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Surveillance of ICU - Acquired Infections

Individual Feedback Report

Infection Indicators

Hospital 9999 Quarter 2009q2

Scientific Institute of Public Health
Direction of Public Health and Surveillance
National Surveillance of Hospital Infections (NSIH program)

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Table 1: Participation

	# ^a	rank ^a	mean	rank ^a	median	rank ^a
admissions	92	37/62				
patientdays	585	35/62	6.36	15/62	4	2/50

^a #=total, rank=obtained after sorting indicator (#, mean, median) for all hospitals/units with participation in this period in ascending order

Table 2: Pneumonia

	# ^a	rate ^a	rank ^a
patients with P (all)	9	9.78/100 admissions	47/62
patients with P \geq D3 ^b (NP ^b)	8	8.70/100 admissions	46/62
patients with NP, ID2 ^b	6	6.52/100 admissions	51/62
P (all)	9	15.38/1000 patientdays	45/62
P \geq D3 (NP)	8	13.68/1000 patientdays	48/62
NP, 1st ^b	8	13.68/1000 patientdays	50/62
NP, ID2	6	30.00/1000 IDdays ^b	47/50
NP, ID2, 1st	6	46.15/1000 IDdays bef 1st NP	48/50

^a #=total, rate=# divided by indicated denominator, rank=obtained after sorting incid for all hospitals/units with participation in this period in ascending order

^b P=pneumonia, NP(s)=Nosocomial P, \geq D3=occurring after D2 (nosocomial), ID=Invasive Device (intubation for P) exposure before onset of NP, ID2=Invasive Device (intubation for P) exposure in 2 days before onset of NP, 1st=only 1st infection per patient

Table 3: Case Definitions: Pneumonia

	# ^a	% ^a	rank ^a
PN1	1	13	33/47
PN2	3	38	44/47
PN3	0	0	1/47
PN4	4	50	12/47
PN5	0	0	1/47

^a #=total, %=100 x #/# P, rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order



Table 4: Bloodstream Infections

	# ^a	rate ^a	rank ^a
patients with B (all)	5	5.43/100 admissions	55/62
patients with B \geq D3 ^b (NB ^b)	5	5.43/100 admissions	56/62
patients with NB, ID2 ^b	5	5.43/100 admissions	59/62
B (all)	5	8.55/1000 patientdays	56/62
B \geq D3 (NBs)	5	8.55/1000 patientdays	57/62
NB, 1st ^b	5	8.55/1000 patientdays	58/62
NB, ID2	5	10.78/1000 IDdays ^b	47/50
NB, ID2, 1st	5	15.97/1000 IDdays bef 1st NB	48/51
NB, ori=cat/unk ^{b,c}	2	3.42/1000 patientdays	43/62
NB, (ori=cat/unk, ID2)/(ori=cat) ^d	2	4.31/1000 IDdays	41/50
NB, ori=cat ^e	0	0.00/1000 IDdays	1/50
NB, ori=unk	2	3.42/1000 patientdays	46/62
NB, ori=cat or unk, 1st	2	3.42/1000 patientdays	45/62
NB, (ori=cat or unk, ID2)/(ori=cat), 1st	2	6.39/1000 IDdays bef 1st NB	46/51
NB, ori=cat, 1st	0	0.00/1000 IDdays bef 1st NB	1/51
NB, ori=unk, 1st	2	3.42/1000 patientdays	49/62
NBs, ID2, \geq 1HC path or \geq 2HCs with sc ^b	5	15.97/1000 IDdays bef 1st NB	47/51
NBs, ID2, \geq 1HC path or \geq 2HCs with sc, ori=cat	0	0.00/1000 IDdays bef 1st NB	1/51
NBs, ID2, \geq 1HC path or \geq 2HCs with sc, ori=cat, 1st	0	0.00/1000 IDdays bef 1st NB	1/51

^a #=total, rate=# divided by indicated denominator, rank=obtained after sorting incd for all hospitals/units with participation in this period in ascending order

^b B=Bloodstream Infection episodes; NB(s)=Nosocomial B; \geq D3=occurring after D2 (nosocomial); IDdays=Invasive Device (central vascular catheter for B) days; ID2=Invasive Device (central vascular catheter for B) in 2 days before onset of B; 1st=only 1st infection per patient; ori=cat/unk=NB origin is either catheter or unknown; ori=cat=NB origin is catheter; \geq 1HC path=at least one hemoculture from a pathogen; \geq 2HCs with sc=at least 2 hemocultures from a skincontaminant

^c Primary BSI

^d Catheter Associated Primary BSI

^e Definite Catheter Associated Primary BSI

Table 5: Case Definitions: bloodstream Infections

	# ^a	% ^a	rank ^a
BSI-A	5	100	4/46
BSI-B	0	0	1/46

^a #=total, %=100 x #/# P, rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order

Table 6: Urinary Tract Infections

	# ^a	rate ^a	rank ^a
patients with U (all)	0	0.00/100 admissions	1/62
patients with U \geq D3 (NU) ^b	0	0.00/100 admissions	1/62
patients with NU, ID2 ^b	0	0.00/100 admissions	1/62
U (all)	0	0.00/1000 patientdays	1/62
U \geq D3 (NU)	0	0.00/1000 patientdays	1/62
NU, 1st ^b	0	0.00/1000 patientdays	1/62
NU, ID2	0	0.00/1000 ID days before 1st NU	1/41
NU, ID2, 1st	0	0.00/1000 ID days before 1st NU	1/41

^a #=total, rate=# divided by indicated denominator, rank=obtained after sorting incd for all hospitals/units with participation in this period in ascending order

^b U=Urinary Tract Infection; NU=Nosocomial U; \geq D3=occurring after D2 (nosocomial); IDdays=Invasive Device (urinary catheter for U) days; ID2=Invasive Device (urinary catheter for U) in 2 days before onset of U; 1st=only 1st infection per patient



Table 7: Case Definitions: Urinary Tract Infections

	# ^a	% ^a	rank ^a
UTI-A	0		
UTI-B	0		
UTI-C	0		

^a #=total, %=100 x #/# P, rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order

Table 8: Catheter Related Infections

	# ^a	rate ^a	rank ^a
patients with CRI (all)	0	0.00/100 admissions	1/62
patients with CRI _≥ D3 (NCRI) ^b	0	0.00/100 admissions	1/62
CRI (all)	0	0.00/1000 patientdays	1/62
CRI _≥ D3 (NCRI)	0	0.00/1000 patientdays	1/62
NCRI, 1st ^b	0	0.00/1000 patientdays	1/62

^a #=total, rate=# divided by indicated denominator, rank=obtained after sorting incd for all hospitals/units with participation in this period in ascending order

^b CRI=Catheter Related Infection; NCRI=Nosocomial CRI; _≥D3=occurring after D2 (nosocomial); 1st=only 1st infection per patient

Table 9: Case Definitions: Catheter Related Infections

	# ^a	% ^a	rank ^a
CRI1	0		
CRI2	0		
CRI3	0		

^a #=total, %=100 x #/# P, rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order

Table 10: All reported micro-organisms (all infections) (a)

	code	NP ^a		NB ^a		NU ^a		tot ^a	
		# ^b	% ^b	#	%	#	%	#	%
<i>Enterococcus faecalis</i>	ENCFAE	0	0.0	1	20.0	0		1	6.7
<i>Staphylococcus aureus</i>	STAAUR	2	20.0	1	20.0	0		3	20.0
Gram-positive cocci		2	20.0	2	40.0	0		4	26.7
<i>Enterobacter aerogenes</i>	ENBAER	0	0.0	0	0.0	0		0	0.0
<i>Escherichia coli</i>	ESCCOL	1	10.0	1	20.0	0		2	13.3
<i>Klebsiella oxytoca</i>	KLEOXY	2	20.0	1	20.0	0		3	20.0
Gram-negative bacilli, enterobacteriaceae		3	30.0	2	40.0	0		5	33.3

^a NP=Nosocomial Pneumonia; NB=Nosocomial Bloodstream Infection; NU=Nosocomial Urinary Tract Infection; tot=all Nosocomial Infections

^b #=number of micro-organisms, %=percentage of total micro-organisms



Table 11: All reported micro-organisms (all infections) (b)

	code	NP ^a		NB ^a		NU ^a		tot ^a	
		# ^b	% ^b	#	%	#	%	#	%
<i>Pseudomonas aeruginosa</i>	PSEAER	2	20.0	1	20.0	0		3	20.0
<i>Pseudomonadaceae family, other</i>	PSEOTH	1	10.0	0	0.0	0		1	6.7
Gram-negative bacilli, other		3	30.0	1	20.0	0		4	26.7
<i>Candida albicans</i>	CANALB	2	20.0	0	0.0	0		2	13.3
Parasites		2	20.0	0	0.0	0		2	13.3

^a NP=Nosocomial Pneumonia; NB=Nosocomial Bloodstream Infection; NU=Nosocomial Urinary Tract Infection; tot=all Nosocomial Infections

^b #=number of micro-organisms; %=percentage of total micro-organisms

Table 12: Anti Microbial Resistance Indicators I: Gram Positive Cocci

	SIR ^a			IR ^a		
	# ^a	% ^a	rank ^a	# ^a	% ^a	rank ^a
<i>Staphylococcus aureus</i>						
cultures	3					
Fluoroquinolones: Ciprofloxacin/ofloxac	0	0.00	1/28			
Macrolides/sim.: Clindamycin (lincosamides)	0	0.00	1/28			
Macrolides/sim.: Erythromycin (macrolides)	0	0.00	1/28			
Other antibiotics: Fosfomycin	0	0.00	1/28			
Other antibiotics: Fusidic acid	0	0.00	1/28			
Aminoglycosides: Gentamycin	0	0.00	1/28			
Glycopeptides: Vancomycin/teicoplanin (Glycopeptides)	0	0.00	1/28			
Penicillins: Methicillin/Oxacillin (beta-lact.res.penic.)	3	100.00	3/28	2	66.67	21/26
Penicillins: Penicillin	0	0.00	1/28			
<i>Coagulase Negative Staphylococci</i>						
no data available						
<i>Enterococcus faecalis</i>						
cultures	1					
Penicillins: Ampicillin	0	0.00	1/16			
Penicillins: Amoxicillin/clavulanate	0	0.00	1/16			
Aminoglycosides: Gentamycin	0	0.00	1/16			
Glycopeptides: Vancomycin/teicoplanin (Glycopeptides)	0	0.00	1/16			
<i>Enterococcus faecium</i>						
no data available						

^a SIR=all Sensitive/Intermediate/Resistant antibiogram results, IR=all Intermediate/Resistant antibiogram results, #=total, %=#/100 cultures (SIR) or #/100 SIR results (IR), rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order



Table 13: Anti Microbial Resistance Indicators II: Enterobacteriaceae (a)

	SIR ^a			IR ^a		
	# ^a	% ^a	rank ^a	# ^a	% ^a	rank ^a
<i>Escherichia coli</i>						
cultures	2					
Penicillins: Amoxicillin/clavulanate	0	0.00	1/36			
Cephalosporins: Cefotaxime/ceftriaxone (3rd gen cephalosp.)	0	0.00	1/36			
Carbapenems: Meropenem/imipenem (carbapenems)	0	0.00	1/36			
ESBL: Extended Spectrum Beta Lactamase	0	0.00	1/36			

Enterobacter aerogenes

no data available

Enterobacter cloacae

no data available

^a SIR=all Sensitive/Intermediate/Resistant antibiogram results, IR=all Intermediate/Resistant antibiogram results, #=total, %=#/100 cultures (SIR) or #/100 SIR results (IR), rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order

Table 14: Anti Microbial Resistance Indicators III: Enterobacteriaceae (b)

	SIR ^a			IR ^a		
	# ^a	% ^a	rank ^a	# ^a	% ^a	rank ^a
<i>Klebsiella pneumoniae</i>						
no data available						
<i>Klebsiella oxytoca</i>						
cultures	3					
Penicillins: Amoxicillin/clavulanate	0	0.00	1/23			
Cephalosporins: Cefotaxime/ceftriaxone (3rd gen cephalosp.)	0	0.00	1/23			
Carbapenems: Meropenem/imipenem (carbapenems)	0	0.00	1/23			
ESBL: Extended Spectrum Beta Lactamase	0	0.00	1/23			

^a SIR=all Sensitive/Intermediate/Resistant antibiogram results, IR=all Intermediate/Resistant antibiogram results, #=total, %=#/100 cultures (SIR) or #/100 SIR results (IR), rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order

Table 15: Anti Microbial Resistance Indicators IV: Nonfermentative Bacilli

	SIR ^a			IR ^a		
	# ^a	% ^a	rank ^a	# ^a	% ^a	rank ^a
<i>Pseudomonas aeruginosa</i>						
cultures	3					
Carbapenems: Meropenem/imipenem (carbapenems)	0	0.00	1/38			
Cephalosporins: Ceftazidim (anti-pseudom 3G ceph)	0	0.00	1/38			
Polymyx.: Colistin (polymixins)	0	0.00	1/38			
Penicillins: Piperacillin/ticarcillin (anti-pseudom. penic.)	0	0.00	1/38			
Penicillins: Piperacillin/ticarcillin + enzyme inhibitor	0	0.00	1/38			

Acinetobacter baumannii

no data available

^a SIR=all Sensitive/Intermediate/Resistant antibiogram results, IR=all Intermediate/Resistant antibiogram results, #=total, %=#/100 cultures (SIR) or #/100 SIR results (IR), rank=obtained after sorting % for all hospitals/units with participation in this period in ascending order



Table 16: Missing Infection variables

variable	L1 ^a	L2 ^a	Ls ^a	Req ^a	# ^a	% ^a
invasive device in 48 hours preceding infection	V	V	0	R	0	0
origin of bloodstream infection	V	V	0	O	0	0
antimicrobial treatment	V	V	0	O	14	107.6923
Microorganism indicator	V	V	0	M	0	0
total infection variables	V	V	0	O	14	25

^a l1= level 1 variable (denominator-based surveillance) ; l2= level 2 variable (patient-based surveillance) ; L2s= level 2 suboption (0=basic level 2 variables a=extra patient admission and day by day variables, b=central vascular catheter follow-up, c=antimicrobial treatment follow-up); Req: M=mandatory, R=Required, O=Optional #=number of missing variables; %=# / 100 eligible records



Hospital 9999 :
92 patients

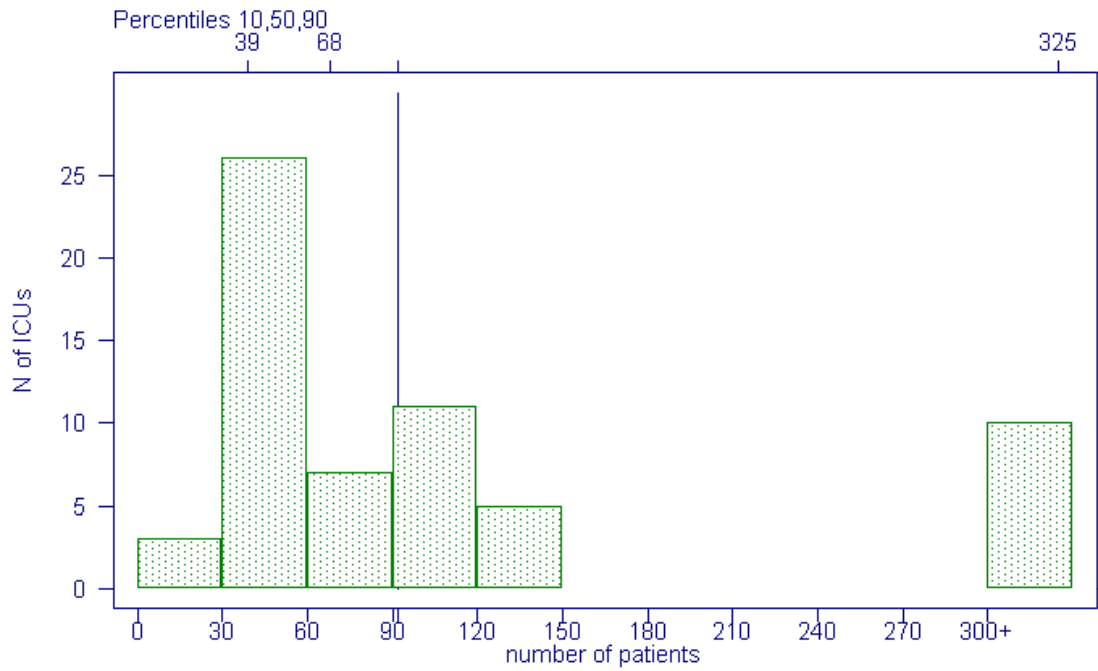


Figure 1: Distribution: number of patients

Hospital 9999 :
4.0 days

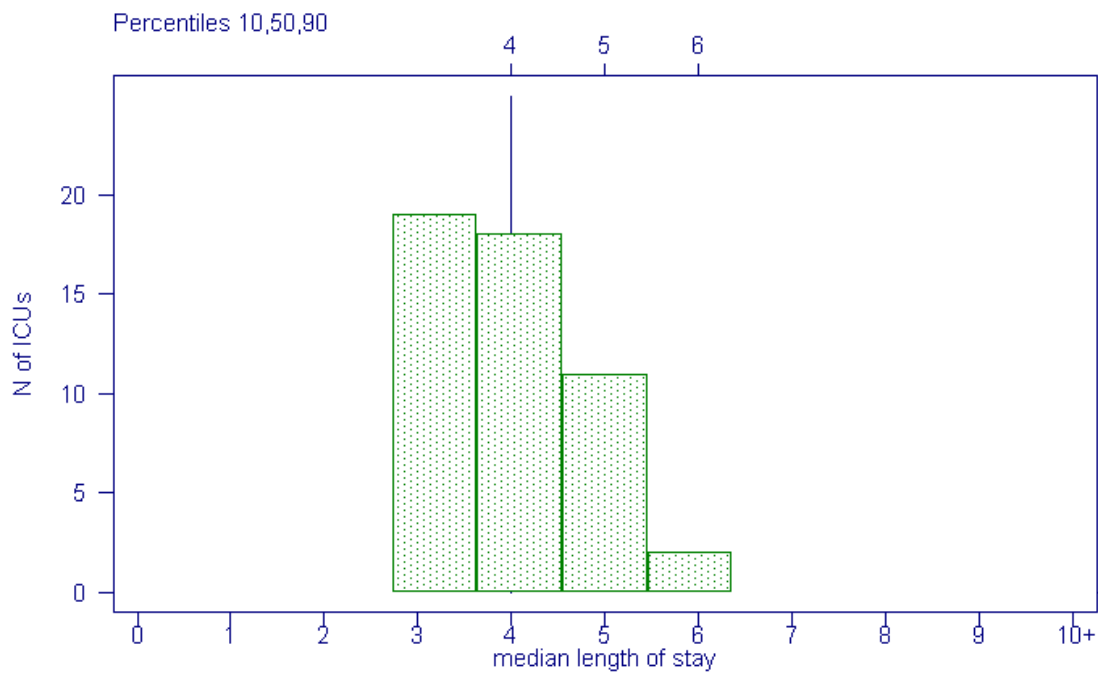


Figure 2: Distribution: median length of stay



Hospital 9999 :
13.7 NP/1000 patientdays (95% CI 5.9 - 26.9)

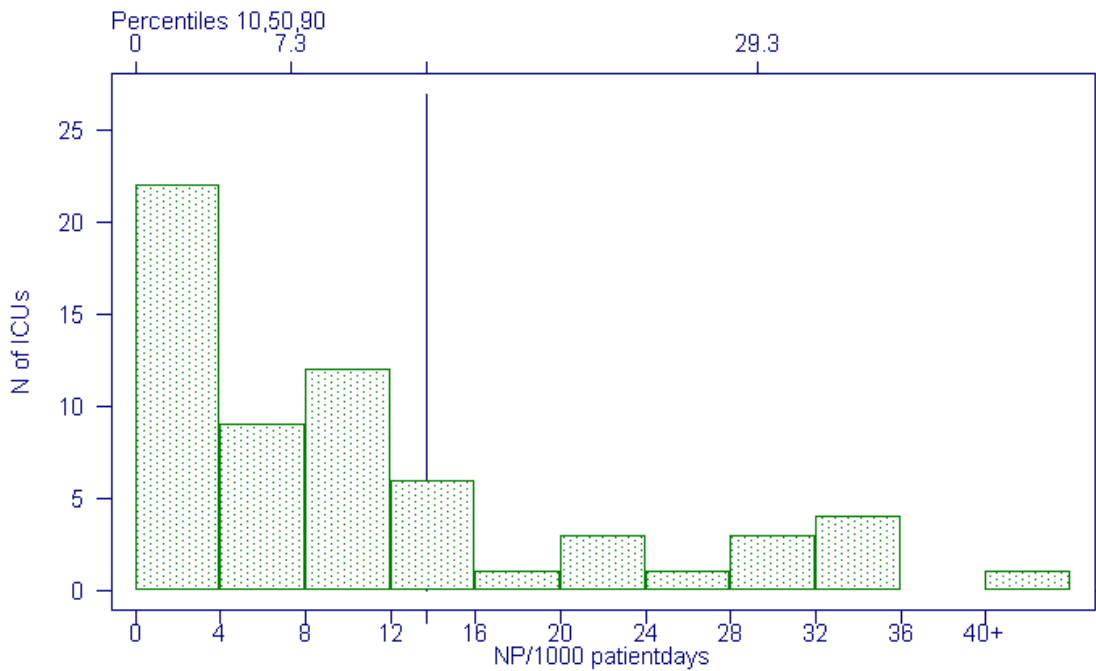


Figure 3: Distribution: $P \geq D3$ (NP) / 1000 patientdays

Hospital 9999 :
46.2 NPs, ID2, 1st / 1000 IDdays bef 1st NP (95% CI 16.9 - 100.5)

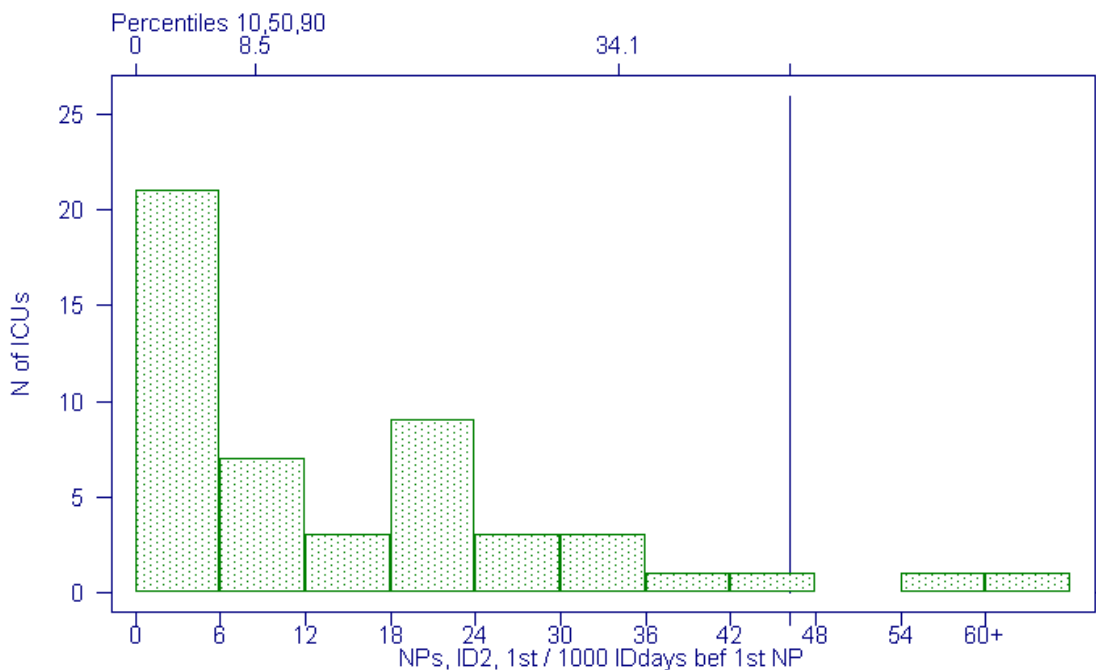


Figure 4: Distribution: NPs, ID2, 1st / 1000 IDdays bef 1st NP ; NPs, 1st episode only, with intubation in 2 days before onset of NP / 1000 intubation days



Hospital 9999 :
 8.5 Bs \geq D3 (NBs) / 1000 patientdays (95% CI 2.8 - 19.9)

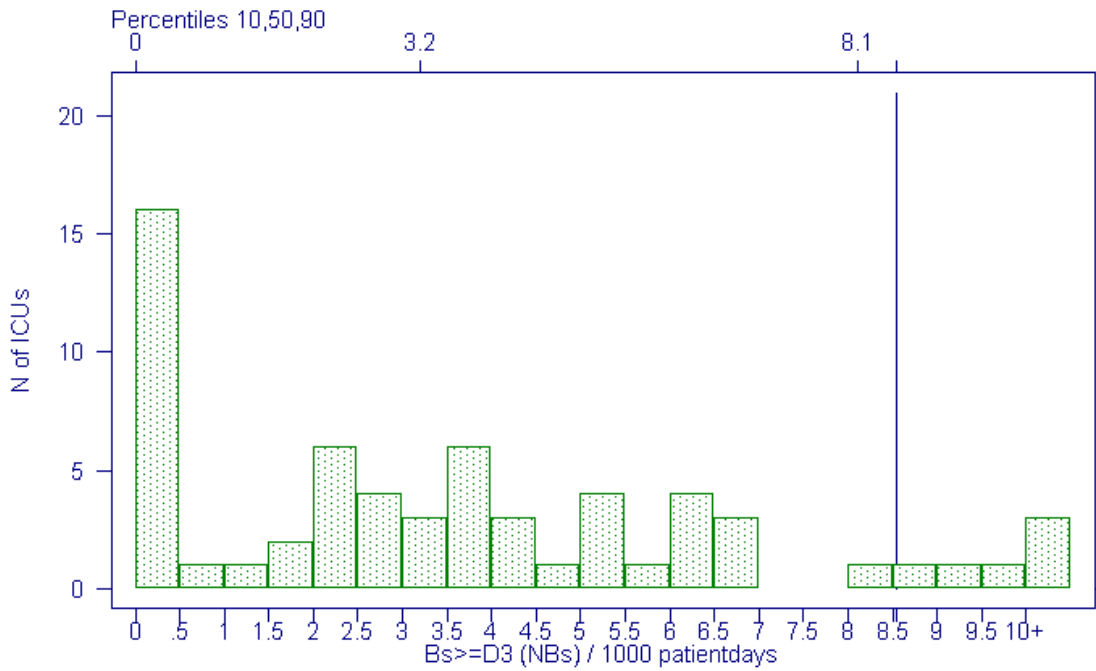


Figure 5: Distribution: Bs \geq D3 (NBs) / 1000 patientdays

Hospital 9999 :
 3.4 NBs, ori=(cat/un) / 1000 patientdays (95% CI .4 - 12.3)

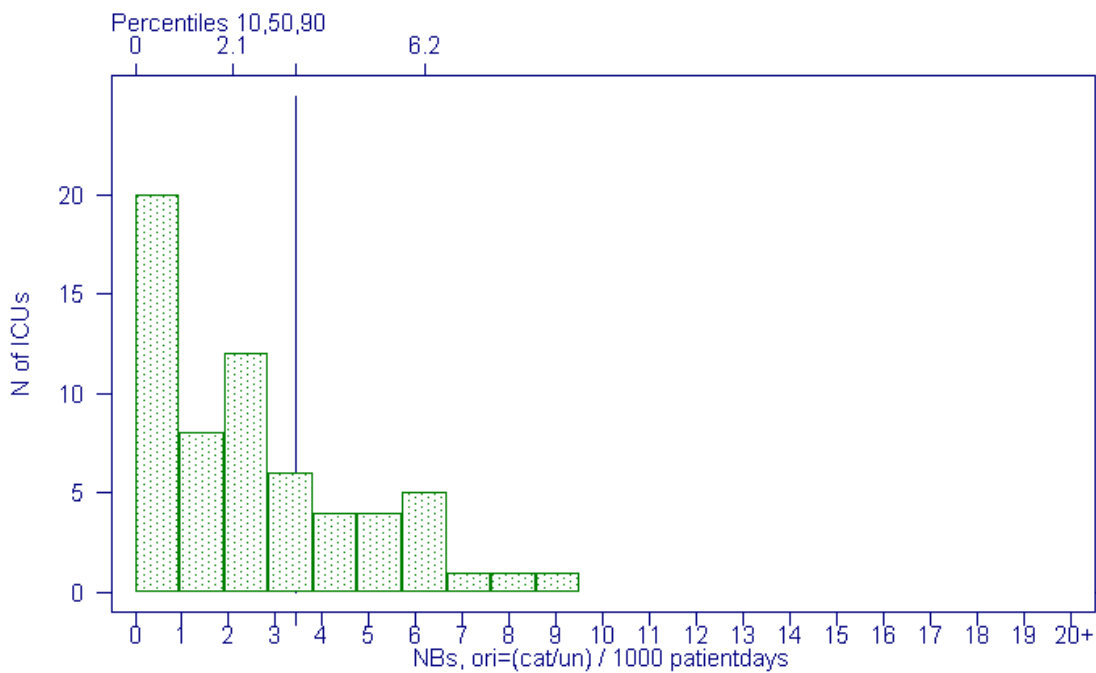


Figure 6: Distribution: NBs, ori=(cat/un) / 1000 patientdays ; primary NBs / 1000 patientdays



Hospital 9999 :
4.3 NBs, (ori=cat/un,ID2) / 1000 IDdays (95% CI .5 - 15.6)

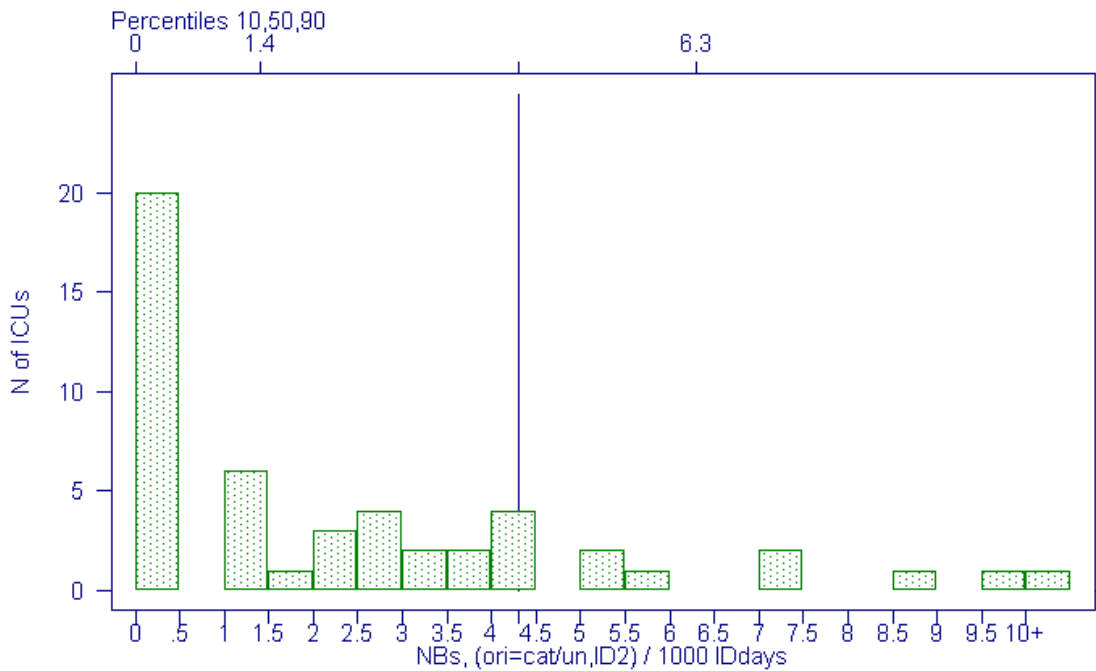


Figure 7: Distribution: NBs, (ori=cat/un,ID2) OR (ori=cat) / 1000 IDdays ; catheter associated NBs / 1000 catheterdays (CDC)

Hospital 9999 :
0 NBs, ori=cat, 1st / 1000 IDdays bef 1st NB (95% CI 0 - 11.8)

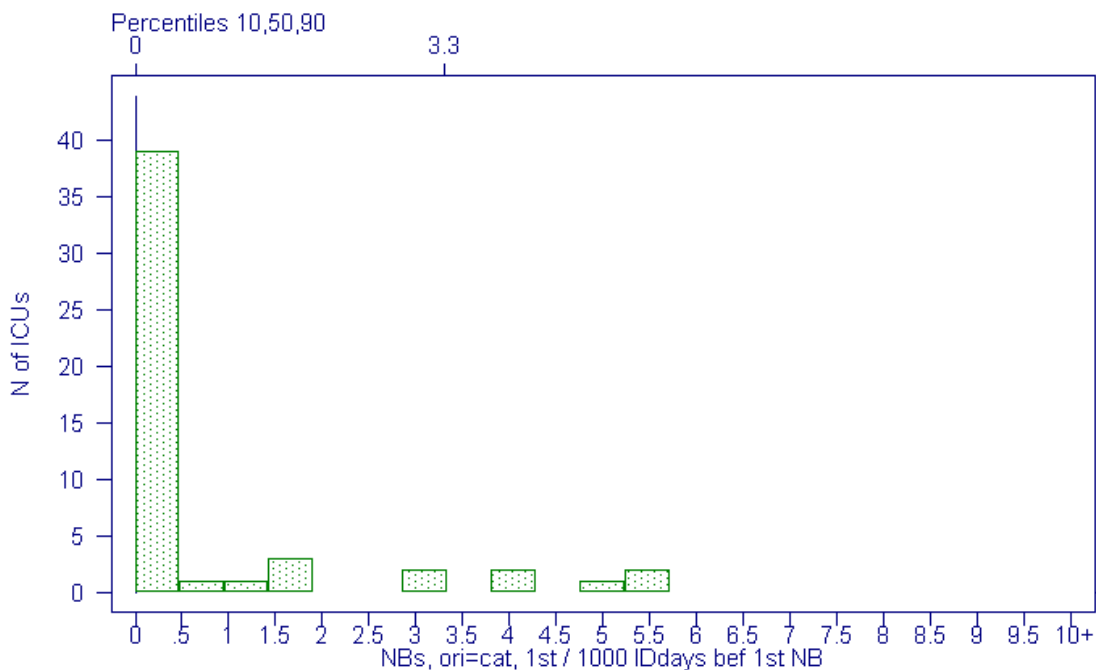


Figure 8: Distribution: NBs, ori=cat, 1st / 1000 IDdays bef 1st NB ; definite catheter associated NBs, 1st episodes only / 1000 catheterdays



Hospital 9999 :
 0 NUs / 1000 patientdays (95% CI 0 - 6.3)

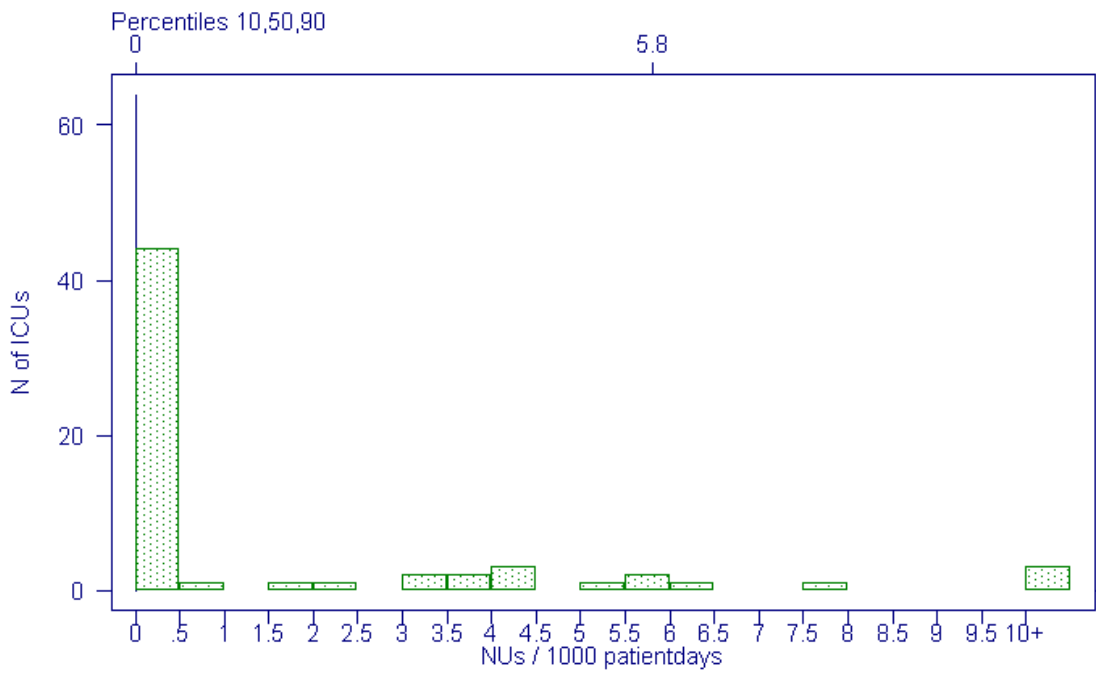


Figure 9: Distribution: $Us_{\geq D3}$ (NU) / 1000 patientdays ; NUs / 1000 patientdays

Hospital 9999 :
 0 NUs, ID2 / 1000 ID days (95% CI 0 - 7.8)

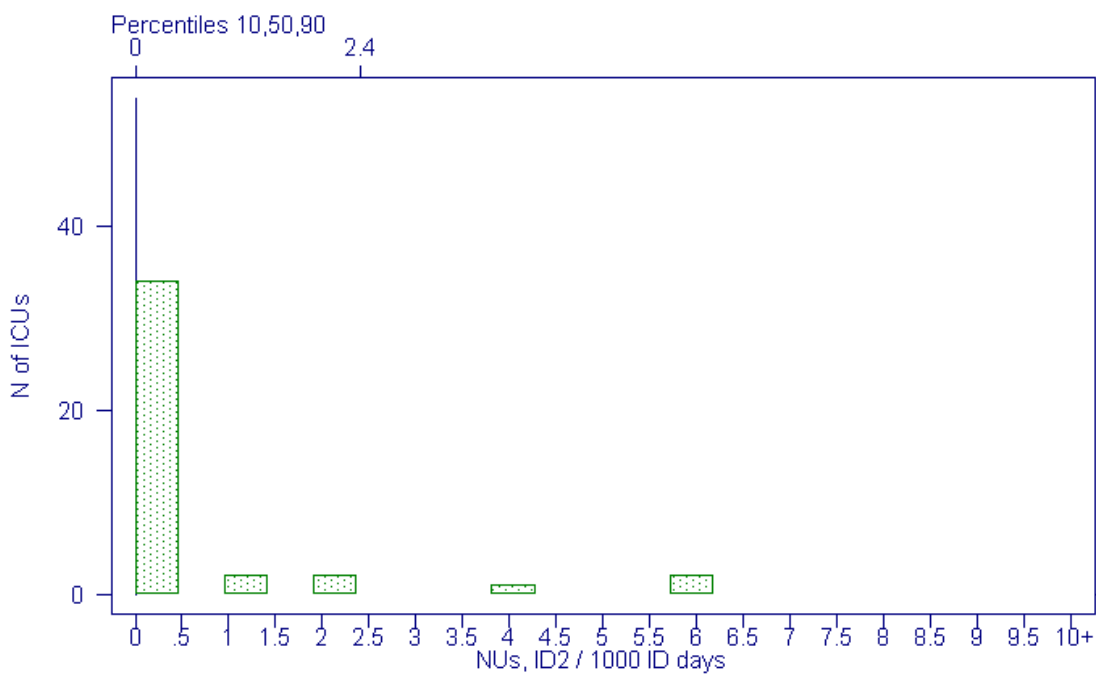


Figure 10: Distribution: NUs, ID2 / 1000 ID days ; catheter associated NUs / 1000 urinary catheterdays

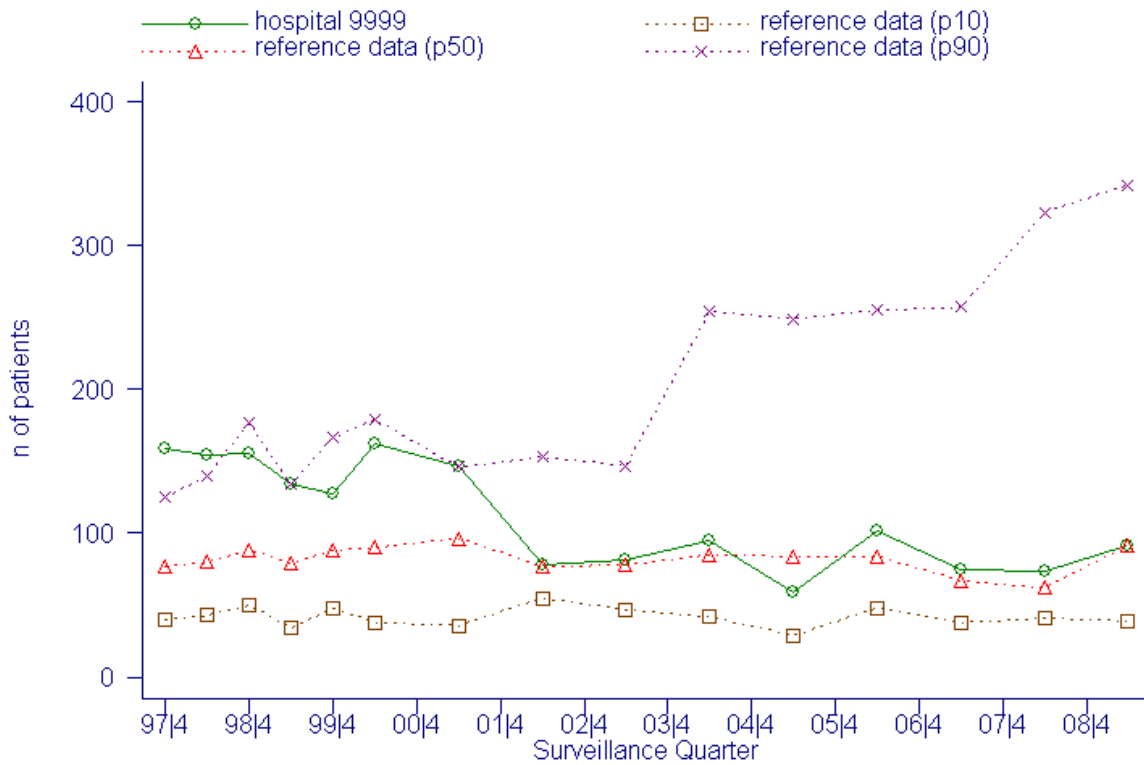


Figure 11: Evolution: Number of patients

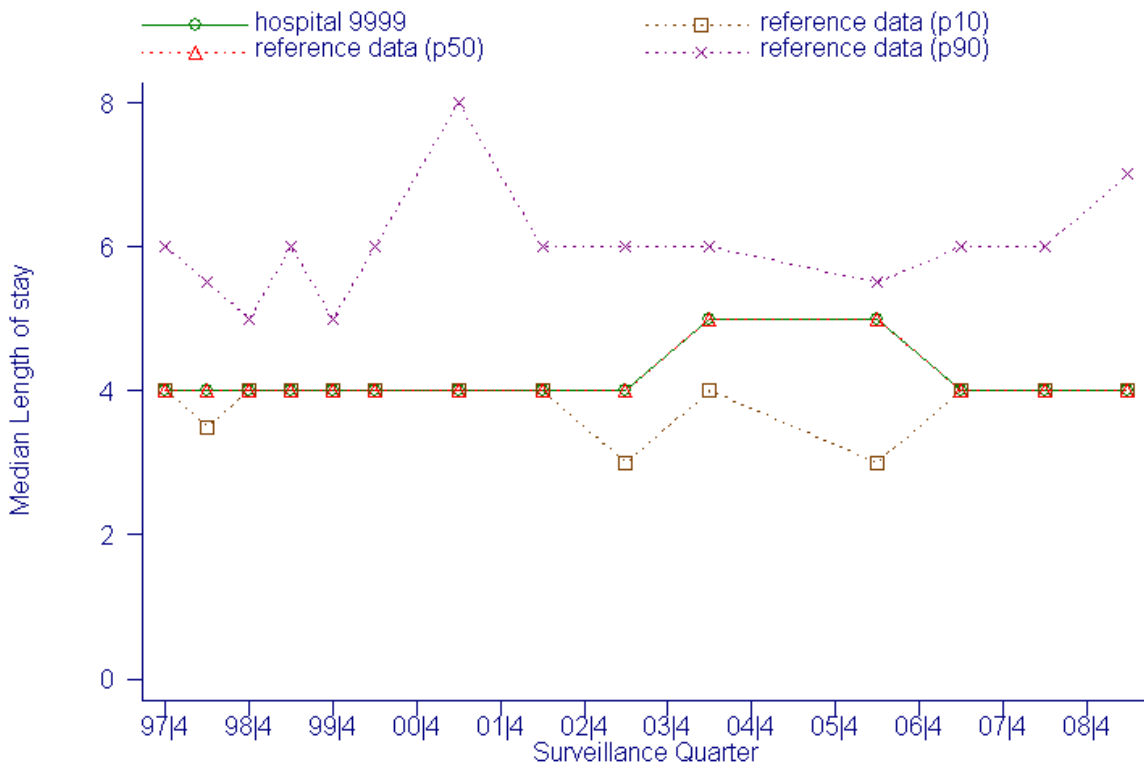


Figure 12: Evolution: Median Length of stay

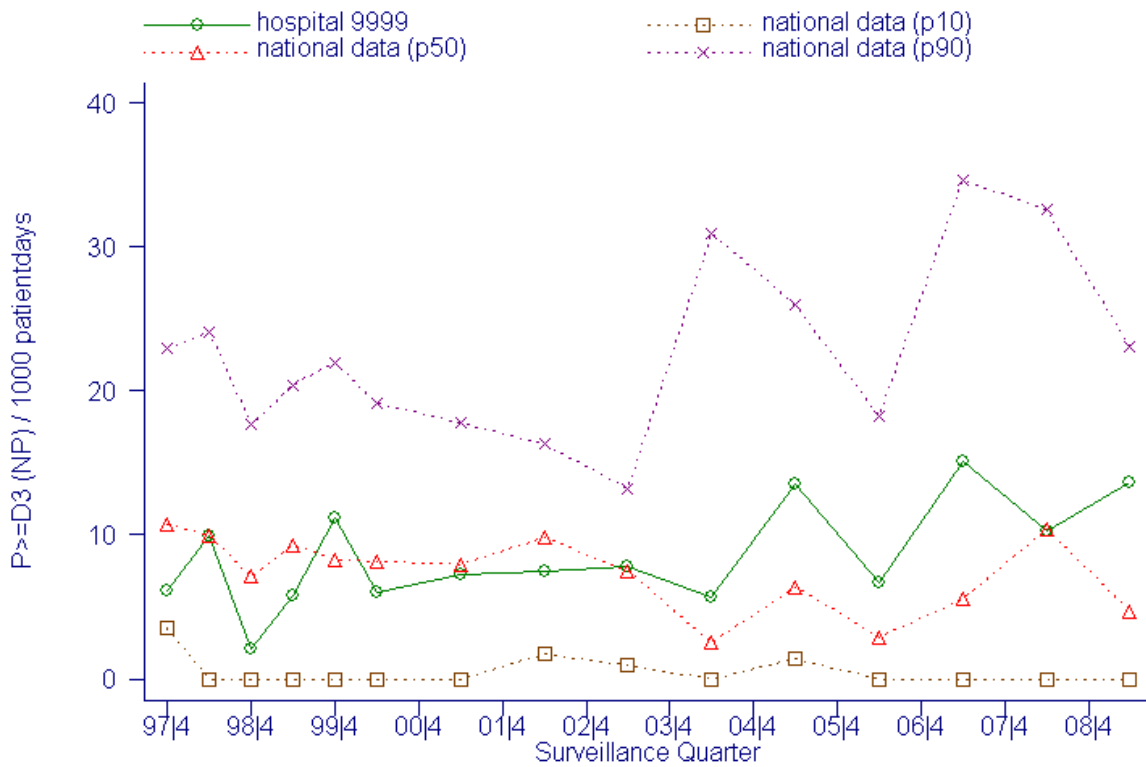


Figure 13: Evolution: $P \geq D3$ (NP) / 1000 patientdays

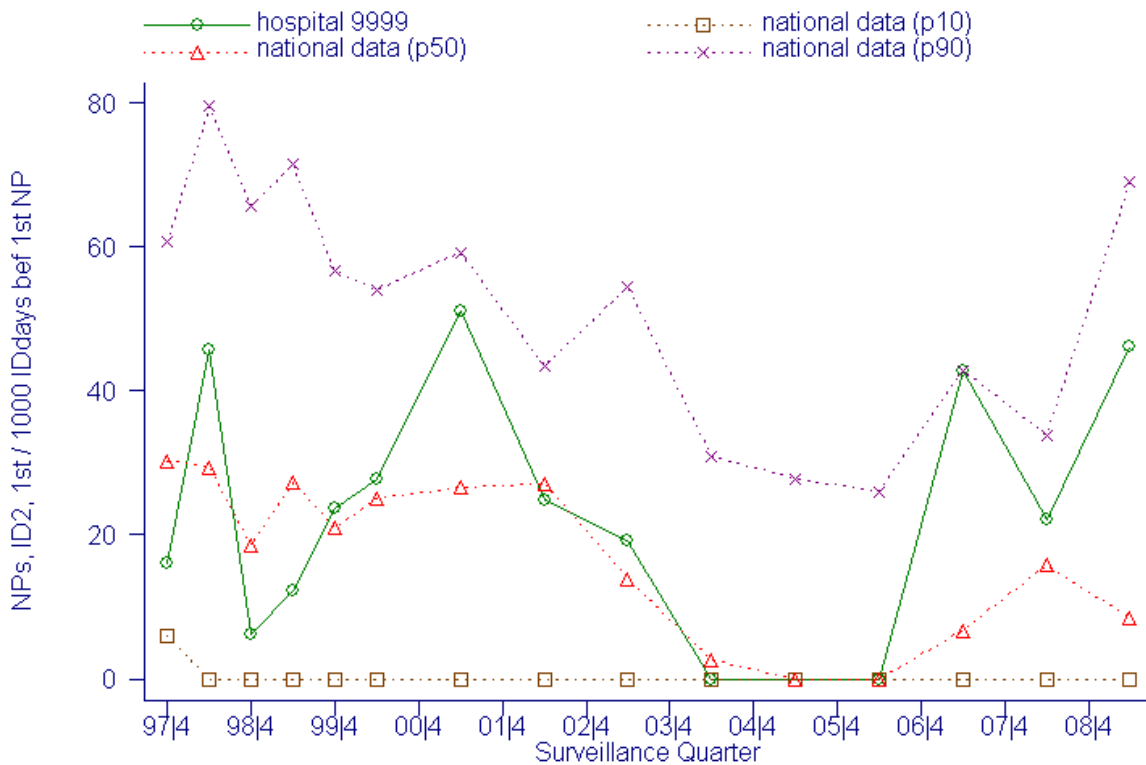


Figure 14: Evolution: NPs, ID2, 1st / 1000 IDdays bef 1st NP ; NPs, 1st episode only, with intubation in 2 days before onset of NP / 1000 intubation days

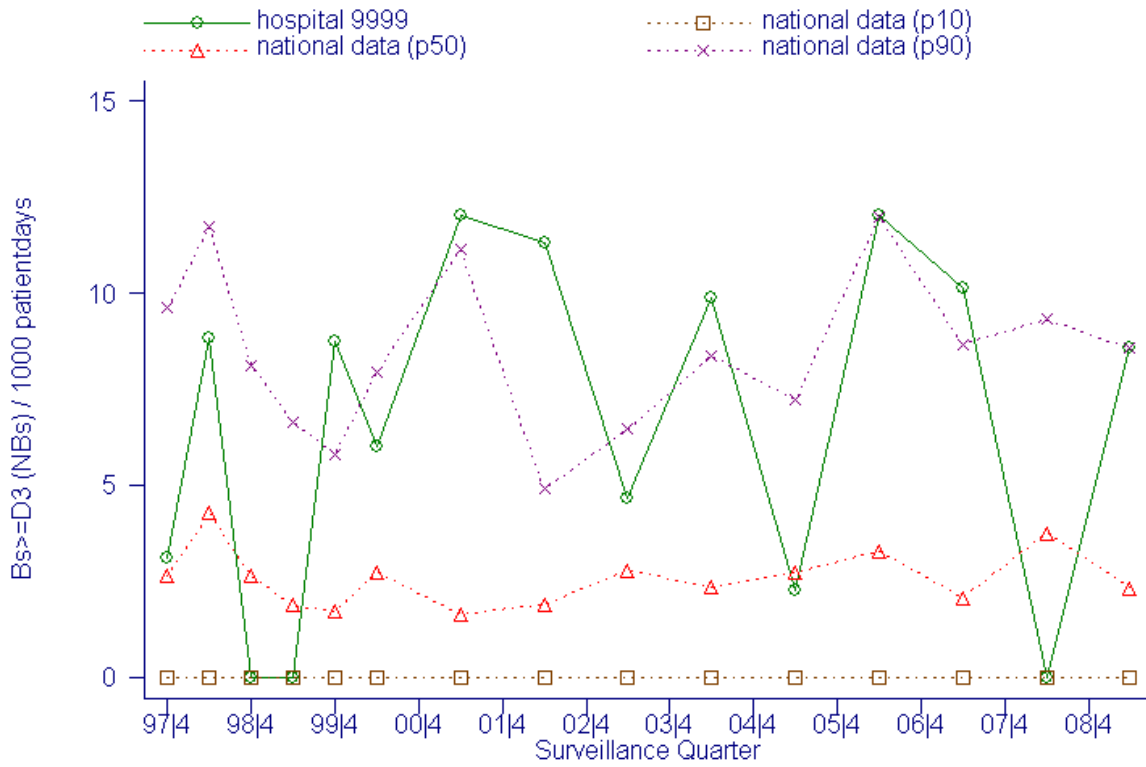


Figure 15: Evolution: Bs ≥ D3 (NBs) / 1000 patientdays

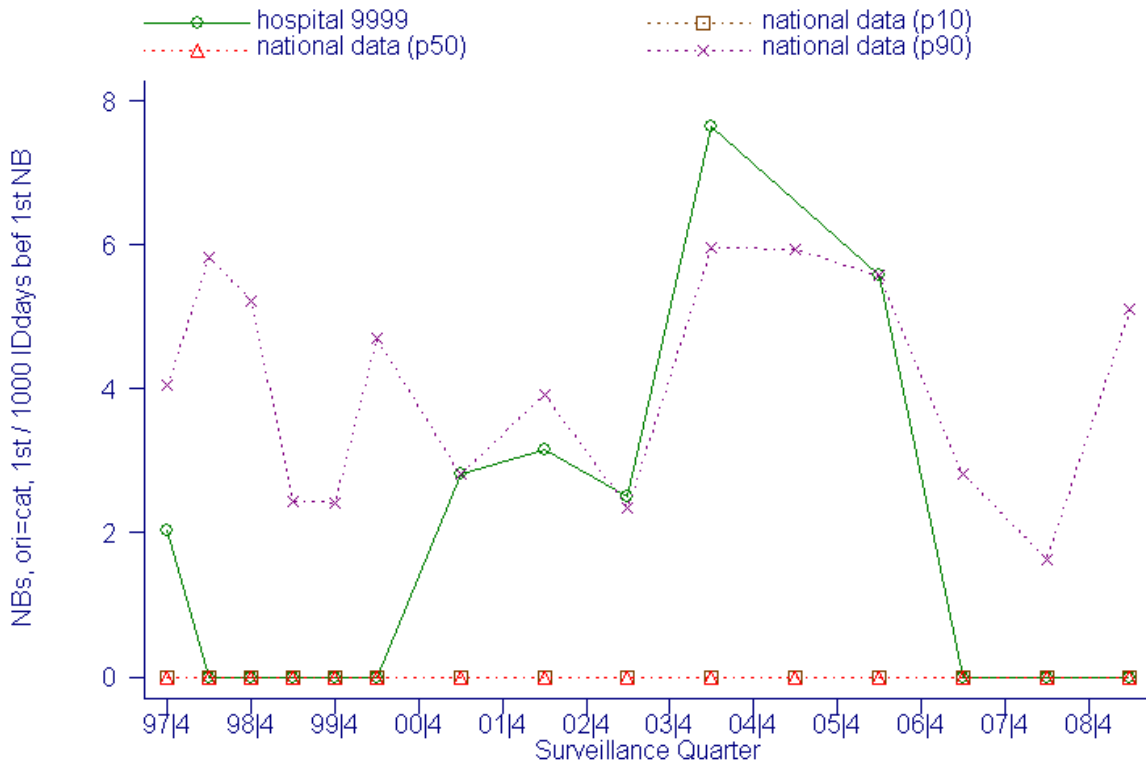


Figure 16: Evolution: NBs, ori=cat, 1st / 1000 IDdays bef 1st NB ; definite catheter associated NBs, 1st episodes only / 1000 catheterdays

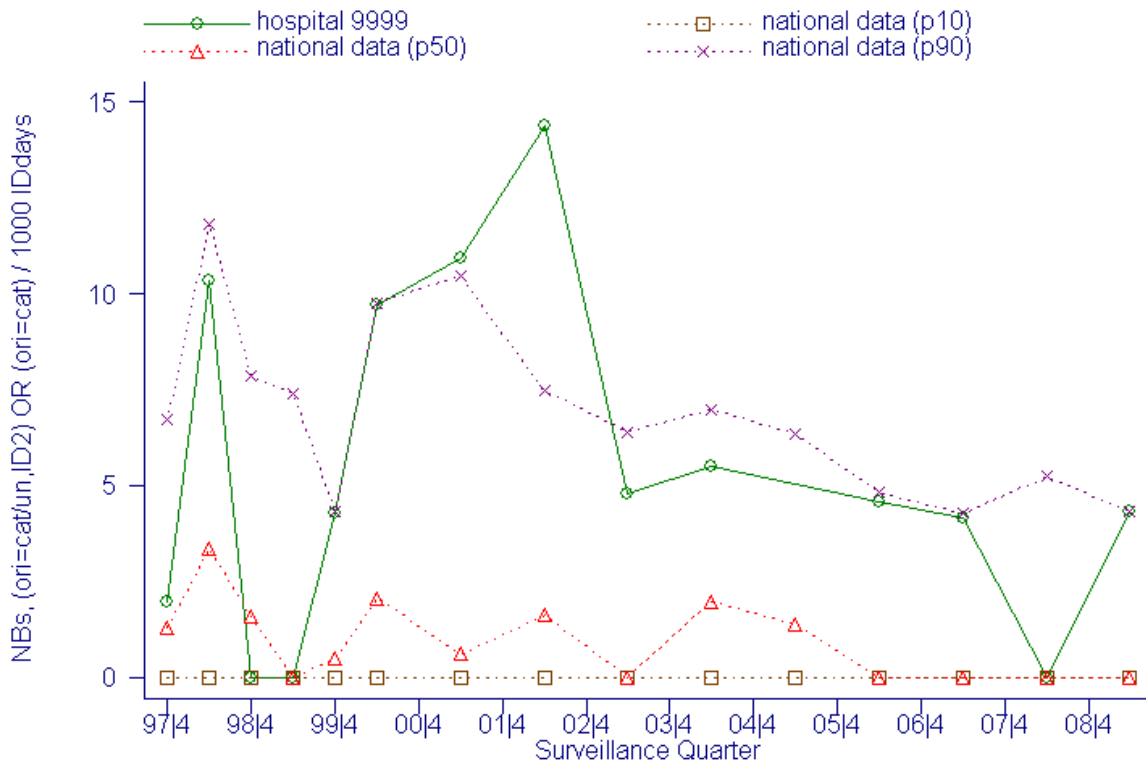


Figure 17: Evolution: NBs, (ori=cat/un,ID2) OR (ori=cat) / 1000 IDdays ; catheter associated NBs / 1000 catheterdays (CDC)

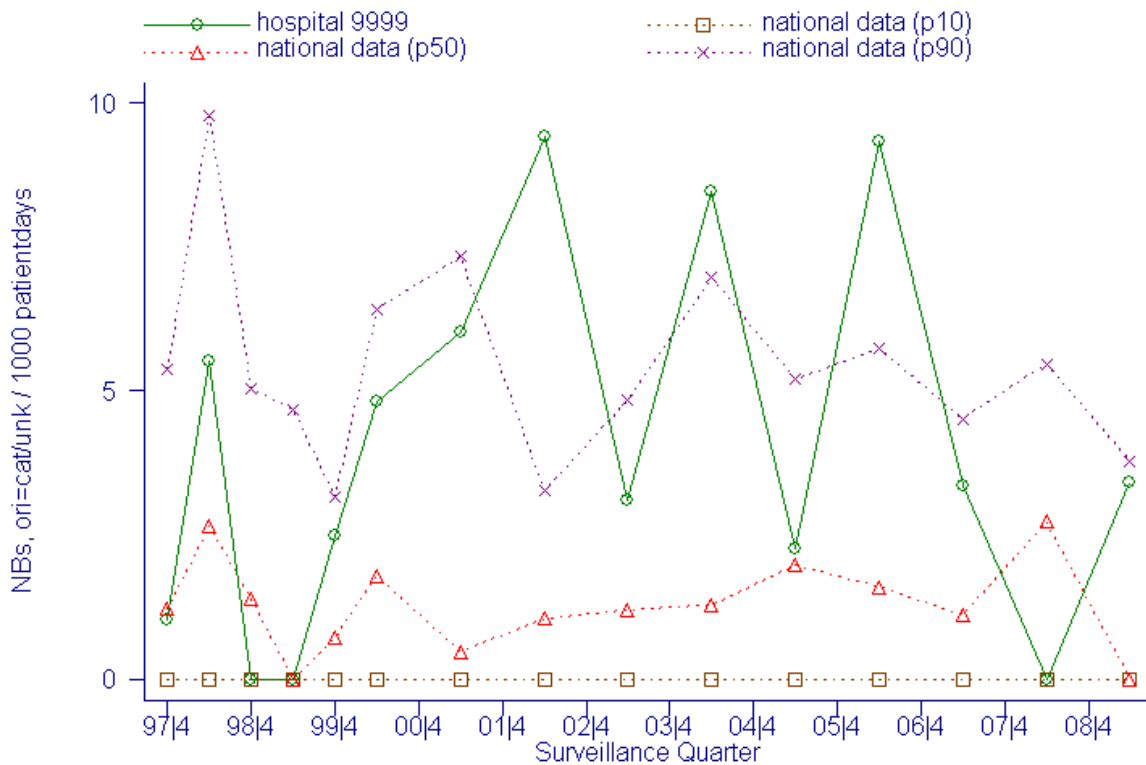


Figure 18: Evolution: NBs, ori=cat/unk / 1000 patientdays ; primary NBs / 1000 patientdays

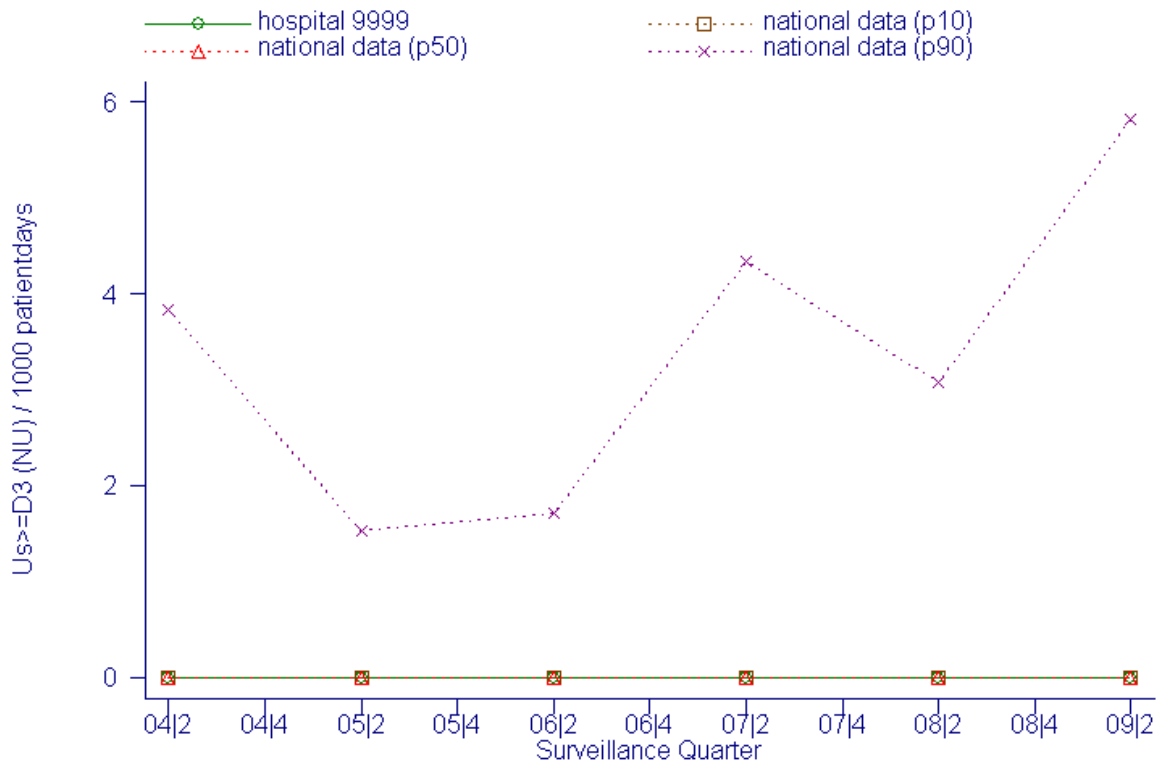


Figure 19: Evolution: $Us \geq D3$ (NU) / 1000 patientdays ; NUs / 1000 patientdays

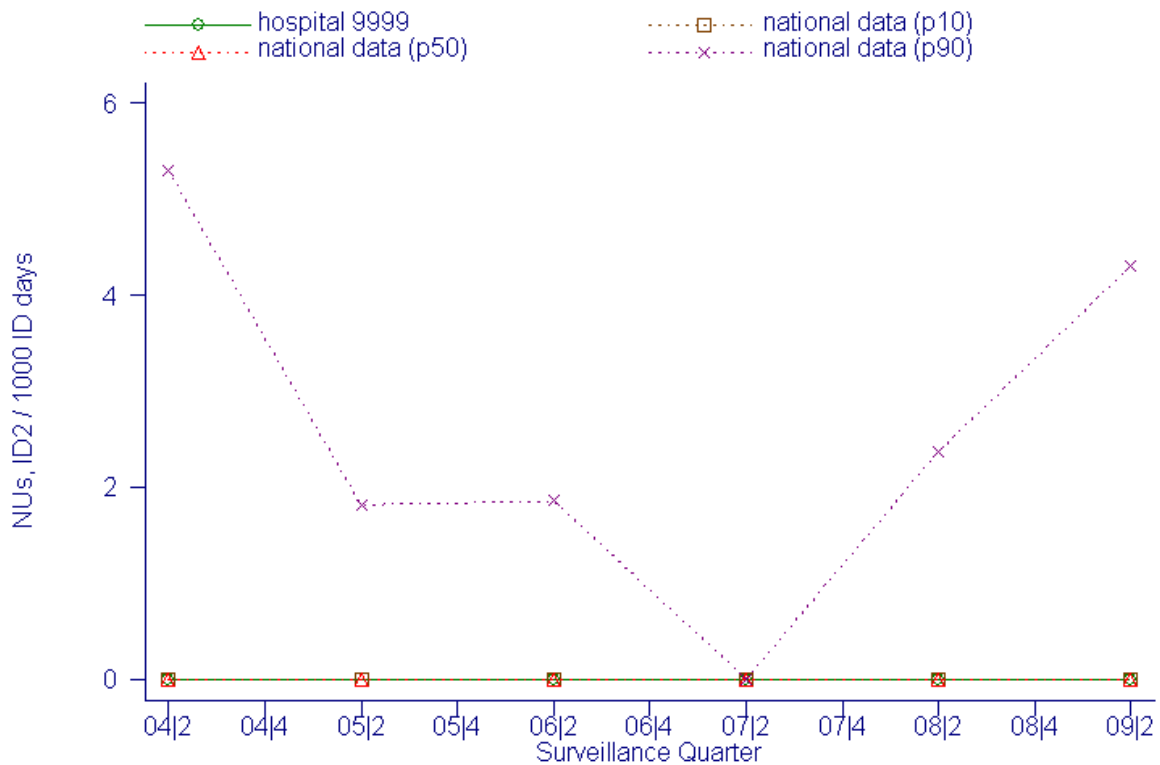


Figure 20: Evolution: NUs, ID2 / 1000 ID days ; catheter associated NUs / 1000 urinary catheterdays