Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

hpsc

LABORATORY PROTOCOL FOR ENHANCED SURVEILLANCE OF BLOODSTREAM INFECTIONS REPORTED TO EARS-NET IN IRELAND

Data Collection MS Excel Tool, Version 5 (May 2016) OR later
This document created June 2016

Introduction

Data on bacteraemia caused by selected pathogens is currently collected as part of the European Antimicrobial Resistance Surveillance Network (EARS-Net). EARS-Net has proved very successful in Ireland providing valuable data on antimicrobial resistance in Ireland. Additional data on episodes of bloodstream infections reported to EARS-Net has been collected since 2004 through the enhanced programme.

The purpose of the enhanced programme is to help guide local and national strategies for healthcare-associated infection and antimicrobial resistance prevention and control. Data from the enhanced EARS-Net system can identify changes in the association of infection over time (e.g., community or healthcare-associated), identify potentially preventable sources of bloodstream infection (e.g., IV lines and urinary catheters) and enable this information to help track the progress of improvement programmes. The ultimate aim is to improve overall patient safety.

Method Overview

A minimal dataset is requested for each bloodstream infection reported to EARS-Net isolate. The dataset has been selected to reflect the type of clinical data routinely gathered as part of clinical liaison by microbiologists and the local infection control team.

The data should be reported using this "Enhanced EARS-Net Surveillance" protocol onto an MS Excel, after suitable encryption. ***NO PAPER BASED FORMS ARE ACCEPTED***. Data should be collected quarterly, along with the corresponding EARS-Net isolate data.

The completed electronic files should be sent to the Health Protection Surveillance Centre (HPSC) in encrypted format. Participation to the enhanced programme is voluntary but encouraged.

Data confidentiality statement

HPSC abides by the rules for data protection, set out in the Data Protection Acts. The HPSC will not, and has no desire to, identify individual patients on the basis of data collected as part of bacteraemia surveillance. Note that it is not possible for HPSC to identify individual patients on the basis of the information provided on the EARS-Net Enhanced data collection form. Such

identification should only be possible within the participating hospital. It is the obligation of the data providers to ensure that data are managed and transmitted in a secure manner at all time.

Definitions

Laboratories should report using current EARS-Net surveillance definitions. The first invasive isolate of a pathogen under EARS-Net surveillance per patient per quarter should be reported. For the purposes of this protocol this only includes blood culture isolates of *Staphylococcus aureus, Streptococcus pneumoniae* and *Escherichia coli, Enterococcus faecium, E. faecalis, Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Note that data on CSF isolates of these organisms are not requested as part of this enhanced surveillance but laboratories should continue to report them under the usual EARS-Net system and, where necessary, should provide meningitis enhanced surveillance data separately. Laboratories are also encouraged to continue to supply any other data requested and not regard data supplied via this system in place of, or as part submission of, the data for other surveillance systems.

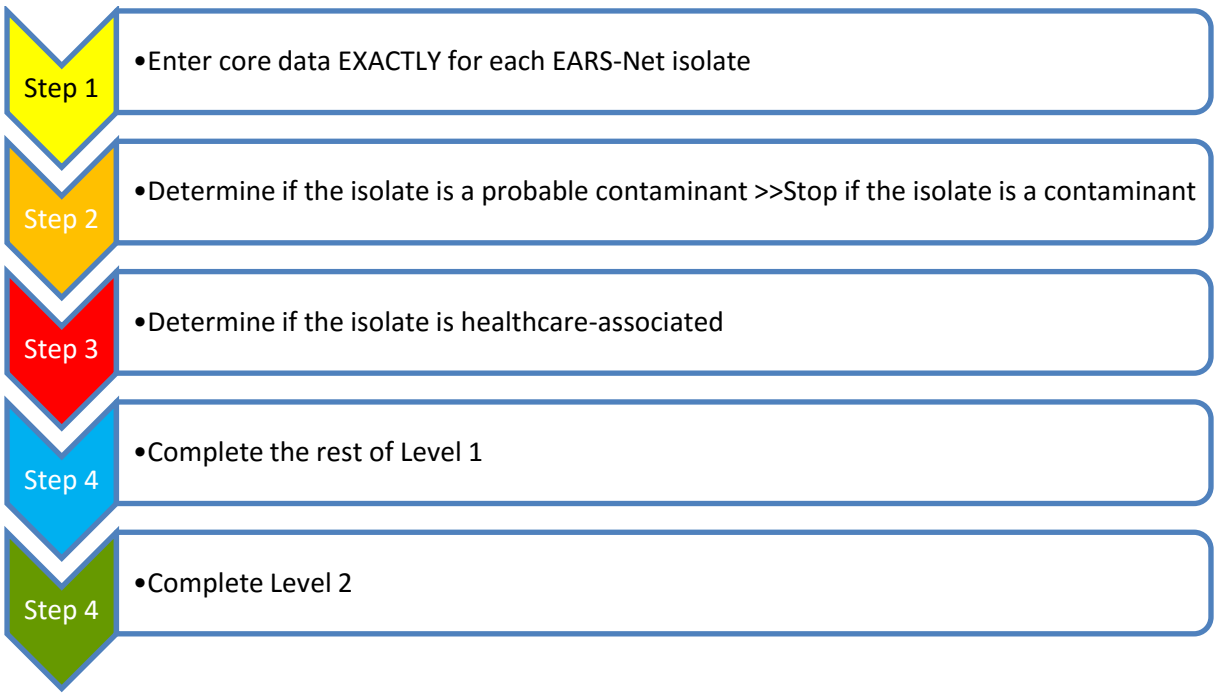
THE DEFINITIONS SET OUT IN THIS DOCUMENT APPLY TO THE EARS-NET ENHANCED SURVEILLANCE SYSTEM ONLY

Participants may supply data for *S. aureus* at a minimum, but are encouraged to submit data on all EARS-Net pathogens. Participants may supply data to **LEVEL 1** only (healthcare and device-association), but are encouraged to submit data to **LEVEL 2** also (source and outcome). Many hospitals are unable to find data on antibiotic exposure, however, they may still continue to participate.

Further definitions are supplied within subsequent sections.

Overall algorithm

Please see Appendix 1 for a sample of the form.



Step 1 – CORE DATA

Please supply all of the information for each EARS-Net isolate EXACTLY as supplied to EARS-Net the manager.

PART OF CORE DATA	Same as each EARSS-Net isolate	**EARS-Net Laboratory Code**	*Just the number like "99"*
		EARS-Net Hospital Code	*The full code for the hospital like "099A"*
		Patient number	*Ensure all letters and numbers are the same as the EARS-Net data*
		Specimen number	*Ensure all letters and numbers are the same as the EARS-Net data*
		Specimen date (dd/mm/yyyy)	
		Organism code	*Select one from the drop-down list*
		Date of admission (dd/mm/yyyy)	

Step 2 – PROBABLE CONTAMINATION

	Probable contaminant	*Select Y or N*

If the isolate is not noted as possible contaminant, then it is assumed to be clinically significant; that is, if "Probable contaminant" is Blank or N, then the isolate is taken as clinically significant.

THERE IS NO NEED TO COMPLETE THE REST OF THE FORM FOR ANY ISOLATE THAT IS A CONTAMINANT. Though please note reason why the isolate is designated as a contaminant in the "Any additional information" field.

Step 3 – HEALTHCARE-ASSOCIATION

	Healthcare-association	*Select one from the drop-down list*

Definitions are adapted from Friedman *et al* (2002). Note the values in the drop-down are shorthand values for ease of data entry. Furthermore, as not all the information may be available readily, use of terms such as "most likely not acquired in the reporting hospital but otherwise healthcare-associated" should be accommodated when interpreting these values. Please use these criteria **SEQUENTIALLY**; that is if the infection meets the first set (e.g. This Hosp) then do not apply the next set (e.g. Other Hosp).

"This Hosp" - The infection is considered hospital-acquired within the reporting hospital if a positive blood culture was obtained from a

- Patient who had been hospitalised for >48 hours^
- Patient is re-admitted to the hospital following a recent (<30 days) discharge; when inpatient for >48 hours^ during the previous admission
- **IN THE CASE OF THIS SURVEILLANCE SYSTEM ONLY**, patient is known to have acquired the infection in the reporting hospital based on advice from the local infection control team*

"Other Hosp" - The infection is hospital acquired within another facility (sometime referred as "otherwise healthcare-associated") if a positive blood culture was obtained from the patient at the time of hospital admission or within 48 hours^ of admission AND the patient fulfilled any of the following criteria:

- Received intravenous therapy at home, received wound care or specialised nursing care through a healthcare agency, family or friend, or had self-administered intravenous medical therapy within 30 days before the onset of the infection. Patients whose only home therapy was oxygen use are excluded
- Attended a hospital or haemodialysis clinic or received intravenous chemotherapy in the last 30 days before the infection
- Was hospitalised in an acute care hospital for >48 hours^ on the 90 days before the infection

"Long Stay Facility" - The infection is acquired within another facility if a positive blood culture was obtained from the patient at the time of hospital admission or within 48 hours^ of admission AND the patient fulfilled the following criteria:

- Patient residing in a nursing home or long-term care facility

"Community" - All other infections can be considered to be acquired at home or otherwise community-acquired.

^Note: 48 hours in this context can be taken as on or after the third day of admission for practical reason
*Please supply rationale in the "Any additional information" field

Step 4- COMPLETE THE REST OF LEVEL 1

LEVEL 1	Device	**Device (catheter)-associated**	*Select Y or N*
		Type of device	*Select one from the drop-down list*
	Implant	**Implant-associated**	*Select Y or N*
		Type of implant (free text)	
	Procedure	**Procedure-associated**	*Select Y or N*
		Name of procedure (free text)	
		Any additional information (free text)	

Definitions are adapted from Horan *et al* (2008) and CDC guidelines (2005).

Device-associated bloodstream infection if following criteria met. In this case of intra-vascular line and other indwelling medical devices:

- Isolate is clinically significant (see above) AND device present within 48 hours of the isolation AND organism is not related to an infection at another site

Implant-associated bloodstream infection if following criteria met.

- Isolate is clinically significant (see above) AND the infection occurs within 1 year of an operative procedure that placed the implant AND organism is not related to an infection at another site

Procedure-associated bloodstream infection if following criteria met.

- Isolate is clinically significant (see above) AND the infection occurs within 30 days after the operative procedure AND organism is not related to an infection at another site

Ensure no additional patient identifiable information in present in the "Any additional information" field.

Step 4- COMPLETE LEVEL 2

LEVEL 2		**Source organ site (one from list):**	*Select one from the drop-down list*
		Further information on source	
		Neutropaenia	*Select Y or N*
		Acquired in critical care	*Select Y or N*
		Outcome	*Select one from the drop-down list*
		Date of discharge or death (dd/mm/yyyy)	
		Antibiotic exposure (free text list)	*Enter either Y or N, or the antibiotic(s) given*

If the source is strongly suspected of being a device, then ensure the details in LEVEL 1 are completed first then select "Other" for the "Source organ site" field, finally write "device" into the "Further information on source" field.

Please reserve the "Further information on source" field to supply information on source only for sources of type "Other", and do not supply general information on the infection here.

Please update the outcome data (discharge date and status) at the end of each quarter of data collection before returning the file to HPSC. If a patient is still in hospital at the time of finalisation then please indicate so and supply the last date when this status was known.

Returns

Please complete this document for each quarter and return at the beginning of the following quarter.

Again, the core and enhanced data must be matched for each isolate for which there are enhanced data collected.

Please return completed and encrypted MS Excel documents as instructed in the latest version of the Excel tool.

References

Horan T.C. *et al*. (2008). CDC/NHSC surveillance definition of health care-associated infection and criteria for specific types of infection in the acute care setting. *Am J Infect Control* **36:**309-32

Friedman N.D. *el al*. (2002). Health care-associated bloodstream infections in adults: a reason to change the accepted definition of community-acquired infection. 2002. *Am Col Phys-Am Soc Int Med* **137:**797-798

CDC Guidelines for prevention of intravascular catheter-related infections. *MMWR* 2005; **51:**RR-10

APPENDIX 1 – SAMPLE PRINTABLE FORM

EARS-Net/Enhanced Bacteraemia Surveillance

Printable Form - do not send individual forms to HPSC, please send the completed Excel instead.

Circle items that apply

PART OF CORE DATA	Same as each EARSS-Net isolate	**EARS-Net Laboratory Code**	
		EARS-Net Hospital Code	
		Patient number	
		Specimen number	
		Specimen date (dd/mm/yyyy)	
		Organism code	sau | eco | efa | efm | kpn | pae | spn
		Date of admission (dd/mm/yyyy)	
LEVEL 1		**Probable contaminant**	Y | N | *(do not complete the rest of form if 'Y')*
		Healthcare-association	This Hosp | Other Hosp | Long Stay Facility | Community | Unknown |
	Device	**Device (catheter)-associated**	Y | N |
		Type of device	PVC | CVC | CVC-PICC | Dialysis Catheter | Urinary Catheter | Other |
	Implant	**Implant-associated**	Y | N |
		Type of implant (free text)	
	Procedure	**Procedure-associated**	Y | N |
		Name of procedure (free text)	
		Any additional information (free text)	
LEVEL 2		**Source organ site (one from list):**	Respiratory | Gastroinstestinal | Hepatobilliary | Bone and joint | Head and neck | Central nervous system | Urinary tract | Genital tract | Skin/Soft tissue – surgical wound | Skin/Soft tissue–other | Cardiovascular | Other | Unknown |
		Further information on source	
		Neutropaenia	Y | N |
		Acquired in critical care	Y | N |
		Outcome	Discharged | Died | Still in Hosp | Unknown |
		Date of discharge or death (dd/mm/yyyy)	
		Antibiotic exposure (free text list)	

HSE-HPSC EARS-Net Enhanced V5 May-16