

KISS Hospital Infection Surveillance System
(*Krankenhaus-Infektions-Surveillance-System*)



**NEO-KISS component
Reference Data
Calculation period: January 2005 to December 2009
Prepared: 10 March 2010**

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Reference data for neonatology departments

Birthweight class	<u>To 499</u>
Total departments	140
Total patients	754
Total patient days	41,488
Average length of surveillance (days):	55.02

Table 1: Device usage rate¹

Device	Total device days	Pooled average	25% quantile	Median	75% quantile
Vascular catheter	25,130	60.57	52.22	64.07	90.27
- CVC	16,665	40.17	30.03	42.95	60.26
- PVC	8,465	20.40	7.24	17.24	29.20
Mech. Ventilation	30,524	73.57	65.14	78.45	93.10
- Intubation	14,684	35.39	25.39	42.21	66.56
- CPAP	15,840	38.18	16.14	27.86	40.34
Antibiotics	19,125	46.10	35.75	48.99	65.79

Table 2: Incidence density²

Type of infection	Total infections	Pooled average	25% quantile	Median	75% quantile
Severe HAI³	213	9.95	0.00	6.86	14.05
- Pneumonia	52	1.25	0.00	0.00	0.00
- BSI	361	8.70	0.00	5.84	12.28
NEC	67	1.61	0.00	0.00	1.98

¹ Device usage rate: $\frac{\text{Total device days}}{\text{Total patient days}} \times 100$

² Incidence density: $\frac{\text{Total infections}}{\text{Total patient days}} \times 1000$

³ Severe HAI (Hospital-associated infection): Total BSI and pneumonia



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Table 3: Device-associated infection rates⁴

Dev.-assoc. infection	Total dev.-assoc. infections	Pooled average	25% quantile	Median	75% quantile
Vascular catheter- assoc. BSI	2,258	9.33	1.71	6.77	11.51
- CVC-assoc. BSI	1,367	9.88	0.00	6.96	12.52
- PVC-assoc. BSI	891	8.60	0.00	3.87	10.95
Mech. ventilation- assoc. pneumonia	376	1.42	0.00	0.37	2.10
- Intubation-assoc. pneumonia	236	2.41	0.00	0.00	3.26
- CPAP-assoc. pneumonia	140	0.84	0.00	0.00	0.67

⁴ Device-associated infection rate:

Total device-associated infection / Total device days x 1000



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Reference data for neonatology departments

Birthweight class	<u>500 to 999</u>
Total departments	198
Total patients	9,226
Total patient days	454,978
Average length of surveillance (days):	49.31

Table 1: Device usage rate¹

Device	Total device days	Pooled average	25% quantile	Median	75% quantile
Vascular catheter	241,909	53.17	45.22	52.20	60.86
- CVC	138,303	30.40	19.08	29.84	39.47
- PVC	103,606	22.77	15.28	21.62	29.23
Mech. Ventilation	264,101	58.05	42.57	54.79	62.92
- Intubation	97,856	21.51	13.17	20.65	27.38
- CPAP	166,245	36.54	20.17	31.03	39.66
Antibiotics	157,945	34.17	25.70	33.30	42.34

Table 2: Incidence density²

Type of infection	Total infections	Pooled average	25% quantile	Median	75% quantile
Severe HAI³	3,151	6.93	2.76	5.99	9.01
- Pneumonia	416	0.91	0.00	0.41	1.31
- BSI	2,735	6.01	1.82	4.69	7.83
NEC	510	1.12	0.00	0.68	1.44

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² Incidence density: $\frac{\text{Total infections}}{\text{Total patient days}} \times 1000$
³ Severe HAI (Hospital-associated infection): Total BSI and pneumonia

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Table 3: Device-associated infection rates⁴

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Vascular catheter- assoc. BSI	2,258	9.33	1.71	6.77	11.51
- CVC- assoc. BSI	1.367	9.88	0.00	6.96	12.52
- PVC- assoc. BSI	891	8.60	0.00	3.87	10.95
Mech. Ventilation- assoc. pneumonia	376	1.42	0.00	0.37	2.10
- Intubation- assoc. pneumonia	236	2.41	0.00	0.00	3.26
- CPAP- assoc. pneumonia	140	0.84	0.00	0.00	0.67

⁴ Device-associated infection rate:

Total device-associated infection / Total device days x 1000

Reference data for neonatology departments

Birthweight class	<u>1000 to 1499</u>
Total departments	207
Total patients	14,321
Total patient days	404,571
Average length of surveillance (days):	28.25

Table 1: Device usage rate¹

Device	Total device days	Pooled average	25% quantile	Median	75% quantile
Vascular catheter	189,958	46.95	40.35	46.48	54.52
- CVC	68,259	16.87	8.32	16.40	25.29
- PVC	121,699	30.08	21.58	29.98	37.65
Mech. Ventilation	104,180	25.75	15.94	23.40	29.97
- Intubation	26,182	6.47	3.84	5.89	8.35
- CPAP	77,998	19.28	9.92	15.87	22.95
Antibiotics	93,601	23.14	16.33	22.22	28.73

Table 2: Incidence density²

Type of infection	Total infections	Pooled average	25% quantile	Median	75% quantile
Severe HAI³	1,5518	3.75	1.51	3.19	5.29
- Pneumonia	128	0.32	0.00	0.00	0.43
- BSI	1,390	3.44	1.10	2.76	4.69
NEC	188	0.46	0.00	0.00	0.65

¹ Device usage rate: $\frac{\text{Total device days}}{\text{Total patient days}} \times 100$
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Reference data for neonatology departments

Table 3: Device-associated infection rates⁴

Dev.-assoc. infection	Total dev.-assoc. infections	Pooled average	25% quantile	Median	75% quantile
Vascular catheter- assoc. BSI	1,161	6.11	1.38	4.74	8.00
- CVC-assoc. BSI	440	6.45	0.00	4.44	8.83
- PVC-assoc. BSI	721	5.92	0.00	3.71	7.42
Mech. Ventilation- assoc. pneumonia	96	0.92	0.00	0.00	0.63
- Intubation-assoc. pneumonia	47	1.80	0.00	0.00	0.00
- CPAP-assoc. pneumonia	49	0.63	0.00	0.00	0.00

⁴ Device-associated infection rate:

Total device-associated infection / Total device days x 1000

Reference data for neonatology departments

Pathogen distribution

Table 1: Pneumonia pathogens (Total infections = 596)

Pathogen	Total infections with/out pathogen	Total infections with/out pathogen per 100 infections (%)	Total pathogens per 100 pathogens (%)
No pathogen detected	185	31.04	
KNS	68	11.41	13.39
URE	58	9.73	11.42
ENT	50	8.39	9.84
ENB	44	7.38	8.66
ECO	40	6.71	7.87
SAU	40	6.71	7.87
KLE	38	6.38	7.48
PAE	26	4.36	5.12
CAN	21	3.52	4.13
SON	15	2.52	2.95
Pathogens in table	400		78.74
Total pathogens	508		100.00

Reference data for neonatology departments

Pathogen distribution

Table 2: BSI pathogens (Total infections = 4,486)

Pathogen	Total infections with/out pathogen	Total infections with/out pathogen per 100 infections (%)	Total pathogens per 100 pathogens (%)
No pathogen detected	2,221	49.51	
KNS	1,247	27.80	51.68
SAU	209	4.66	8.66
ENT	148	3.30	6.13
ENB	135	3.01	5.59
ECO	134	2.99	5.55
SON	93	2.07	3.85
KLE	92	2.05	3.81
CAN	81	1.81	3.36
SER	31	0.69	1.28
ANB	29	0.65	1.20
Total pathogens in table	2,199		91,13
Total pathogens	2,413		100.00



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Reference data statistics

Total neonatology departments that contributed at least one data set to reference data: 209

Distribution of neonatology levels of care (self-assigned, as defined by German law)

Perinatal center LEVEL 1 (highest risk patients): 152

Perinatal center LEVEL 2 (wide spectrum intermediary care for high risk patients): 43

Centers with emphasis on perinatal care (wide spectrum postnatal care for infants in hospitals): 6

Maternity hospitals (centers only for mature births without significant risk): 8