



Scientific Institute of Public Health



National surveillance of nosocomial bloodstream infections New trends and changes in the protocol

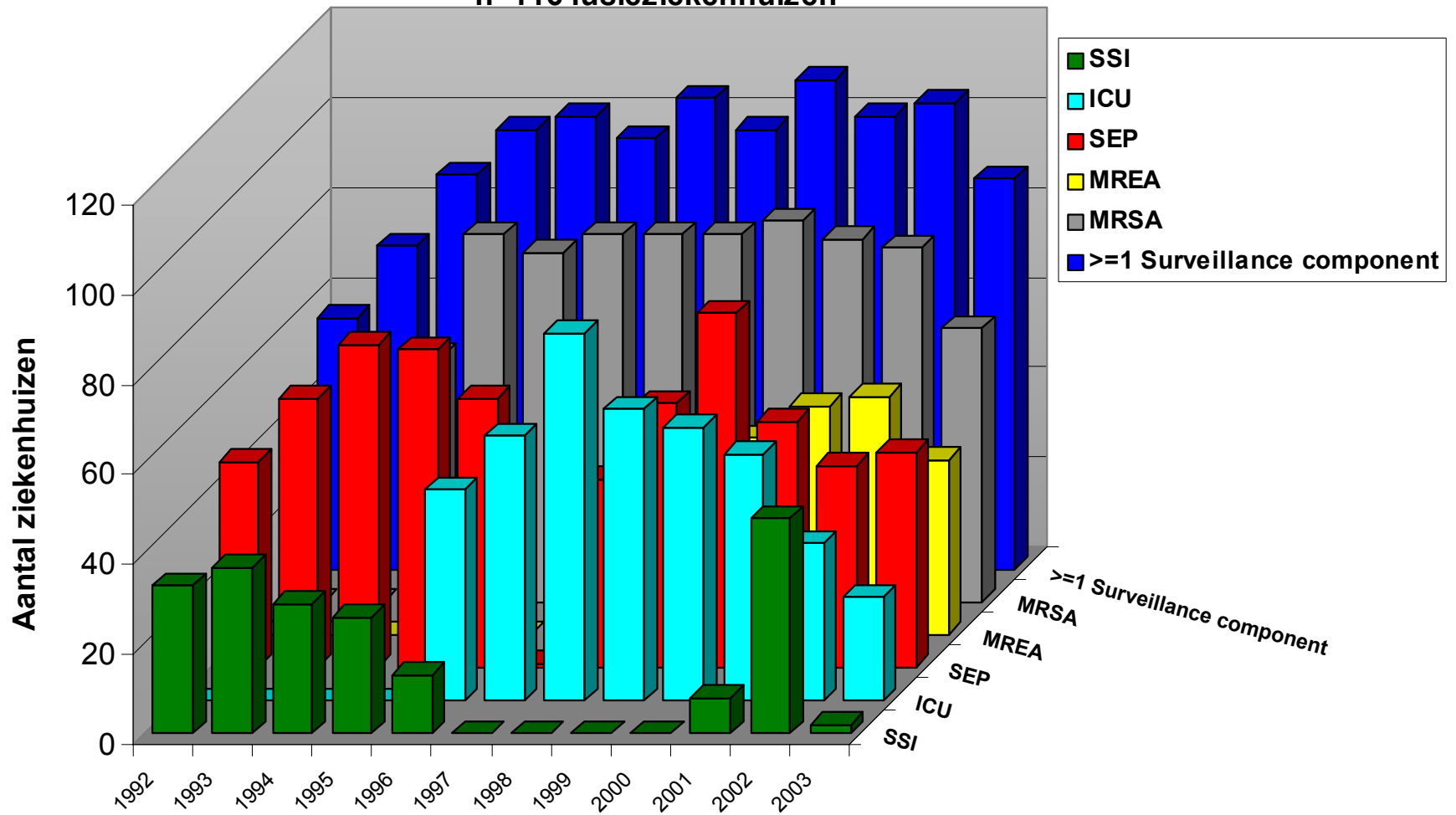
Dr. Carl Suetens, Scientific Institute of Public Health

NSIH seminar, 20-2-2004 , 2-3-2004

Material

- National surveillance of nosocomial bloodstream infections (BSI), 1992-2003
 - Hospital-wide
 - Aggregated denominator: admissions + patient-days per surveillance-quarter
 - N=32620 BSI-episodes>48h

Jaarlijkse deelname aan NSIH surveillance, 1992-2003 (status 31/1/2004),
n=116 fusieziekenhuizen

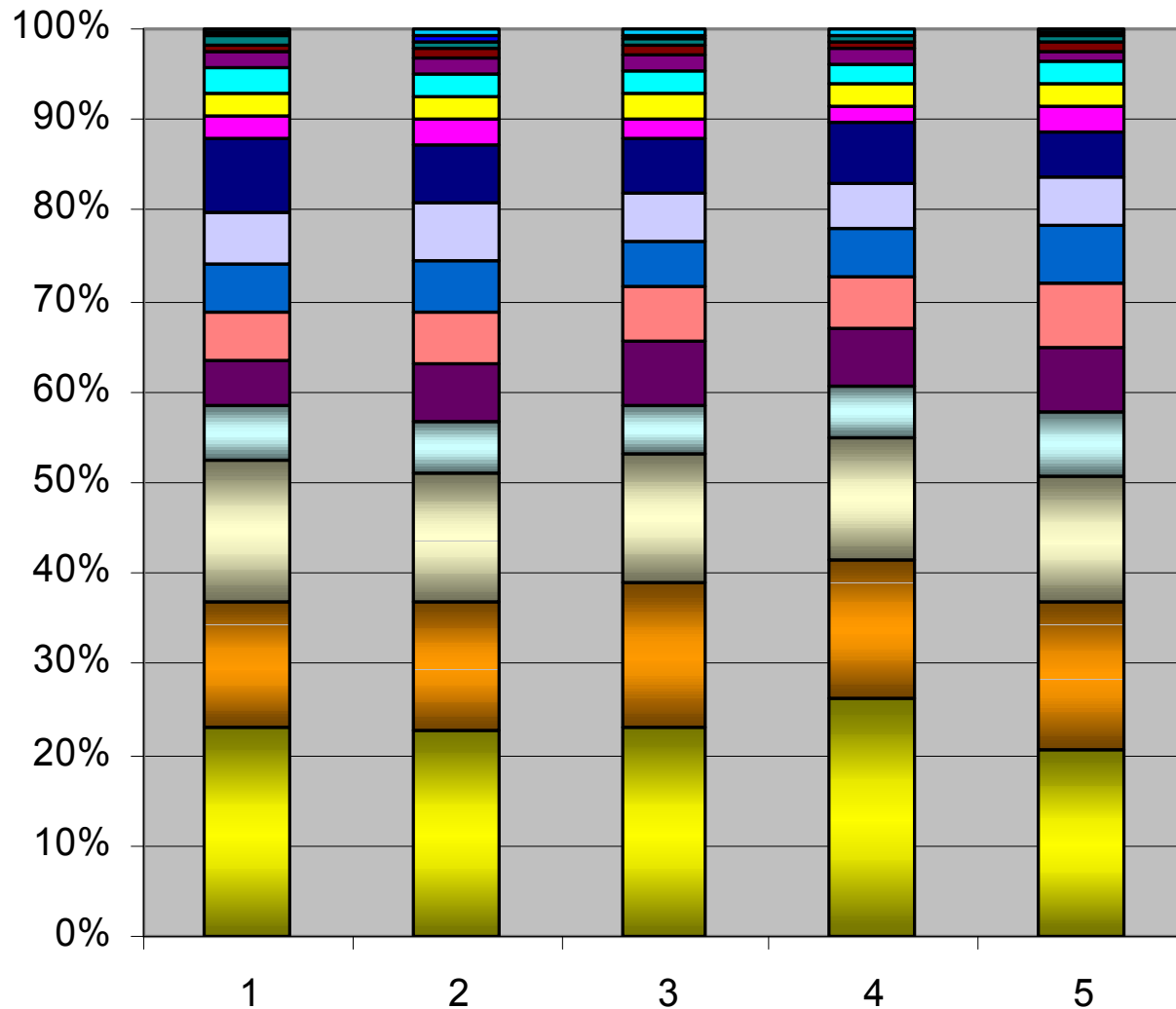


National surveillance of nosocomial BSI

- 154 hospital (sites), 87% of hosp. “fusions”
- Laboratory confirmed:
 - Recognized pathogens: ≥ 1 pos. hemoculture
 - Skin contaminant: 2 HC+
- Trend analysis: n=91 regular hospitals, corrected for n of hemocultures/1000 patient-days
- Estimates of total n of BSI: based on mean of 15 M patient-days/year in Belgian acute care hospitals (source MOH, Statbel, 2001,1996)

Belgian hospital-wide data

- Incidence of nosocomial bloodstream infections:
 - 5.9 BSI/1000 admissions
 - 7.3/10000 patient-days
 - = 10800 nosocomial BSI/year (= 14% of est. 75000)
 - BSI-associated mortality 32%
 - Definite relationship: 243 (198-294)
 - Probable relationship: 1165 (1079-1254)
- Incidence of nosocomial MRSA-cases: 3/1000 admissions, = 5500 n-MRSA/year



- *Salmonella spp.*
- *Stenotrophomonas spp.*
- *Citrobacter spp.*
- *Morganella spp.*
- *Bacteroides spp.*
- *Serratia spp.*
- *Proteus spp.*
- *Acinetobacter spp.*
- *Streptococcus spp.*
- *Pseudomonas spp.*
- *Klebsiella spp.*
- *Enterococcus spp.*
- *Enterobacter spp.*
- *Candida spp.*
- *Staphylococcus aureus*
- *Escherichia spp.*
- *Coagulase-neg. staphy*

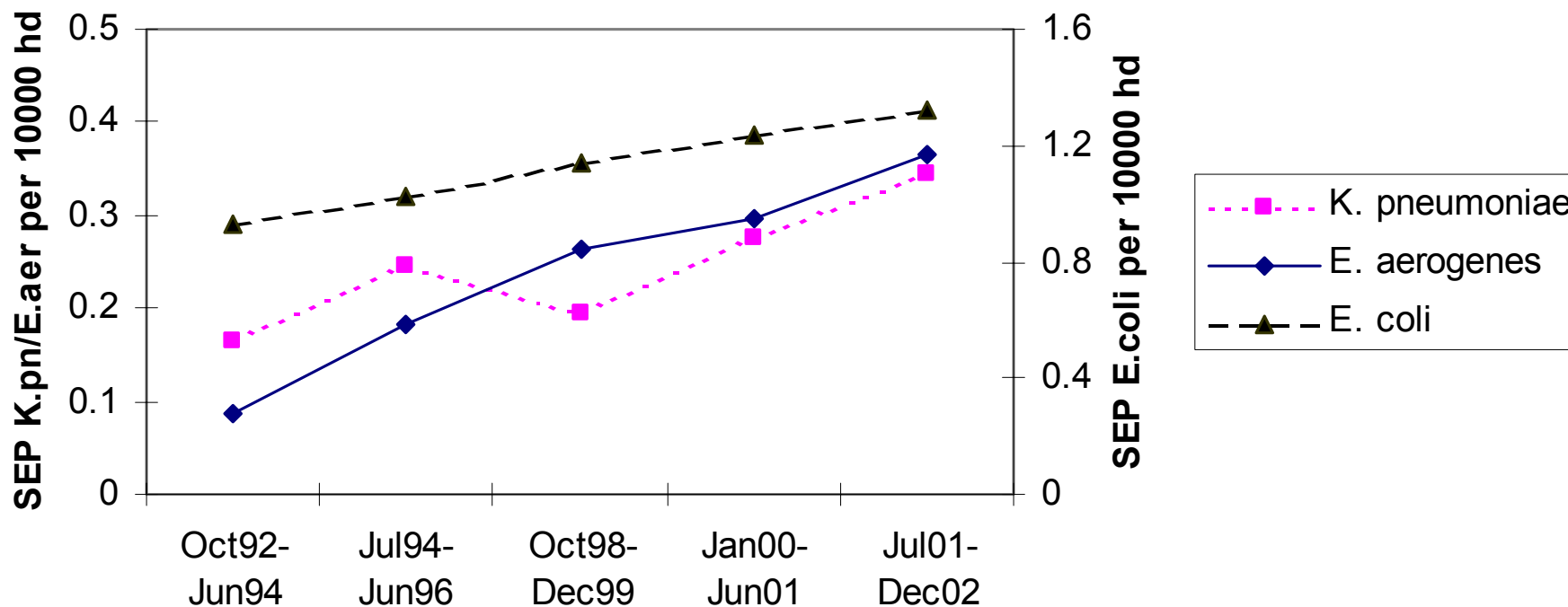
Evolutie van het incidentiecijfer van nosocomiale septicemieën (aantal SEP-episodes per 10000 hospitalisatiedagen) in 91 ziekenhuizen met regelmatige deelname, 1992-2003

n SEP/10000 ligdagen	Oct92- Jun94	Jul94- Jun96	Oct98- Dec99	Jan00- Jun01	Jul01- Dec03	p trend	
Alle septicemie episodes	5.84	6.96	7.22	7.99	8.40	p<0.05	↗
Catheter-gerelateerde septicemieën	1.46	1.46	1.63	1.85	1.80	NS	
Septicemieën van ongekende oorsprong	1.96	2.38	2.21	2.99	3.20	p<0.05	↗
Secundaire septicemieën	2.43	3.13	3.38	2.99	3.40	NS	
SEP incidentie volgens regio							
Vlaanderen	5.65	6.44	6.50	7.95	7.20	NS	
Brussel	6.37	8.98	9.35	9.16	8.14	NS	
Wallonië	5.96	6.91	7.45	7.74	9.84	p<0.05	↗
Sensitiviteit van de surveillance							
N hemoculturen/1000 ligdagen	22.45	27.57	32.43	31.33	33.19	p<0.05	↗

Evolutie van het incidentiecijfer van pathogeen-specifieke septicemieën, 1992-2003, gram -

n SEP/10000 ligdagen	Oct92- Jun94	Jul94- Jun96	Oct98- Dec99	Jan00- Jun01	Jul01- Dec03	p-trend	
Gram-positieve kokken	3.09	3.52	3.75	4.28	4.08	p<0.05	↗
CNS	1.57	1.99	2.05	2.37	2.08	NS	
<i>S.aureus</i>	0.79	0.8	0.9	1.05	1.09	p<0.05	↗
<i>Enterococcus spp.</i>	0.31	0.35	0.43	0.45	0.61	p<0.05	↗
<i>E.faecalis</i>	0.18	0.27	0.31	0.28	0.42	p<0.05	↗
<i>Streptococcus spp.</i>	0.54	0.5	0.42	0.52	0.43	p<0.05	↘
Enterobacteriaceae	1.93	2.35	2.46	2.64	3.02	p<0.05	↗
<i>Eschericia spp.</i>	0.92	1.03	1.1	1.2	1.35	p<0.05	↗
<i>Enterobacter spp.</i>	0.3	0.43	0.51	0.54	0.59	p<0.05	↗
<i>E.aerogenes</i>	0.09	0.18	0.26	0.3	0.26	p<0.05	↗
<i>E.cloacae</i>	0.16	0.19	0.2	0.2	0.27	NS	
<i>Klebsiella spp.</i>	0.3	0.39	0.31	0.4	0.58	p<0.05	↗
<i>K.pneumoniae</i>	0.16	0.24	0.18	0.25	0.32	p<0.05	↗
<i>K.oxytoca</i>	0.12	0.14	0.11	0.13	0.24	NS	
<i>Proteus spp.</i>	0.15	0.19	0.21	0.2	0.22	NS	
<i>Serratia spp.</i>	0.19	0.19	0.17	0.16	0.17	NS	
<i>Citrobacter spp.</i>	0.04	0.05	0.03	0.05	0.05	NS	

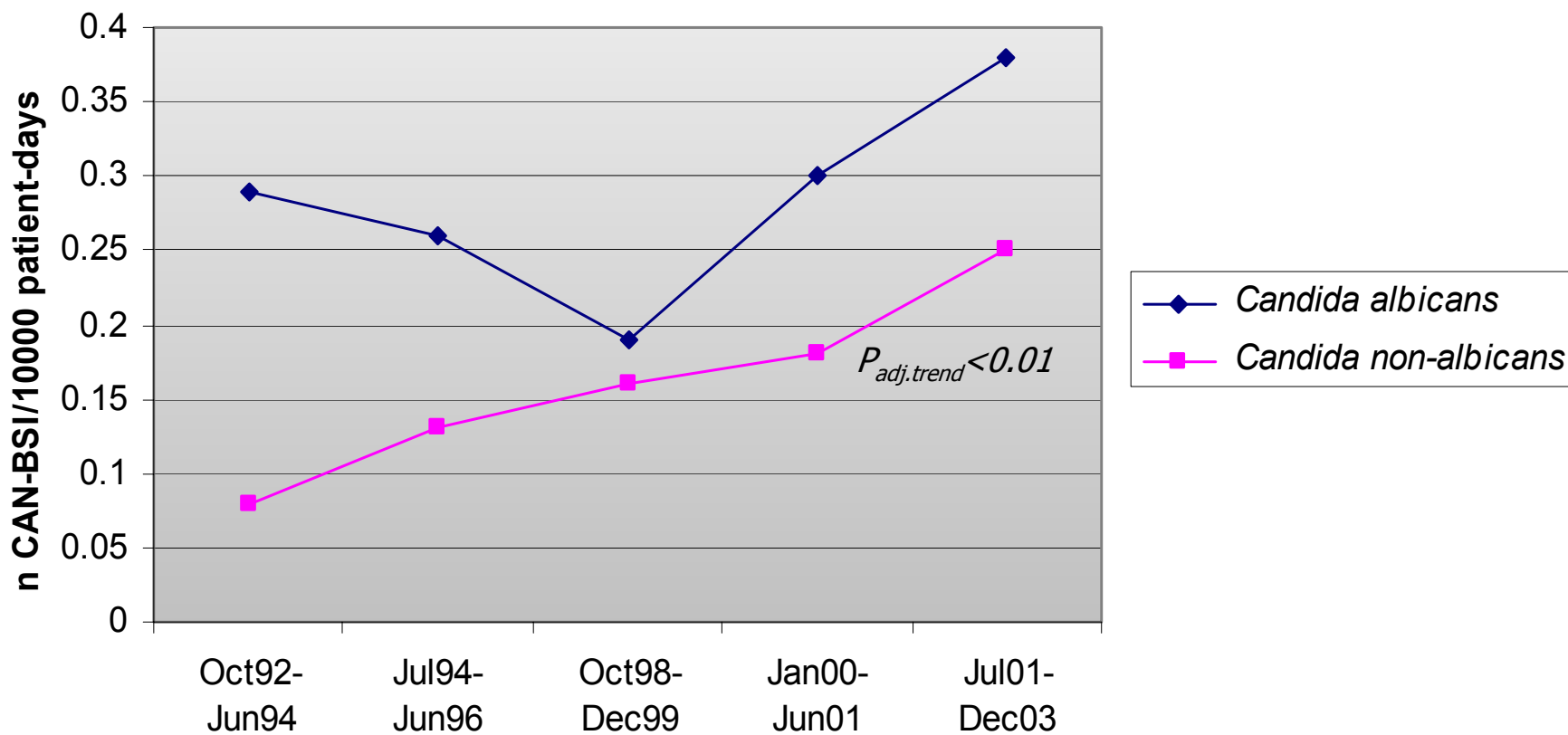
Evolutie van het incidentiecijfer van pathogeen-specifieke septicemieën, 1992-2003, ESBL-producerende enterobacteriaceae



Evolutie van het incidentiecijfer van pathogeen-specifieke septicemieën, 1992-2003, non-fermenters & fungi

n SEP/10000 ligdagen	Oct92- Jun94	Jul94- Jun96	Oct98- Dec99	Jan00- Jun01	Jul01- Dec03	p-trend	
Non-fermenters	0.6	0.82	0.6	0.64	0.85	NS	
<i>Pseudomonas spp.</i>	0.36	0.47	0.37	0.41	0.45	NS	
<i>Acinetobacter spp.</i>	0.17	0.25	0.17	0.18	0.26	NS	
<i>A.baumannii</i>	0.05	0.05	0.07	0.07	0.17	p<0.05	↗
<i>Stenotrophomonas spp.</i>	0.03	0.04	0.03	0.01	0.06	NS	
Candida spp.	0.37	0.39	0.35	0.47	0.63	p<0.05	↗
<i>C.albicans</i>	0.29	0.26	0.19	0.3	0.38	NS	
Candida non-albicans	0.08	0.13	0.16	0.18	0.25	p<0.05	↗

Evolution of the incidence of *Candida*-BSI in Belgium, national surveillance of nosocomial BSI, 1992-2003



Discussie

- Stijging globale SEP incidentie, vnl. in Wallonië
- Stijging SEP-incidentie \sim AMR
- Wijziging protocol:
 - Nieuw KD: catheter-BSI behouden
 - Link met GOSPIZ centrale stammencollectie
 - AB resistentie gegevens