



FORM 1 CENTER DEMOGRAPHY

Center No

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Type of hospital: <input type="checkbox"/> University/academic <input type="checkbox"/> Non-university	
Hospital capacity: ____ Beds	
Type of ICU: <input type="checkbox"/> Closed <input type="checkbox"/> Open (non-ICU doctors may write orders)	
ICU specialty: Surgical: <input type="checkbox"/> Cardiac/cardiothoracic <input type="checkbox"/> Transplantation <input type="checkbox"/> Trauma <input type="checkbox"/> Burns <input type="checkbox"/> Neurosurgical <input type="checkbox"/> General Medical: <input type="checkbox"/> Cardiac <input type="checkbox"/> Neurologic <input type="checkbox"/> Respiratory <input type="checkbox"/> General Mixed: <input type="checkbox"/> Medical/surgical Other: <input type="checkbox"/> Please specify	
Are the following techniques available in your ICU?: High flow nasal oxygen <input type="checkbox"/> Yes <input type="checkbox"/> No Echocardiography done by ICU team <input type="checkbox"/> Yes <input type="checkbox"/> No Invasive monitoring (any, including but not limited to CVP and arterial lines) <input type="checkbox"/> Yes <input type="checkbox"/> No Invasive mechanical ventilation <input type="checkbox"/> Yes <input type="checkbox"/> No Non-invasive mechanical ventilation <input type="checkbox"/> Yes <input type="checkbox"/> No Intermittent renal replacement therapy (dialysis) <input type="checkbox"/> Yes <input type="checkbox"/> No Continuous renal replacement therapy <input type="checkbox"/> Yes <input type="checkbox"/> No ECMO (VV and/or VA) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Number of ICU admissions in 2016 (approximate): ---	
Total no of staffed ICU beds (on the day of the study, excluding HDU beds): ____ beds Is there a high dependency unit (HDU) in your hospital? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, how many beds? beds	
Does your unit admit pediatric patients? <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always	
Do you have access to: Infectious diseases specialists/ clinical microbiologist: <input type="checkbox"/> 24/7 <input type="checkbox"/> just during the week <input type="checkbox"/> no Is there a pharmacist assigned to the ICU team (at least part time) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Can you perform the following microbiological cultures in your ICU? Blood <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always Respiratory secretions (qualitative) <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always Respiratory secretions (quantitative) <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always Urine <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always	
Are you able to perform the following? Blood gas analysis within 1 hour of ICU admission <input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always	



Blood lactate within 1 hour of ICU admission	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
Any antibiograms	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
Do you have the following antimicrobials available?	
Piperacillin/tazobactam	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
Echinocandins	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
Tigecycline	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
Antibiotic monitoring:	
Do you monitor antibiotic levels?	
- for aminoglycosides	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
- for vancomycin	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
- for beta-lactams	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
- for voriconazole	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always
- for echinocandins	<input type="checkbox"/> Never <input type="checkbox"/> Sometimes <input type="checkbox"/> Often <input type="checkbox"/> Always



Form 3a Study day variables - general

Center | | |

Patient | | |

Core body temperature (min)	_ . _		(max)	_ . _ °C	
Heart rate (min)	---		(max)	---	bpm
Systolic blood pressure (min)	---		(max)	---	<input type="checkbox"/> mmHg <input type="checkbox"/> KPa
Mean arterial pressure (min)	---		(max)	---	<input type="checkbox"/> mmHg <input type="checkbox"/> KPa
Vasoactive agents					
Norepinephrine	<input type="checkbox"/> Yes <input type="checkbox"/> No	if yes, dose (max)	_ . _	μg/kg/min	
Dopamine	<input type="checkbox"/> Yes <input type="checkbox"/> No	if yes, dose (max)	_ . _	μg/kg/min	
Epinephrine	<input type="checkbox"/> Yes <input type="checkbox"/> No	if yes, dose (max)	_ . _	μg/kg/min	
Dobutamine	<input type="checkbox"/> Yes <input type="checkbox"/> No	if yes, dose (max)	_ . _	μg/kg/min	
Vasopressin	<input type="checkbox"/> Yes <input type="checkbox"/> No	if yes, dose (max)	_ . _	U/min	
Other vasopressors	name, dose unit				
	name, dose unit				
Other inotropes	name, dose unit				
	name, dose unit				
Respiratory rate (min)	--		(max)	--	bpm
PaO ₂ (min)	--		(max)	--	<input type="checkbox"/> mmHg <input type="checkbox"/> KPa
Concurrent FiO ₂ (min)	--		(max)	--	(%)
PaCO ₂ (min)	--		(max)	--	<input type="checkbox"/> mmHg <input type="checkbox"/> KPa
Arterial pH (min)	---		(max)	---	
Serum HCO ₃ (if no ABGs) (min)	_ . _		(max)	_ . _	mmol/L
Leukocytes (min)	---		(max)	---	10 ³ /mm ³
Platelets (min)	---			---	10 ³ /mm ³
Hemoglobin (min)	_ . _		(max)	_ . _	<input type="checkbox"/> g/dL <input type="checkbox"/> mmol/L
Hematocrit (min)	_ . _		(max)	_ . _	(%)
Total bilirubin (max)	_ . _			_ . _	<input type="checkbox"/> mg/dL <input type="checkbox"/> μmol/L
Blood lactate (max)	_ . _			_ . _	mmol/L
Blood urea (max)	_ . _			_ . _	<input type="checkbox"/> mg/dL <input type="checkbox"/> mmol/L
Blood creatinine (min)	_ . _		(max)	_ . _	<input type="checkbox"/> mg/dL <input type="checkbox"/> μmol/L
Serum potassium (min)	_ . _		(max)	_ . _	mmol/L



Serum sodium	(min)	---	(max)	---	mmol/L
Urine output		---		mL/24 hours	
Estimated Glasgow Coma Score (worst, prior to sedation/anesthesia)					
	Eyes (1-4)	_	Verbal (1-5)	_	Motor (1-6)
Actual Glasgow Coma Score (worst, under sedation/anesthesia)					
	Eyes (1-4)	_	Verbal (1-5)	_	Motor (1-6)
Interventions (on study day)					
High flow nasal oxygen		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
CPAP/non-invasive ventilation		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Invasive mechanical ventilation		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Tracheostomy		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Central venous catheter		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Pulmonary artery catheter		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Other cardiac output monitoring devices	name(s).....				
Intermittent hemodialysis		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Continuous renal replacement therapy		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
ECMO		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes,	VA	<input type="checkbox"/>	high-flow VV	<input type="checkbox"/>	ECCO ₂ R <input type="checkbox"/>
End-of-life decisions					
Is there a documented decision (received on or before the study day) not to resuscitate (DNR) or to withhold/withdraw life-sustaining measures					
DNR		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Withhold		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Withdraw		<input type="checkbox"/>	Yes	<input type="checkbox"/>	No



Instructions to complete the CRF

All forms should be completed on paper and then submitted electronically via the secured internet-based platform. Participants should register online via our webpage (www2.intensive.org/EPIC3/home.asp). Providing a valid email address is mandatory to facilitate correspondence during the study. Please inform us of any changes in your email.

Center Demography (Form 1)

This form should be completed and submitted electronically within one week after the study date.

Where several ICUs are participating from the same hospital, each ICU must complete and submit a separate form.

- Type of ICU:** Please indicate whether your ICU is open (non-ICU doctors can write orders) or closed (only ICU doctors can write orders).
- ICU specialty:** Please classify your ICU according to the majority type (>60 %) of patient admitted. Other specialties can be listed if necessary.
- Staffed ICU beds:** This refers to the number of beds normally available for admissions; i.e. beds blocked for any reason (staff shortages, technical problems, etc....) are not to be counted.

Enrollment (Form 2)

This form consists of patient demographics.

- Center nr.:** Center number provided by the coordinating center.
- Patient nr.:** Patient number provided by the coordinating center.
- Date/time of admission:** The format day/month/year should be used, time given using the 24 hour clock
- Age:** Patient's age (in years) on the day of the study
- Weight:** Patient's weight (in kg) on the day of the study
- Height:** Patient's height (in cm) on the day of the study
- Type of admission:** Surgical - defined as having surgery in the week preceding ICU admission. Elective surgery is defined as surgery scheduled > 24 hours in advance and emergency surgery as that scheduled within 24 hours of operation. Trauma is defined as an ICU admission directly related to, or as a complication of, a traumatic event in the 30 days preceding ICU admission. "Trauma" and "surgical" should be selected as type of admission if a trauma patient has undergone surgery. All other admissions are considered medical. Codes for site of surgery are listed separately (up to 3 sites are possible)
- Admission source:** Only one choice is possible, but a free text option is available if needed.
- Primary diagnosis:** The main reason for admission to the ICU. Only one primary diagnosis should



be entered (see codes).

- Secondary diagnoses:** Defined as associated acute conditions on admission. Up to 3 secondary diagnoses are possible (see codes). If there are no relevant secondary diagnoses, please leave blank.
- Comorbidities:** Chronic diseases present prior to ICU admission. More than one can be chosen according to the following definitions:
 - **Metastatic cancer:** Metastases proven by surgery, computed tomography or magnetic resonance scan, or any other method.
 - **Hematologic cancer:** If yes, select appropriate box.
 - **HIV infection:** HIV positive patients with clinical complications such as *Pneumocystis carinii* pneumonia, Kaposi's sarcoma, lymphoma, tuberculosis, or toxoplasma infection.
 - **Chronic renal failure:** Defined as either chronic dialysis dependent renal failure or history of chronic renal insufficiency with a serum creatinine > 3.6 g/dL (300 μ mol/L).
 - **Immunosuppression:** Administration within the 6 months prior to ICU admission of corticosteroid treatment (at least 0.3 mg/kg/day prednisolone for at least one month) or other immunosuppressant drugs, severe malnutrition, congenital immunohumoral or cellular immune deficiency state.
 - **Chemotherapy/radiotherapy:** If yes, select within or more than 6 months prior to ICU admission.

Study day variables (Form 3)

These data will be used to calculate APACHE II, SAPS II and SOFA scores on the study day (13th September, 2017). This form should be submitted within one month after the study date, i.e., before October 13. If values are collected retrospectively, missing values should be left blank.

- Center nr.:** Center number provided by the coordinating center.
- Patient nr.:** Patient number provided by the coordinating center.
- Min** refers to the lowest value and **max** to the highest value in the 24 hour-period. Both min and max values are required when indicated. If only one value has been recorded in the 24 hour-period, it should be noted in both fields (min & max).
- Please choose the **appropriate unit** when applicable.
- Vasopressor doses** are calculated in μ g/kg/min (except for vasopressin).
- In patients without respiratory support, FiO_2 can be estimated using the provided guidelines (listed separately at the end of this document).
- PaO_2 and FiO_2** should be recorded simultaneously and the lowest value during the day is reported. In absence of respiratory support, use the provided guidelines to estimate the FiO_2 and/or PaO_2 . Artifacts should be avoided (transient decrease during pneumothorax.....etc).
- If the patient stays for less than 24 hours (admitted or discharged during the day), the **urine output** should be estimated for the 24 hour period (for example, if the patient dies after 8 hours and had 500 ml of urine during his/her ICU stay, the urine output would be 1.5 L).
- Continuous renal replacement therapy** refers to any forms of continuous renal therapy (CVVH, CVVHD, etc.) whereas intermittent **hemodialysis** refers to iterative hemodialysis.



- Record the three components of the "estimated" **Glasgow coma score** (last pre-sedation GCS) and **the actual GCS on sedative/anesthetic agents**. If the patient cannot verbalize (eg, endotracheal tube, tracheostomy, ...) you should indicate for the verbal component what you feel the verbal response would be if the patient could verbalize.
- **Infection** should be defined as definite, probable or possible as per the international sepsis forum definitions (Calandra and Cohen 2005).
- Please introduce the appropriate code for the site of infection, antibiotic(s), and microorganism(s). Only microorganisms considered to be pathogenic should be included with the most relevant microorganism for each site of infection recorded.
- Hospital-acquired infections are those evident at least 48 hours after hospitalization. Health-care-associated-infection refers to infections in a patient who meets any of the following criteria: 1. Received intravenous therapy at home; received wound care or specialized nursing care through a health care agency, family, or friends in the 30 days prior to hospital admission patients whose only home therapy was oxygen use were not included), 2) Attended a hospital or hemodialysis clinic or received intravenous chemotherapy in the 30 days prior to hospital admission, 3) Had been admitted to an acute care hospital for 2 or more days in the 90 days prior to hospital admission, 4) Resided in a nursing home or a long-term care facility. ICU acquired infections are defined as those occurring at least 24 hours following admission to the ICU.

Follow-up (Form 4)

The follow-up period is until hospital discharge or for 60 days (i.e., Nov. 12 for patients admitted on Sept 13 and Nov 13 for patients admitted on Sept 14) if the patient has not already been discharged. For patients discharged before 12/13 Nov follow up ceases at hospital discharge. Patients discharged alive from the hospital before 60 days will be considered as alive on the 60th day. This form should be completed and submitted before Dec. 15.



Codes

I Site of Surgery

100 Neurosurgery:

- 101 Cerebrovascular accident: neurosurgery for intracranial hematoma or other non-traumatic accident (hemorrhage, aneurysm)
- 102 Intracranial tumor: neurosurgery for any type of tumor primary or secondary
- 103 Spinal surgery
- 104 Ear, nose and throat surgery
- 105 Maxillo-facial surgery
- 106 Other

200 Thoracic surgery:

- 201 Pneumonectomy or lobectomy
- 202 Pleural surgery: includes all surgery on pleura either for tumor or pneumothorax
- 203 Lung transplantation
- 204 Other

300 Cardiac surgery:

- 301 Valvular, without CABG: all surgical treatments of valvulopathies without coronary surgery
- 302 Valvular with CABG: valvular repair with coronary surgery.
- 303 CABG without valvular repair:
- 304 Other: pericardial effusion, congenital anomaly, ventricular aneurysm, neoplastic disease, vena cava clipping/filter.
- 305 Heart transplantation
- 306 Heart & lung transplantation
- 307 Major aortic surgery: includes all surgery on aorta for dissection, atheroma, aneurysm.
- 308 Carotid endarterectomy: includes all surgery on the carotid artery
- 309 Other major vascular surgery: includes all surgery on intra thoracic or intra-abdominal vessels
- 310 Peripheral vascular surgery: includes all surgery on non-intracranial, non-intrathoracic, non-intraabdominal vessels, either arteries or veins with or without by-pass graft
- 311 Other

400 Renal-urinary tract:

- 401 Renal surgery
- 402 Urological surgery

500 Digestive:

- 501 Upper gastrointestinal surgery (up to and including the jejunum)
- 502 Lower gastrointestinal surgery
- 503 Biliary tract: surgery of gallbladder and/or biliary tract
- 504 Liver: partial hepatectomy, portal-systemic shunt surgery
- 505 Liver transplantation
- 506 Pancreas

600 Metabolic:

- 601 Endocrine surgery (thyroid, adrenal, pancreas etc)

700 Ob/gyn

- 701 Obstetric surgery: Cesarean section; surgery for ectopic pregnancy, peri or post partum hemorrhage, intra-uterine death
- 702 Gynecological surgery: surgery on uterus, ovaries, cervix uteri, genitalia



800 Trauma

- 801 Brain: surgery for subdural, epidural, intracerebral hematoma or skull fracture
- 802 Thorax: surgery of intra-thoracic organs (either cardiac, respiratory or digestive tract) and vessels.
- 803 Abdomen
- 804 Limb

900 Skin and soft tissue surgery

- 901 Surgery for necrotizing fasciitis
- 902 Burns surgery
- 903 Other skin or soft tissue surgery

II Diagnoses

000 Surveillance/monitoring only

100 Neurological:

- 101 Coma, stupor, obtunded patient, vigilance disturbances, confusion, agitation, delirium
- 102 Seizures
- 103 Ischemic stroke
- 104 Spontaneous intracranial hemorrhage
- 105 Focal neurological deficit (hemiplegia, paraplegia, tetraplegia) of other origin
- 106 Intracranial mass effect
- 107 Meningitis/encephalitis
- 108 Non-traumatic subarachnoid hemorrhage
- 109 Other

200 Respiratory:

- 201 ARDS: Syndrome of inflammation and increased permeability associated with clinical, radiological and physiological abnormalities: arterial hypoxemia resistant to oxygen therapy ($\text{PaO}_2/\text{FiO}_2 < 300 \text{ mmHg}$) and diffuse bilateral radiological infiltrates without signs of cardiac failure (or increased left-sided filling pressures)
- 202 Acute respiratory failure on chronic pulmonary disease: Chronic pulmonary disease could be obstructive or restrictive
- 203 Pneumonia
- 204 Other

300 Cardiovascular:

- 301 Out-of-hospital cardiac arrest: Needing cardiopulmonary resuscitation (CPR) prior to admission to ICU. CPR must include chest compression, defibrillation or cardiac massage.
- 302 In-hospital cardiac arrest: Needing cardiopulmonary resuscitation (CPR) prior to admission to ICU. CPR must include chest compression, defibrillation or cardiac massage.
- 303 Shock: Defined as a systolic blood pressure (SBP) $< 90 \text{ mmHg}$ or a drop in SBP of $> 40 \text{ mmHg}$ from baseline with presence of organ hypoperfusion (altered cutaneous perfusion, oliguria, encephalopathy, lactic acidosis) requiring the use of vasopressor agents.
- 304 Coronary artery syndrome
- 305 Hypertensive crisis
- 306 Major arrhythmia
- 307 Cardiac failure without shock (left, right or global)
- 308 Endocarditis/myocarditis
- 309 Other

400 Renal:



- 401 Pre-renal (or functional) renal failure
- 402 Obstructive renal failure (post-renal)
- 403 Organic acute renal failure
- 404 Pyelonephritis
- 405 Other

500 Hematological:

- 501 Hemorrhagic syndrome
- 502 Coagulopathy including severe thrombocytopenia and/or increase in prothrombin time and/or APTT.
- 503 Severe hemolysis
- 504 Other

600 Digestive/Liver:

- 601 Bleeding: Either upper or lower gastrointestinal tract
- 602 Acute abdomen: Related to infection, ischemia, perforation, inflammation, either upper or lower gastrointestinal tract. Excludes severe pancreatitis
- 603 Severe pancreatitis
- 604 Liver failure: hepatic failure inducing metabolic disturbances and/or encephalopathy
- 605 Other

700 Metabolic:

- 701 Acid-base and/or electrolyte disturbance
- 702 Hypo and hyperthermia
- 703 Hypo and hyperglycemia (includes diabetic coma)
- 704 Hypo/hyperthyroidism
- 705 Other

800 Ob/gyn:

- 801 Eclampsia
- 802 Peripartum bleeding
- 803 Other peripartum complication
- 804 Other obstetric problem
- 805 Gynecological problem

900 Trauma

- 901 Brain
- 902 Thorax
- 903 Abdomen
- 904 Limb
- 905 Polytrauma
- 906 Burns without surgery

IV Site of infection

- 1 Respiratory
- 2 Abdominal
- 3 Blood stream
- 4 Renal
- 5 Skin
- 6 Catheter-related
- 7 Genito-urinary
- 8 Central nervous system
- 9 Other

V Microorganisms

Gram-positive

- 101 Staphylococcus aureus, unknown sensitivity/resistance
- 102 Staphylococcus aureus sensitive to methicillin (MSSA)
- 103 Staphylococcus aureus resistant to methicillin (MRSA)
- 104 Staphylococcus aureus resistant to linezolid
- 105 Staphylococcus aureus vancomycin-intermediate or resistant (VISA)
- 106 Staphylococcus coagulase negative (epidermidis, haemolyticus, ...), unknown sensitivity/resistance
- 107 Staphylococcus coagulase negative (epidermidis, haemolyticus, ...) sensitive to methicillin
- 108 Staphylococcus coagulase negative (epidermidis, haemolyticus, ...) resistant to methicillin
- 109 Streptococcus D group (Enterococcus faecalis, faecium), unknown sensitivity/resistance
- 110 Streptococcus D group (Enterococcus faecalis, faecium) vancomycin sensitive
- 111 Streptococcus D group (Enterococcus faecalis, faecium) vancomycin-intermediate or resistant (VRE)
- 112 Streptococcus, A, B, C, G group
- 113 Streptococcus pneumoniae, unknown sensitivity/resistance
- 114 Streptococcus pneumoniae resistant to macrolides
- 115 Streptococcus pneumoniae sensitive to macrolides
- 116 Streptococcus, others
- 117 Cocci Gram +ve, others
- 118 Neisseria meningitidis
- 119 Moraxella (Moraxella catarrhalis, Moraxella spp)
- 120 Listeria monocytogenes
- 121 Neisseria gonorrhoeae
- 122 Bacillus Gram +ve, others (Bacillus cereus, Bacillus spp, Corynebacterium spp, Lactobacillus, Rhodococcus equi, Nocardia spp, other)

Gram-negative

- 201 Escherichia coli, unknown sensitivity/resistance
- 202 Escherichia coli sensitive to beta lactams (including 3rd generation cephalosporins)
- 203 Escherichia coli resistant to beta lactams (including 3rd generation cephalosporins)
- 204 Escherichia coli resistant to carbapenems
- 205 Enterobacter (any type)
- 206 Klebsiella, unknown sensitivity/resistance
- 207 Klebsiella (any type) sensitive to beta lactams (including 3rd generation cephalosporins)
- 208 Klebsiella (any type) resistant to beta lactams (including 3rd generation cephalosporins)
- 209 Klebsiella resistant to resistant to carbapenems
- 210 Proteus or Providencia (any type)
- 211 Salmonella (any type)
- 212 Serratia
- 213 Citrobacter
- 214 Pseudomonas aeruginosa, unknown sensitivity/resistance
- 215 Pseudomonas aeruginosa sensitive to carbapenems
- 216 Pseudomonas aeruginosa sensitive to beta lactams (including 3rd generation cephalosporins)
- 217 Pseudomonas aeruginosa resistant to carbapenems
- 218 Pseudomonas aeruginosa resistant to beta lactams (including 3rd generation cephalosporins)
- 219 Pseudomonas, other
- 220 Acinetobacter, unknown sensitivity/resistance
- 221 Acinetobacter sensitive to carbapenems
- 222 Acinetobacter resistant to carbapenems
- 223 Stenotrophomonas maltophilia
- 224 Campylobacter - Helicobacter - Brucella
- 225 Haemophilus (influenzae or other)
- 226 Enterobacteria, other (Yersinia spp, Shigella spp, other)
- 227 Any Gram-negative resistant to colistin
- 228 Gram -ve, other



Anaerobes

- 301 Clostridium (Clostridium difficile, Clostridium perfringens, Clostridium spp, Actinomyces, Propionibacterium)
- 302 Anaerobe cocci (Peptococcus, Peptostreptococcus, Veillonella)
- 303 Bacteroides (Bacteroides fragilis, Bacteroides melaninogenicus, Capnocytophaga, Fusobacterium spp,...)
- 304 Anaerobe, other

Other organisms

- 401 Mycobacteria (tuberculosis or others)
- 402 Chlamydia
- 403 Rickettsia
- 404 Mycoplasma (Mycoplasma pneumoniae or hominis, Rochalimeae spp, Bartonella spp)
- 405 Legionella pneumoniae

Fungi

- 501 Candida albicans, unknown sensitivity/resistance
- 502 Candida albicans sensitive to azoles
- 503 Candida albicans resistant to azoles
- 504 Candida tropicalis, unknown sensitivity/resistance
- 505 Candida tropicalis sensitive to azoles
- 506 Candida tropicalis resistant to azoles
- 507 Candida glabrata, unknown sensitivity/resistance
- 508 Candida glabrata sensitive to azoles
- 509 Candida glabrata resistant to azoles
- 510 Candida krusei, unknown sensitivity/resistance
- 511 Candida krusei sensitive to azoles
- 512 Candida krusei resistant to azoles
- 513 Candida kefyr, unknown sensitivity/resistance
- 514 Candida kefyr sensitive to azoles
- 515 Candida kefyr resistant to azoles
- 516 Candida parapsilosis, unknown sensitivity/resistance
- 517 Candida parapsilosis sensitive to azoles
- 518 Candida parapsilosis resistant to azoles
- 519 Candida guilliermondii, unknown sensitivity/resistance
- 520 Candida guilliermondii sensitive to azoles
- 521 Candida guilliermondii resistant to azoles
- 522 Candida dubliniensis, unknown sensitivity/resistance
- 523 Candida dubliniensis sensitive to azoles
- 524 Candida dubliniensis resistant to azoles
- 525 Aspergillus
- 526 Fungi, other (Cryptococcus neoformans, Histoplasma spp...)

Viruses

- 601 Influenza A
- 602 Influenza B
- 603 HSV I or II
- 604 CMV
- 605 Others

Parasites

- 701 Plasmodium falciparum, Pneumocystis carinii, Toxoplasma gondii...

801 Mixed Flora

V Antibiotics



Cephalosporins

- 11 Cefazolin
- 12 Cefuroxime
- 13 Ceftazidime
- 14 Ceftriaxone
- 15 Cefepime/cefpirome
- 16 Other cephalosporin

Penicillins

- 21 Benzyl penicillin
- 22 Ampicillin
- 23 Amoxy + clavulanate
- 24 Piperacillin + tazobactam
- 25 Oxacillin/cloxacillin/flucloxacillin
- 26 Other penicillin

Carbapenems

- 31 Imipenem
- 32 Meropenem
- 33 Ertapenem
- 34 Doripenem
- 35 Others

Other beta-lactams

- 41 Temocillin
- 42 Aztreonam
- 43 Other

Aminoglycosides

- 51 Amikacin
- 52 Tobramycin
- 53 Gentamicin
- 54 Other

Quinolones

- 61 Ciprofloxacin
- 62 Levofloxacin
- 63 Other

Glycopeptides

- 71 Vancomycin
- 72 Teicoplanin
- 73 Other

Macrolides

- 81 Erythromycin
- 82 Other (clarithromycin, etc)

Other antibiotics

- 91 Metronidazole
- 92 Cotrimoxazole
- 93 Oxazolidinone (Linezolid)
- 94 Lipopeptide (Daptomycin)
- 95 Tigecycline
- 96 Other

Antifungal



101 Fluconazole
102 Amphotericin B
103 Ampho lipid formulation
104 Echinocandins
105 Voriconazole
106 Other

200 Antiviral

201 Highly active antiretroviral therapy (HAART)
202 Oseltamivir
203 Zanamivir
204 Aciclovir
205 Ganciclovir
206 Amantadine
207 Other

Appendix

A) Conversion tables

1 Estimating PaO₂ from a given SO₂

SO ₂ (%)	PaO ₂ (mmHg)	pKa
80	44	5.9
81	45	6.0
82	46	6.1
83	47	6.3
84	49	6.5
85	50	6.7
86	52	6.9
87	53	7.1
88	55	7.3
89	57	7.6
90	60	8.0
91	62	8.3
92	65	8.7
93	69	9.2
94	73	9.7
95	79	10.5
96	86	11.5
97	96	12.8
98	112	14.9
99	145	19.3

2 Estimating FiO₂

Method	O ₂ flow (l/min)	Estimated FiO ₂ (%)
Nasal cannula	1	24
	2	28
	3	32
	4	36
	5	40
	6	44
Nasopharyngeal catheter	4	40
	5	50
	6	60
Face mask	5	40
	6-7	50
	7-8	60
	>8	60
Face mask with reservoir	6	60
	7	70
	8	80
	9	90
	10	95