Session 10: Epidemic Intelligence Information System (EPIS) & national experiences in early warning and response of AMR & HAI

Moderators
Niels Frimodt-Møller, Niels Kleinkauf
Rapporteur
Barbro Olsson Liljequist

4 presentations

1. **Niels Kleinkauf, ECDC**: Presentation of the new EPIS module for Antimicrobial Resistance and Healthcare-associated infections (EPIS AMR-HAI).
2. **Bruno Coignard, France**: How to monitor rare, severe or emerging HAI? Implementation of a national HAI early warning and response system.
3. **Gunnar Kahlmeter, Sweden**: SVEBAR – the Swedish AMR Early Warning and Surveillance System.
4. **Nienke van de Sande-Bruinsma, The Netherlands**: The importance of national surveillance on antimicrobial resistance: The Dutch example.

What is EPIS?

- EPIS is a real-time web-based **communication platform** for rapid and secure expert information exchange related to potential public health events

- Access is restricted to nominated experts
- Participation is voluntary
- Hosted by ECDC
- Platform for exchange of un- and semi-structured information
- Neither redundant to TESSy nor to EWRS

Who will have access to EPIS AMR-HAI?

- **Network users**
  - nominated by the Member States
  - access rights to all urgent inquiries and public discussions
- **Network guests**
  - nominated by the Member States
  - restricted access to particular urgent inquiry and associated discussion

ECDC users

- Can initiate and read urgent inquiry, post network announcements and read urgent inquiries and public discussions

ECDC guests (e.g. WHO)

- restricted access to particular urgent inquiry and associated discussion

Network architecture

- **Urgent inquiries** - Potential health event at the European level, contains up-to-date detailed information about an AMR-HAI event
- **Discussion Forum** – chat forum for public or private discussions which may or may not be associated to the Urgent Inquiry
- **Network announcements** – used to post any announcements that are relevant to the AMR-HAI network

National, HAI/AMR Early Warning and Response System, France (1)

- *Signalement des infections nosocomiales*
- Defined by law (26/07/2001)
- Mandatory notification of some HAI : emerging, severe, epidemic
  - Rare or severe infection, based on the characteristics of the pathogen, its resistance phenotype, or the infection site
  - Associated with a contaminated product or device, specific practices, the environment
  - Death associated with a HAI
  - Otherwise notifiable infectious diseases acquired in the hospital
- Objectives : assistance to healthcare facilities in investigation and control, threat detection, feedback of experience

2011 : Deployment of a Web-Based Application

http://www.invs.sante.fr/esin (public pages)

Data Feedback: Automated Reports (PDF)

e-SIN User

e-SIN Web App

RAPPORT AUTOMATISÉ E-SIN

1/7

Signalements en bref :

Produit le : 18/01/2011
Localisation : National
Signalement émis : entre le 01/01/2009 et le 31/12/2009

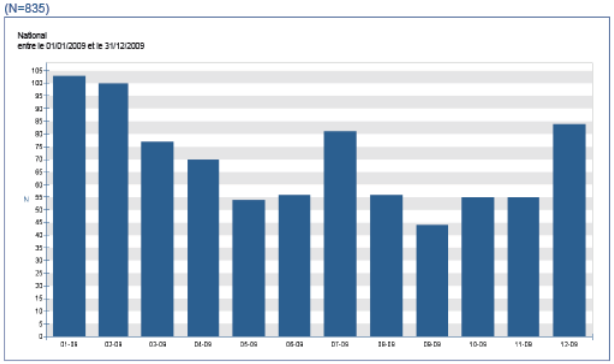
Etablissement(s) signalant(s) : N= 414 (nombre de Finess etab.différents)
Nombre de signalements : N= 835
Cas groupés : 43 % (% Nombre de signalements)
Investigations locales : 74 % (% Nombre de signalements)
Demande d'aide extérieure : 8 % (% Nombre de signalements)

Cas signalés : N= 4051
Décès signalés(1) : 5 % (% Nombre de cas signalés)

(1) Tel que déclaré sur la fiche de signalement et avant vérification du lien entre décès et infection

Signalements par année :
(N=835)

National
entre le 01/01/2009 et le 31/12/2009



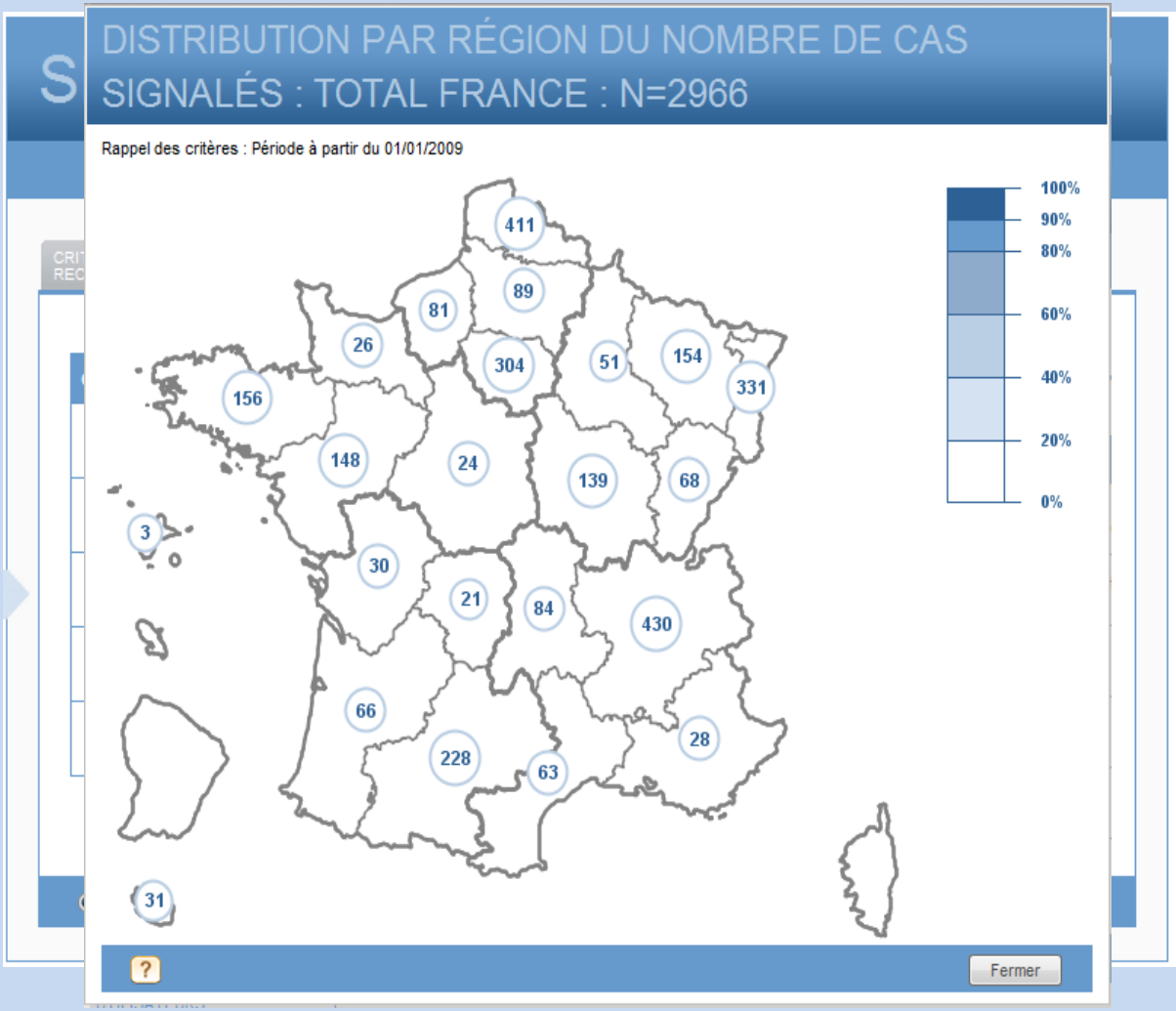
Délai entre la date du dernier cas d'un évènement et la date du signalement :
(N=835)

National
entre le 01/01/2009 et le 31/12/2009

	Minimum	p25	Mediane	p75	Maximum
Durée (jours)	-2	4	13	29	660382

Si le signalement rapporte un seul cas, la date de ce cas est prise en compte

Querying the Notification Database



Svebar

Swedish antimicrobial resistance early warning and surveillance system

Gunnar Kahlmeter, SMI and Växjö
Tomas Söderblom, SMI
Johan Struwe, SMI
Karin Tegmark-Wisell, SMI
Katarina Skärlund, SMI

Warsaw November 2011

Smi
SMITTSKYDDSINSTITUTET
Swedish Institute for Communicable Disease Control

Svebar – two components

- **Early warning (EW)**
- **Antimicrobial resistance surveillance**

- Automatic (but avoid pre-mapping)
- To deal early with proprietory issues
- **Offer benefits to participating laboratories**

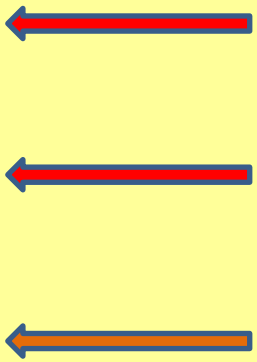
Svebar – Early Warning

	Labkod	Art	Antibiotika	Aktivt	Antal R	%R	%(I + R)	Period	C/L
	Alla	STAPHYLOCOCCUS AUREUS	VANKOMYCIN OR TEICOPLANIN OR DAPTOMYCIN OR LINEZOLID	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	ENTEROCOCCUS FAECIUM	VANKOMYCIN OR TEICOPLANIN	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	STREPTOCOCCUS PNEUMONIAE	AMOXICILLIN OR AMPICILLIN OR CEFOTAXIM OR CEFTRIAXON OR MEROPENEM OR PENICILLIN V	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	ESCHERICHIA COLI	ERTAPENEM OR IMIPENEM OR MEROPENEM OR DORIPENEM	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	KLEBSIELLA PNEUMONIAE	ERTAPENEM OR DORIPENEM OR IMIPENEM OR MEROPENEM	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	ESCHERICHIA COLI	AMPICILLIN	ja	0	30	Ej valt	3 månader	Centralt
	Alla	ESCHERICHIA COLI	CIPROFLOXACIN	ja	0	Ej valt	10	3 månader	Centralt
	Alla	STREPTOCOCCUS PNEUMONIAE	PENICILLIN V	ja	0	5	Ej valt	2 veckor	Centralt
	Alla	PSEUDOMONAS AERUGINOSA	CEFTAZIDIM AND DORIPENEM OR ERTAPENEM OR MEROPENEM OR IMIPENEM	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	STREPTOCOCCUS PNEUMONIAE	ERYTROMYCIN OR KLINDAMYCIN AND TETRACYKLIN AND TRIMETOPRIMSULFA	ja	1	Ej valt	Ej valt	2 veckor	Centralt
	Alla	STREPTOCOCCUS PYOGENES	PENICILLIN G	ja	1	Ej valt	Ej valt	2 veckor	Centralt

Svebar - Swedish surveillance of antimicrobial resistance

Svebar - AMR surveillance: E. *coli* in urine

Antibiotikum	Totalt	S %	I %	R %	Prim=1	S %	I %	R %
AMIKACIN	11	90,9	9,1	0	0	?	?	?
AMOXICILLIN	562	3,6	63,7	32,7	523	1	68,5	30,6
AMOXICILLINCLAVULANSYRA	5	60	0	40	1	100	0	0
AMPICILLIN	16 926	26,3	45,7	28	13 841	25,6	46,8	27,7
AZTREONAM	364	18,1	6	75,8	149	12,8	4,7	82,6
CEFADROXIL	36 723	56,5	40,2	3,3	25 591	60,8	36,4	2,8
CEFALEXIN	4	25	0	75	1	100	0	0
CEFEPIM	360	31,4	5,3	63,3	149	26,8	4	69,1
CEFOTAXIM	12 951	91	0,5	8,5	9 810	94,8	0,2	5
CEFOXITIN	160	34,4	0	65,6	3	33,3	0	66,7
CEFPODOXIM	239	7,5	0	92,5	16	6,2	0	93,8
CEFTAZIDIM	15 018	92,2	1,6	6,2	10 761	95	1	3,9
CEFTIBUTEN	22 573	98,6	0,1	1,4	17 478	98,7	0,1	1,2
CEFUROXIM	305	80	0,7	19,3	37	89,2	0	10,8
CIPROFLOXACIN	34 165	89,5	0,3	10,2	24 660	89,6	0,3	10,1
COLISTIN	13	100	0	0	12	100	0	0
DOXYCYKLIN	4	0	0	100	0	?	?	?
ERTAPENEM	156	98,7	0	1,3	5	100	0	0
FOSFOMYCIN	746	63,9	0	36,1	22	81,8	0	18,2
FUSIDINSYRA	1	0	0	100	0	?	?	?
GENTAMICIN	2 999	89,5	0,5	10	277	85,9	1,1	13
IMIPENEM	721	99,9	0	0,1	90	100	0	0



When?

- 5 laboratories online since up to 2 years
- + 2 more during 2011
- Another 10 – 15 during 2012
- All laboratories 2013

- Cost per lab: 4 000 – 8 000 €

The Dutch surveillance system ISIS-AR

For this purpose, the Dutch Infectious Diseases Surveillance

Information System on Antibiotic Resistance (ISIS-AR) and the

interactive database ISISweb were developed.

Multidisciplinary ISIS-AR team started in July 2007

Now, in 2011, 30 of the 66 Dutch Medical Microbiology Laboratories are participating

Goals ISIS-AR

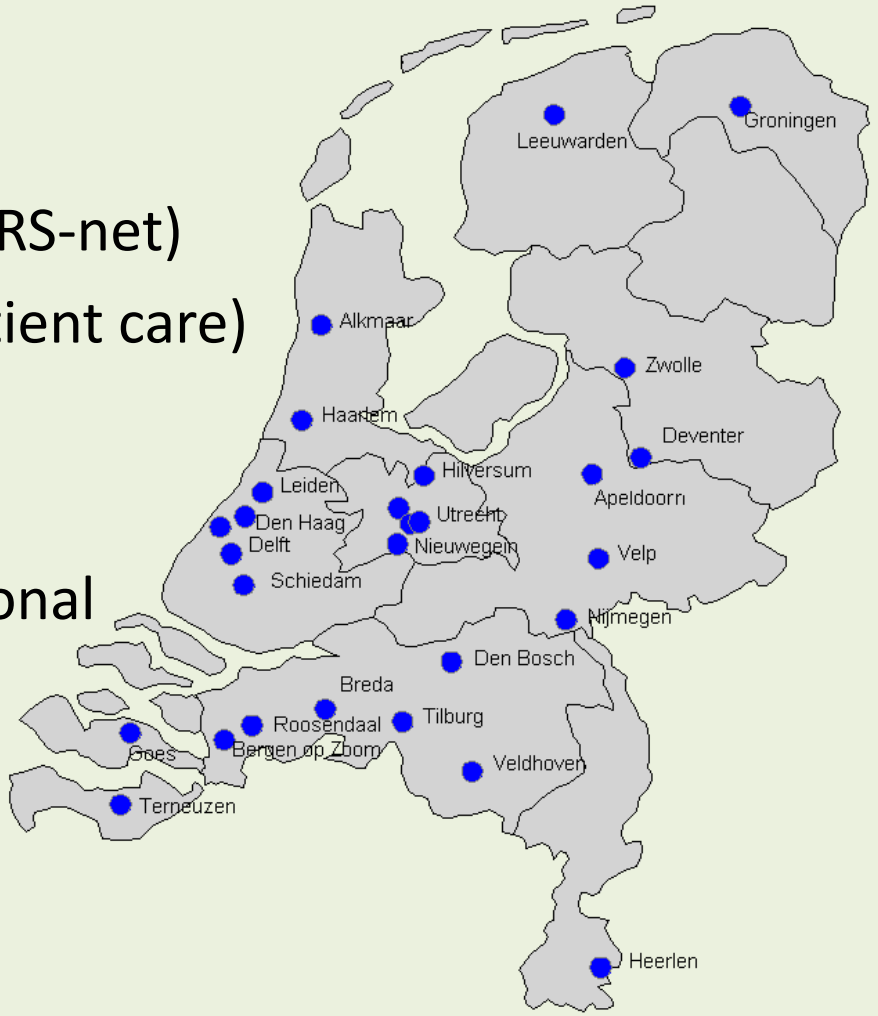
Monitor AMR trends (Nethmap, EARS-net)

Produce ‘mirror’ data (improve patient care)

- Feedback reports
- ISISweb

‘Early’ detection of (multi-)institutional elevations

Active response to new resistance development (guidelines)



Feedback report

- Overview of dataset
- Datamanager check of data send in to RIVM. If necessary consultation with medical microbiologist.
- Table with unknown values
- Table unusual resistance phenotypes are included, and have to be confirmed by the medical microbiologist.
- Medical microbiologist of ISIS-AR team can contact the lab in case of special findings that are worrisome.
- After confirmation the data go online.
- Improvement of quality, awareness and communication!

Aanlevering

Lab-code	ISIS002
Maand	April
Jaar	2011
Aanlevering-ID	4194
Datum	14-07-2011

Onbekende sleutelwaarden

Gegeven	Onbekende waarde	Aantal	Soort
AFDELING	HOOG2	1	monsters

Totaal Overzichten

#Isolaten ISIS	#Isolaten	#Patienten ISIS	#Patienten
1619	1802	764	817

Samenvatting Bijzondere Resistenties

Antibiotica-pathogeen combinaties	#Pat	#Iso	Monster.Isolaatvolgnr
Moraxella catarrhalis intermediair/resistent t.o.v. ceftriaxon (TR07)	1	1	11-530555.2
Overige Enterobacteriaceae (excl. Proteus/Morganella) resistent t.o.v. carbapenem (TR07a)	1	1	11-526400.1
Acinetobacter spp. carbapenem resistent (TR07a)	3	8	11-526412.1, 11-527796.1, 11-528068.1, 11-532577.1, 11-532582.1, 11-532584.1, 11-532831.1, 11-525604.1
Overige Enterococcus spp. penicilline groep en vancomycine resistent (TR07a)	1	1	11-525095.1
6.2a Coagulase-negative staphylococci Resistant to vancomycin (TR08b)	1	1	11-531927.1

Wake up call: OXA-48 outbreak in Dutch hospital

- 31 may 2011 outbreak of CPE was officially reported, but was going on already for some time…
- Lot of media attention that lead to political and social discussions, how to prevent these outbreaks in the future
- Due to the late discovery of the outbreak and delayed action, 4.340 patients had to be screened for possible contamination
- In total 115 patients carried the Klebsiella OXA-48
- End of July the outbreak was under control!
- Interim report Health Inspectorate october 2011. Title: Klebsiella outbreak in Maasstad hospital avoidable.
- The final report will be available in the beginning 2012; was the outbreak also blameworthy.