# Online Supplemental Material

**Title:** Potentially modifiable factors contributing to outcome from Acute Respiratory Distress Syndrome: the LUNG SAFE study

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# APPENDIX 3 – LUNG SAFE Protocol and Case Report Form

## 3.1 LUNG SAFE Study Protocol

**Large observational study to UNderstand the Global impact of Severe Acute respiratory FailurE (LUNG-SAFE) Study**

Protocol Version – December 9, 2013

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### INTRODUCTION

The original description of Acute Respiratory Distress Syndrome (ARDS) dates back more than 40 years. After the landmark definition provided by the American European Consensus Conference in 1994 [1], the definition was recently updated, by the "ARDS definition task force" (an initiative of the European Society of Intensive Care Medicine endorsed by the American Thoracic Society and the Society of Critical Care Medicine) which proposed and validated the "Berlin definition"[2], with the aim of overcoming some of the limitations which have emerged in regard to the 1994 definition.

Several large observational population studies have been conducted in the last 10 years, with the aim of describing the ICU incidence and outcome of ARDS patients as well as collecting clinical and physiological variables, with a specific focus on mechanical ventilator settings [3-5]. These studies have provided great insights into the understanding of ARDS: far from the carefully controlled settings of randomized controlled trials these studies provide a "real-life

picture" of ARDS patients and of clinicians' response.
However, important advances and changes in the management of patients with respiratory failure have occurred. First, the use of non-invasive ventilation to delay/prevent intubation has rapidly increased. The 1994 definition of ARDS required the patient to be supported by mechanical ventilation. Second, protective ventilation has become more established and the use of adjuncts such as ECMO has increased substantially in the last five years. Third, the patient population is also changing, as elderly patients are more commonly admitted into ICUs. Perhaps most importantly, the definition of ARDS itself has recently changed.

For these reasons the Acute Respiratory Failure section of ESICM proposes to undertake the "LUNG SAFE study", in order to prospectively assess the incidence of, and outcomes from ARDS, as defined by the Berlin definition.

In summary, the study will focus on the following items:

- The frequency and disease burden of acute hypoxaemic respiratory failure in winter
- The aetiologies of acute hypoxaemic respiratory failure requiring ventilatory support.
- The incidence of ARDS based on the Berlin definition within this patient cohort
- The mortality from ARDS within this cohort, and how does this vary based on ARDS severity
- Natural history of ARDS (duration and evolution by severity)
- Therapeutic resource utilization
    - Use of treatments, such as recruitment maneuvers, prone positioning, nitric oxide, high frequency oscillation, ECMO, transfer to tertiary hospital from smaller regional ones) according to the severity of the disease
    - Use of non-invasive ventilation in management of ARDS patients (use in different stages: early ARDS versus immediately after extubation)

**METHODS**
This is a prospective observational study, aimed at collecting an adequate dataset on a large cohort of patients admitted to a large number of ICUs.

# ICU RECRUITMENT AND PARTICIPATION

ICUs will be invited to participate on a voluntary basis. ICUs enrolling into existing databases (e.g., ERIC study, ICON audit) will be invited to participate. It is important that participating ICUs commit (by written agreement) to fully comply with the study protocol.
ICU recruitment in each country will be spearheaded by a national coordinator Each ICU will be requested to recruit for **4 consecutive 'winter' weeks**

- Northern Hemisphere – 4 week period between February 1st and March 31st 2014.
- Southern Hemisphere: 4 week period between June 1st – August 31st 2014

There will be 2 data collectors per participating ICU's. Each data collector will undergo an online training program designed to standardize data interpretation [esp. CXR's] and will receive a login authorization following completion of this training.

**INCLUSION CRITERIA:** All patients admitted to the participating ICUs receiving invasive or non- invasive ventilation will be screened and included in the database.

**EXCLUSION CRITERIA:** Age < 16

# DATA COLLECTION

Data collection will be web based, permitting conditional Data Collection screens, i.e. data collectors will be automatically guided as to which sections to complete based on data entered indicating whether Inclusion Criteria are met. Data collection will be done at 10am each morning.

***Form #1:*** This is completed by each participating ICU just prior to study commencement. It will provide a set of data concerning its own size, staff, case-mix.
***Form #2:*** Completed at ICU admission on all patients in participating ICUs
***Form #3:*** Completed on all patients receiving: (1) CPAP > 5cm $H_2O$, or Assisted ventilation (invasive or non-invasive) with PEEP CPAP > 5cm $H_2O$ and with a P/F ratio <300 [<40 if $PO_2$ in KPa]. Patients will be reassessed daily and if they fulfill inclusion criteria will have form #3 completed at that point, and be entered into the study at that point. Day 1 is the date of fulfillment of the inclusion criteria. Data will be collected daily for Study Days 1-7 inclusive, then on Study Days 10, 14, 28, and at ICU death or discharge. ***Forms #4 and 5***: Completed at ICU and at either hospital discharge or day 90 [whichever comes first] respectively.

# SAMPLE SIZE

Our aim is to obtain a sample of at least 1000 ARDS patients within the cohort of patients receiving assisted ventilation. The reported incidence of ARDS in ICU patients varies, from 2.2% of ICU admissions develop ARDS in ALIEN [3], 7.1% in ALIVE Study [6], to 17.5% of Ventilated patients in KCLIP [7]. A reasonable projection of the incidence of ARDS among patients admitted in ICUs can be estimated to approximate 5% of ICU admission. As a conservative estimate, if a medium-sized ICU admits 50 patients/month and collects data for four weeks, 500 ICUs will be necessary to achieve this number.

# ETHICAL APPROVAL AND PATIENT'S CONSENT

We believe that informed patient consent will not be necessary, as this audit is purely observational, the data collected are part of routine clinical care, and the data will be anonymized. However, each PI will notify the relevant ethics committee, in compliance with the local legislation and rules. The national coordinators will facilitate this process.

# DATA ANONYMIZATION AND DE-IDENTIFICATION

The study will not store electronically any data which allow direct patient's identification (such as name and/or date of birth). Only initials and age are collected and the patient is then assigned a unique identifier number, generated by the eCRF, used to identify the data, but investigators are allowed not to enter patient's initials in the eCRF. Upon enrollment in the eCRF, the patient is assigned a unique identifier number, termed the Study ID, which is used subsequently to identify the data. If initials are not inserted in the eCRF a record connecting patient's initials and Study ID can be retained locally, to facilitate data collection. At the end of the study, a verification of all data in the database is carried out, and the local site coordinator asked to verify specific data as needed. Once this is done, the database is locked and before the beginning of the statistical analysis the patients' initials will be erased from the dataset. The individual site coordinators are then asked to destroy all identifying information, including the record linking

the patient's initials to their Study ID. Thereafter, data will only be identified with the unique Study ID. The data is stored securely and all procedures regarding data management will comply with EU directive on data protection 95/46/EC. Further details can be found in the document signed by Clinfile, provider of the electronic CRF.

After study completion the database will be securely stored to avoid accidental or unauthorized disclosure or access. Access to the database will be granted to the "Lung Safe" investigators only, to perform the statistical analysis described in the attached plan. Lung safe investigators have the right to propose additional analysis of the collected data, subject to approval of the Principal investigators.

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**3.2. Case Report Form (Paper Version)**

# DAILY SCREENING FORM

Patient's initials:_____ Date of admission:_____ Time of admission:_____ Gender: M ☐ F ☐
Year of Birth:_____ Type of admission: Medical/Surgical/Postoperative (elective)

| Days since admission | Date | Mechanical ventilation (circle the appropriate mode) | Lung fields on Radiology | PaO2 | FiO2 | PaO2/FiO2 | Severe respirat failure Criteria fulfilled |
|---|---|---|---|---|---|---|---|
| 0 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 1 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 2 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 3 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 4 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 5 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 6 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 7 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 8 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 9 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 10 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 11 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 12 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ | Normal/ Abnormal/ | | | | □ YES □ NO |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | None of the Above | Not done | | | | |
| 13 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 14 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 15 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 16 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 17 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 18 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 19 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 20 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 21 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 22 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 23 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 24 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 25 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 26 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |
| 27 | | Inv. MV PEEP≥5/ NIMV EPAP≥5/ CPAP≥5/ None of the Above | Normal/ Abnormal/ Not done | | | | □ YES □ NO |

***If NIV/IV/CPAP with end expiratory pressure >5 cm$H_2O$ AND abnormal lung radiology AND PaO2/FiO2<300 mmhg (or < 40kPa), please move to the "Study form", otherwise, please reevaluate the patient the next day**

# BASELINE DATA COLLECTION FORM - Study Day 1

Date of fulfillment of criteria for severe respiratory failure (from screening form):_____

Date of Hospital Admission: _ _ / _ _ / 201 _ _ _ : _ _ (24 h clock)

Height (first documented at ICU admission): _____ □ inch□ cm

Weight (first documented at ICU admission): _____ □ lbs □ kg

**Admission Source:**
□ Other hospital (ICU) □ Other hospital (Ward) □ ER/ambulance
□ Operating Room □ Study Hospital (Ward) □ Study Hospital (Other ICU) □ Other, please specify _____

**If patient transferred from another hospital and/or ICU:**
What was date of Admission to that Hospital: _____
If patient transferred from external ICU, what was date of ICU Admission: _____

Reason for transfer: □ ICU Bed Unavailability □ Need for more advanced support
□ Need for specialty medical input □ Other (please be precise):_____

**Co-morbidities (check all that Apply):**
□ COPD
□ Diabetes Mellitus
□ Chronic Renal Failure
□ Active Neoplasm
□ Hematologic neoplasm
□ Immunosuppression
□ Heart failure: NYHA classes III-IV
□ Chronic liver failure (Child-Pugh Class C)
□ Home Ventilation

**ARDS Risk Factor (check all that apply):**

| | **Direct** | | **Indirect** |
|---|---|---|---|
| | Pneumonia | | Non-pulmonary sepsis |
| | Aspiration of gastric contents | | Major trauma |
| | Inhalational injury | | Pancreatitis |
| | Pulmonary contusion | | Severe burns |

| | | | |
|---|---|---|---|
| | Pulmonary vasculitis | | Non-cardiogenic shock |
| | Drowning | | Drug overdose |
| | | | Multiple transfusions/transfusion-associated acute lung injury (TRALI) |
| | **OTHER (Specify):** | | |
| | **NONE** | | |

Date of the insult: _ _ / _ _ / _ _ _ _ OR Not Known ☐

**Can hypoxemia be entirely explained by cardiac failure?**
☐ Yes ☐ No

**Did you use any of these method to rule out the cardiac origin of the disease? (check all that apply):**

| | |
|---|---|
| | Echocardiography |
| | Pulmonary artery catheter |
| | Transpulmonary thermodilution (e.g., PiCCO) |
| | Other (specify): |
| | None: |

**What is/are the cause(s) of the patient's acute hypoxemic respiratory failure (check all that apply)?**
☐ Pneumonia
☐ Cardiac Failure
☐ Asthma
☐ ARDS
☐ COPD
☐ Unknown
☐ Other _____

**Are there new or worsening respiratory symptoms within the last week?**
☐ Yes ☐ No

# DAILY DATA COLLECTION FOR PATIENTS WITH SEVERE RESPIRATORY FAILURE[1]

Day_____ Date of this form_____

Is the patient in the ICU on this date? □ YES □ NO*
* If "NO" please complete the discharge/Death forms

| **ARTERIAL BLOOD GAS** | **Units** | **Value** |
|---|---|---|
| **pH:** | | |
| **$PaO_2$:** | | |
| **$PaCO_2$:** | | |
| **$FiO_2$:** | | |
| **Arterial blood gas not available** | | ☐ |
| **SpO2** | | |

| **CHEST X-RAY (CXR) / CT SCAN** | |
|---|---|
| **Chest x-ray (CXR) / CT scan not available** | ☐ |
| **Bilateral opacities on the CXR/CT scan** | **Yes ☐ No ☐** |
| **Number of involved quadrants:** | **1☐** 2 ☐ 3 ☐ 4☐ |

**Mechanical Ventilation** *(Please record ventilatory settings as close as possible to the ABG)***:**

☐ Invasive ☐ Non-invasive ☐ Only $O_2$ ☐ None
*Modailty*
☐ *Volume A/C*
☐ *PC/BIPAP/APRV*
☐ *SIMV*
☐ *PRVC*
☐ *PSV*
☐ *NAVA*
☐ *HFO*
☐ *CPAP*
☐ *T-Tube*
☐ Other

[1] Data is collected at at 10am on Days 1,2,3,5,7 inclusive, Day 10, 14, 21, 28 until ICU discharge/death.

| **Ventilatory settings:** | |
|---|---|
| **Respiratory Rate** (set) | |
| **Respiratory Rate** (Total) | |
| **Tidal Volume** (ml) | |
| **PEEP** ($cmH_2O$) | |
| **Plateau Pressure available?** | **Yes ☐ No ☐** |
| **Plateau Pressure** ($cmH_2O$) | |
| **Peak Inspiratory Pressure (PIP)** ($cmH_2O$) | |
| **Mean Airway Pressure (MAP)** ($cmH_2O$) | |
| **Is the patient triggering the Ventilator?** | **Yes ☐ No ☐** |
| **Oxygen flow** (for t-tube or O2 therapy) | |

**Adjunctive Measures/Therapies (in the last 24 hours – check all that apply)**

| | | | |
|---|---|---|---|
| | Prone positioning ***** | | CT scan |
| | Recruitment maneuvers | | Alveolar surfactant |
| | Extracorporeal membrane oxygenation (If yes: V-V or A-V or V-A) | | Lung Ultrasound |
| | High dose corticosteroids | | Renal Replacement Therapy |
| | Almitrine besylate | | Tracheostomy |
| | Continuous Sedation | | Inhaled vasodilators |
| | Oesophageal pressure monitoring****** | | Neutrophil Elastase Therapy |
| | Continuous Neuromuscular Blocking Agents | | |
| | Pulmonary Artery Catheter | Mean pulmonary arterial pressure:_____ | |
| | None of the above | | |

## Sequential Organ Failure Assessment (SOFA) Score (worst value over last 24hrs)

| SOFA Score | Units | Value | NOT AVAILABLE |
|---|---|---|---|
| Estimated Glasgow Coma Scale | | | □ |
| Mean Arterial Pressure | mmHg | | □ |
| Vasopressors used? Yes/No | | | |
| Dopamine infusion | | | □ |
| Dobutamine infusion | | | □ |
| Noradrenaline infusion | | | □ |
| Adrenaline infusion | | | □ |
| Platelet Count($\times 10^3/mm^3$) | | | □ |
| Total Bilirubin | µmol/L<br>mg/dL | | □ |
| Creatinine (mg/dL) | | | □ |
| OR Creatinine (µmol/L) | | | □ |
| OR Urine Output (mL/day) | | | □ |

*** For Patients Receiving prone position:**

| | Units | Supine (before pronation) | Prone |
|---|---|---|---|
| **pH:** | -------- | | |
| **$PaO_2$:** | | | |
| **$PaCO_2$:** | | | |
| **PEEP** | $cmH_2O$ | | |
| **Plateau pressure** | $cmH_2O$ | ☐ | |
| **Duration of the session** | hours | | |

**** For Patients receiving Oesophageal pressure measurement:**

Why was esophageal pressure used?

☐ To measure chest wall elastance
☐ To facilitate PEEP titration
☐ To assess the Work of breathing
☐ To assess synchrony
☐ Other:_____

# OUTCOME AND ICU DISCHARGE/DEATH

## OUTCOMES AT ICU DISCHARGE/DEATH

**ICU (or day 90) Outcome (whichever event comes first)**
□ Alive □ Dead

Date of ICU discharge/Death: _ _ **/** _ _ / _ _ _ _

*For patients without severe respiratory failure only this section is necessary*

**Discharged to:**
□ Other ICU □ Hospital Ward □ Intermediate Care Unit □ Hospital Discharge

**Did the patient develop additional risk factors for ARDS (in addition to those indicated in the "STUDY DATA-BASELINE" form) (check all that apply):**

| | **Direct** | | **Indirect** |
|---|---|---|---|
| | Pneumonia | | Non-pulmonary sepsis |
| | Aspiration of gastric contents | | Major trauma |
| | Inhalational injury | | Pancreatitis |
| | Pulmonary contusion | | Severe burns |
| | Pulmonary vasculitis | | Non-cardiogenic shock |
| | Drowning | | Drug overdose |
| | | | Multiple transfusions/transfusion-associated acute lung injury (TRALI) |
| | **OTHER (Specify):** | | |

**Could patient hypoxemia be entirely explained by cardiac failure?**
☐ Yes ☐ No

**Did you use any of these method to rule out the cardiac origin of the disease? (check all that apply):**

| | |
|---|---|
| | Echocardiography |
| | Pulmonary artery catheter |
| | Transpulmonary thermodilution (e.g., PiCCO) |
| | Other (specify): |
| | None: |

**Did the patient have ARDS at any stage of their ICU stay?**
☐ Yes ☐ No

**Respiratory status at ICU Discharge (Check all that apply):**
□ Tracheostomy □ Invasive ventilation □ Non-invasive ventilation □ CPAP
□ Oxygen therapy □ No oxygen therapy

**Date of liberation from MV:** _ _ / _ _ / _ _ _ _

**If patient did not survive**:
What was the most important factor leading to ICU Death (Check one)?
- □ Respiratory Failure
- □ Cardiovascular Failure [i.e. Unresponsive Shock]
- □ Renal Failure
- □ Hepatic Failure
- □ Coagulation Failure
- □ Neurologic Failure

**Limitations in Care**
Was there a decision to withhold a life sustaining measure at any time during the ICU stay? □ Yes □ No

Was there a decision to withdraw a life sustaining measure at any time during the ICU stay? □ Yes □ No

Date of decision to withhold/withdraw life sustaining measures: _ _ / _ _ / _ _ _ _

Did the patient undergo an autopsy (i.e. post mortem) examination
□ Yes □ No

If an Autopsy was performed, what did lung histology demonstrate [Check all that apply]
□ Pneumonia
□ Diffuse Alveolar Damage
□ Pulmonary Oedema
□ Atelectasis
□ Alveolar Haemorrhage
□ No lung pathology
□ Other (Specify) _____

# DISCHARGE/DEATH

## ADDITIONAL DISCHARGE FORM FOR PATIENT WITHOUT RISK FACTORS FOR ARDS

*This form is required only for patients with "none" selected as risk factor for ARDS*

**Was a broncho-alveolar lavage (BAL) fluid analysis performed?** ☐ Yes ☐ No

If yes, please provide

- Day BAL performed*: _ _ / _ _ / _ _ _ _
- Cytological analysis:

Macroscopic aspect: ☐ normal ☐ bloody or pink ☐ lactescent

Number of cells: _ _ _ _ _ _ / mL

Macrophages: _ _ % lymphocytes: _ _ % neutrophils: _ _ %

mast cells: _ _ % eosinophils: _ _ % siderophages: _ _ % other cells: _ _ %

- Microbiological analyses performed (check all that apply):

☐ Bacterial culture

☐ *Pneumocystis jiroveci* stain or PCR

☐ Fungal analysis

☐ Viral PCRs

Positive result(s): _ _ _ _ _

*if several BAL were performed: results of the nearest to the ARDS diagnosis

**Were immunological tests performed?** ☐ Yes ☐ No

If yes, please check if the result is positive:

☐ antinuclear antibodies

☐ Antisynthetase antibodies

☐ Anti-CCP antibody

☐ ANCA

☐ Rheumatoid factor

☐ Other: _ _ _ _

**Was the patient taking pneumotoxic medications* before the development of ARDS?** ☐ Yes ☐ No

If yes, provide name of the drugs (check all that apply)

☐ Amiodarone

☐ Methotrexate

☐ Hydrochlorothiazide

☐ Tyrosine kinase inhibitors

☐ Chemotherapy agents: _ _ _ _ _ _ _ _

☐ Other: _ _ _ _ _ _ _ _ _

* see www.pneumotox.com for more information

**Was a final etiology for ARDS obtained?** ☐ Yes ☐ No

If yes, specify: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

**Was a chest CT-scan performed?** ☐ Yes ☐ No

If yes, day chest CT-scan performed: _ _ / _ _ / _ _ _ _

If yes, provide CT-scan patterns present (check all that apply):

☐ *Honeycombing*

☐ *Ground class attenuation*

☐ *Traction bronchiectasis*

☐ *Interlobular septal thickening*

☐ *Air space consolidation including atelectasis*

☐ *Other* Specify: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

*if several CT were performed: results of the nearest to the ARDS diagnosis

# DISCHARGE/DEATH

## HOSPITAL OUTCOME

### Hospital (or 90 day) Outcome (whichever event occurs first)

□ Alive □ Dead

Date of hospital discharge: _ _ / _ _ / _ _ _ _