

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



**ITS-KISS component
Reference Data
Calculation period: January 2005 to December 2009
Prepared on 16 March 2010**

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**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	ALL		
Total units:	586		
Total months of observation:	20,999	Total patient days:	5,876,973
Total patients:	1,651,941	Average hospital stay:	3.56

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	586	5,876,973	4,757,133	80.95	70.71	83.06	91.30
CVC (to 12/07)	477	3,188,367	2,179,011	68.34	48.82	65.63	81.88
CVC (after 01/08)	516	2,688,606	1,823,097	67.81	48.85	66.71	82.02
Ventilation INV	586	5,876,973	2,391,381	40.69	23.50	35.70	49.80
Ventilation NIV (a)	182	789,409	48,682	6.17	1.25	4.14	8.05
Ventricular drainage (a)	111	472,977	30,872	6.53	0.00	0.00	5.25

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	583	9,357	1.97	0.29	1.05	2.44
-symptomatic UTI	583	3,379	0.71	0.00	0.31	0.86
-asymptomatic bacteruria	583	5,857	1.23	0.00	0.41	1.33
CVC-assoc BSI (to 12/07)	475	3,194	1.47	0.29	1.00	2.07
CVC-assoc . BSI (after 01/08)	514	2,294	1.26	0.00	0.76	1.72
INV-assoc. lower respiratory infections	583	15,607	6.53	2.65	5.01	7.96
INV-assoc. pneumonia	583	12,239	5.12	2.02	3.98	6.84
INV-assoc. bronchitis	583	3,368	1.41	0.00	0.27	1.41
NIV-assoc. lower respiratory infections (a)	158	64	1.31	0.00	0.00	0.00
NIV-assoc. pneumonia (a)	158	50	1.03	0.00	0.00	0.00
NIV-assoc. bronchitis (a)	158	14	0.29	0.00	0.00	0.00
EVD-assoc. meningitis (a)	46	155	5.02	0.00	1.52	5.38

(a) optional surveillance component



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – statistics for most common pathogens (Type of station: ALL)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	4,735 (15.68)	2,597 (27.75)	237 (4.68)	1,900 (12.17)	1,449 (11.84)	451 (13.39)				1 (0.65)
Enterococcus spp.	4,353 (14.42)	2,481 (29.51)	935 (18.45)	917 (5.88)	736 (6.01)	181 (5.37)				20 (12.90)
Enterococcus spp. (b)	2,522 (8.35)	1,565 (16.73)	651 (12.85)	290 (1.86)	219 (1.79)	71 (2.11)				16 (10.32)
P. aeruginosa	4,310 (14.28)	1,326 (14.17)	215 (4.24)	2,762 (17.70)	2,195 (17.93)	567 (16.83)				7 (4.52)
S. aureus	4,095 (13.57)	136 (1.45)	736 (14.53)	3,212 (20.58)	2,411 (19.70)	801 (23.46)				11 (7.10)
MRSA (% of S. aureus)	1,467(35.82)	50 (36.76)	293 (39.81)	1,120 (34.87)	892 (37.00)	228 (28.46)				4 (36.36)
C. albicans	3,402 (11.27)	1,037 (11.08)	284 (5.60)	2,078 (13.31)	1,724 (14.09)	354 (10.51)				3 (1.94)
C. albicans (b)	1,795 (5.95)	811 (8.67)	220 (4.34)	762 (4.88)	638 (5.21)	124 (3.68)				2 (1.29)
Klebsiella spp.	2,939 (9.74)	761 (8.13)	262 (5.17)	1,914 (12.26)	1,474	440 (13.06)				2 (1.29)
Coagulase neg. Staph.	2,491 (8.25)	231 (2.47)	1,901 (37.52)	306 (1.96)	245 (2.00)	61 (1.81)				53 (34.19)
Coagulase neg. Staph (b)	1,927 (6.38)	158 (1.69)	1,626 (32.09)	95 (0.61)	73 (0.60)	22 (0.65)				48 (30.97)
Enterobacter spp.	2,022 (6.70)	466 (4.98)	213 (4.20)	1,339 (8.58)	979 (8.00)	360 (10.69)				4 (2.58)
ANC	1,151 (3.81)	462 (4.94)	113 (2.23)	574 (3.68)	466 (3.81)	108 (3.21)				2 (1.29)
Total pathogens in table	29,498	9,497	4,896	15,002	11,679	3,323				103
Total other pathogens	6,522	1,248	809	4,598	3,422	1,176				21
Total pathogens	36,050	10,745	5,705	19,600	15,101	4,499				124
Total infections w/o pathogens	2,154	292	0	1,862	1,857	5				42
Total infections w/ pathogens	27,877	9,065	5,067	13,745	10,382	3,363				113
Total infections	30,186	9,357	5,067	15,607	12,239	3,368	(d)	(d)	(d)	155

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Interdisciplinary (< 400 beds)		
Total units:	202		
Total months of observation:	7,311	Total patient days:	1,569,480
Total patients:	532,814	Average hospital stay:	2.95

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	202	1,569,480	1,204,910	76.77	69.06	78.17	85.83
CVC (to 12/07)	161	799,341	468,559	58.62	44.43	55.58	68.17
CVC (after 01/08)	185	770,139	444,134	57.67	42.41	54.79	72.39
Ventilation INV	202	1,569,480	485,810	30.95	19.58	25.89	36.29
Ventilation NIV (a)	69	226,426	14,284	6.31	1.90	4.34	8.05
Ventricular drainage (a)	36	105,541	1,811	1.72	0.00	0.00	0.00

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	583	1,266	1.05	0.00	0.53	1.23
-symptomatic UTI	583	614	0.51	0.00	0.19	0.58
-asymptomatic bacteruria	583	610	0.51	0.00	0.11	0.55
CVC-assoc . BSI (to 12/07)	475	482	1.01	0.00	0.67	1.32
CVC-assoc . BSI (after 01/08)	514	396	0.89	0.00	0.35	1.25
INV-assoc. lower respiratory infections	583	2,784	5.73	2.00	4.34	7.56
INV-assoc. pneumonia	583	2,322	4.78	1.65	3.93	6.60
INV-assoc. bronchitis	583	462	0.95	0.00	0.00	0.83
NIV-assoc. lower respiratory infections (a)	158	15	1.05	0.00	0.00	0.00
NIV-assoc. pneumonia (a)	158	13	0.91	0.00	0.00	0.00
NIV-assoc. bronchitis (a)	158	2	0.14	0.00	0.00	0.00
EVD-assoc. meningitis (a)	46					

(a) optional surveillance component



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: Interdisciplinary < 400 beds)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	665 (13.73)	344 (27.17)	43 (5.42)	278 (9.99)	224 (9.65)	54 (11.69)				
Enterococcus spp.	667 (13.77)	347 (27.41)	134 (16.90)	186 (6.68)	150 (6.46)	36 (7.79)				
Enterococcus spp. (b)	334 (6.90)	197 (15.56)	81 (10.21)	56 (2.01)	51 (2.20)	5 (1.08)				
P. aeruginosa	830 (17.14)	187 (14.77)	37 (4.67)	606 (21.77)	496 (21.36)	110 (23.81)				
S. aureus	725 (14.97)	19 (1.50)	156 (19.67)	550 (19.76)	441 (18.99)	109 (23.59)				
MRSA (of S. aureus)	343 (47.31)	8 (42.11)	68 (43.59)	267 (48.55)	218 (49.43)	49 (44.95)				
C. albicans	589 (12.16)	117 (9.24)	67 (8.45)	405 (14.55)	323 (13.91)	82 (17.75)				
C. albicans (b)	303 (6.26)	89 (7.03)	50 (6.31)	164 (5.89)	127 (5.47)	37 (8.01)				
Klebsiella spp.	444 (9.17)	101 (7.98)	59 (7.44)	284 (10.20)	238 (10.25)	46 (9.96)				
Coagulase neg. Staph.	357 (7.37)	38 (3.00)	242 (30.52)	77 (2.77)	55 (2.37)	22 (4.76)				
Coagulase neg. Staph (b)	250 (5.16)	24 (1.90)	207 (26.10)	19 (0.68)	13 (0.56)	6 (1.30)				
Enterobacter spp.	254 (5.24)	62 (4.90)	32 (4.04)	160 (5.75)	131 (5.64)	29 (6.28)				
ANC	173 (3.57)	37 (2.92)	17 (2.14)	119 (4.27)	96 (4.13)	23 (4.98)				
Total pathogens in table	4,704	1,252	787	2,665	2,154	511				
Total other pathogens	990	162	124	704	554	150				
Total pathogens	5,694	1,414	911	3,369	2,708	661				
Total infections w/o pathogens	546	104	0	442	442	0				
Total infections w/ pathogens	4,297	1,162	793	2,342	1,880	462				
Total infections	4,843	1,266	793	2,784	2,322	462	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Interdisciplinary (≥ 400 beds)		
Total units:	97		
Total months of observation:	3,562	Total patient days:	1,317,160
Total patients:	363,798	Average hospital stay:	3.62

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	97	1,317,160	1,101,589	83.63	77.55	85.70	92.30
CVC (to 12/07)	74	696,667	483,282	69.37	56.55	69.39	83.68
CVC (after 01/08)	87	620,493	428,801	69.11	54.41	71.88	83.04
Ventilation INV	97	1,317,160	551,009	41.83	29.06	39.56	53.97
Ventilation NIV (a)	38	236,812	13,143	5.55	0.55	4.12	7.31
Ventricular drainage (a)	22	98,819	4,607	4.66	0.00	0.26	6.88

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	97	2,058	1.87	0.61	1.59	2.84
-symptomatic UTI	97	794	0.72	0.07	0.40	1.05
-asymptomatic bacteruria	97	1,241	1.13	0.11	0.71	1.47
CVC-assoc . BSI (to 12/07)	74	568	1.18	0.41	0.90	1.51
CVC-assoc . BSI (after 01/08)	86	582	1.36	0.29	0.89	2.08
INV-assoc. lower respiratory infections	96	3,743	6.79	3.37	5.04	8.16
INV-assoc. pneumonia	96	2,679	4.86	2.42	3.75	6.80
INV-assoc. bronchitis	96	1,064	1.93	0.00	0.61	1.94
NIV-assoc. lower respiratory infections (a)	33	33	2.51	0.00	0.00	3.95
NIV-assoc. pneumonia (a)	33	24	1.83	0.00	0.00	3.49
NIV-assoc. bronchitis (a)	33	9	0.68	0.00	0.00	0.00
EVD-assoc. meningitis (a)	12	28	6.08	0.00	0.00	6.75

(a) optional surveillance component



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: Interdisciplinary ≥ 400 beds)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	1,151 (16.68)	548 (26.63)	56 (5.09)	547 (14.61)	386 (14.41)	161 (15.13)				
Enterococcus spp.	1,051 (15.23)	568 (27.60)	222 (20.16)	261 (6.97)	196 (7.32)	65 (6.11)				
Enterococcus spp. (b)	601 (8.71)	374 (18.17)	143 (12.99)	84 (2.24)	50 (1.87)	34 (3.20)				
P. aeruginosa	1,081 (15.66)	303 (14.72)	42 (3.81)	736 (19.66)	548 (20.46)	188 (17.67)				
S. aureus	1,035 (15.00)	28 (1.36)	163 (14.80)	844 (22.55)	564 (21.05)	280 (26.32)				
MRSA (of S. aureus)	399 (38.55)	11 (39.29)	63 (38.65)	325 (38.51)	244 (43.26)	81 (28.93)				
C. albicans	749 (10.85)	270 (13.12)	53 (4.81)	426 (11.38)	344 (12.84)	82 (7.71)				
C. albicans (b)	373 (5.40)	205 (9.96)	39 (3.54)	129 (3.45)	108 (4.03)	21 (1.97)				
Klebsiella spp.	753 (10.91)	175 (8.50)	66 (5.99)	512 (13.68)	368 (13.74)	144 (13.53)				
Coagulase neg. Staph.	492 (7.13)	47 (2.28)	387 (35.15)	58 (1.55)	43 (1.61)	15 (1.41)				
Coagulase neg. Staph (b)	384 (5.56)	34 (1.65)	323 (29.34)	27 (0.72)	17 (0.63)	10 (0.94)				
Enterobacter spp.	496 (7.19)	106 (5.15)	49 (4.45)	341 (9.11)	202 (7.54)	139 (13.06)				
ANC	266 (3.85)	102 (4.96)	31 (2.82)	133 (3.55)	116 (4.33)	17 (1.60)				
Total pathogens in table	7,074	2,147	1,069	3,858	2,767	1,091				
Total other pathogens	1,413	222	200	991	693	298				
Total pathogens	8,487	2,369	1,269	4,849	3,460	1,389				
Total infections w/o pathogens	383	62	0	321	321	0				
Total infections w/ pathogens	6,519	1,996	1,101	3,422	2,358	1,064				
Total infections	6,902	2,058	1,101	3,743	2,679	1,064	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Internal medicine		
Total units:	102		
Total months of observation:	3,615	Total patient days:	1,00,710
Total patients:	283,733	Average hospital stay:	3.53

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	102	1,000,710	737,798	73.73	63.88	71.96	83.87
CVC (to 12/07)	87	597,405	348,175	58.28	43.33	55.13	71.77
CVC (after 01/08)	81	403,305	244,747	60.69	44.12	56.05	75.05
Ventilation INV	102	1,000,710	386,022	38.57	25.12	34.17	47.60
Ventilation NIV (a)	26	122,806	11,241	9.15	1.80	5.55	10.39
Ventricular drainage (a)	10	37,904	457	1.21	0.00	0.00	0.00

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	101	1,421	1.93	0.44	1.05	2.42
-symptomatic UTI	101	438	0.59	0.00	0.32	0.84
-asymptomatic bacteruria	101	967	1.31	0.00	0.49	1.33
CVC-assoc . BSI (to 12/07)	87	569	1.63	0.39	10.6	2.38
CVC-assoc . BSI (after 01/08)	81	326	1.33	0.30	0.94	1.70
INV-assoc. lower respiratory infections	102	1,816	4.70	1.89	3.97	5.85
INV-assoc. pneumonia	102	1,479	3.83	1.28	2.91	5.28
INV-assoc. bronchitis	102	337	0.87	0.00	0.25	1.04
NIV-assoc. lower respiratory infections (a)	24	9	0.80	0.00	0.00	0.55
NIV-assoc. pneumonia (a)	24	6	0.53	0.00	0.00	0.00
NIV-assoc. bronchitis (a)	24	3	0.27	0.00	0.00	0.00
EVD-assoc. meningitis (a)	(b)					

(a) optional surveillance component

(b) insufficient data



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: Internal medicine)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	574 (14.20)	356 (25.05)	34 (4.22)	184 (10.13)	137 (9.26)	47 (13.95)				
Enterococcus spp.	683 (16.89)	374 (26.32)	193 (23.95)	116 (6.39)	99 (6.69)	17 (15.04)				
Enterococcus spp. (b)	453 (11.20)	255 (17.95)	155 (19.23)	43 (2.37)	36 (2.43)	7 (2.08)				
P. aeruginosa	494 (12.22)	159 (11.19)	38 (4.71)	297 (16.35)	232 (15.69)	65 (19.29)				
S. aureus	477 (11.80)	15 (1.06)	166 (14.39)	346 (19.05)	261 (17.65)	85 (25.22)				
MRSA (of S. aureus)	159 (33.33)	6 (40.00)	42 (36.21)	111 (32.08)	89 (34.10)	22 (25.88)				
C. albicans	525 (12.99)	217 (15.27)	31 (3.85)	277 (15.25)	237 (16.02)	40 (11.87)				
C. albicans (b)	310 (7.67)	178 (12.53)	23 (2.85)	109 (6.00)	101 (6.83)	8 (2.37)				
Klebsiella spp.	329 (8.14)	102 (7.18)	34 (4.22)	193 (10.63)	142 (9.60)	51 (15.13)				
Coagulase neg. Staph.	356 (8.81)	23 (1.62)	298 (36.97)	35 (1.93)	32 (2.16)	3 (0.89)				
Coagulase neg. Staph (b)	286 (7.07)	11 (0.77)	265 (32.88)	10 (0.55)	10 (0.68)					
Enterobacter spp.	193 (4.77)	47 (3.31)	24 (2.98)	122 (6.72)	97 (6.56)	25 (7.42)				
ANC	166 (4.11)	91 (6.40)	9 (1.12)	66 (3.63)	56 (3.79)	10 (2.97)				
Total pathogens in table	3,797	1,384	777	1,636	1,293	343				
Total other pathogens	792	207	105	480	362	118				
Total pathogens	4,589	1,591	882	2,116	1,655	461				
Total infections w/o pathogens	387	41	0	346	343	3				
Total infections w/ pathogens	3,656	1,380	806	1,470	1,136	334				
Total infections	4,043	1,421	806	1,816	1,479	337	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Surgical		
Total units:	119		
Total months of observation:	4,375	Total patient days:	1,373,337
Total patients:	338,011	Average hospital stay:	4.06

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	119	1,373,337	1,244,200	90.60	86.98	90.97	95.76
CVC (to 12/07)	101	765,321	641,694	83.85	73.09	83.00	92.07
CVC (after 01/08)	105	608,016	492,548	81.01	72.13	81.54	91.11
Ventilation INV	119	1,373,337	661,255	48.15	32.45	44.68	57.45
Ventilation NIV (a)	31	137,794	5,642	4.09	0.40	3.52	8.81
Ventricular drainage (a)	22	138,451	8,901	6.43	0.00	0.31	6.48

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	119	3,137	2.52	0.71	1.75	2.94
-symptomatic UTI	119	1,101	0.88	0.10	0.45	1.15
-asymptomatic bacteruria	119	2,009	1.61	0.11	0.72	2.10
CVC-assoc . BSI (to 12/07)	101	999	1.56	0.47	1.37	2.26
CVC-assoc . BSI (after 01/08)	105	652	1.32	0.18	1.00	1.95
INV-assoc. lower respiratory infections	118	4,919	7.44	4.13	6.37	9.98
INV-assoc. pneumonia	118	3,899	5.90	2.97	4.90	8.06
INV-assoc. bronchitis	118	1,020	1.54	0.00	0.63	1.98
NIV-assoc. lower respiratory infections (a)	27	4	0.71	0.00	0.00	0.00
NIV-assoc. pneumonia (a)	27	4	0.71	0.00	0.00	0.00
NIV-assoc. bronchitis (a)	27	0	0.00	0.00	0.00	0.00
EVD-assoc. meningitis (a)	13	54	6.07	0.00	1.90	3.94

(a) optional surveillance component



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: ALL)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	1,558 (16.20)	889 (28.34)	59 (3.77)	610 (12.40)	490 (12.57)	120 (11.76)				
Enterococcus spp.	1,352 (14.06)	866 (27.61)	272 (17.40)	214 (4.35)	178 (4.57)	36 (3.53)				
Enterococcus spp. (b)	793 (8.24)	535 (17.05)	196 (12.54)	62 (1.26)	48 (1.23)	14 (1.37)				
P. aeruginosa	1,395 (14.50)	478 (15.24)	73 (4.67)	844 (17.16)	705 (18.08)	139 (13.63)				
S. aureus	1,239 (12.88)	51 (1.63)	215 (13.76)	973 (19.78)	742 (19.03)	231 (22.65)				
MRSA (of S. aureus)	409 (33.01)	18 (35.29)	94 (43.72)	297 (30.52)	242 (32.61)	55 (23.81)				
C. albicans	1,023 (10.64)	321 (10.23)	101 (6.46)	601 (12.22)	515 (13.21)	86 (8.43)				
C. albicans (b)	548 (5.70)	246 (7.84)	83 (5.31)	219 (4.45)	190 (4.87)	29 (2.84)				
Klebsiella spp.	936 (9.73)	245 (7.81)	65 (4.16)	626 (12.73)	488 (12.52)	138 (13.53)				
Coagulase neg. Staph.	753 (7.83)	81 (2.58)	603 (38.58)	69 (1.40)	64 (1.64)	5 (0.49)				
Coagulase neg. Staph (b)	608 (6.32)	59 (1.88)	525 (33.59)	24 (0.49)	23 (0.59)	1 (0.10)				
Enterobacter spp.	681 (7.08)	152 (4.85)	68 (4.35)	461 (9.37)	363 (9.31)	98 (9.61)				
ANC	352 (3.66)	144 (4.59)	44 (2.82)	164 (3.33)	130 (3.33)	34 (3.33)				
Total pathogens in table	9,289	3,227	1,500	4,562	3,675	887				
Total other pathogens	2,266	405	236	1,625	1,185	440				
Total pathogens	11,555	3,632	1,736	6,187	4,860	1,327				
Total infections w/o pathogens	552	64	0	488	487	1				
Total infections w/ pathogens	9,067	3,073	1,563	4,431	3,412	1,019				
Total infections	9,619	3,137	1,563	4,919	3,899	1,020	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Neurosurgery		
Total units:	19		
Total months of observation:	606	Total patient days:	192,084
Total patients:	41,999	Average hospital stay:	4.57

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	19	192,084	176,739	92.01	87.22	95.01	96.18
CVC (to 12/07)	16	108,432	81,549	75.21	73.39	79.55	84.46
CVC (after 01/08)	16	83,652	61,108	73.05	66.30	76.41	83.36
Ventilation INV	19	192,084	94,444	49.17	38.04	50.59	58.22
Ventilation NIV (a)	(b)						
Ventricular drainage (a)	10	56,120	12,212	21.76	5.71	19.49	20.49

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	19	899	5.09	2.55	4.60	9.96
-symptomatic UTI	19	268	1.52	0.35	0.89	2.83
-asymptomatic bacteruria	19	627	3.55	0.71	2.76	6.08
CVC-assoc . BSI (to 12/07)	16	173	2.12	0.66	1.40	3.93
CVC-assoc . BSI (after 01/08)	16	116	1.90	0.54	1.22	3.23
INV-assoc. lower respiratory infections	18	906	9.59	6.22	7.72	12.95
INV-assoc. pneumonia	18	746	7.90	2.60	5.84	12.07
INV-assoc. bronchitis	18	160	1.69	0.25	1.50	2.80
NIV-assoc. lower respiratory infections (a)	(b)					
NIV-assoc. pneumonia (a)	(b)					
NIV-assoc. bronchitis (a)	(b)					
EVD-assoc. meningitis (a)	8	62	5.08	1.63	3.05	8.83

(a) optional surveillance component

(b) insufficient data



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: ALL)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	463 (22.28)	318 (35.37)	11 (4.03)	134 (14.79)	109 (14.61)	25 (15.63)				
Enterococcus spp.	271 (13.04)	205 (22,80)	32 (11.72)	34 (3.75)	31 (4.16)	3 (1.88)				
Enterococcus spp. (b)	155 (7.46)	123 (13.68)	23 (8.42)	9 (0.99)	6 (0.80)	3 (1.88)				
P. aeruginosa	226 (10.88)	119 (13.34)	13 (4.76)	94 (10.38)	82 (10.99)	12 (7.50)				
S. aureus	342 (16.46)	15 (1.67)	32 (11.72)	295 (32.56)	247 (33.11)	48 (30.00)				
MRSA (of S. aureus)	58 (16.96)	5 (33.33)	6 (18.75)	47 (15.93)	42 (17.00)	5 (10.42)				
C. albicans	153 (7.36)	53 (5.90)	8 (2.93)	92 (10.15)	81 (10.86)	11 (6.88)				
C. albicans (b)	79 (3.80)	42 (4.67)	6 (2.20)	31 (3.42)	28 (3.75)	3 (1.88)				
Klebsiella spp.	221 (10.64)	83 (9.23)	10 (3.66)	128 (14.13)	107 (14.34)	21 (13.13)				
Coagulase neg. Staph.	167 (8.04)	31 (3.45)	134 (49.08)	2 (0.22)	2 (0.27)					
Coagulase neg. Staph (b)	135 (6.50)	23 (2.56)	112 (41.03)							
Enterobacter spp.	177 (8.52)	66 (7.34)	11 (4.03)	100 (11.04)	78 (10.46)	22 (13.75)				
ANC	92 (4.43)	48 (5.34)	2 (0.73)	42 (4.64)	33 (4.42)	9 (5.63)				
Total pathogens in table	2,112	938	253	921	770	151				
Total other pathogens	489	133	54	302	239	63				
Total pathogens	2,601	1,071	307	1,223	1,009	214				
Total infections w/o pathogens	95	12	0	83	83	0				
Total infections w/ pathogens	1,983	887	273	823	663	160				
Total infections	2,078	899	273	906	746	160	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Pediatric		
Total units:	19		
Total months of observation:	653	Total patient days:	163,056
Total patients:	27,525	Average hospital stay:	5.92

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	19	163,056	47,698	29.25	15.85	30.47	38.00
CVC (to 12/07)	17	87,818	40,727	46.38	32.70	50.51	59.26
CVC (after 01/08)	17	75,238	37,617	50.00	42.57	50.10	62.14
Ventilation INV	19	163,056	55,876	34.27	15.72	32.25	49.11
Ventilation NIV (a)	8	38,028	2,663	7.00	3.90	5.97	8.41
Ventricular drainage (a)	(b)						

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	19	75	1.57	0.00	0.70	1.77
-symptomatic UTI	19	24	0.50	0.00	0.28	0.70
-asymptomatic bacteruria	19	51	1.07	0.00	0.24	1.21
CVC-assoc . BSI (to 12/07)	17	121	2.97	1.12	2.63	3.99
CVC-assoc . BSI (after 01/08)	17	66	1.75	0.00	1.40	3.21
INV-assoc. lower respiratory infections	19	116	2.08	0.57	1.89	4.13
INV-assoc. pneumonia	19	103	1.84	0.48	1.59	4.13
INV-assoc. bronchitis	19	13	0.223	0.00	0.00	0.24
NIV-assoc. lower respiratory infections (a)	8	2	0.75	0.00	0.00	2.13
NIV-assoc. pneumonia (a)	8	2	0.75	0.00	0.00	2.13
NIV-assoc. bronchitis (a)	8	0	0.00	0.00	0.00	0.00
EVD-assoc. meningitis (a)	(b)					

(a) optional surveillance component

(b) insufficient data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – statistics for most common pathogens (Type of station: ALL)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	16 (6.18)		9 (6.29)	7 (6.03)	7 (6.80)					
Enterococcus spp.	22 (8.49)		19 (13.29)	3 (2.59)	2 (1.94)					
Enterococcus spp. (b)	16 (6.18)		15 (10.49)	1 (0.86)	1 (0.97)					
P. aeruginosa	21 (8.11)		2 (1.40)	19 (16.38)	18 (17.48)					
S. aureus	31 (11.97)		18 (12.59)	13 (11.21)	10 (9.71)					
MRSA (of S. aureus)	3 (9.68)		2 (11.11)	1 (7.69)	1 (10.00)					
C. albicans	18 (6.95)		4 (2.80)	14 (12.07)	13 (12.62)					
C. albicans (b)	10 (3.86)		3 (2.10)	7 (6.03)	7 (6.80)					
Klebsiella spp.	23 (8.88)		9 (6.29)	14 (12.07)	13 (12.62)					
Coagulase neg. Staph.	67 (25.87)		61 (42.66)	6 (5.17)	4 (3.88)					
Coagulase neg. Staph (b)	52 (20.08)		49 (34.27)	3 (2.59)	2 (1.94)					
Enterobacter spp.	27 (10.42)		14 (9.79)	13 (11.21)	11 (10.68)					
ANC	5 (1.93)		3 (2.10)	2 (1.72)	1 ((0.97)					
Total pathogens in table	230		139	91	79					
Total other pathogens	62		22	40	35					
Total pathogens	292		161	131	114					
Total infections w/o pathogens	19		0	19	19					
Total infections w/ pathogens	240		143	97	84					
Total infections	259	(d)	143	116	103					

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Neurology		
Total units:	13		
Total months of observation:	363	Total patient days:	85,544
Total patients:	10,862	Average hospital stay:	7.88

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	13	85,544	78,704	92.00	92.97	95.61	96.59
CVC (to 12/07)	10	48,015	32,424	67.53	61.98	69.25	74.89
CVC (after 01/08)	11	37,529	27,826	74.15	57.94	78.20	85.93
Ventilation INV	13	85,544	50,122	58.59	50.55	61.57	69.41
Ventilation NIV (a)	(b)						
Ventricular drainage (a)	6	22,316	2,842	12.74	0.93	5.26	18.72

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	13	279	3.54	1.48	2.93	3.71
-symptomatic UTI	13	102	1.30	0.29	0.63	1.18
-asymptomatic bacteruria	13	176	2.24	0.85	1.49	3.07
CVC-assoc . BSI (to 12/07)	10	79	2.44	0.60	1.89	4.43
CVC-assoc . BSI (after 01/08)	11	35	1.26	0.36	1.56	1.88
INV-assoc. lower respiratory infections	13	330	6.58	4.53	6.30	7.43
INV-assoc. pneumonia	13	269	5.37	3.08	5.27	5.98
INV-assoc. bronchitis	13	61	1.22	0.31	1.32	2.20
NIV-assoc. lower respiratory infections (a)	(b)					
NIV-assoc. pneumonia (a)	(b)					
NIV-assoc. bronchitis (a)	(b)					
EVD-assoc. meningitis (a)	6	8	2.81	0.00	0.70	4.65

(a) optional surveillance component

(b) insufficient data



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: neurology)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	110 (15.51)	72 (25.81)	13 (13.00)	25 (7.58)	18 (6.69)					
Enterococcus spp.	98 (13.82)	71 (25.45)	13 (13.00)	14 (4.24)	11 (4.09)					
Enterococcus spp. (b)	62 (8.74)	47 (16.85)	9 (9.00)	6 (1.82)	4 (1.49)					
P. aeruginosa	80 (11.28)	38 (13.62)	8 (8.00)	34 (10.30)	31 (11.52)					
S. aureus	121 (17.07)	7 (2.51)	9 (9.00)	105 (31.82)	85 (31.60)					
MRSA (of S. aureus)	51 (42.15)	2 (28.57)	4 (44.44)	45 (42.86)	35 (41.18)					
C. albicans	88 (12.41)	34 (12.19)	3 (3.00)	51 (15.45)	39 (14.50)					
C. albicans (b)	47 (6.63)	29 (10.39)	2 (2.00)	16 (4.85)	11 (4.09)					
Klebsiella spp.	69 (9.73)	26 (9.32)	6 (6.00)	37 (11.21)	31 (11.52)					
Coagulase neg. Staph.	52 (7.33)	5 (1.79)	42 (42.00)	5 (1.52)	3 (1.12)					
Coagulase neg. Staph (b)	37 (5.22)	2 (0.72)	35 (35.00)							
Enterobacter spp.	47 (6.63)	12 (4.30)	3 (3.00)	32 (9.70)	23 (8.55)					
ANC	26 (3.67)	16 (5.73)	3 (3.00)	7 (2.12)	6 (2.23)					
Total pathogens in table	691	281	100	310	247					
Total other pathogens	165	51	13	101	83					
Total pathogens	856	332	113	411	330					
Total infections w/o pathogens	46	4	0	42	41					
Total infections w/ pathogens	663	275	100	288	228					
Total infections	709	279	100	330	269	(d)	(d)	(d)	(d)	(d)

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data



**KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009**

Reference data – Device utilization rates and device-associated infection rates

Type of station:	Cardiosurgical		
Total units:	15		
Total months of observation:	514	Total patient days:	175,602
Total patients:	53,199	Average hospital stay:	3.30

Table 1: Device utilization rates for all ICUs of this type

Device	Total ICUs	Total patient days	Total device days	Device utilization rate			
				Pooled average	25% quantile	Median	75% quantile
UC	15	175,602	165,495	94.24	91.23	96.08	99.44
CVC (to 12/07)	11	85,368	82,601	96.76	94.24	97.65	99.78
CVC (after 01/08)	14	90,234	86,316	95.66	94.12	97.42	99.68
Ventilation INV	15	175,602	106,843	60.84	50.13	53.29	79.26
Ventilation NIV (a)	(b)						
Ventricular drainage (a)	(b)						

Table 2: Device-associated infection rates for all ICUs of this type

Type of infection	Total ICUs	Total device-assoc. infections	Device-associated infection rates			
			Pooled average	25% quantile	Median	75% quantile
UC-assoc. UTI	15	222	1.34	0.00	0.33	1.43
-symptomatic UTI	15	38	0.23	0.00	0.05	0.14
-asymptomatic bacteruria	15	176	1.06	0.00	0.23	0.63
CVC-assoc . BSI (to 12/07)	11	213	2.58	1.20	2.17	3.33
CVC-assoc . BSI (after 01/08)	14	121	1.40	0.42	0.94	1.46
INV-assoc. lower respiratory infections	15	993	9.29	7.10	8.85	12.35
INV-assoc. pneumonia	15	742	6.94	3.61	7.10	9.44
INV-assoc. bronchitis	15	251	2.35	0.32	1.86	3.71
NIV-assoc. lower respiratory infections (a)	(b)					
NIV-assoc. pneumonia (a)	(b)					
NIV-assoc. bronchitis (a)	(b)					
EVD-assoc. meningitis (a)	(b)					

(a) optional surveillance component

(b) insufficient data



KISS Hospital Infection Surveillance System
ITS-KISS Component
Calculation period: January 2005 to December 2009

Reference data – statistics for most common pathogens (Type of station: ALL)

Table 3: Total device-associated infections with given pathogen (% of total infections) on units of this type

Pathogen	Sum	UC-assoc. UTI	CVC-assoc . BSI (B1 only)	INV-assoc. resp.infect.	INV-assoc. pneumonia	INV-assoc. bronchitis	NIV-assoc. resp.infect. (a)	NIV-assoc. pneumonia (a)	NIV-assoc. bronchitis (a)	EVD-assoc. meningitis (a)
E. coli	177 (11.78)	50 (22.52)	12 (4.17)	115 (11.58)	78 (10.51)	37 (14.74)				
Enterococcus spp.	172 (11.44)	33 (14.86)	50 (17.36)	89 (8.96)	69 (9.30)	20 (7.97)				
Enterococcus spp. (b)	83 (5.52)	25 (11.26)	29 (10.07)	29 (2.92)	23 (3.10)	6 (2.39)				
P. aeruginosa	161 (10.71)	27 (12.16)	2 (0.69)	132 (13.29)	83 (11.19)	49 (19.52)				
S. aureus	114 (7.58)	1 (0.45)	27 (9.38)	86 (8.66)	61 (8.22)	25 (9.96)				
MRSA (of S. aureus)	41 (35.96)		14 (51.85)	27 (31.40)	21 (34.43)	6 (24.00)				
C. albicans	245 (16.30)	16 (7.21)	17 (5.90)	212 (21.35)	172 (23.18)	40 (15.94)				
C. albicans (b)	115 (7.65)	13 (6.31)	14 (4.86)	87 (8.76)	66 (8.89)	21 (8.37)				
Klebsiella spp.	154 (10.25)	21 (9.46)	13 (4.51)	120 (12.08)	87 (11.73)	33 (13.15)				
Coagulase neg. Staph.	194 (12.91)	6 (2.70)	134 (46.53)	54 (5.44)	42 (5.66)	12 (4.78)				
Coagulase neg. Staph (b)	127 (8.45)	5 (2.25)	110 (38.19)	12 (1.21)	8 (1.08)	4 (1.59)				
Enterobacter spp.	139 (9.25)	17 (7.66)	12 (4.17)	110 (11.08)	74 (9.97)	36 (14.34)				
ANC	67 (4.46)	22 (9.91)	4 (1.39)	41 (4.13)	28 (3.77)	13 (5.18)				
Total pathogens in table	1,423	193	271	959	694	265				
Total other pathogens	471	61	55	355	271	84				
Total pathogens	1,894	254	326	1,314	965	349				
Total infections w/o pathogens	123	2	0	121	121	0				
Total infections w/ pathogens	1,380	220	288	872	621	251				
Total infections	1,503	222	288	993	742	251				

(a) optional surveillance components

(b) as sole cause of disease

(c) UC-assoc. UTI + CVC-assoc . BSI (nur B1) + INV resp.infect. + NIV resp. infect. (a) + EVD meningitis (a) (d) not enough data