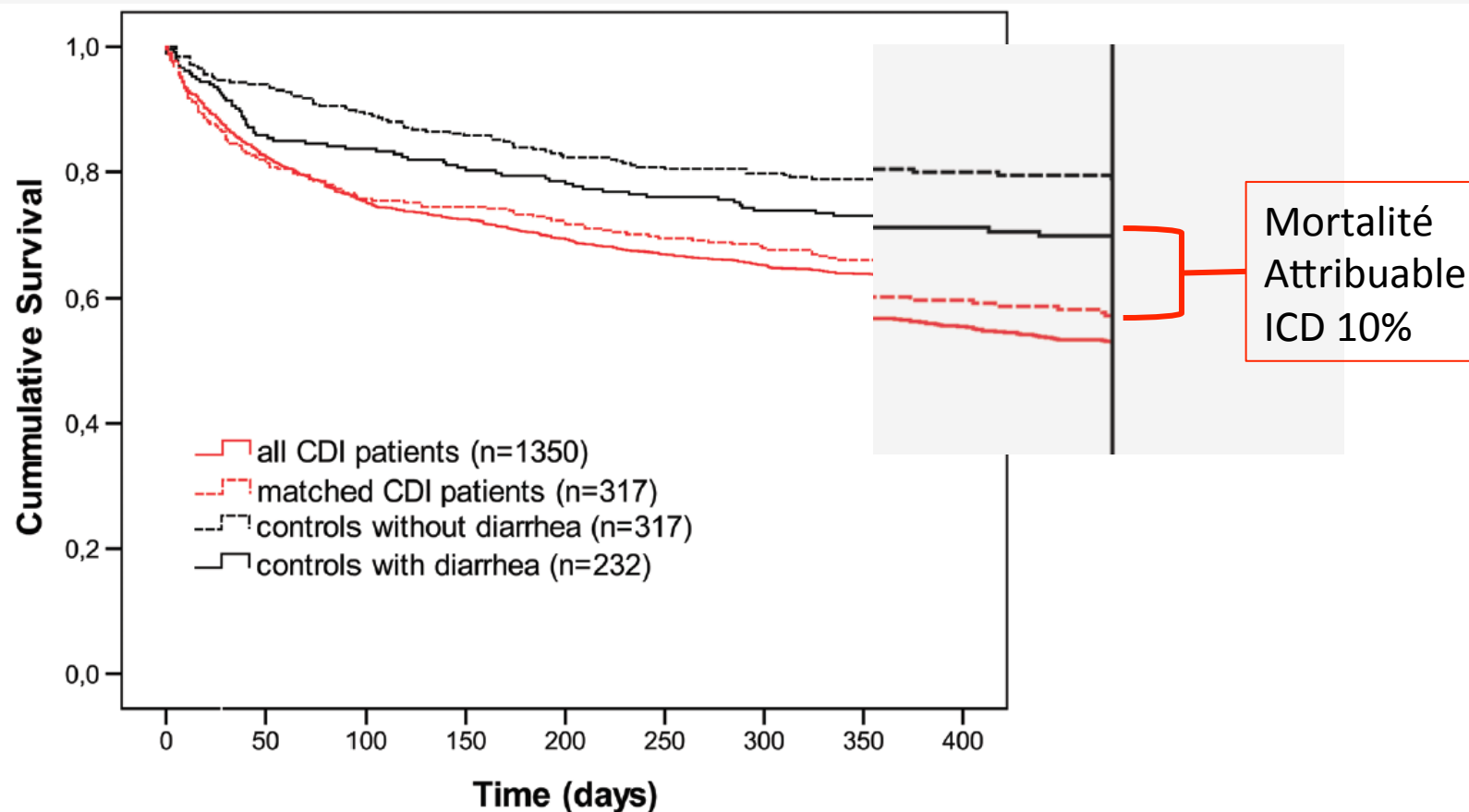
Complications:
fulminant colitis,
ICU admission,
shock, and/or death



ICD La gravité sujet âgé. La mortalité

All-Cause and Disease-Specific Mortality in Hospitalized Patients With *Clostridium difficile* Infection: A Multicenter Cohort Study

Marjolein P. M. Hensgens,
Clinical Infectious Diseases
2013;56(8):1108–16



	< 30 days		< 3 months		< 6 months		< 1 year	
Death, no. (%)								
all CDI patients	177 / 1350	13.1%	319 / 1350	23.6%	401 / 1350	29.7%	497 / 1350	36.8%
matched CDI patients	47 / 317	14.8%	74 / 317	23.3%	85 / 317	26.8%	109 / 317	34.4%
controls without diarrhoea	17 / 317	5.4%	31 / 317	9.8%	51 / 317	16.1%	68 / 317	21.5%
controls with diarrhoea	20 / 232	8.6%	38 / 232	16.4%	48 / 232	20.7%	63 / 232	27.2%

Figure 2. Mortality rate of all patients with *Clostridium difficile* infection (CDI) and the matched cohort (CDI patients and matched control patients) during the first year of inclusion.

ICD La gravité sujet âgé

La mortalité

All-Cause and Disease-Specific Mortality in Hospitalized Patients With Clostridium difficile Infection: A Multicenter Cohort Study

Marjolein P. M. Hensgens,
Clinical Infectious Diseases
2013;56(8):1108–16

Table 2. Mortality Risk Stratified by Polymerase Chain Reaction Ribotype and Age

Stratification	Total N = 1350	Deaths		
		<30 d	<3 mo	<1 y
		% (n = 177)	% (n = 319)	% (n = 497)
Age group, y				
≤9	58	0.0	1.7	6.9
10–19	40	2.5	7.5	15.0
20–29	33	6.1	9.1	12.1
30–39	52	1.9	3.8	15.4
40–49	90	10.0	14.4	28.9
50–59	191	12.0	18.8	28.3
60–69	252	11.9	23.0	34.5
70–79	351	14.5	29.9	45.6
80–89	244	21.3	34.8	51.2
≥90	39	20.5	33.3	59.0
PCR ribotype				
014	111	10.8	20.7	32.4
078	76	14.5	23.7	38.2
001	57	15.8	22.8	33.3
027	55	21.8	32.7	40.0
Other	387	10.1	20.2	34.9
No type result	664	14.2	25.5	38.6

ICD La gravité sujet âgé. La mortalité

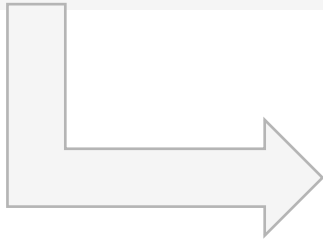
Table 3. Adjusted U.S. National Estimates of Recurrences and Deaths Associated with CDI, According to Epidemiologic Category, 2011.*

Characteristic	Estimated Recurrences		Recurrence Rate		Estimated Deaths		Death Rate	
	CA CDI	HCA CDI	CA CDI	HCA CDI	CA CDI	HCA CDI	CA CDI	HCA CDI
	<i>no. (95% CI)</i>		<i>no. per 100,000 persons (95% CI)</i>		<i>no. (95% CI)</i>		<i>no. per 100,000 persons (95% CI)</i>	
All cases	21,600 (16,900–26,300)	61,400 (40,200–82,600)	7.0 (5.5–8.6)	19.9 (13.0–26.9)	2000 (1200–2800)	27,300 (15,300–39,300)	0.7 (0.4–0.9)	8.9 (5.0–12.8)
Age group								
1–17 yr	1400 (900–1900)	300 (100–500)	2.0 (1.3–2.7)	0.4 (0.1–0.7)	NA	NA	NA	NA
18–44 yr	2600 (1300–3900)	3400 (1000–5700)	2.3 (1.1–3.4)	3.0 (0.9–5.0)	50 (0–120)	NA	<0.1 (0–0.1)	NA
45–64 yr	6200 (4000–8300)	9000 (4400–13,700)	7.5 (4.8–10.0)	10.9 (5.3–16.6)	420 (120–720)	4500 (1020–8000)	0.5 (0.1–0.9)	5.4 (1.2–9.7)
≥65 yr	11,400 (7400–15,400)	48,700 (28,100–69,200)	27.5 (17.9–37.2)	117.6 (67.9–167.2)	1500 (750–2200)	22,800 (11,300–34,200)	3.6 (1.8–5.3)	55.1 (27.3–82.6)

Burden of Clostridium difficile Infection in the United States

Infection à *Clostridium difficile* sujet âgé

Plus de récurrences
Plus à risque de gravité
Plus de mortalité



Quel traitement ?

ICD 1^{er} épisode non grave



Actualisation des recommandations pour le traitement des infections à *Clostridium difficile*



Traitement recommandé	Niveau de preuve
Métronidazole 500 mg/8h PO pendant 10 jours	A-I
Vancomycine 125 mg/6h PO pendant 10 jours	B-I
Fidaxomicine 200 mg/12h PO pendant 10 jours	B-I
Vancomycine 500 mg/6h PO pendant 10 jours	C-I
Arrêt des antibiotiques et surveillance avec ré-évaluation à 48h	C-II
Si voie orale impossible : métronidazole IV 500 mg / 8h pendant 10 jours	A-II

Diapositives à partir des Recommandations de l'ESCMID mars 2014

Validation diapositives Groupe recommandation le 28/09/2016

<http://www.infectiologie.com/fr/diaporamas-recommandations.html>

ICD Forme modérée : 1ère récurrence ou risque de récurrence



Actualisation des recommandations pour le traitement des infections à *Clostridium difficile*



Traitement recommandé	Niveau de preuve
Fidaxomicine 200 mg/12h PO pendant 10 jours	B-I
Vancomycine 125 mg/6h PO pendant 10 jours	B-I
Métronidazole 500 mg/8h PO pendant 10 jours	C-I
Vancomycine 500 mg/6h PO pendant 10 jours	C-III
Si voie orale impossible : métronidazole IV 500 mg / 8h pendant 10 jours	A-II

Diapositives à partir des Recommandations de l'ESCMID mars 2014

Validation diapositives Groupe recommandation le 28/09/2016

<http://www.infectiologie.com/fr/diaporamas-recommandations.html>

ICD Forme grave



Actualisation des recommandations pour le traitement des infections à *Clostridium difficile*



Traitement recommandé	Niveau de preuve
Vancomycine 125 mg/6h PO pendant 10 jours	A-I
Fidaxomicine 200 mg/12h PO pendant 10 jours	B-I
Vancomycine 500 mg/6h PO pendant 10 jours	B-III
Si voie orale impossible : - métronidazole IV 500 mg / 8h pendant 10 jours plus vancomycine en lavements 500 mg dans 100 mL de SSI/6h en intracolique et/ou vancomycine 500 mg/6h / sonde nasogastrique ou - tigécycline IV 50 mg /12h pendant 14 jours	B-II C-III

ICD traitement sujet âgé

Fidaxomicin versus Vancomycin for *Clostridium difficile* Infection



The NEW ENGLAND
JOURNAL of MEDICINE

N Engl J Med 2011;364:422-31.

Thomas J. Louie, M.D., Mark A. Miller, M.D., Kathleen M. Mullane, D.O.,
Karl Weiss, M.D., Arnold Lentnek, M.D., Yoav Golan, M.D.,
Sherwood Gorbach, M.D., Pamela Sears, Ph.D., and Youe-Kong Shue, Ph.D.,
for the OPT-80-003 Clinical Study Group*

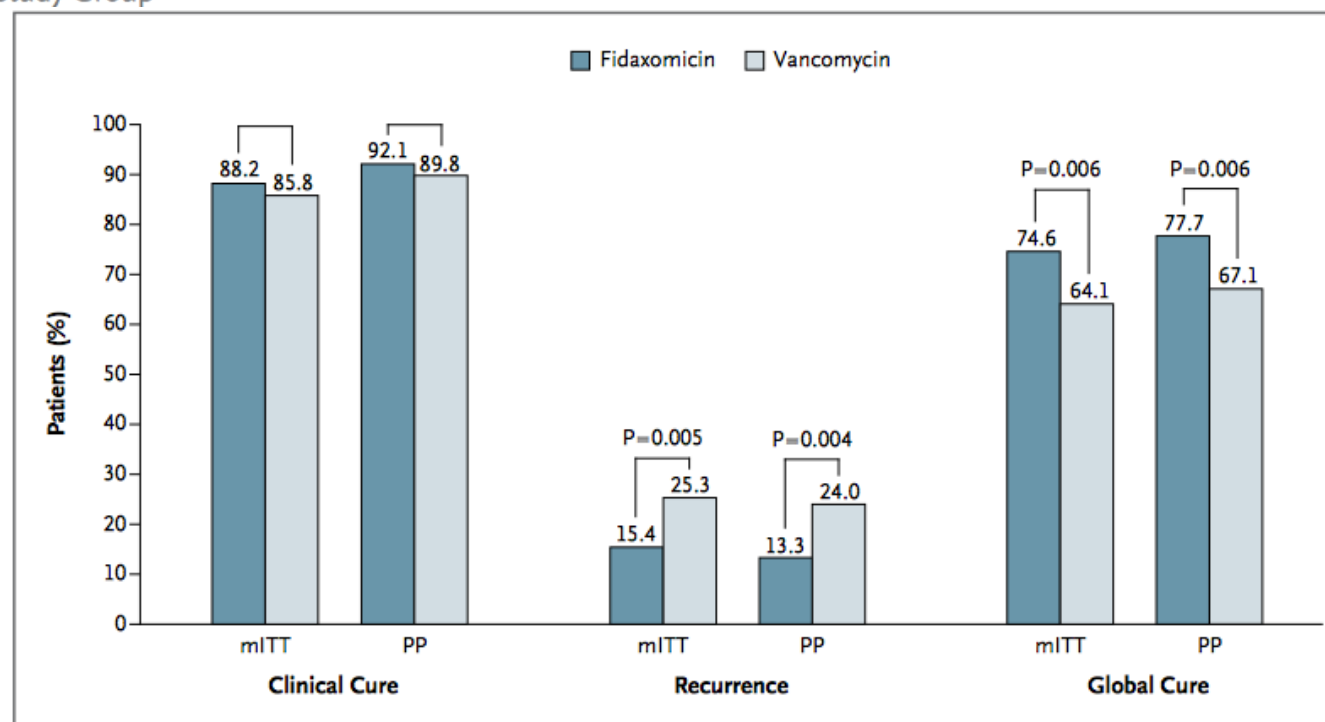


Figure 2. Rates of Primary and Secondary End Points.

For the primary outcome of clinical cure, the lower boundary of the 97.5% confidence interval for the difference in cure rates between fidaxomicin and vancomycin was -3.1 percentage points in the modified intention-to-treat (mITT) analysis and -2.6 percentage points in the per-protocol (PP) analysis.

ICD traitement sujet âgé

Fidaxomicine
récidives

Table 3. Rates of Recurrence of *C. difficile* Infection, According to Subgroups, in the Modified Intention-to-Treat and Per-Protocol Populations.

Subgroup	Modified Intention-to-Treat Population			Per-Protocol Population		
	Fidaxomicin no./total no. (%)	Vancomycin no./total no. (%)	P Value	Fidaxomicin no./total no. (%)	Vancomycin no./total no. (%)	P Value
Age						
<65 yr	19/150 (12.7)	27/134 (20.1)	0.09	12/126 (9.5)	22/118 (18.6)	0.04
≥65 yr	20/103 (19.4)	40/131 (30.5)	0.05	16/85 (18.8)	31/103 (30.1)	0.08
Hospital status						
Inpatient	24/136 (17.6)	40/146 (27.4)	0.05	19/106 (17.9)	29/111 (26.1)	0.15
Outpatient	15/117 (12.8)	27/119 (22.7)	0.05	9/105 (8.6)	24/110 (21.8)	0.007
Previous episode of <i>C. difficile</i> infection						
No	30/211 (14.2)	52/217 (24.0)	0.01	22/175 (12.6)	41/183 (22.4)	0.02
Yes	9/42 (21.4)	15/48 (31.2)	0.30	6/36 (16.7)	12/38 (31.6)	0.14
Treatment for current episode of <i>C. difficile</i> infection in previous 24 hr						
Yes	16/88 (18.2)	25/97 (25.8)	0.22	13/73 (17.8)	19/81 (23.5)	0.39
No	23/165 (13.9)	42/168 (25.0)	0.01	15/138 (10.9)	34/140 (24.3)	0.003
Severity of disease at baseline						
Mild	7/59 (11.9)	20/68 (29.4)	0.02	4/44 (9.1)	13/55 (23.6)	0.06
Moderate	20/102 (19.6)	18/88 (20.5)	0.89	15/90 (16.7)	18/71 (25.4)	0.18
Severe	12/92 (13.0)	29/109 (26.6)	0.02	9/77 (11.7)	22/95 (23.2)	0.05
Strain type						
NAP1/BI/027	16/59 (27.1)	14/67 (20.9)	0.42	11/45 (24.4)	13/55 (23.6)	0.93
Non-NAP1/BI/027	12/117 (10.3)	34/121 (28.1)	<0.001	8/103 (7.8)	27/106 (25.5)	<0.001
Concomitant systemic antimicrobial therapy						
Yes	14/81 (17.3)	25/90 (27.8)	0.10	8/56 (14.3)	20/65 (30.8)	0.03
No	25/172 (14.5)	42/175 (24.0)	0.03	20/155 (12.9)	33/156 (21.2)	0.05



The NEW ENGLAND
JOURNAL of MEDICINE

N Engl J Med 2011;364:422-31.

ICD traitement sujet âgé

The NEW ENGLAND JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

JANUARY 26, 2017

VOL. 376 NO. 4

Bezlotoxumab for Prevention of Recurrent *Clostridium difficile* Infection

M.H. Wilcox, D.N. Gerding, I.R. Poxton, C. Kelly, R. Nathan, T. Birch, O.A. Cornely, G. Rahav, E. Bouza, C. Lee, G. Jenkin, W. Jensen, Y.-S. Kim, J. Yoshida, L. Gabryelski, A. Pedley, K. Eves, R. Tipping, D. Guris, N. Kartsonis, and M.-B. Dorr, for the MODIFY I and MODIFY II Investigators*

Anticorps monoclonal anti-toxine B de *C. Difficile*





Diagnostic confirmé d'ICD

traitement antibiotique anti CD
10-14 jours

- ACTO (MODIFY I seulement)
 - BEZLO
 - ACTO+BEZLO
 - Placebo (0.9% NaCl)
- } Injection IV unique

visites

J+1 J+4 J+11 S 4 S 8 S 12

Évaluation
de l'efficacité

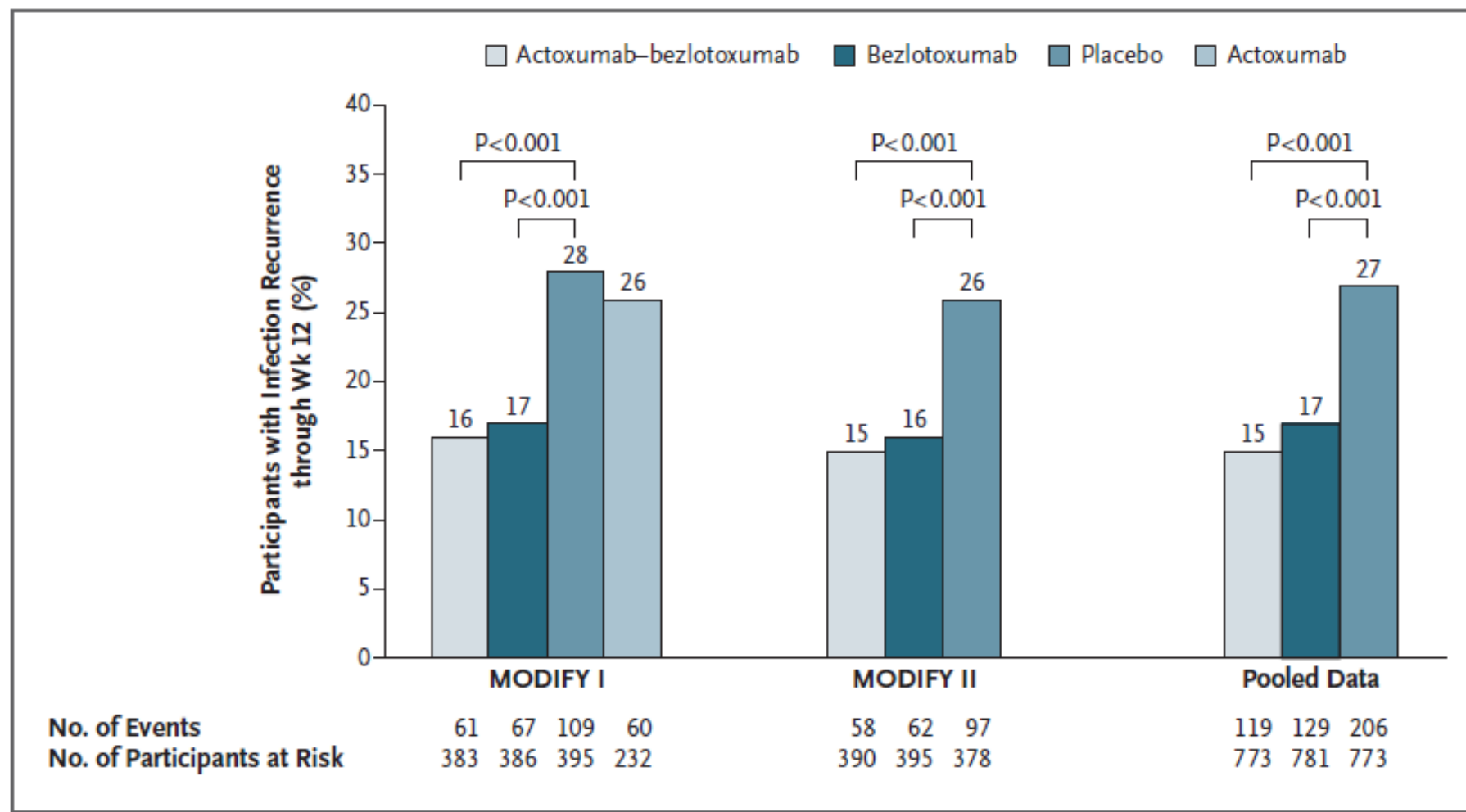
Recueil journalier Nb & consistance des selles. Recherche de CD si diarrhée

Guérison
clinique

récidive (première)

ICD traitement sujet âgé

Résultats. Critère principal Proportion de récurrences à 12 semaines



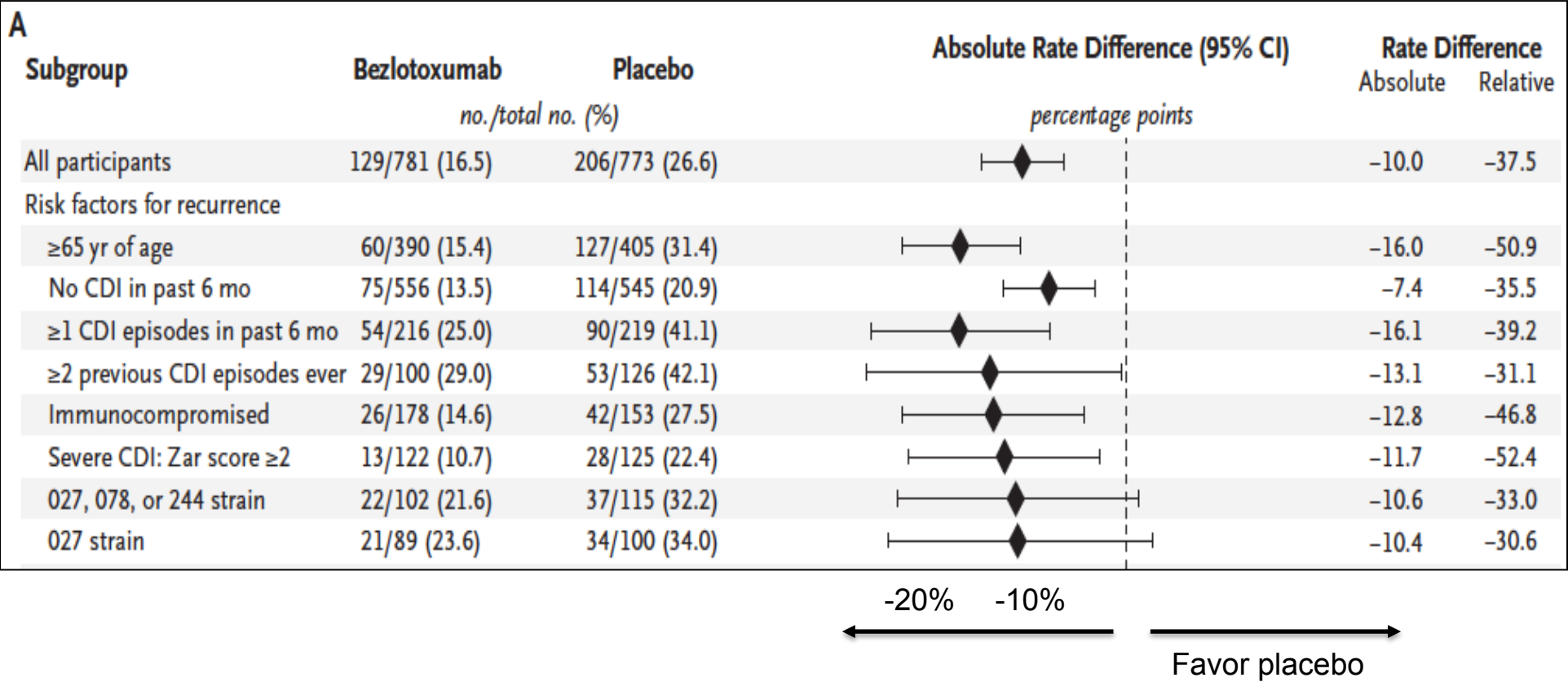
ICD traitement sujet âgé

The NEW ENGLAND
JOURNAL of MEDICINE

ESTABLISHED IN 1812 JANUARY 26, 2017 VOL. 376 NO. 4

Résultats. Critère principal Proportion de récurrences à 12 semaines

Bezlotoxumab for Prevention of Recurrent *Clostridium difficile*
Infection



ICD traitement

Randomised, controlled, open-label study comparing the efficacy of extended-pulsed fidaxomicin (EPFX) with vancomycin therapy for sustained clinical cure of *Clostridium difficile* infection in an older population: the EXTEND study

[Benoit Guery](#),¹ [Francesco Menichetti](#),² [Simon Goldenberg](#),³ [Karen Bisnauthsing](#),³ [Jose Maria Aguado](#),⁴ [Veli-Jukka Anttila](#),⁵ [Chris Longshaw](#),⁶ [Gbenga Kazeem](#),⁶ [Andreas Karas](#),⁶ [Nicholas Adomakoh](#),⁶ [Oliver A. Cornely](#),^{7,8} [Maria Vehreschild](#)⁸

ECCMID 2017 EP0363

Patients were randomised (1:1) to receive:

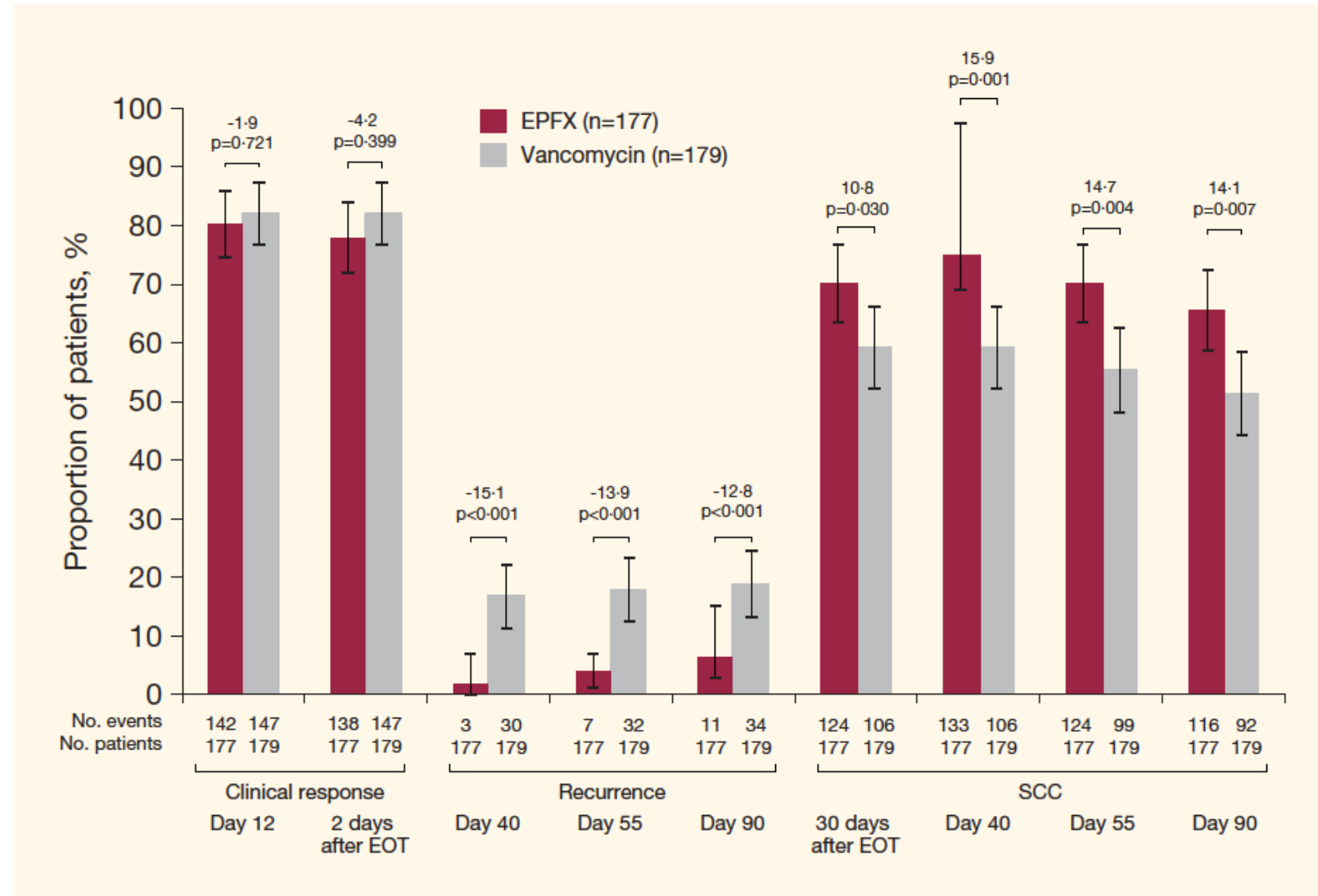
– EPFX: fidaxomicin 200 mg oral tablets, twice daily on Days 1–5, then once daily on alternate days from Days 7–25,

or

– Vancomycin: 125 mg oral capsules, four-times daily on Days 1–10

Dose totale de fidaxomicine
identique à celle du schéma
classique

Figure 2. Clinical response at Day 12 and 2 days after end of treatment, CDI recurrence and sustained clinical cure of CDI at 30 days after end of treatment (primary endpoint), and Days 40, 55 and 90 (mFAS)



Bars show 95% CI. EOT, end of treatment; EPFX, extended-pulsed fidaxomicin; mFAS, modified Full Analysis Set; SCC, sustained clinical cure of CDI

Table 1. Demographics and baseline characteristics, mFAS

Characteristic	EPFX (n=177)	Vancomycin (n=179)	Total (N=356)
Sex, n (%)			
Female	107 (61)	100 (56)	207 (58)
Race, n (%)*			
White	149 (84)	153 (85)	302 (85)
Missing	28 (16)	26 (15)	54 (15)
Median (range) age, years	75 (60–94)	75 (60–95)	75 (60–95)
UBMs per day, n			
Mean (SD)	6.8 (4.7)	6.4 (3.4)	6.6 (4.1)
Median	5.0	5.0	5.0
Severe CDI (ESCMID score), n (%)	78 (44)	84 (47)	162 (46)
Recurrences in past 3 months, n (%)			
0	141 (79.7)	140 (78.2)	281 (78.9)
1	26 (14.7)	29 (16.2)	55 (15.4)
2	10 (5.6)	10 (5.6)	20 (5.6)

Transplantation de microbiote fécal

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

JANUARY 31, 2013

VOL. 368 NO. 5

Duodenal Infusion of Donor Feces for Recurrent *Clostridium difficile*

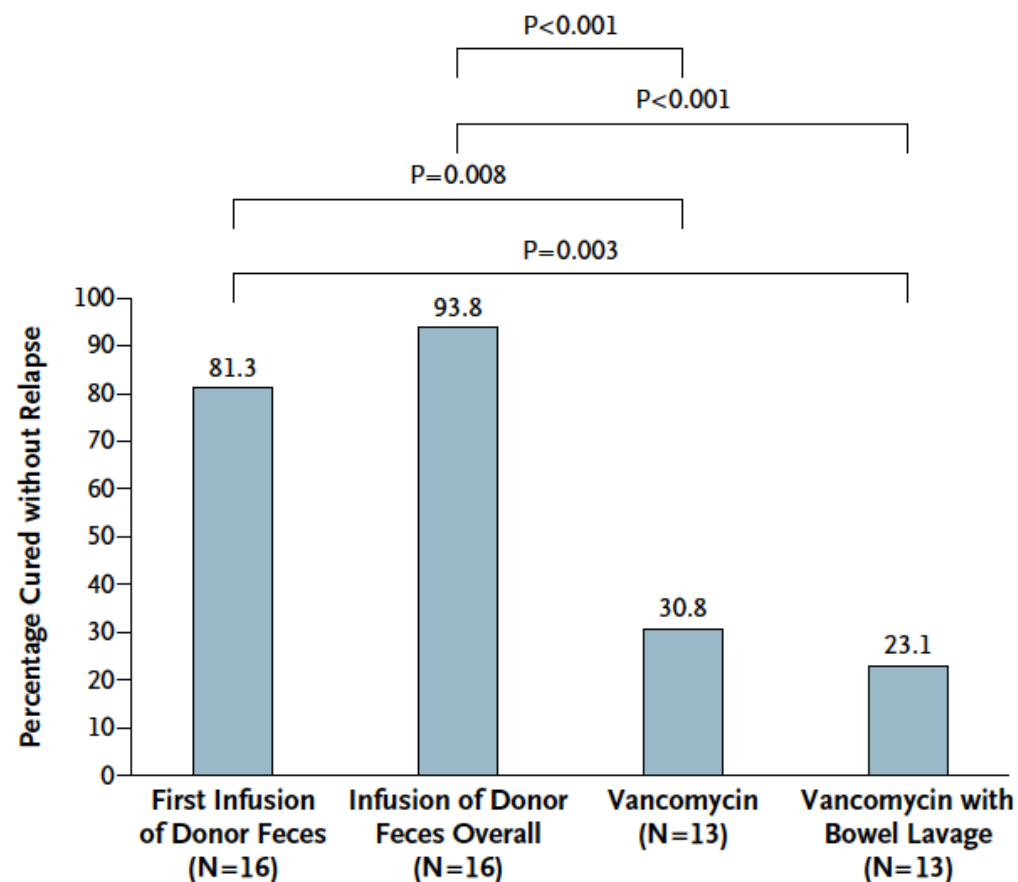


Figure 2. Rates of Cure without Relapse for Recurrent *Clostridium difficile* Infection.

Shown are the proportions of patients who were cured by the infusion of donor feces (first infusion and overall results), by standard vancomycin therapy, and by standard vancomycin therapy plus bowel lavage.

Transplantation de microbiote fécal

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

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VOL. 368 NO. 5

Duodenal Infusion of Donor Feces for Recurrent *Clostridium difficile*

Table 1. Baseline Demographic and Clinical Characteristics of the Patients.*

Characteristic	Donor-Feces Infusion (N= 16)	Vancomycin Only (N= 13)	Vancomycin and Bowel Lavage (N= 13)	P Value†
Age — yr	73±13	66±14	69±16	0.39
Body-mass index‡	22±3	22±4	24±4	0.41
Female sex — no. (%)	8 (50)	7 (54)	3 (23)	0.22

Transplantation de microbiote fécal

Table 1. Baseline Characteristics

Author	N	Age, Mean (Range)	Male/ Female, n/n	Number of Relapses Before Fecal Transplantation, Mean	Time from Diagnosis to Fecal Transplantation, Months, Mean	Follow-Up, Months, Mean (Range)
Schwan et al. ²⁵	1	67	0/1	5	12	18
Tvede and Rask-Madsen ²⁶	5	73 (60–83)	0/5	2	7.4	6
Gustafsson et al. ¹⁹	3	71 (62–83)	3/0	N/A	N/A	18
Persky and Brandt ²³	1	60	0/1	3	6	60
Aas et al. ¹⁸	16	75 (61–88)	5/11	2.3	3.5	3
Khoruts et al. ²¹	1	61	0/1	N/A	>9	6
Rohlke et al. ²⁴	4	73 (60–82)	0/4	3	>6	(6–60)
Kelly et al. ²⁰	13	74 (61–86)	2/11	3	8	(2–30)
Mattila et al. ²²	59	79 (60–90)	34/25	4.5	5	3
van Nood et al. ²⁷	12	79 (65–101)	5/8	3	3	2.5
Total	115	77 (60–101)	49/67	3.5	5.2	5.9 (2–60)

Fecal Transplantation for Recurrent *Clostridium difficile* Infection in Older Adults: A Review

Transplantation de microbiote fécal

Table 3. Clinical Outcomes of Fecal Transplantation						
Procedure Characteristic	N	Resolution	Relapse	Procedural Complication	Death from <i>Clostridium difficile</i> Infection	Death from Other Cause
		n (%)				
All procedures	115	103 (89.6)	12 (10.4)	1 (0.9)	3 (2.6)	2 (1.7)
Infusion method						
Nasogastric or enteric tube	28	24 (85.7) ^a	4 (14.3)	1 (3.6)	0 (0.0)	1 (3.6)
Colonoscopy	78	72 (92.3)	6 (7.7)	0 (0.0)	3 (3.8)	1 (1.2)
Retention enema	9	7 (77.8)	2 (22.2)	0 (0.0)	0 (0.0)	0 (0.0)

Fecal Transplantation for Recurrent *Clostridium difficile* Infection in Older Adults: A Review

Transplantation de microbiote fécal

Frozen vs Fresh Fecal Microbiota Transplantation and Clinical Resolution of Diarrhea in Patients With Recurrent Clostridium difficile Infection
A Randomized Clinical Trial

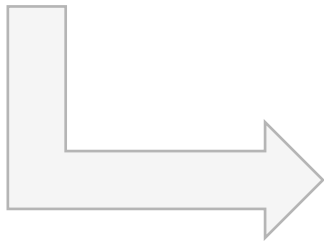
FMT par lavement

Table 3. Primary Efficacy Outcome in the Modified Intention-to-Treat and Per-Protocol Populations According to Subgroup at 13 Weeks After Last Fecal Microbiota Transplantation

	mITT			Per-Protocol		
	Proportion With Clinical Resolution, No./Total (%)		Difference (95% CI), %	Proportion With Clinical Resolution, No./Total (%)		Difference (95% CI), %
	Frozen	Fresh		Frozen	Fresh	
Overall Population						
Primary efficacy outcome ^a	81/108 (75.0)	78/111 (70.3)	4.7 (−5.2 to ∞) (P < .001)	76/91 (83.5)	74/87 (85.1)	−1.6 (−10.5 to ∞) (P = .01)
Subgroups						
Age, y						
<65	22/27 (81.5)	17/27 (63.0)	18.5 (−1.1 to ∞)	21/24 (87.5)	17/21 (81.0)	6.5 (−11.4 to ∞)
≥65	59/81 (72.8)	61/84 (72.6)	0.2 (−11.2 to ∞)	55/67 (82.1)	57/66 (86.4)	−4.3 (−14.7 to ∞)

ICD sujet âgé

Plus de récurrences
Plus à risque de gravité



Pas de métronidazole
Avoir la fidaxomicine facile y compris au premier épisode d'ICD
Envisager sa modalité d'administration extended-pulse
FMT aussi efficace après 65 ans
Bezlotoxumab à voir selon son prix