

SURVEILLANCE BLOODSTREAM INFECTIONS IN BELGIAN HOPITALS ('SEP') RESULTS ANNUAL REPORT data 2000-2014

**SEP Workgroup Meeting
24 June 2015**

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Objectives of SEP workgroup meeting



- Results SEP annual report 2000-2014
- The future:
 - Discussion of changes for protocol
 - Preparing healthdata.be
- SEP research projects

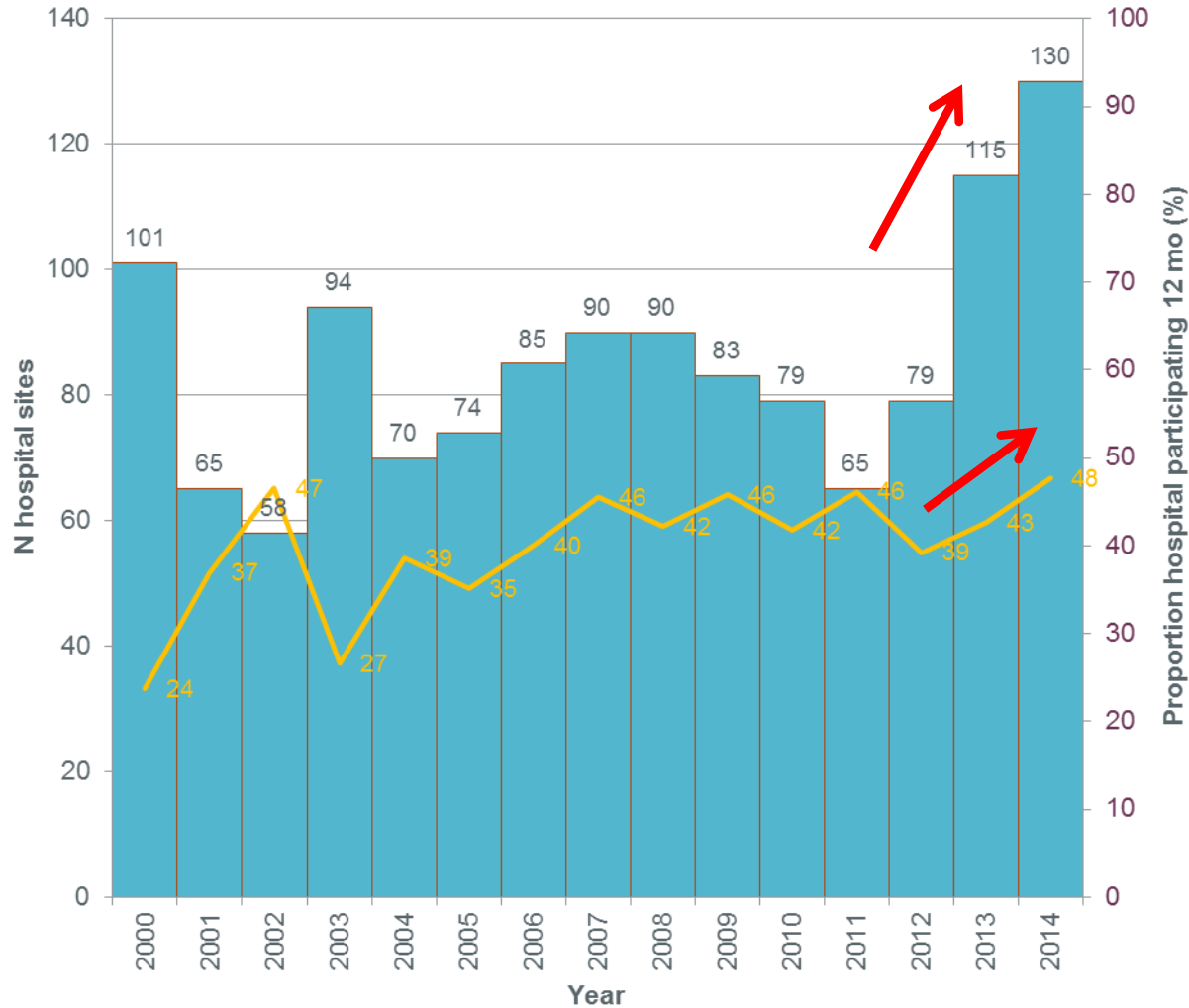
Data SEP surveillance Belgium – 2000-2014



- Participation
- Trends 2000-2014
- SEP description - 2014
- Microbiology – antibiotic resistance

PARTICIPATION 2000-2014

High participation!



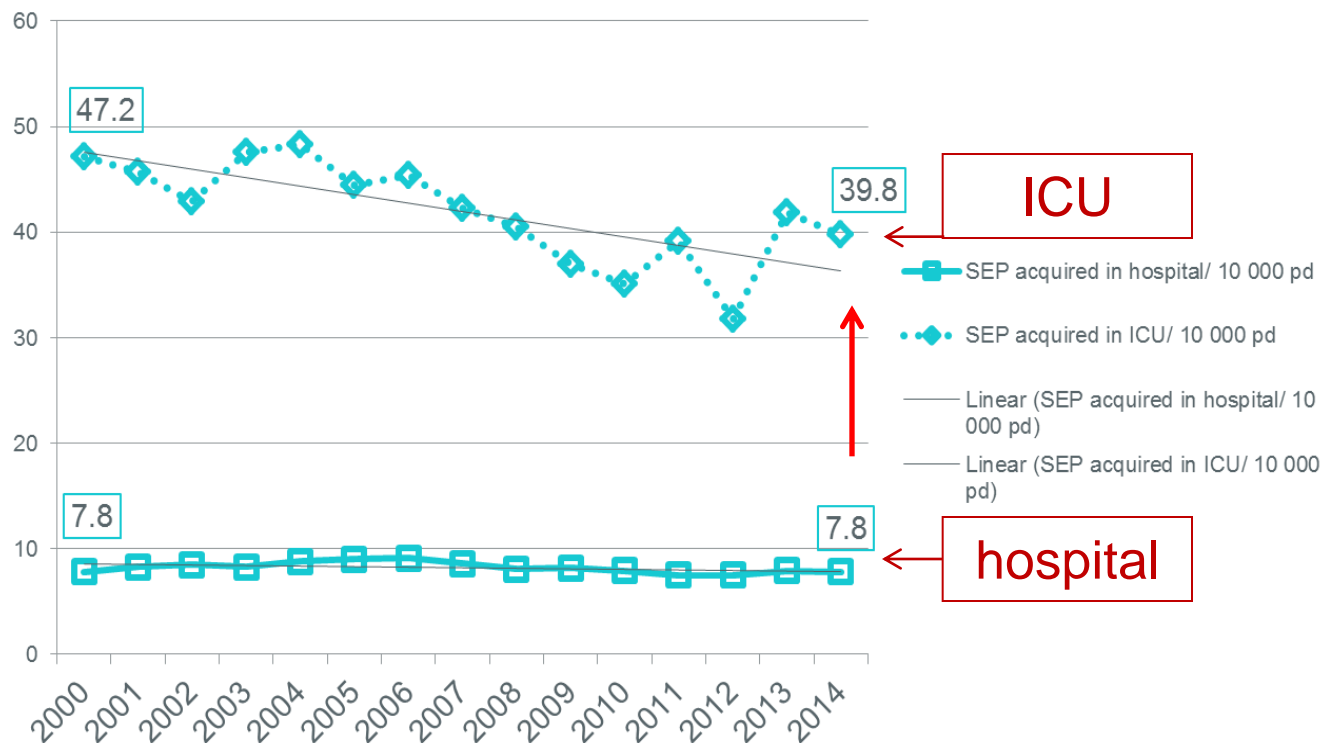
Mandatory since
2014
(AR/KB 08 jan. 2015)

■ N hospitals ≥3mo
— % hospitals 12 mo

**Minimum 3 months / year*

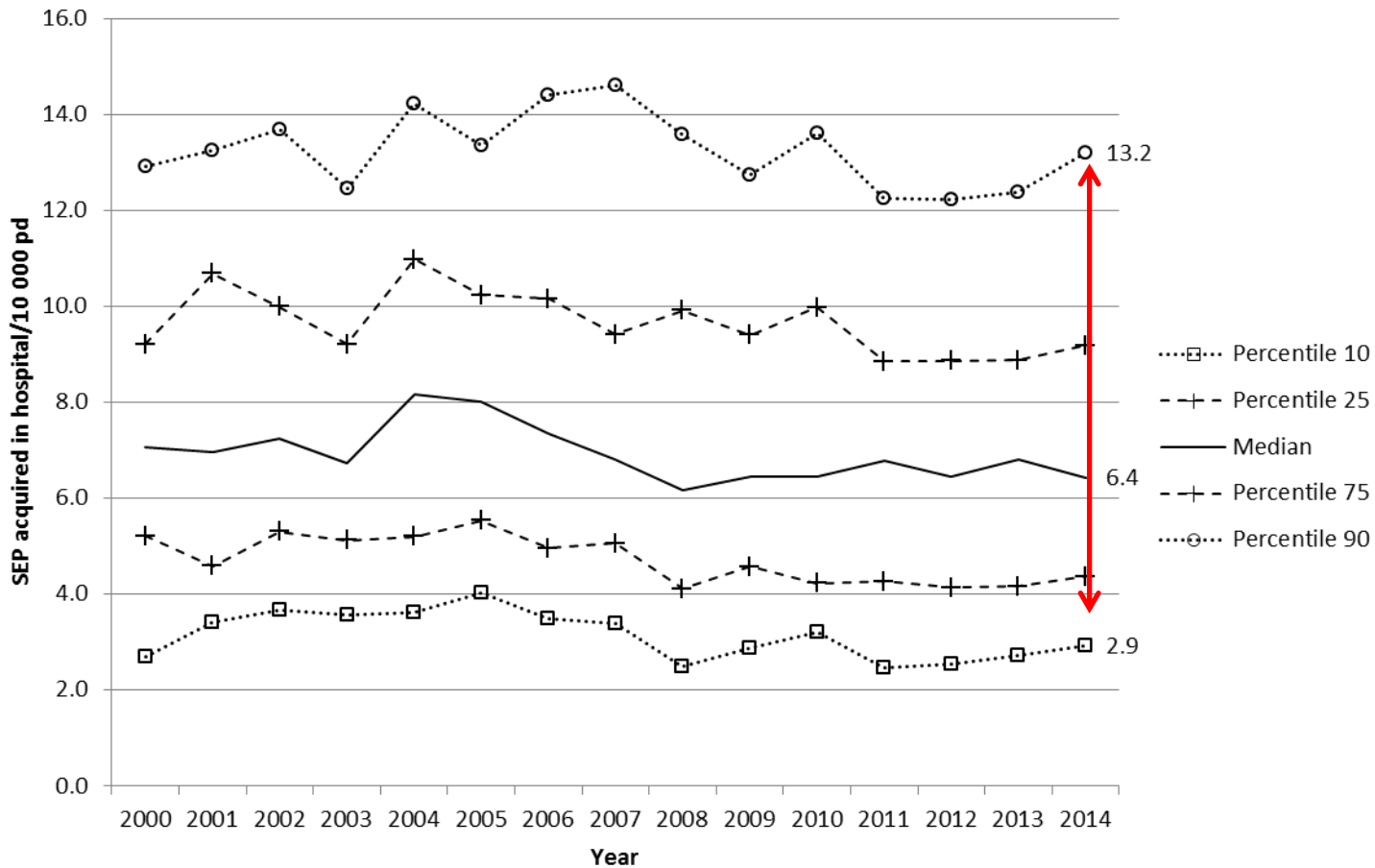
TRENDS 2000-2014

Mean incidences/10 000 pd, 2000-2014

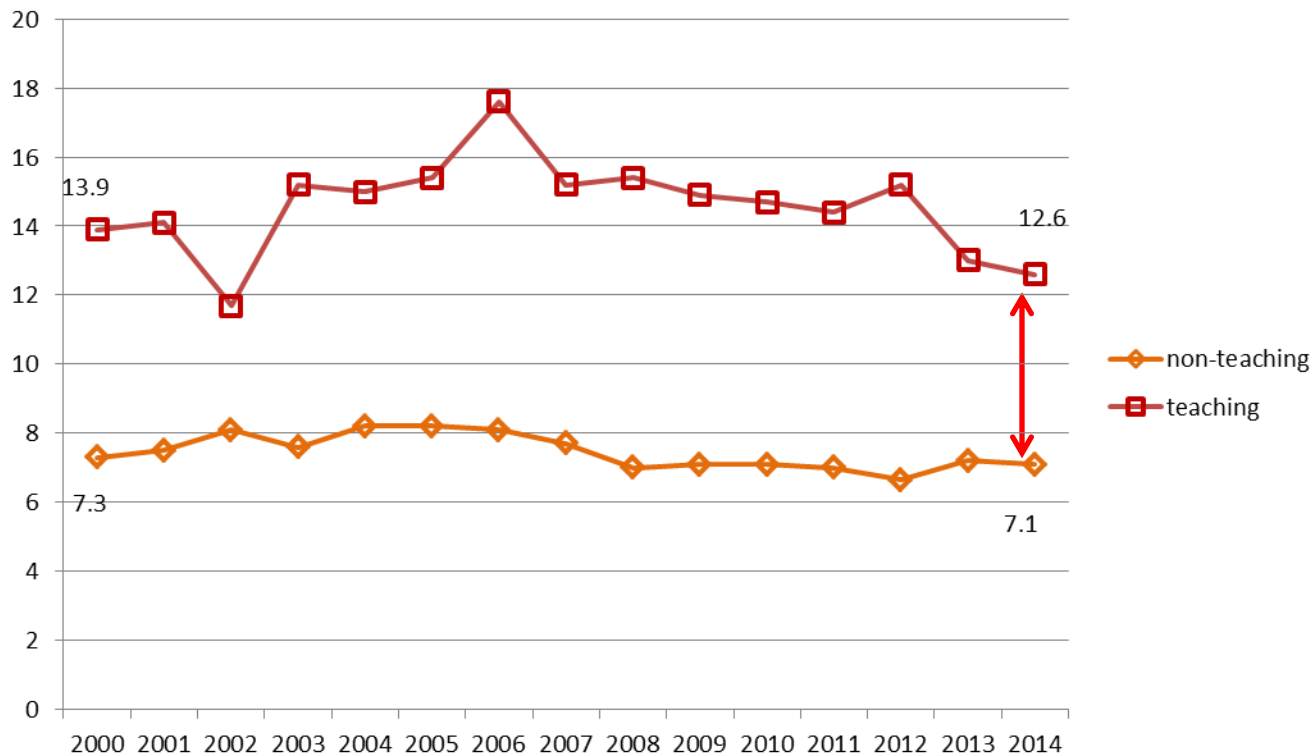


Trend hospital=
Trend ICU ↓, but ↑ 2013-14
Incidence ICU (5x hospital)

Large variation incidence HA-SEP /10.000 pd



Incidence SEP acquired in teaching versus non-teaching hospital /10.000 pd - 2000-2014



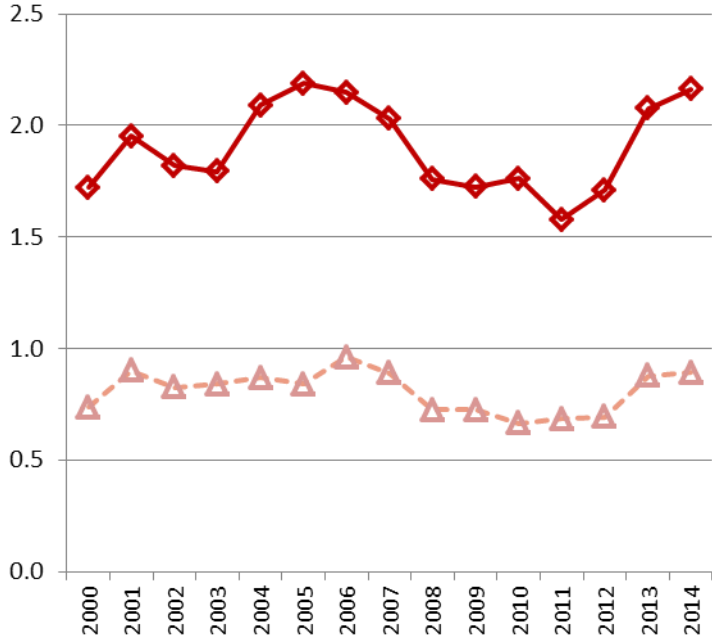
Teaching hospital ↓ since 2013

↑ participation since 2013

Mean incid = Total CVC-SEP cases * 10.000 / total patient days

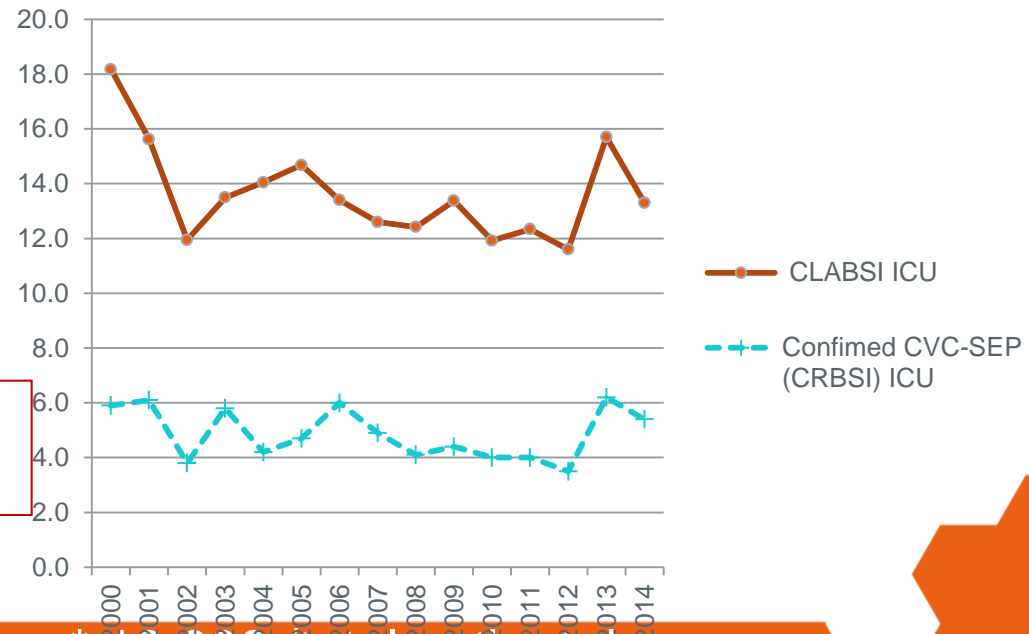
Incidence CVC-SEP acquired in hospital or ICU /10.000 pd - 2000-2014

HOSPITAL ↑ since 2012



- CLABSI hospital
- CVC-SEP confirmed (CRBSI) hospital

ICU ↑ 2013



- CLABSI ICU
- Confirmed CVC-SEP (CRBSI) ICU

Mean incid = Total CVC-SEP cases * 10.000 / total patient days

CLABSI = central line associated SEP with suspected origin CVC & (unknown & cvc present).be

SEP DESCRIPTION - 2014

General SEP 2014

- Total SEP episodes: 9.321
- HA-SEP: 6.847 (6.314 patients, 7.542 mo)
- Case definition: 87% pathogen

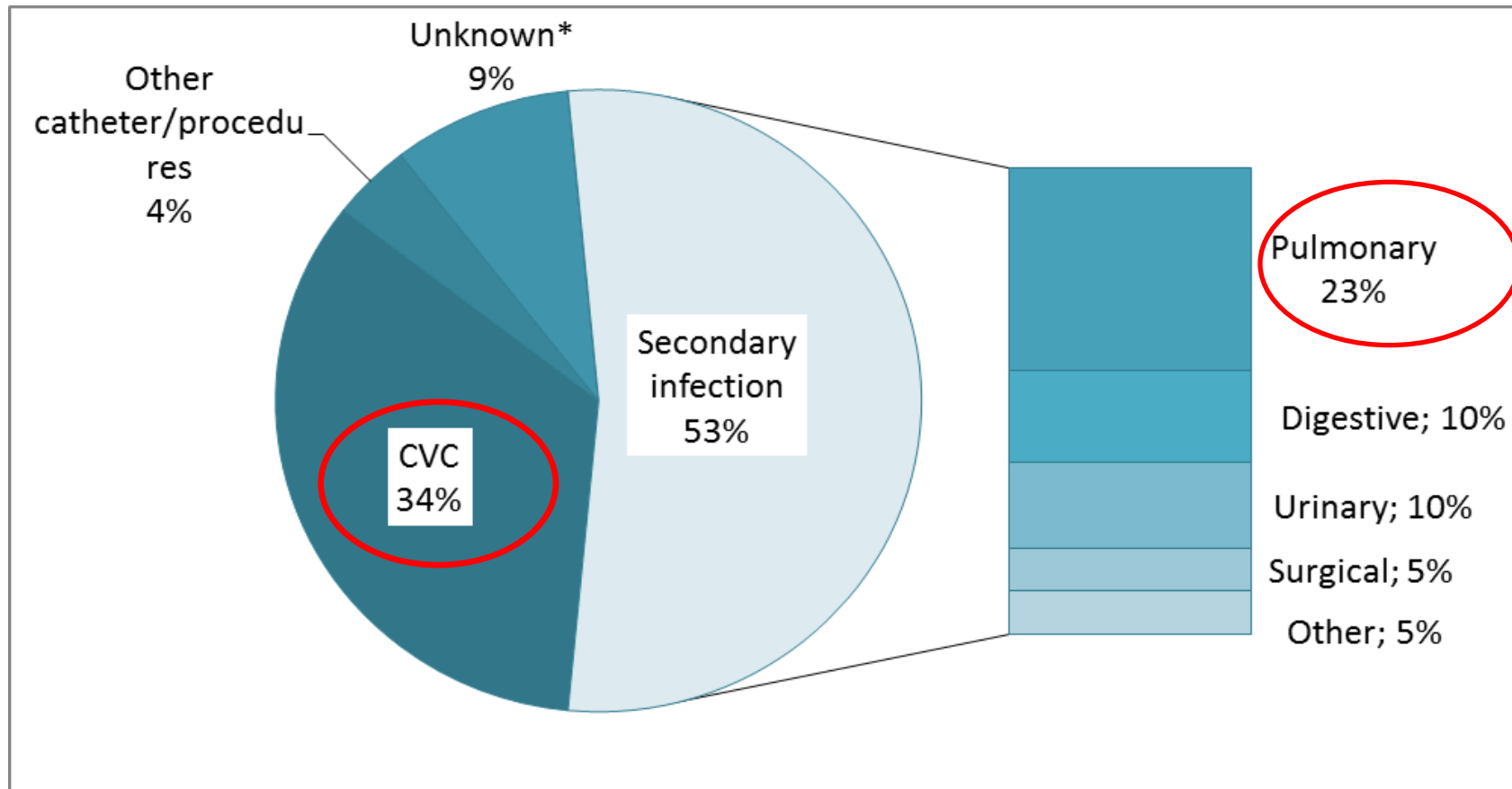
- Median time to infection (P25-P75): 13 d (6-25)
- Median age (P25-P75): 71 y (59-81)
- Crude mortality: 19% (23% missing data)

SEP acquired in hospital per specialty, 2014

SPECIALTY	Total SEP acquired hospital	
	N	%
Internal medicine	1 930	28
Intensive Care Unit*	1 696	25
Surgery	1 066	15
Geriatrics	908	13
Oncology-hematology	872	13
Pediatrics	78	1
Unknown / other	297	5
TOTAL	6 847	100

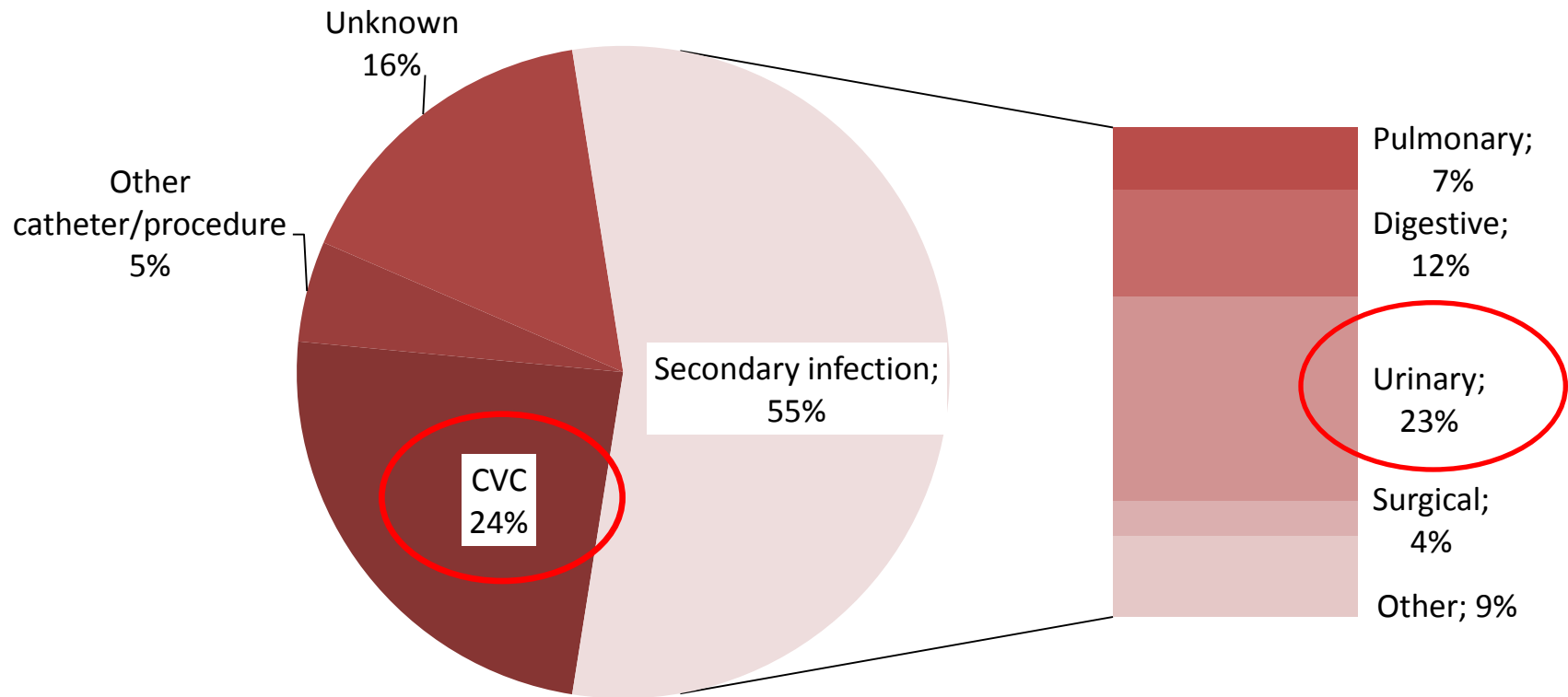
*Including 128 SEP in neonatal ICU (2%)

SEP acquired in ICU per origin, 2014



ICHE 2014 May;35(5): 69% of ICU acquired BSI preventable
NEJM 2006 Dec 28;355(26): up to 66% of CR-BSI preventable

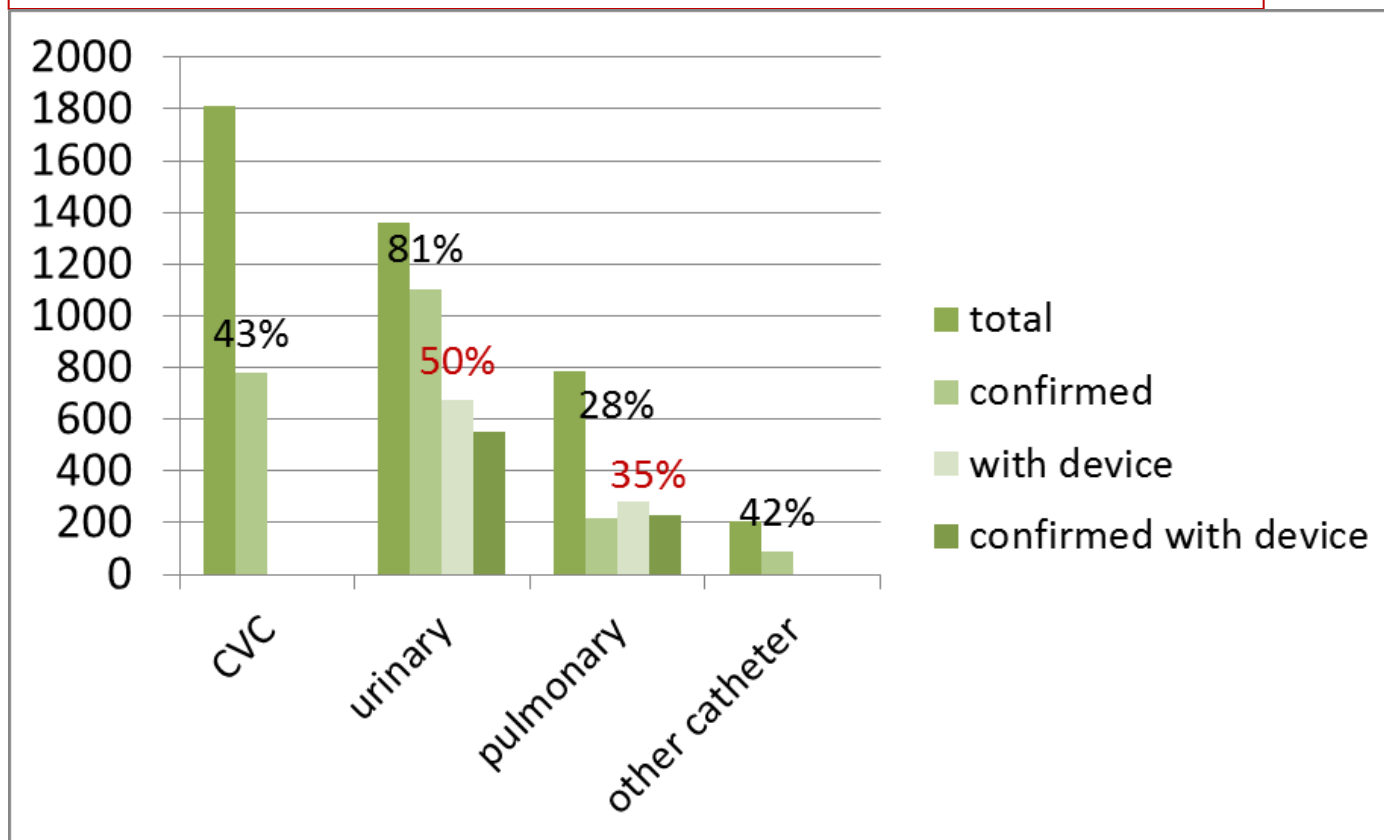
SEP acquired in non-ICU per origin, 2014



In ICU vs non-ICU: higher proportion urinary

SEP acquired in hospital: documented* or associated to device, 2014

45% HA-SEP confirmed origin
43% HA-SEP association with device



*Documented: same micro-organism found in blood culture and suspected origin

Microbiology and Antibiotic resistance

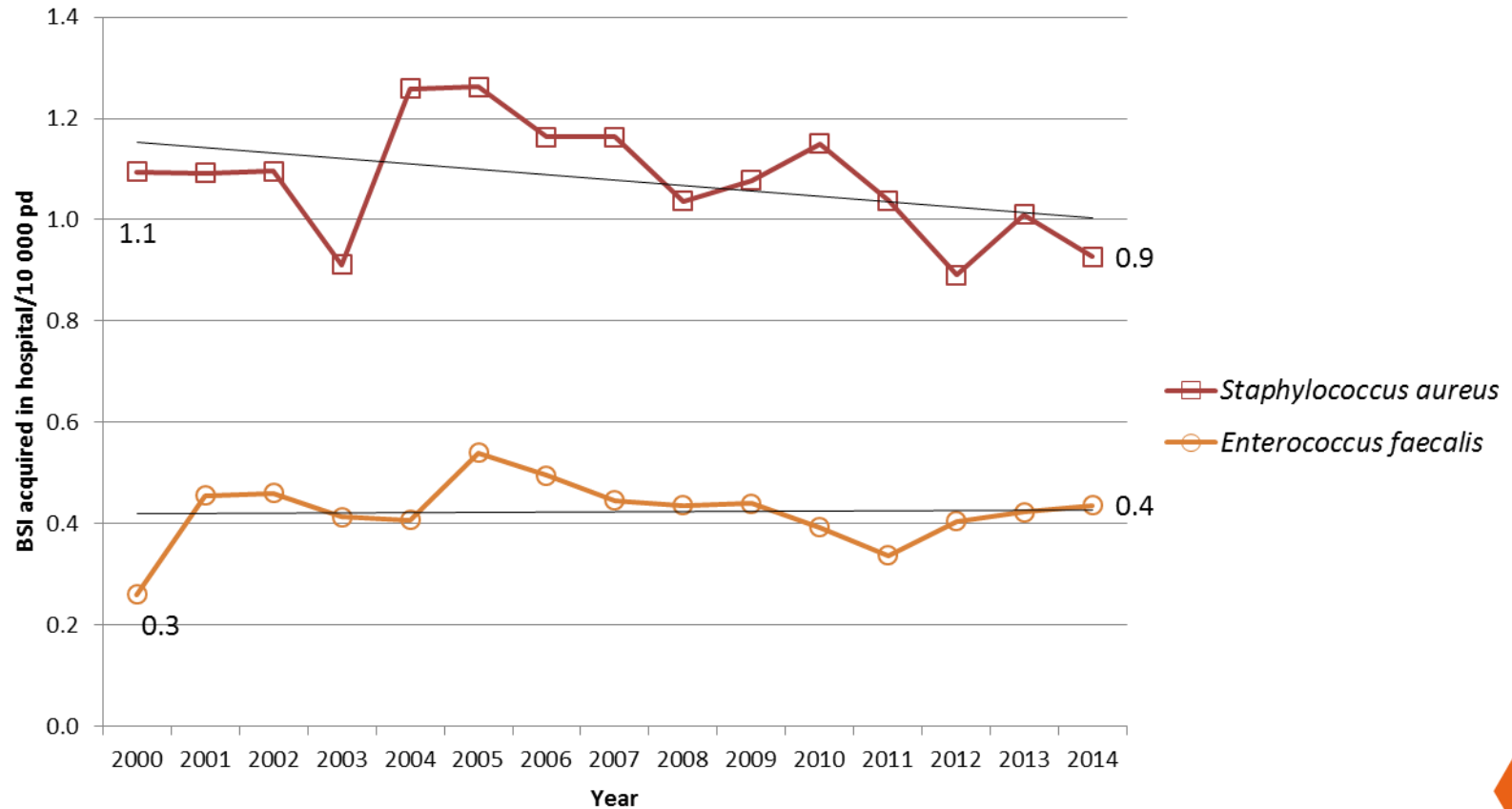
Description & trends

TOP 10 causal micro-organismes, 2014

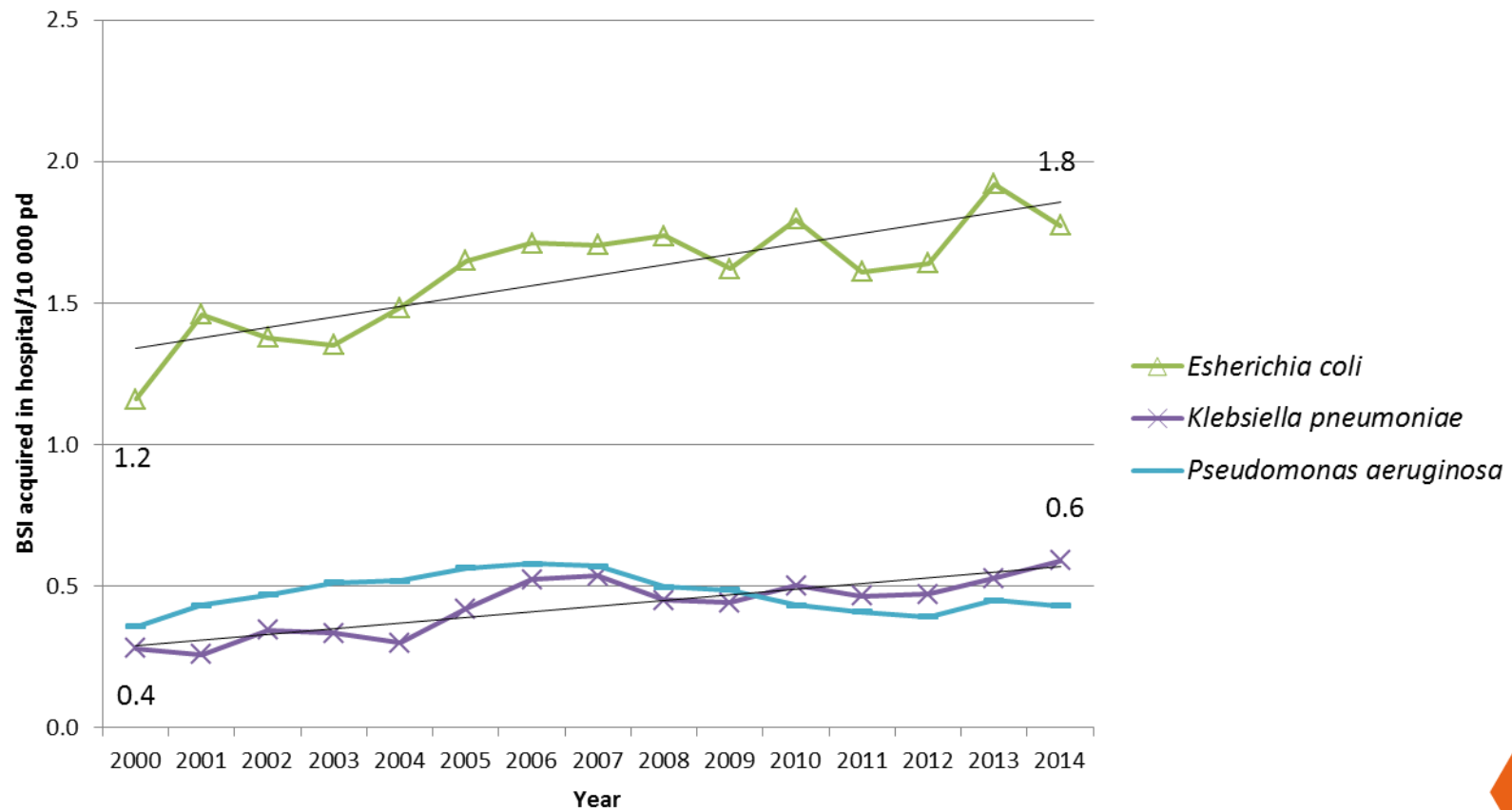
	HOSPITAL acquired		Other	
<i>Escherichia coli</i>	1 559	21%	1 062	40%
Coagulase-neg. staphylococci	1 150	15%	141	5%
<i>Staphylococcus aureus</i>	831	11%	290	11%
<i>Klebsiella pneumoniae</i>	504	7%	120	4%
<i>Enterococcus faecalis</i>	390	6%	68	3%
<i>Pseudomonas aeruginosa</i>	395	5%	71	3%
<i>Enterococcus faecium</i>	278	4%	32	1%
<i>Enterobacter cloaca</i>	248	3%	22	1%
<i>Candida albicans</i>	189	2%	6	0%
<i>Streptococcus sp. other</i>	180	2%	124	5%
Other	1 818	24%	780	27%
Total	7 542	100%	2 634	100%

Skin contaminant unique causal germ in 37% of CLABSI

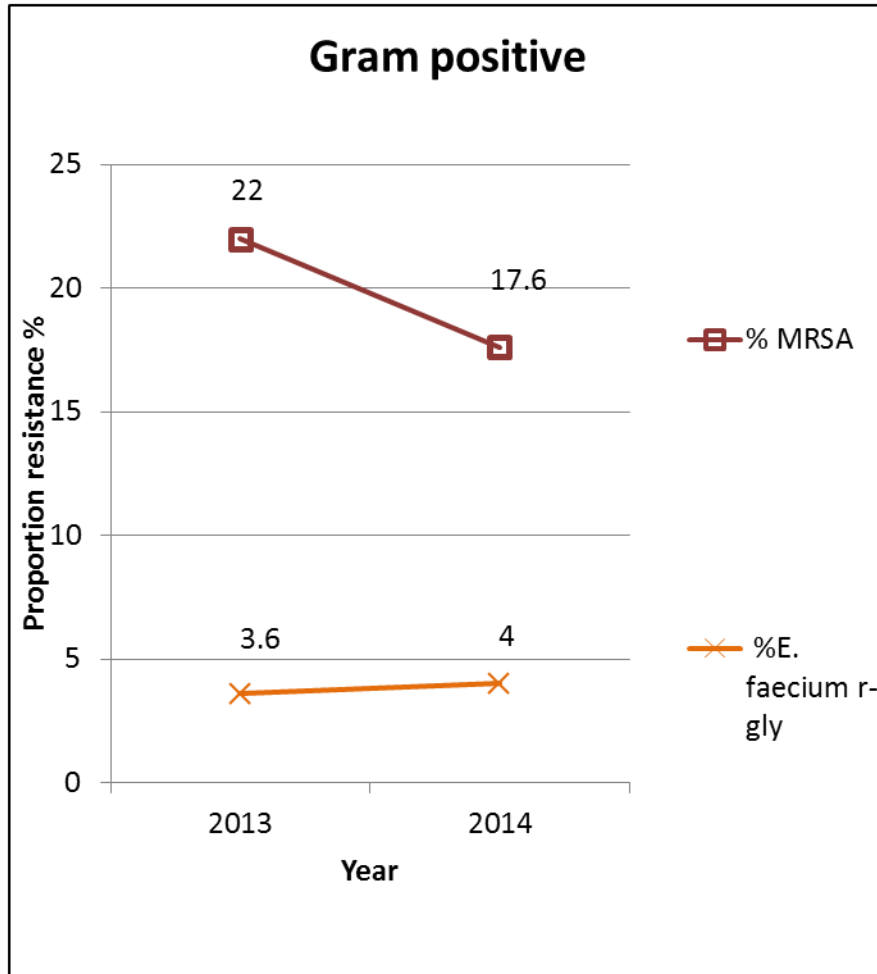
Mean incidence HA-SEP, Gram-positive micro-organismes (/10 000pj) - 2000-14



Mean incidence HA-SEP, Gram-negative micro-organism (/10 000pd) - 2000-14



Proportion resistant Gram positive microorganisms, 2013-14

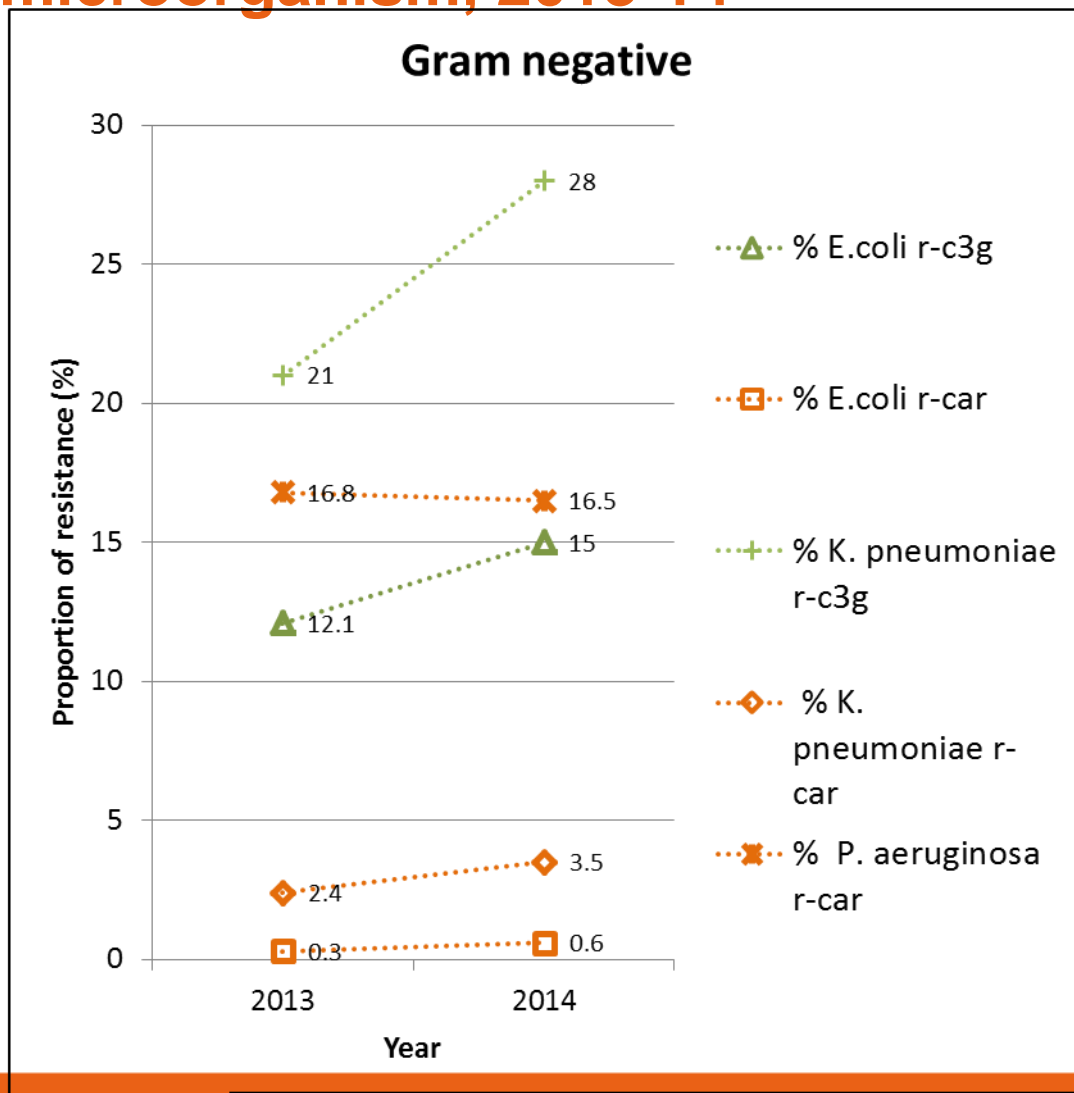


Other national sources MRSA :

- MRSA Surveillance in Belgium, 2013* 17,4%
- EARS-Net result Belgium, 2013** : 16,9%

*include clinical samples (nosocomial & other infection),
**include culture blood and cerebrospinal fluid (CSF) (nosocomial & other infection)

Proportion resistant Gram negative microorganism, 2013-14



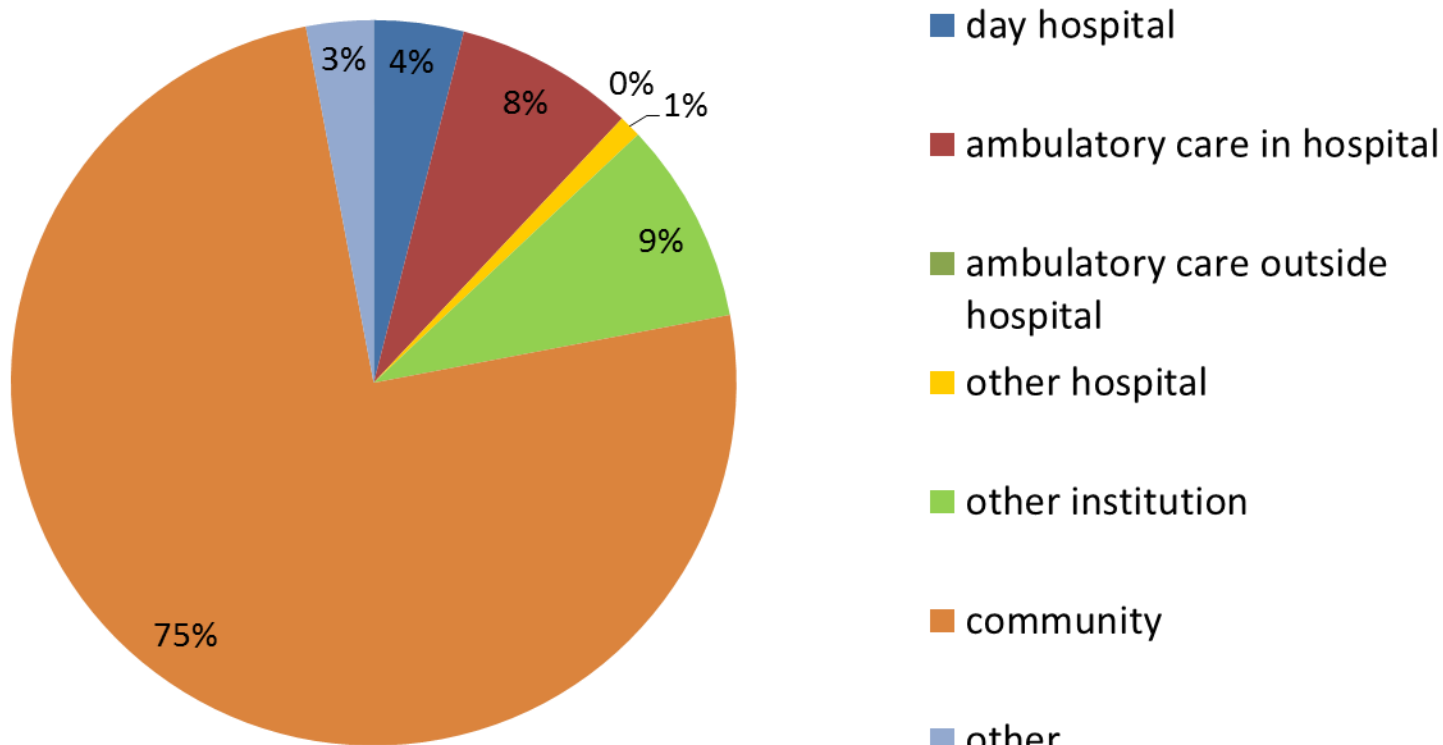
-EARS-Net result Belgium, 2013**:
C3G-R: E.coli 8%
 K. pneumoniae 15,3%

CAR-R: E.coli <0.1% -
 K. pneumoniae 0.3%

-EARS-Net result Belgium, 2013**:
P. Aeruginosa CAR-R: 11%

**include culture blood and CSF (nosocomial & other infection)

Optional: origin SEP not acquired in hospital



N= 846

Completed in only 34% of SEP not acquired during hospitalisation

Take home messages – Results (1)



- Increased participation
- Trends in mean incidence 2000-14: selection bias!
 - SEP acquired in hospital: stable
 - SEP-ICU: decrease 2000-12, but ↑ since 2013
 - CLABSI/10.000 pd: ↑ since 2012
 - SEP Gram-: ↑
- Variability incidences between hospitals +++
- Incidence teaching higher than non-teaching

Take home messages – results (2)



- Priority targets for prevention:
 - Device associated
 - CLABSI: 26%
 - Other devices
 - Specialty: 25% acquired in ICU
- % AB resistance:
 - ↓ MRSA
 - ↑ C3G-r *E.coli*, *K. pneumoniae* (also ↑CAR-r)
- Detailed SEP report : July 2015

Useful links

- NSIHweb
 - SEP, HHM: <https://nsihweb.wiv-isp.be/>
 - MRSA, AB, Cdiff : <https://www.wiv-isp.be/nsihweb>
- SEP protocol (revised January 2015)
 - <https://nsihweb.wiv-isp.be/> > SEP > Download
 - <https://www.wiv-isp.be/nsihweb> > SEP > Download

**Thanks to all participating
hospitals!**

Questions/comments on results?