



Public Health  
England

Protecting and improving the nation's health

# Electronic Reporting System

Enhanced surveillance of  
carbapenemase-producing  
Gram-negative bacteria

Data collection manual

Withdrawn April 2019

## About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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# Contents

Overview of ERS for surveillance of carbapenemase-producing Gram-negative bacteria	5
Core dataset	7
Purpose of submission	8
Patient demographics	9
ERS ID	9
NHS number	10
Date of birth	11
First name	12
Surname	13
Gender	14
Hospital number	15
Normal residence	16
Country of residence	17
Residential postcode	18
Specimen details	19
Laboratory name	19
Type of sample	20
Specimen number	21
Specimen date	22
Specimen type	23
Bacterial ID	24
Which laboratory is this isolate being referred to?	25
Were supplemental and/or confirmatory tests performed on this isolate?	26
If "Yes", please state the type of test(s) performed	27
Did supplemental tests performed indicate the presence of a carbapenemase?	28
MIC evaluation required?	29
Medico-legal case?	30
Do you suspect that the isolate you are referring could be hazard group 3?	31
If you are referring a Pseudomonas spp., does the patient have cystic fibrosis?	32

Do you require this isolate to be typed?	33
Please give reason for typing request and provide details of isolates for comparison if appropriate and the ward the patients are located	34
Patient location at time of specimen collection	35
Patient location at time of specimen collection	35
Select specific healthcare facility if patient was an inpatient, outpatient or in A&E at time of specimen collection	36
Enhanced dataset: All patients	37
Foreign travel	38
Has the patient travelled overseas in the past 12 months?	38
Specify all countries visited in previous 12 months, if applicable	39
Has the patient received any healthcare overseas in the past 12 months?	40
Specify all countries in which healthcare has been received in the previous 12 months, if applicable	41
Enhanced dataset: Admitted patients	42
Admission details	43
Date admitted	43
Select healthcare facility patient admitted to	44
Hospital/site name	45
Clinical specialty at time of specimen collection	46
Was the patient on a private ward?	47
Was the patient admitted for this infection episode?	48
Nature of admission	49
Where was patient admitted from?	50
Specify if admitted from another healthcare facility (NHS or Private)	51
Specify if patient admitted from an overseas country	52
Screening	53
Was patient screened for carbapenemase-producing Gram-negative bacteria on admission?	53
If patient was screened, indicate result	54
Potential contact with carbapenemase-producing bacteria	55
Was the patient in possible contact with carbapenemase-producing Gram-negative bacteria during this admission, before the specimen was taken?	55
Has the patient been in close contact with another case outside of a healthcare facility?	56

# Overview of the Electronic Reporting System for the enhanced surveillance of carbapenemase-producing Gram-negative bacteria

Public Health England (PHE) has established an enhanced surveillance system for carbapenemase-producing Gram-negative bacteria. Enhanced surveillance of carbapenemase-producing Gram-negative bacteria requires use of the web-based Electronic Reporting System (ERS).

The ERS serves three main functions: (i) as a system for laboratories to request full characterisation of Gram-negative bacteria where expression of an acquired carbapenemase is suspected; (ii) as a system for local laboratories to report patients identified locally as being colonised and/or infected by carbapenemase-producing Gram-negative bacteria and (iii) as a system for NHS trusts to submit enhanced surveillance data. Microbiology laboratory users and NHS trust users should refer to 'Electronic Reporting System; Enhanced surveillance of carbapenemase-producing Gram-negative bacteria: NHS Trust and Microbiology Laboratory User Guide' for details on making requests via the ERS, reporting locally confirmed isolates via the ERS and provision of enhanced surveillance data.

In summary, there are three surveillance sections requiring data entry in the ERS:

- core dataset
- enhanced dataset: all patients
- enhanced dataset: admitted patients

The fields within the "Core dataset" should be completed for all requests and reports made via the ERS. This is the minimum data requirement for isolates referred to PHE specialist microbiology laboratories or AMRHAI.

Fields within the "Enhanced dataset: All patients" section should be completed for all carbapenemase-producing Gram-negative bacteria confirmed by a local microbiology laboratory, PHE specialist microbiology laboratory or AMRHAI. This section should be completed within seven days of the positive result being made available on the ERS. This section does not need to be completed for the subsequent referral of isolates in instances of treatment failure or a suspected change in antibiogram.

Fields within the "Enhanced dataset: admitted patients" section should be completed for all carbapenemase-producing Gram-negative bacteria confirmed by a local microbiology laboratory, PHE specialist microbiology laboratory or AMRHAI, if the patient was a hospital inpatient at the time of specimen collection. This section should also be completed within seven

days of the positive result being made available on the ERS. This section does not need to be completed for subsequent referral of isolates in instances of treatment failure or a suspected change in antibiogram.

All data entry fields are described in detail in this document. The data field descriptions indicate whether the field is mandatory, the format of the field, the response options available (if applicable), and the definition associated with responses (if applicable).

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# Core dataset

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## Purpose of submission

<b>Purpose of submission</b>	
Field name:	purpose
Field label:	Purpose of submission
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Refer suspected carbapenemase-producing Gram-negative bacteria isolated from clinical site or screening swab</li> <li>• Subsequent referral of isolate – treatment failure</li> <li>• Subsequent referral of isolate – suspected change in antibiogram</li> <li>• Refer isolate associated with an outbreak or cluster</li> <li>• Submit molecular results</li> </ul>
<p>Definition for collection:</p> <ul style="list-style-type: none"> <li>• Specifies purpose of submitting data to the system</li> <li>• “Refer suspected carbapenemase-producing Gram-negative bacteria isolated from clinical site or screening swab” should be selected when an organism suspected of expressing an acquired carbapenemase has been isolated from any clinical site or screening swab: <ul style="list-style-type: none"> <li>– Subsequent referral of the same species identified from the same patient is only required if: isolated from a different clinical site <b>or</b> in the event of treatment failure <b>or</b> if the laboratory suspects a change in antibiogram</li> <li>– The first isolate of different species isolated from the same patient should be referred for full characterisation if carbapenemase expression is suspected</li> </ul> </li> <li>• “Subsequent referral of isolate – treatment failure” should be selected if rapid testing to inform treatment is required</li> <li>• “Subsequent referral of isolate – suspected change in antibiogram” should be selected if rapid testing is required due to an observed change in the antibiogram</li> <li>• “Refer isolate associated with an outbreak or cluster” should be selected for any carbapenem-resistant Gram-negative bacteria referred because of its association with a cluster or outbreak, irrespective of suspected resistance mechanism, and including species with intrinsic carbapenem resistance</li> <li>• “Submit molecular results” should be selected by those wishing to report a locally confirmed carbapenemase producer but do not require the isolate to be sent to a PHE specialist microbiology laboratory or AMRHAI for further testing</li> </ul>	
<p>Justification</p> <p>Allows system to generate laboratory request form.</p>	



# Patient demographics

<b>ERS ID</b>	
Field name:	ersunique
Field label:	Unique ERS number
Field type:	Text
Mandatory field:	N/A
Number of data items:	One
Definition for collection: <ul style="list-style-type: none"><li>• Unique identifier generated by the Electronic Reporting System when data is submitted via the system</li><li>• ERS ID provides an identifier for each request made</li><li>• The number is automatically generated by the system for each request made</li></ul>	
Justification Uniquely identifies all requests made via the ERS.	

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<b>NHS number</b>	
Field name:	nhsnumber
Field label:	NHS number
Field type:	Numeric
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Unique number assigned by the NHS as a numeric ten digit code to each NHS patient</li> <li>• If NHS number is unknown at time of data submission please enter all 9s i.e. 9999999999</li> </ul>	
Justification	
Enables tracing of patient through the NHS system.	
In combination with other patient demographic data uniquely identifies patient.	

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<b>Date of birth</b>	
Field name:	dob
Field label:	Date of birth
Field type:	Date
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Date of birth of patient</li> </ul>	
Justification	
Used to calculate age.	
In combination with other patient demographic data uniquely identifies patient.	

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<b>First name</b>	
Field name:	firstname
Field label:	First name
Field type:	Text
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Patient's first name</li> </ul>	
Justification	
In combination with other patient demographic data uniquely identifies patient.	

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<b>Surname</b>	
Field name:	surname
Field label:	Surname
Field type:	Text
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Patient's surname (family name)</li> </ul>	
Justification	
In combination with other patient demographic data uniquely identifies patient.	

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<b>Gender</b>	
Field name:	gender
Field label:	Gender
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Gender of the patient</li> </ul>
Justification	<p>Allows analysis of trends between genders.</p> <p>In combination with other patient demographic data uniquely identifies patient.</p>

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<b>Hospital number</b>	
Field name:	hospitalnumber
Field label:	Hospital number
Field type:	Text
Mandatory field:	No
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Number assigned to patient by hospital</li> </ul>	
Justification	
In combination with other patient demographic data uniquely identifies patient.	

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<b>Normal residence</b>	
Field name:	residence
Field label:	Normal residence
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Home</li> <li>• Non-health-related institution</li> <li>• Non-UK resident</li> <li>• Nursing/care home</li> <li>• Temporary accommodation</li> <li>• Other</li> <li>• Unknown</li> </ul>
<p>Definition for collection:</p> <ul style="list-style-type: none"> <li>• Patient's permanent/semi-permanent place of residence at time of specimen collection</li> <li>• For transient locations eg on holiday, staying with relatives/friends, in a hotel etc, use patient's permanent/semi-permanent place of residence unless patient is a non-UK resident; if patient is a non-UK resident, select "Non-UK resident"</li> <li>• Home includes owner occupied and rented property, sheltered housing, safe housing, warden-controlled housing, living with relatives/friends, houseboats, bed and breakfast (if on a semi-permanent basis), etc.</li> <li>• Nursing/care home is an establishment providing nursing or personal care services to the older or infirm or chronically ill population</li> <li>• Temporary accommodation includes either homeless or in hostels, bed and breakfast (if not on holiday) on a temporary basis, etc.</li> <li>• Non-health-related institution includes prisons, correctional facilities, children's homes, etc.</li> <li>• Non-UK resident includes all patients whose normal residence is outside the UK</li> </ul>	
<p>Justification</p> <p>Provides important information on patient's normal residence.</p>	



<b>Country of residence</b>	
Field name:	countyresidence
Field label:	Country of residence
Field type:	Dropdown menu
Mandatory field:	Yes
Number of data items:	One
Options:	• Standard list of countries
Definition for collection: <ul style="list-style-type: none"> <li>• Country in which the patient normally resides</li> <li>• If unknown, check box next to the "Country Unknown" response</li> </ul>	
Justification Provides important information on patient's country of residence. Certain resistance mechanisms are associated with particular geographies.	

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<b>Residential postcode</b>	
Field name:	postcode
Field label:	Residential postcode
Field type:	Text
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Postcode for location in which the patient normally resides</li> <li>• Only to be completed for patients who reside in the UK</li> <li>• If postcode not provided, check box next to the "Postcode Unknown" response</li> </ul>	
Justification	
Provides important information on location where patient normally resides.	

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## Specimen details

<b>Laboratory name</b>	
Field name:	laboratoryname
Field label:	Laboratory name
Field type:	Auto-completed
Mandatory field:	Yes
Number of data items:	One
Options:	N/A
Definition for collection:	<ul style="list-style-type: none"><li>• Laboratory referring the isolate for further testing</li></ul>
Justification	Identifies the laboratory to receive the result from the PHE specialist microbiology laboratory/AMRHAI for isolates referred for confirmatory testing.

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<b>Type of sample</b>	
Field name:	sample
Field label:	Type of sample
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Clinical</li> <li>• Screening</li> <li>• Unknown</li> </ul>
Definition for collection: <ul style="list-style-type: none"> <li>• Clinical samples include all samples considered to be associated with clinical infection</li> <li>• Screening samples include all samples associated with screening for carbapenemase-producing Gram-negative bacteria eg rectal swabs, faeces, perineal swabs etc, and all samples assigned as screening specimens at the local laboratory</li> </ul>	
Justification Categorises samples into screening and clinical specimens. Can calculate rates of clinical infection due to carbapenemase-producing Gram-negative bacteria separately from screening samples.	

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<b>Specimen number</b>	
Field name:	specimennumber
Field label:	Specimen number
Field type:	Text
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Specimen number/identifier assigned to specimen at local laboratory</li> </ul>	
Justification	
Records submitting laboratory specimen number in system so can easily identify record on local system for submission of enhanced surveillance data.	

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<b>Specimen date</b>	
Field name:	specimendate
Field label:	Specimen date
Field type:	Date
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Date on which the specimen was taken</li> </ul>	
Justification	
Allows calculation of patient age at time of specimen collection.	
Assigns a date to the specimen for use in trend analysis.	

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<b>Specimen type</b>	
Field name:	specimentype
Field label:	Specimen type
Field type:	Dropdown menu
Mandatory field:	Yes
Number of data items:	One
Options:	List of specimen types (with option for "Other")
Definition for collection:	
<ul style="list-style-type: none"> <li>• Type of specimen the organism was isolated from</li> </ul>	
Justification	
Identifies type of specimen organism was isolated from.	
Important information to help describe the clinical and non-clinical distribution of specimen types.	

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<b>Bacterial ID</b>	
Field name:	organism
Field label:	Organism
Field type:	Dropdown menu
Mandatory field:	Yes
Number of data items:	One
Options:	List of organisms (with option for "Other")
Definition for collection:	
<ul style="list-style-type: none"> <li>• Organism isolated and identified at the local laboratory</li> </ul>	
Justification	
Identifies organism exhibiting carbapenem resistance.	
Important information to help describe distribution of organisms identified as carbapenemase-producers.	

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<b>Which laboratory is this isolate being referred to?</b>	
Field name:	labreferral
Field label:	Laboratory for referral
Field type:	Dropdown
Mandatory field:	Yes
Number of data items:	One
Options:	<p>Number of options dependent on local referral arrangements</p> <ul style="list-style-type: none"> <li>• East of England Public Health Laboratory</li> <li>• London Public Health Laboratory</li> <li>• North East Public Health Laboratory</li> <li>• North West Public Health Laboratory</li> <li>• South East Public Health Laboratory</li> <li>• South West Public Health Laboratory</li> <li>• The Midlands Public Health Laboratory</li> <li>• Yorkshire and the Humber Public Health Laboratory</li> <li>• Antimicrobial Resistance and Healthcare Associated Infections Reference Unit (Colindale)</li> <li>• Reporting results</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Response refers to the laboratory that the isolate is being sent to for further investigation and characterisation</li> </ul>
Justification	<p>Indicates which laboratory (PHE specialist microbiology laboratory or AMRHAI) the isolate is being referred to so that the system can generate the appropriate request form.</p> <p>This field will be auto-completed as "Reporting results" if the user has set 'Purpose of submission' to "Submit molecular results".</p>

<b>Were supplemental and/or confirmatory tests performed on this isolate?</b>	
Field name:	supplementaltests
Field label:	Supplemental tests
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Inhibitor-based supplemental tests are used in addition to susceptibility tests to help indicate if resistance is due to the presence of a carbapenemase eg imipenem-EDTA synergy tests</li> <li>• Confirmatory tests for the detection of carbapenemases include the Modified Hodge Test (MHT) or 'Cloverleaf' test, MALDI-ToF, 'Carba-NP' or molecular methods</li> </ul>
Justification	Indicates if local laboratory performed supplemental tests prior to submitting isolate to a PHE specialist microbiology laboratory or AMRHAI.

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<b>If “Yes”, please state the type of test(s) performed</b>	
Field name:	supplementaltesttype
Field label:	Supplemental test type
Field type:	Multiselect dropdown (with option for “Other”)
Mandatory field:	Yes
Number of data items:	Up to four
Options:	<ul style="list-style-type: none"> <li>• Carbapenemase screening media – Brilliance™ CRE agar</li> <li>• Carbapenemase screening media – ChromID™ CARBA</li> <li>• Carbapenemase screening media – ChromID™ CARBA SMART</li> <li>• Carbapenemase screening media – CHROMagar™ KPC</li> <li>• Carbapenemase screening media – other</li> <li>• Carba-NP</li> <li>• Modified Hodge Test</li> <li>• MALDI-ToF MS</li> <li>• Molecular test – check-MDR Carba</li> <li>• Molecular test – in-house PCR</li> <li>• Molecular test – other</li> <li>• Synergy test</li> <li>• Other</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Select tests used from the list of confirmatory and molecular tests</li> <li>• If test used is not listed, select “Other” and provide name of test used</li> </ul>
Justification	Indicates which tests were performed to investigate potential carbapenemase production.

<b>Did supplemental/confirmatory tests performed indicate the presence of a carbapenemase?</b>	
Field name:	indicatecarbapenemase
Field label:	Indicate carbapenemase
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> <li>• N/A</li> </ul>
Definition for collection:	
<ul style="list-style-type: none"> <li>• Response refers to results of supplemental and/or confirmatory tests performed</li> </ul>	
Justification	
Indicates if carbapenemase production was identified by the local laboratory, based on tests performed prior to submission of isolate to a PHE specialist microbiology laboratory or AMRHAI.	

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<b>MIC evaluation required?</b>	
Field name:	micevaluation
Field label:	MIC evaluation
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
Definition for collection: • Response to indicate if the submitted isolate requires MIC testing	
Justification Indicates if the isolate requires minimum inhibitory concentration (MIC) testing to be performed.	

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<b>Medico-legal case?</b>	
Field name:	medicolegal
Field label:	Medico-legal
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
Definition for collection: • Indicate if the isolate is from a medico-legal specimen ie is part of an investigative procedure, the results of which may be presented as evidence in a court of law.	
Justification Indicates if the isolate has been obtained from a medico-legal specimen.	

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<b>Do you suspect that the isolate you are referring could be hazard group 3?</b>	
Field name:	hazardgroup3
Field label:	Hazard group 3
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
Definition for collection: • Response to indicate if the submitted isolate is a hazard group 3 pathogen <a href="http://www.hse.gov.uk/pubns/misc208.pdf">[www.hse.gov.uk/pubns/misc208.pdf]</a>	
Justification Indicates if the isolate is a hazard group 3 pathogen and therefore allow the accepting laboratory to ensure necessary precautions are in place on receiving the isolate.	

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<b>If you are referring a Pseudomonas spp., does the patient have cystic fibrosis?</b>	
Field name:	cysticfibtorsis
Field label:	Cystic fibrosis
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> <li>• N/A</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Response to indicate if the submitted isolate is from a patient with cystic fibrosis</li> </ul>
Justification	Indicates if the isolate is from a cystic fibrosis patient.

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<b>Do you require this isolate to be typed?</b>	
Field name:	typing
Field label:	Typing required
Field type:	Checkbox
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
Definition for collection: • Indicate if isolate requires typing	
Justification Indicates if the isolate being referred also requires typing.	

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<b>Please give reason for typing request and provide details of isolates for comparison if appropriate and the ward the patients are located</b>	
Field name:	typingreason
Field label:	Reason for typing
Field type:	Text
Mandatory field:	Yes
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>Reason why typing has been requested and provision of details regarding related specimens (if appropriate) and ward details for associated specimens (if appropriate)</li> </ul>	
Justification	
Allows linkage of specimen results and comparison of isolates when typing analysis is performed.	

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## Patient location at time of specimen collection

<b>Patient location at time of specimen collection</b>	
Field name:	patientlocation
Field label:	Patient location at time of specimen
Field type:	Dropdown menu (with option for "Other")
Mandatory field:	Yes
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• GP/Walk-in Centre</li> <li>• Independent Sector Healthcare Facility/Private Hospital (inpatient)</li> <li>• Independent Sector Healthcare Facility/Private Hospital (outpatient)</li> <li>• NHS Acute Trust (A&amp;E)</li> <li>• NHS Acute Trust (inpatient)</li> <li>• NHS Acute Trust (outpatient)</li> <li>• NHS Community Trust (inpatient)</li> <li>• NHS Community Trust (outpatient)</li> <li>• NHS Mental Health Trust (inpatient)</li> <li>• NHS Mental Health Trust (outpatient)</li> <li>• Nursing/Care Home</li> <li>• Other</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Locations refer to healthcare settings in which a specimen may be taken</li> <li>• The setting selected should reflect the healthcare setting the patient was in at time of specimen collection and indicate whether the patient was an inpatient, outpatient or A&amp;E patient, if applicable</li> </ul>
Justification	Provides important information on the type of healthcare setting the patient was in at time of specimen collection.

**Select specific healthcare facility if patient was an inpatient, outpatient or in A&E at time of specimen collection**

Field name:	healthcarefacility
Field label:	Healthcare facility at time of specimen
Field type:	Dropdown menu
Mandatory field:	Yes
Number of data items:	One
Options:	• List of NHS trusts and healthcare facilities
Definition for collection:	• Select the relevant NHS trust or healthcare facility (eg private hospital) associated with the location the patient was in at time of specimen collection
Justification	Provides important information on the type of healthcare setting the patient was in at time of specimen collection. Identifies if the patient was in an NHS trust or other healthcare facility at time of specimen collection.

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# Enhanced dataset

All patients

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## Foreign travel

<b>Has the patient travelled overseas in the past 12 months?</b>	
Field name:	overseastravel
Field label:	Overseas travel
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"><li>• Yes</li><li>• No</li><li>• Unknown</li></ul>
Definition for collection:	<ul style="list-style-type: none"><li>• Travel overseas includes travel to any country outside the UK</li><li>• 12 months previous to date of specimen collection</li></ul>
Justification	Important information required to identify if the patient has been in an overseas location in the 12 months prior to specimen collection.

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<b>Specify all countries visited in previous 12 months, if applicable</b>	
Field name:	overseascountry
Field label:	Overseas country
Field type:	Multiselect dropdown
Mandatory field:	No
Number of data items:	Up to twelve
Options:	• Standard list of countries
Definition for collection:	
• All countries travelled to in the 12 months prior to the date of specimen collection	
Justification	
Important information required to identify if the patient has been in an overseas location with a known high prevalence of carbapenemase-producing Gram-negative bacteria.	
Can be analysed to identify if any risk is associated with travel to particular countries.	

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<b>Has the patient received any healthcare overseas in the past 12 months?</b>	
Field name:	overseashealthcare
Field label:	Overseas healthcare
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Any healthcare received in any overseas country</li> <li>• Includes healthcare received in any country outside of the UK</li> <li>• 12 months previous to date of specimen collection</li> </ul>
Justification	Important information required to identify if the patient has been in contact with healthcare facilities in an overseas location in the 12 months prior to specimen collection.

Withdrawn April 2019



<b>Specify all countries in which healthcare has been received in the previous 12 months, if applicable</b>	
Field name:	healthcarecountry
Field label:	Healthcare country
Field type:	Multiselect dropdown
Mandatory field:	No
Number of data items:	Up to six
Options:	• Standard list of countries
Definition for collection:	
• All countries in which healthcare received in the 12 months prior to the date of specimen collection	
Justification	
Important information required to identify if the patient has received healthcare in an overseas location with a known high prevalence of carbapenemase-producing Gram-negative bacteria.	
Can be analysed to identify if any risk is associated with receiving healthcare in particular countries.	

Withdrawn April 2019

# Enhanced dataset

Admitted patients

Withdrawn April 2019

## Admission details

<b>Date admitted</b>	
Field name:	dateadm
Field label:	Date admitted
Field type:	Date
Mandatory field:	No
Number of data items:	One
Definition for collection:	<ul style="list-style-type: none"><li>• Date the patient was admitted to hospital prior to specimen collection</li></ul>
Justification	Combined with the date of the first positive specimen it is possible to determine time of infection onset in relation to hospital admission.

Withdrawn April 2019

<b>Select healthcare facility patient admitted to</b>	
Field name:	admfacility
Field label:	Admitting facility
Field type:	Dropdown menu
Mandatory field:	No
Number of data items:	One
Options:	• List of NHS trusts
Definition for collection:	• Select the relevant NHS trust that the patient was admitted to prior to specimen collection
Justification	Required for mapping infections in space and time.

Withdrawn April 2019

<b>Hospital/site name</b>	
Field name:	hospitalname
Field label:	Hospital/site name
Field type:	Text
Mandatory field:	No
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Name of hospital the patient was admitted to</li> </ul>	
Justification	
Required for mapping infections in space and time.	

Withdrawn April 2019

<b>Clinical specialty at time of specimen collection</b>	
Field name:	clinicalspecialty
Field label:	Clinical specialty
Field type:	Dropdown menu (with option for "Other")
Mandatory field:	No
Number of data items:	One
Definition for collection:	
<ul style="list-style-type: none"> <li>• Select the clinical specialty/ward specialty the patient was in at time of specimen collection</li> </ul>	
Justification	
Helps identify where within the hospital population we are seeing cases.	

Withdrawn April 2019

<b>Was the patient on a private ward?</b>	
Field name:	privateward
Field label:	Private ward
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Indicate if the patient was on a private hospital ward at the time of specimen collection.</li> </ul>
Justification	Helps identify if the patient is a private or NHS patient.

Withdrawn April 2019

<b>Was the patient admitted for this infection episode?</b>	
Field name:	infectionepisode
Field label:	Infection episode
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Unknown</li> </ul>
Definition for collection: <ul style="list-style-type: none"> <li>• “Yes” implies that patient was admitted to hospital due to this infection episode if the patient had the specimen taken prior to hospital admission (eg at a GP, walk-in centre, outpatient clinic, etc.) but was admitted to hospital subsequently due to infection, the admission would be associated with this infection episode</li> <li>• “No” implies that the patient was admitted to hospital for other reasons</li> </ul>	
Justification Indicates if the patient was admitted due to infection.	

Withdrawn April 2019



<b>Nature of admission</b>	
Field name:	admnature
Field label:	Admission nature
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Elective admission</li> <li>• Emergency admission</li> <li>• Maternity admission</li> <li>• Transfer</li> <li>• Medical tourism</li> <li>• Unknown</li> <li>• Other</li> </ul>
<p>Definition for collection:</p> <ul style="list-style-type: none"> <li>• Select the nature of admission that best described reason for admission to hospital</li> <li>• Elective admission, includes all planned admissions</li> <li>• Emergency admission, includes all unplanned admissions</li> <li>• Maternity admission, includes admissions associated with maternity services</li> <li>• Transfer, includes all admissions directly from another healthcare facility (NHS or private)</li> <li>• Medical tourism, includes admission of patients that normally reside overseas but who have come to England specifically for medical treatment</li> </ul>	
<p>Justification</p> <p>Helps identify where within the hospital population we are seeing cases.</p>	

<b>Where was patient admitted from?</b>	
Field name:	admfrom
Field label:	Admitted from
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Home</li> <li>• Nursing/care home</li> <li>• Temporary accommodation</li> <li>• Non-health-related institution</li> <li>• Other NHS trust</li> <li>• Other Independent Sector Healthcare Facility/Private Hospital</li> <li>• Overseas</li> <li>• Unknown</li> <li>• Other</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Home includes owner occupied and rented property, sheltered housing, safe housing, warden-controlled housing, living with relatives/friends, houseboats, bed and breakfast (if on a semi-permanent basis), etc.</li> <li>• Nursing/care home is an establishment providing nursing or personal care services to the older or infirm or chronically ill population</li> <li>• Temporary accommodation includes either homeless or in hostels, bed and breakfast (if not on holiday) on a temporary basis etc.</li> <li>• Non health-related institution includes prisons, correctional facilities, children's homes, etc.</li> <li>• Other NHS trust includes patients admitted directly from any other NHS trust</li> <li>• Other Independent Sector Healthcare Facility/Private Hospital includes patients admitted directly from any other private hospital</li> <li>• Overseas includes admission directly from an overseas location</li> </ul>
Justification	Provides important information on the location the patient was in immediately prior to admission.

<b>Specify if admitted from another healthcare facility (NHS or Private)</b>	
Field name:	specadmfrom
Field label:	Specify admitted from
Field type:	Dropdown box
Mandatory field:	No
Number of data items:	One
Options:	• List of NHS trusts and healthcare facilities
Definition for collection:	<ul style="list-style-type: none"> <li>• If patient was admitted directly from another NHS trust or Independent Sector Healthcare Facility, select the relevant option to indicate where the patient was transferred from</li> </ul>
Justification	Provides important information on the specific location the patient was in immediately prior to admission.

Withdrawn April 2019

<b>Specify if patient admitted from an overseas country</b>	
Field name:	admfromoverseas
Field label:	Admitted from overseas
Field type:	Dropdown menu
Mandatory field:	No
Number of data items:	One
Options:	• Standard list of countries
Definition for collection:	
• Country patient was admitted from, if admitted from a location outside the UK	
Justification	
Provides important information on whether the patient was admitted from an overseas country.	

Withdrawn April 2019

## Screening

<b>Was the patient screened for carbapenemase-producing Gram-negative bacteria on admission?</b>	
Field name:	screened
Field label:	Patient screened for CPO
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"><li>• Yes</li><li>• No</li><li>• Unknown</li></ul>
Definition for collection:	<ul style="list-style-type: none"><li>• Indicate if patient screened for carbapenemase-producing Gram-negative bacteria (including carbapenemase-producing Enterobacteriaceae) on admission to hospital</li></ul>
Justification	Provides important information on whether the patient was screened for carbapenemase-producing Gram-negative bacteria on admission to hospital.

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<b>If patient was screened, indicate result</b>	
Field name:	screenresult
Field label:	Result of CPO screening
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Positive</li> <li>• Negative</li> <li>• This is the screening specimen</li> <li>• Unknown</li> </ul>
<p>Definition for collection:</p> <ul style="list-style-type: none"> <li>• Indicate result from screening, if applicable</li> <li>• Positive, screening specimen was positive for carbapenemase-producing Gram-negative bacteria on admission to hospital</li> <li>• Negative, screening specimen was negative for carbapenemase-producing Gram-negative bacteria on admission to hospital</li> <li>• “This is the screening specimen” should be selected if the isolate being referred via the ERS was the screening specimen taken on admission to hospital</li> </ul>	
<p>Justification</p> <p>Provides important information on the status of patient on admission to hospital.</p>	

Withdrawn April 2019

## Potential contact with carbapenemase-producing bacteria

<b>Was the patient in possible contact with carbapenemase-producing Gram-negative bacteria during this admission, before the specimen was taken?</b>	
Field name:	cpocontact
Field label:	CPO contact
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"> <li>• Yes, patient was on the same ward at the same time as other patient(s) who were known at the time to be infected or colonised</li> <li>• Yes, patient was on the same ward at the same time as other patient(s) who were later found to be infected or colonised</li> <li>• Possibly, other patient(s) known to be infected or colonised in hospital at same time</li> <li>• No, patient not known to have contact with other patient(s) infected or colonised</li> <li>• Unknown</li> </ul>
Definition for collection:	<ul style="list-style-type: none"> <li>• Select the option that best describes the level of contact the patient had with carbapenemase-producing Gram-negative bacteria prior to the collection of the specimen being referred via the ERS</li> </ul>
Justification	Provides important information on whether the patient had been in contact with carbapenemase-producing Gram-negative bacteria prior to positive specimen.

**Has the patient been in close contact with another case outside of a healthcare facility?**

Field name:	cpocontactoutside
Field label:	CPO contact outside healthcare
Field type:	Checkbox
Mandatory field:	No
Number of data items:	One
Options:	<ul style="list-style-type: none"><li>• Yes</li><li>• No</li><li>• Unknown</li></ul>

Definition for collection:

- Indicate if patient has had contact with another case of carbapenemase-producing Gram-negative bacteria outside the healthcare setting
- Close contact includes a person living in the same house, sharing the same sleeping space or a sexual partner

Justification

Provides important information on whether the patient has been in contact with carbapenemase-producing Gram-negative bacteria outside the healthcare setting prior to positive specimen.

Withdrawn April 2019