

CRF :

1. Specimen Abbreviations:

ES	Expectorated Sputum
TA	Tracheal Aspirate
QTA	Quantitative tracheal aspirate
PTC	Protected telescoping catheter (quantitative)
BAL	Bronchoalveolar Lavage
PSB	Protected specimen brush
BC	Blood Culture
PI	Pleural fluid
Cyt	Cytology
DFA	Direct Fluorescent Antibody on Respiratory Specimen
Ser	Serology on serum
NP	Nasopharyngeal aspirate
OLB	Open Lung Biopsy
TBLB	Transbronchial lung biopsy
AG	Antigen test-specify site
Other	Specify

2. Coding of microorganisms

Code	Name	Equivalent 1	Equivalent 2
1	Staphylococcus aureus	S. aureus	Staph.aureus
2	Staph coagulase-negative	S. CN	S. epidermidis
3	Enterococcus spp.	E. faecalis	E. faecium
4	Streptococcus pneumoniae	S. Pneumoniae	Pneumococci
5	Streptococcus spp	Streptococcus sanguis, mitis	Strep. Viridans, alpha-strep
6	Strep. (or gr.) A, C, G	Beta-hemolytic	
7	Haemophilus spp	H. influenzae	H. para influenzae
8	Moraxella (or M.) catharralis	Branhamella	
9	Escherichia coli	E. coli	
10	Proteus mirabilis	Prot. mirabilis	Morganella
11	Klebsiella spp	K. pneumoniae	K. oxytoca
12	Enterobacter spp	E. cloacae	E. areogenes
13	Serratia	S. marcescens	
14	Citrobacter	C. freundii	
15	Salmonella spp.		.
16	Other enterobacteriaceae		
17	GNB (unidentified)	Gram-negative bacilli	
18	Pseudomonas aeruginosa	P. aeruginosa	
19	Pseudomonas spp.		
20	Acinetobacter spp.	A. baumannii	A. Iwoffii
21	Stenotrophomonas maltophilia	S. maltophilia	
22	Other aerobic GNB	Pseudomonas spp.	Aeromonas sp.
23	Bacteroides	B. fragilis	Bacteroides spp.
24	Other anaerobe		
25	Candida	C. albicans	Candida spp.
26	Aspergillus	A. fumigatus	Aspergillus spp.
27	Mycobacterium	M. tuberculosis	Mycobacterium sp.
28	Legionella	L. pneumophila	Legionella sp.
29	Listeria	L. monocytogenes	
30	Chlamydia, Rickettsia		
31	Mycoplasma	M. pneumoniae	
32	Virus	CMV, Herpes virus	
33	Other virus		
34	No documentation		

3 Pathogenicity

- P Definite pathogen
- M Possible Pathogen
- C Contaminant/coloniser

As defined by the investigator, according to clinical judgment and interpretation of specimen culture results.

4 Severity of Infection

Severity of sepsis

Severity is defined as sepsis/severe sepsis/shock following the ACCP/SCCM 1992 conference. To qualify for severe sepsis, new/worsening OD other than the lung must be present, and related to the episode of pneumonia.

5 Co-morbidities:

1. Bone Marrow Transplantation

2. Non-metastatic cancer: Could include regional lymph nodes

3. Chronic Renal Failure: Chronic renal supportive therapy (ie chronic haemodialysis/haemofiltration/peritoneal dialysis) for irreversible renal disease or history of chronic renal insufficiency associated with clinical adverse effects (usually Creatinine > 300 umol/l)

4. COPD: Chronic obstructive pulmonary disease, chronic bronchitis and or emphysema requiring prescribed treatment

5. Chronic respiratory failure: permanent shortness of breath on light activity, due to pulmonary (chronic restrictive or obstructive) disease. The subject is unable to work, climb stairs or perform household duties. Documented chronic hypoxaemia, hypercarbia, secondary polycythaemia, severe pulmonary hypertension (mean PAP > 40 mmHg) or requirement for chronic respiratory support (eg home O2 therapy)

6. Chronic Heart Failure: Fatigue, dyspnoea or angina at either rest or a minimum level of activity. The subject cannot stand-alone, walk slowly or dress without symptoms (ie NYHA class IV).

7. Cirrhosis: Diagnosed by either biopsy taken prior to or during ICU admission, or clinical features such as portal hypertension, presence of oesophageal/gastric varices (demonstrated by surgery, imaging or endoscopy), or the demonstration of retrograde splenic-venous flow by ultrasound, or history of variceal bleeding, or episodes of acute hepatic failure/encephalopathy/coma.

8. Alcoholism: Alcohol intake that exceeds the social drinking custom (usually regular intake of more than 80 grams of alcohol/day for at least 6 months prior to ICU admission) and responsible for clinical adverse effects such as logorrhea, encephalopathy, neurological disorder, nutritional disorder, cirrhosis.

9. Homelessness: No fixed address for 6 months prior to ICU admission

10. Drug Abuse: Drug addiction with intravenous drugs (opioids and derivatives) for at least 6 months prior to ICU admission.

11. Diabetes Mellitus: Requiring daily insulin therapy

12. Solid organ transplant: liver/heart/lung/kidney still requiring immunosuppression

13. Immunosuppression: can be associated with the following:

- known daily corticosteroid therapy with greater than or equal to a total daily dose equivalent to 1 mg/kg or greater than 40 mg/day of oral prednisolone for at least 7 consecutive days within one month prior to study entry
- clinically suspected or known to have Acquired Immunodeficiency Syndrome (AIDS) as defined by the Centre for Disease Control
- granulocyte count less than $1 \times 10^9/l$ due to a cause other than severe sepsis (eg metastatic or haematological malignancies or chemotherapy)
- immunosuppressant therapy (eg due to an organ or bone marrow transplant)

9. McCabe’s Classification of Chronic Disease (4)

Each of the above co-morbidities, if present, should be coded according to this classification:

1. Non-fatal underlying disease or no underlying disease
(All patients other than the ones categorised below)
2. “Ultimately fatal (<5 years) underlying disease
Examples: bone marrow aplasia, chronic leukaemia, and myeloproliferative Syndrome, myeloma, malignant lymphoma less than stage IV, transplantation of heart, lung, bone marrow, pancreas or liver, cancer without metastasis, portal hypertension, cardiac insufficiency (NYHA III), chronic respiratory insufficiency with oxygen therapy, chronic haemodialysis, AIDS classification IV, A, B or E.
3. “Rapidly fatal (<1 year) underlying disease
Examples: acute leukaemia, primitive or blastic transformation of chronic myeloid leukaemia, malignant lymphoma or Hodgkin’s disease stage IV, metastatic cancer, hepatic failure with encephalopathy, ischaemic or nonobstructive cardiac failure NYHA IV, rapidly progressive respiratory failure, AIDS classification IV, C or D or HIV encephalopathy

10. SEVERITY SCORES

SOFA SCORE

Dysfunction	1	2	3	4	TOTAL Score
Respiratory PaO ₂ /FIO ₂ mmHg	<400	<300	< 200 with resp support	<100 with resp support	
Coagulation Platelets X 10 ⁹ /l	<150	<100	<50	<20	
Liver Bilirubin (micromol/l)	20-32	33-101	102-204	>204	
CVS (hypotension)	MAP < 70 mmHg	*Dopamine ≤ 5 or *dobutamine (any dose)	*Dopamine > 5 or *Nor/adrenaline ≤ 0.1	*Dopamine > 15 or *Nor/adrenaline > 0.1	
CNS (Glasgow Coma Score)	13-14	10-12	6-9	< 6	
Renal (creatinine mmol/l or urine output, UOP)	0.11 – 0.17	0.171-0.299	0.30-0.44 or UOP < 500 ml/day	>0.44 or UOP < 200 ml/day	

*Dopamine/Dobutamine and Nor/adrenaline administered for at least one hour, doses in micrograms/kg/min

Total Score: ____

SAPS II Scoring Sheet (Le Gall et al.)

Variables /Points	26	13	12	11	9	7	6	5	4	3	2	0	1	2	3	4	6	7	8	9	10	12	15	16	17	18	
Age (years)												<40							40-59				60-69	70-74	75-79		≥80
HR (beats/min)				<40							40-69	70-119				120-159			≥160								
SBP (mmHg)		<70						70-99				100-199		≥200													
Temperature (C°)												<39°			≥39°												
PaO2, mmHg/FiO2 PaO2 kPa/FiO2				<100 <13.3	100-199 13.3-26.5			≥200 ≥26.6																			
Diuresis (L/d)				<0.5					0.5-0.999			≥1															
BUN (g/L) BUN (mg/dL)												<10.0 <0.60					10.0-29.9 0.6-1.7									≥30.0 ≥1.8	
Leukocytosis (10 ³ /mL)			<1									1.0-19				≥20.0											
Potassium (mmol/L)										<3.0		3.0-4.9				≥5.0											
Sodium (mmol/L)								<125				125-144	≥145														
Bicarbonates (mmol/L)							<15			15-19		≥20															
Bilirubin (μmol/L) Bilirubin (mg/dL)												<68.4 <40		68.4-102.5 40-59													≥ 103 ≥ 60
Glasgow score	<6	6-8				9-10		11-13				14-15															
Chronic diseases																					Metast cancer	Hematol malignancy					AIDS
Type of admission												1Sched. Surg.					2Medical			3Emerg. Surg.							
Sum of points																											

Tick boxes corresponding to most abnormal value during past 24 hours

Total score: _ _ _

Variables and Definitions for SAPS II

Variable	Definition	Variable	Definition
Age	Use the patients age (in years) at last birthday	Serum bicarbonate level	Use the lowest value in mEq/L
Heart rate	Use the worst value in 24 hours, either low or high heart rate; if it varied from cardiac arrest (11 points) to extreme tachycardia (7 points) assign 11 points	Bilirubin level	Use the highest value in umol/L or mg/dl
Systolic blood pressure	Use the same method as for heart rate, eg if it varied from 60 mm Hg to 205 mm Hg, assign 13 points	Glasgow Coma Score	Use the lowest value; if the patient is sedated, record the estimated Glasgow Coma Score before sedation
Body temperature	Use the highest temperature in degrees Centigrade or Fahrenheit	Serum potassium /sodium level	Use the worst (high or low) value in mmol/L according to the scoring sheet
PaO ₂ /FiO ₂ ratio	If ventilated or continuous pulmonary artery pressure, use the lowest value of the ratio	Urinary output	If the patient is in the intensive care unit for less than 24 hours, make the calculation for 24 hours eg 1L in 8 hours – 3L in 24 hours
Serum urea or serum urea nitrogen level	Use the highest value in mmol/L or g/L for serum urea, in mg/dL for serum urea nitrogen	Metastatic Cancer	Yes, if proven metastasis by surgery, computed tomographic scan or any other method
WBC count	Use the worst (high or low) value in mmol/L according to the scoring sheet	Hematologic malignancy	Yes, if lymphoma, acute leukemia, or multiple myeloma
Type of admission Surgery	3 Patients added to operating room schedule within 24 hours of the operation 1 Patients whose surgery was scheduled at least 24 hours in advance 2 Patients having no surgery within 1 week of admission to intensive care unit	AIDS	Yes, if HIV-positive with clinical complications such as Pneumocystis carinii pneumonia, Kaposi's sarcoma, lymphoma, tuberculosis or toxoplasma infection

CASE REPORT FORM

1. Hospital Name: _____

2. Patient Age: ___ 3. Patient Gender: M F 4. Unit Record Number _____

5. Date of Hospital admission: ___/___/___ 6. Date of ICU admission: ___/___/___

7. Severity of illness score within first 24 hours of admission (**SAPS II**): ___ ___

8. Principal Diagnoses on admission:

Major organ dysfunction: 1. _____ 2. _____ 3. _____

Underlying cause: _____

9. Chronic Comorbidities : mark 0 if absent, and use McCabes' Classification of Chronic Illness if present as: 1=nonfatal underlying disease, 2=ultimately fatal (< 5 years), 3=Rapidly fatal (<1 year) disease to classify each of the comorbidities if present.

Bone Marrow Transplant		COPD		Diabetes Mellitus	
Solid Organ Transplant		Chronic Renal Failure		Chronic Alcoholism	
Immunosuppression		Chronic Respiratory Failure		iv. Drug Abuse	
Non Metastatic Cancer		Chronic Heart Failure		Homelessness	
Metastatic cancer		Cirrhosis		Other: _____	
AIDS		Haematological malignancy			

(note : AIDS, Metastatic cancer and Haematological malignancy are scored in the SAPS II score)

10. Date initiation MV ___/___/___

11. Date Ceased MV ___/___/___

12. Duration Non-Invasive Ventilation (days) ___ ___

13. Date endotracheal intubation ___/___/___

14. Date Discharged from ICU ___/___/___

15. Date Discharged from Hospital ___/___/___

16. Patient Outcome: Survived ICU admission or Died

IF DIED, Date of Death: ___/___/___

Contribution of pneumonia to death (choose one): 1.directly related; 2. contributing; 3. unrelated to pneumonia: ___

Suspected VAT/VAP

Date of onset ___/___/___ (date of clinical suspicion for this episode)

1.1 Reason to Suspect Pneumonia:

(tick appropriate boxes-more than one possible)

- | | |
|-----------------------------------------------------------------------|--------------------------|
| Clinical Signs of Consolidation | <input type="checkbox"/> |
| Worsening Gas Exchange | <input type="checkbox"/> |
| Purulent or changing character of sputum/tracheal aspirate | <input type="checkbox"/> |
| New rise in core body temperature > 1°C or > 38.3 °C | <input type="checkbox"/> |
| Hypothermia (T<36 °C) | <input type="checkbox"/> |
| Pleural Effusion | <input type="checkbox"/> |
| New or worsening CXR infiltrate or consolidation | <input type="checkbox"/> |
| Peribronchial CXR Infiltrate Only | <input type="checkbox"/> |
| CXR cavitation of infiltrate (not non infective cause) | <input type="checkbox"/> |
| > 25% increase in circulating leucocytes or > 10 X 10 ⁹ /l | <input type="checkbox"/> |
| > 10% immature WBC | <input type="checkbox"/> |
| Neutropenia < 1 X 10 ⁹ /l | <input type="checkbox"/> |
| Histological demonstration of pneumonia or necrosis | <input type="checkbox"/> |

1.5 Degree of Confidence in Clinical Diagnosis of Pneumonia: (Tick one only)

- | | |
|--------------------------------------------|--------------------------|
| 1. High > 50 % likelihood | <input type="checkbox"/> |
| 2. Medium > 20-50% likelihood of pneumonia | <input type="checkbox"/> |
| 3. Low < 20 % likelihood of pneumonia | <input type="checkbox"/> |

1.6 Other Infection Clinically Suspected or ongoing (specify site/microbiology): _____

1.2 Severity of Infection on day of suspicion: (tick appropriate box)

- SOFA score: ___
- | | |
|---------------|--------------------------|
| Sepsis | <input type="checkbox"/> |
| Severe sepsis | <input type="checkbox"/> |
| Septic shock | <input type="checkbox"/> |

1.3 SAPS II SCORE at pneumonia onset (only for VAP episode)

Score on the Day before pneumonia clinical diagnosis: ___ ___

Score on the Day of pneumonia clinical diagnosis: ___ ___

1.4 Infection Acquired in: (Tick one only)

- | | |
|-----------|--------------------------|
| Community | <input type="checkbox"/> |
| Hospital | <input type="checkbox"/> |
| ICU | <input type="checkbox"/> |

1.7 Diagnostic Investigations Performed for this VAT/VAP Episode:

Circle the appropriate response for each procedure and the reason for the procedure being or not being performed for this episode of suspected pneumonia-
 INFORMATION TO BE COLLECTED FROM INTENSIVIST RESPONSIBLE FOR PATIENT WHEN PNEUMONIA OCCURRED

Procedure	Procedure Performed *	Date/Time performed (eg 1/11/05-13:00)	Result**	Micro-organism***	If not performed in this patient, why (tick appropriate box - several possible)?		
					Unavailable	Not indicated	Contra-indicated
Non-invasive LRTI specimens		-					
Expectorated Sputum (collected prior to intubation)		-					
Qualitative Tracheal Aspirate		-					
Quantitative Tracheal Aspirate		-					
Protected Telescoping Catheter		-					
Invasive LRTI specimens							
Bronchoscopy		-					
Bronchoalveolar lavage		-					
Protected Telescoping Catheter		-					
PSB		-					
Open Lung Biopsy		-					
Transbronchial Lung Biopsy		-					
Pleural Fluid culture		-					
Microbiological techniques							
Quantitative Bacterial Cultures		-					
Cytology on BAL fluid		-					
Bacterial/Mycoplasma DFA		-					
Viral Direct Fluorescent Antibody		-					
Blood Culture							
Serology on Serum		-					
Urine Ag test for Legionella		-					
Urine Ag test for pneumococcus		-					
Other, specify:		-					
Other, specify:		-					

* Mark 0 if not performed; 1 if performed *Result: 0 if performed and negative; list all positive results in consecutive number for all specimens (1, 2, 3, etc for each microorganism identified)

**Microorganisms: Please refer to coded list

1.8 VAT/VAP. Microbiological Specimen Results (include specimens with no growth):

(report all specimens results related to suspected pneumonia. Antibiotic susceptibilities are coded as R for resistant-intermediate and S for sensitive, and NT if not tested); Circle isolate if Extended Spectrum Beta-Lactamase (ESBL)-Producing Organism.

Micro-organism number *	Isolate **	Category pathogen ***	Antibiotic susceptibility																								
			Pe	Ox	Va	Er	Am	Au	Ct	Cx	Cr	Cz	Ge	To	Ak	Im	Me	Cp	Ti	Ta	Te	Co	Lz	Other specify	Other Specify		

*As listed in preceding table under "results"; **See code for microorganisms list

***Pathogenicity Abbreviation: P – definite pathogen M –Possible Pathogen C-contaminant/coloniser