Appendix: Data Collection Form LIBERATION Study

1. **Basic information of the hospital and ICU (this data set will be completed before the commencement of patient enrolment)**
   1. Total Number of hospital beds (beds)
   2. Function of hospital  
      　Primary hospital  
      　Secondary hospital  
      　Tertiary hospital  
      　Quaternary hospital
   3. Academic affiliation of the hospital  
      　University hospital  
      　University-Affiliated hospital  
      　Community hospital  
      　Others
   4. Type of ICU  
      　Medical  
      　Medical-surgical (mixed)  
      　Surgical  
      　Cardiovascular surgical  
      　Neurological  
      　Trauma / Burn  
      　Pediatric  
      　Others
   5. Style of ICU  
      　Closed  
      　Semi-closed  
      　Open
   6. Is your ICU monitored/supported by a tele-ICU system from another hospital or ICU?  
      　Yes  
      　No
   7. Number of ICU beds (beds)
   8. How many ICU beds are specifically designated for patients with COVID-19? (beds)
   9. Nurse-to-patient ratio, the number of patients assigned to one nurse, in the ICU during the daytime? (numbers)
   10. Maximum number of (?qualified) nurses in the ICU during the daytime when the ICU beds are at full capacity with patients. (numbers)
   11. Professionals dedicated to your ICU (Click all that apply)  
       　Nurses  
       　Intensivist  
       　Physician (other than an intensivist)  
       　Physiotherapist  
       　Occupational therapist  
       　Respiratory therapist  
       　Nutritionist / Dietitian  
       　Pharmacist  
       　Medical engineer / Clinical engineering  
       　Research Assistance  
       　Policy maker
   12. How many ICU physicians are there in the ICU during the day? (numbers)
   13. Role of ICU physicians / Intensivists  
       　Primary responsibility for patient treatments  
       　Mandatory consultant without primary responsibility  
       　Occasional consultant  
       　Others (free text)
   14. Number of visiting hours in your ICU allowed for a family / relatives per day (hours)  
       0.14.1 (if answer other than 0) What time is the family allowed to visit your ICU? (Select from 12:00 am to 11:00 pm in a pull-down manner. If there is no restriction on the visiting hours, please select 12:00 am to 12:00 am.)
   15. How frequently does your ICU have multi-professional/-disciplinary rounds?  
       　Not applicable  
       　At least once daily  
        (if marked, [ times / per week])  
       　At least once a week  
        (if marked, [ times / per month])  
       　At least once a month  
        (if marked, [ times / per 6 months])  
       　Less than once a month
   16. Who is primarily responsible for implementing the multi-disciplinary round in the ICU?  
       　Multidisciplinary/-professional rounds / conference / team  
       　Nurse (include nurse managers, directors, and critical care nurse specialists)  
       　Intensivist  
       　Physician (other than an intensivist)  
       　Physiotherapist  
       　Respiratory therapist  
       　No one person has responsibility for implementing the rounds  
       　The multidisciplinary round is not implemented in the ICU  
       　Others (free text)
   17. Which of the following written protocols shown below do you have in your ICU? (Click all that apply)  
       　Pain management protocol (assess, prevent and manage Pain)

　Spontaneous Awakening Trial (SAT) management protocol

　Spontaneous breathing trial (SBT) management protocol

　Sedation management protocol

　Delirium management protocol (assess, prevent and manage Delirium)

　Early mobility and exercise protocol

　Family engagement and empowerment protocol

　Nutrition management protocol

　Physical restraint protocol

　ICU Diaries protocol

　Swallowing or Dysphagia protocol (assess, prevent and manage Pain)

　Sleep protocol (assess, prevent and manage Pain)

　None of the above protocols

　Other (free text)

* 1. What kind of **PAIN** assessment tools do you use in your ICU for patients receiving **non-invasive mechanical ventilation**? (Click all that apply)  
      Verbal Description Scale (VDS)

 Visual Analogical Scale (VAS)  
 Numerical Rating Scale (NRS)  
 Critical-care Pain Observation Tool (CPOT)  
 Behavioral Pain Scale (BPS)  
 Others (free text)

* 1. What kind of **PAIN** assessment tools do you use in your ICU for patients receiving **invasive mechanical ventilation**? (Click all that apply)  
      Verbal description scale (VDS)

 Visual analogical scale (VAS)  
 Numerical Rating Scale (NRS)  
 Critical-care Pain Observation Tool (CPOT)  
 Behavioral Pain Scale (BPS)  
 Others (free text)

* 1. What kind of **PAIN** assessment tools do you use in your ICU for patients who are in a **deeply sedated state or receiving Neuromuscular Blockade**? (Click all that apply)  
      verbal description scale (VDS)

 visual analogical scale (VAS)  
 Numerical Rating Scale (NRS)  
 Critical-care Pain Observation Tool (CPOT)  
 Behavioral Pain Scale (BPS)  
　Hear rate  
　Blood pressure  
　Pupillary dilation  
　Hear rate variability (HRV)  
　Sudation  
　Ectrophysiological devices for the monitoring of nociception and related pain  
 Others (free text)

* 1. What kind of **SEDATION** assessment tools do you use in your ICU for patients receiving **non-invasive mechanical ventilation**? (Click all that apply)  
      Richmond-Agitation Sedation Scale (RASS)  
      Riker Sedation-Agitation Scale (SAS)  
      Others (free text)
  2. What kind of **SEDATION** assessment tools do you use in your ICU for patients receiving **invasive mechanical ventilation**? (Click all that apply)  
      Richmond-Agitation Sedation Scale (RASS)  
      Riker Sedation-Agitation Scale (SAS)  
      Others (free text)
  3. What kind of **DELIRIUM** assessment tools do you use in your ICU for patients receiving **non-invasive mechanical ventilation**? (Click all that apply)  
      Confusion Assessment Method for ICU (CAM-ICU)  
      Intensive Care Delirium Screening Checklist (ICDSC)  
      Others (free text)
  4. What kind of **DELIRIUM** assessment tools do you use in your ICU for the patients receiving **invasive mechanical ventilation**? (Click all that apply)  
      Confusion Assessment Method for ICU (CAM-ICU)  
      Intensive Care Delirium Screening Checklist (ICDSC)  
      Others (free text)
  5. Does the ICU have a specific team for Early Mobilization / Rehabilitation?  
     　Yes  
     　No  
     0.25.1 (If yes) What professional groups does the Early Mobilization team consist of? (Click all that apply)  
     　Nurses  
     　Intensivist  
     　Physician (other than an intensivist)  
     　Physiotherapist  
     　Occupational therapist  
     　Speech-language therapist  
     　Respiratory therapist  
     　Nutritionist / Dietitian  
     　Pharmacist  
     　Medical engineer / Clinical engineering  
     　Research Assistance  
     　Policy maker
  6. Does the ICU provide mobilization / physical rehabilitation sessions to patients during a weekend?  
     　By the Early Mobilization team  
     　By usual staff  
     　No
  7. Does the ICU have a system to introduce patients to the follow-up facilities/institutions/clinics (after ICU or hospital discharges)?  
     　Yes  
     　No
  8. Does the ICU inform the disabilities or dysfunctions of the patients related to Post Intensive Care Syndrome in follow-up facilities/institutions/clinics (after ICU or hospital discharges)?  
     　Yes  
     　No
  9. Does the ICU have a system to follow up patients in the ward environment (after ICU discharge but before hospital discharge) by ICU staff/team?  
     　Yes  
     　No
  10. Does the hospital have a follow-up clinic for ICU patients after hospital discharge?  
      　Yes  
      　No
  11. Does the ICU have a specific template for handover communication with the ward at the time of ICU discharge?  
      　Yes  
      　No  
      0.31.1 (if Yes) Does the template of hand-off communication include information on Post Intensive Care Syndrome?  
      　Yes  
      　No
  12. Does the ICU have a culture to teach or tell the patient and his/her family about Post Intensive Care Syndrome?  
      　Yes  
      　No
  13. Does the ICU have a specific brochure about Post Intensive Care Syndrome for the patient and his/her family?  
      　Yes  
      　No

**Patient Eligibility**

Does the patient meet all the following criteria? Please click if the criteria are met or enter the data appropriately to check the eligibility.

1. Patients receiving invasive or non-invasive ventilation within 24 hours of ICU admission  
    Yes  
    No
2. Patients who are expected to be on invasive and/or non-invasive ventilation for more than 48 hours in total  
    Yes  
    No
3. Patients who meet the diagnosis of ARDS within 24 hours of ICU admission (Please enter and complete the following information).  
   3.1 Within 1 week of a known clinical insult or new or worsening respiratory symptoms? Please enter the number of days. (Day)  
   3.2 Please select the X-ray closest to your patient’s image. (Online supplement: Intensive Care Med. 2012;38(10):1573-82)  
   3.3 Please select the origin of edema on the lungs (click all that apply)  
   　 Bacterial Respiratory Infection  
    Influenza  
    COVID-19  
    Other virus respiratory infection  
    Fungal Respiratory Infection  
    Sepsis (other than lungs)  
    Exacerbation of chronic lung disease  
    Pulmonary vasculitis  
    Noncardiogenic shock  
    Pancreatitis  
    Aspiration  
    Inhalation injury  
    Lung contusion  
    Blood transfusion  
    Trauma (other than chest)  
    Burn  
    Drowning  
    Drug overdose  
    Cardiogenic shock  
    Cardiac failure  
    Fluid overload  
    Others (free text)  
    3.3.1 Please select the primary cause of ARDS among those you have   
    chosen above. (Select only one in a pull-down manner)  
   3.4 Please enter the following data regarding the patients current respiratory state to ensure the eligibility  
    3.4.1 PEEP or CPAP (cmH2O):   
    3.4.2 FIO2 (%):   
    3.4.3 PaO2 (mmHg):  
   (PEEP, positive end-expiratory pressure, CPAP, continuous positive airway pressure, FIO2, fraction of inspired oxygen, PaO2, partial pressure of arterial oxygen)

**(Once all criteria above are met)**

1. All inclusion criteria are met. Do you want to register this patient?  
    Yes  
    No
2. Please check the exclusion criteria  
   5.1 If the patient has met all of the above inclusion criteria, please assess for any of the exclusion criteria below. If more than one applies, please select the most relevant reason for exclusion. If none of the exclusions apply, please click on [The patient can be registered] at the bottom to proceed to the registration.  
   1) Patients aged less than 16 years old   
   2)Patients with terminal conditions at the time of ICU admission  
   3) Patients who have been admitted to the ICU with a terminal care policy or who are expected to be admitted to the ICU with a terminal care policy within 24 hours of admission to the ICU  
   4) Patients who have expressed their refusal to have their clinical data used in research.  
    The patient can be registered  
    The patient should be excluded since one of the exclusion criteria is met  
   5.1 (If “The patient can be registered”) The following button will show up to confirm the registration.  
    I will register this patient
3. **Patient baseline characteristics (this data set will be completed on the ICU admission)**
   1. Age (years)
   2. Sex  
      　 Male  
      　 Female
   3. Height (cm)
   4. Weight (kg)
   5. Date of hospital admission (time and date: select on the calendar and adjust the time afterwards) (The ICU under the regulations of the GDPR, especially the ICUs in Europe will not collect this information.)
   6. Date of ICU admission (time and date: select on the calendar and adjust the time afterwards) (The ICU under the regulations of the GDPR, especially the ICUs in Europe will not collect this information.)
   7. Clinical Frailty Scale (Pre-admission state, which means the best score two weeks prior to the hospitalization. Estimation by the family is acceptable.) (The definition for each item will be placed beside the question)  
      　 Very fit  
      　 Well  
      　 Managing Well  
      　 Vulnerable  
      　 Mildly Frail  
      　 Moderately Frail  
      　 Severely Frail  
      　 Very Severely Frail  
      　 Terminally ill
   8. Barthel Index (Pre-admission state, which means the best score two weeks prior to the hospitalization. Estimation by the family is acceptable.) (The definition for each item will be placed beside the question)
   9. Cognitive state based on Clinical Dementia Rating (Pre-admission state, which means the best score two weeks prior to the hospitalization. Estimation by the family is acceptable.) (The definition for each item will be placed beside the question)
   10. Psychiatric complications before hospital admission  
       　 Depression  
       　 Bipolar disorder  
       　 Anxiety neurosis  
       　 Drug addiction  
       　 Alcoholic addiction  
       　 Autistic Disorder  
       　 Others (free text)
   11. Functional Oral Intake Scale (FOIS) (Pre-admission state, which means the best score two weeks prior to the hospitalization. Estimation by the family is acceptable.) (The definition for each item will be placed beside the question)
   12. SOFA score at ICU admission
   13. APACHEⅡat ICU admission
   14. Charlson Comorbidity Index (CCI) at ICU admission

Chronic Lung Disease (Click all that apply)  
 Interstitial lung disease / pulmonary fibrosis  
 Chronic Obstructive Pulmonary Disease: COPD  
 Asthma  
 Asbestosis  
 Pneumonitis   
 Home oxygen/ventilator  
 Others lung diseases (free text)

* 1. Employment status (Pre-admission state, which means the best state within one month before the hospitalization)  
      Full-time  
      Part-time  
      No employed  
      Others (free text)

1. **Daily data on the implementation of evidenced based ICU care, ventilation settings, and blood gas (this data set will be collected in a daily basis from the first day of ICU admission to day 14 on the ICU or the date of ICU discharge, whichever is earliest)**

**To note, some questions reflect the previous day's answers as they were to reduce data entry workload.**

* 1. Do you have a target or goal for **PAIN** (i.e. targeted number by pain scale)  
     　Yes  
     　No  
     3.1.1 (if yes) Did you achieve the target or goal for **PAIN** today?  
      　Yes  
      　No
  2. How many times did you use the **PAIN** assessment tools (times/24 hours) today? (numbers)  
     (When you use two pain assessment tools at the same time, you need to count it as one time. When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours.)
  3. Was the Spontaneous Awakening Trial (SAT) today?  
     　Not done  
     　Failed  
     　Successful  
     2.3.1 (if Not done) What was the reason for "not done"?  
      　Receiving a sedative infusion for active seizures or alcohol withdrawal  
      　Receiving escalating doses of sedative for agitation  
      　Receiving neuromuscular blockers  
      　Receiving prone positioning  
      　Receiving extracorporeal membrane oxygenation (ECMO)  
      　Evidence of active myocardial ischemia in prior 24 hours  
      　Evidence of increased intracranial pressure  
      　High mechanical ventilation settings  
      　High dose of vasopressors or inotropes  
      　Others (free text)  
     2.3.2 (if failed) What was the reason for "failed"?  
      　Neurologic instability  
       Agitation  
       Delirium  
       Pain  
       Psychiatric symptom  
       Reduced level of consciousness  
       Known neurologic dysfunction/injury  
       Significant sweating (Diaphoresis)  
      　Respiratory instability  
       Hypoxiemia  
       De-saturation  
       Hypercapnia  
       Respiratory acidosis  
       Imbalance (i.e., Respiratory rate/tidal volume >105 breaths/min/L)  
       frequent respiratory rate (i.e., >35 breaths/min or increase≧50%)  
       Evidence of increased respiratory muscle effort (i.e., Increased accessory muscle usage, Facial signs of distress, Dyspnea)  
      　Cardiovascular instability  
       Heart rate (i.e., >140 beats/min or increase> 20%)  
       High systolic blood pressure (>180 mmHg or increase>20%)  
       Low systolic blood pressure (<90mmHg)  
       Significant cardiac arrhythmias  
       High dose of vasopressors or inotropes to maintain blood pressure  
      　Others (free text)
  4. Was the Spontaneous Breathing Trial (SBT) today?  
     　Not done  
     　Failed  
     　Successful  
     2.4.1 (if Not done) What was the reason for "not done"?  
      　Inadequate oxygenation  
      　High mechanical ventilation settings  
      　No spontaneous inspiratory breathing  
      　Neurological insufficiency  
      　Agitation  
      　Delirium  
      　Hemodynamic instability  
      　High dose of vasopressors or inotropes  
      　Increased intracranial pressure  
      　Others (free text)  
     2.4.2 (if failed) What was the reason for "failed"?  
      　Neurologic instability  
       Agitation  
       Delirium  
       Pain  
       Psychiatric symptom  
       Reduced level of consciousness  
       Known neurologic dysfunction/injury  
       Significant sweating (Diaphoresis)  
      　Respiratory instability  
       Hypoxiemia  
       De-saturation  
       Hypercapnia  
       Respiratory acidosis  
       Imbalance (i.e., Respiratory rate/tidal volume >105 breaths/min/L)  
       frequent respiratory rate (i.e., >35 breaths/min or increase≧50%)  
       Evidence of increased respiratory muscle effort (i.e., Increased accessory muscle usage, Facial signs of distress, Dyspnea)  
      　Cardiovascular instability  
       Heart rate (i.e., >140 beats/min or increase> 20%)  
       High systolic blood pressure (>180 mmHg or increase>20%)  
       Low systolic blood pressure (<90mmHg)  
       Significant cardiac arrhythmias  
       High dose of vasopressors or inotropes to maintain blood pressure  
      　Others (free text)
  5. Do you have a target or goal for **SEDATION** (i.e. targeted number by sedation scale)  
     　Yes  
     　No  
     3.7.1 (if yes) Did you achieve the target or goal for **SEDATION**?  
      　Yes  
      　No
  6. How many times did you use the **SEDATION** assessment tools (times/24 hours) today? (numbers)  
     (When you use two sedation assessment tools at the same time, you need to count it as one time. When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours.)
  7. What was the highest **RASS** score during the daytime today (e.g., 8:00 am to 8:00 pm)? (The definition for each item will be placed beside the question)
  8. What was the lowest **RASS** score during the daytime today (e.g., 8:00 am to 8:00 pm)? (The definition for each item will be placed beside the question)
  9. Were any Pharmacologic Interventions used for **SEDATION** today (Click all that apply)  
     　Propofol  
     　Dexmedetomidine  
     　Midazolam  
     　Other benzodiazepines  
     　Others (free text)
  10. How many times did you use the **DERILIUM** assessment tools (times/24 hours) today? (numbers)  
      (When you use two delirium assessment tools at the same time, you need to count it as one time. When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours.)
  11. How many times were the patients diagnosed as **DELIRIOUS** according to the assessments? (numbers)
  12. What was today's goal for rehabilitation/mobility according to the Intensive Care Unit Mobility Scale? (The definition for each item will be placed beside the question)  
      　Select from 11 scales or “No goal”
  13. How many times did the patient receive physical rehabilitation today regardless of the type of professions involved? (This includes any sessions completed by nurses only) (numbers, pulldown to select from 0 to 5 or more)  
      (if 1 or more is selected on the above question)  
      2.13.1 Highest rehabilitation Intensity achieved according to the Intensive Care Unit Mobility Scale (The definition for each item will be placed beside the question)  
       　Select from 11 scales  
       2.13.1.1 (if 0, 1, or 2 was selected on the above question) Select the most 　likely reason why the patient did NOT achieve a score of 3 or higher according to the Intensive Care Unit Mobility Scale. (Choose the most important barriers to rehabilitation)  
       　Consciousness factor (existing consciousness disorder, RASS: ≤ -3 or ≥+2, deep sedation, delirium, etc.)

　Subjective symptoms (respiratory distress, BPS or > 3 or NRS >5, fatigue, patient refusal, etc.)

　Respiratory factor (SpO2: <90%; FIO2: >0.6; respiratory rate: >30 times/min, ventilator unsynchronized, etc.)

　Circulatory factor (systolic blood pressure: <90 or >180 mmHg; mean blood pressure: <65 or >110 mmHg; heart rate: <50 or >120 beats/min; new arrhythmias; additional administration of vasopressors, etc.)

　Device factor (exist catheter, drain, dialysis, mechanical ventilation, or extracorporeal membrane oxygenation, etc.)

　Medical staff factor (lack of staff, holidays, many examinations, poor time adjustment, etc.)

　Factors associated with COVID-19 (restriction for medical staff to contact with the patients, restriction for rehabilitation, infectious control, etc.)

　Others  
2.13.2 Duration of the rehabilitation session (mins)  
2.13.3 Duration of the rehabilitation session on the highest intensity (mins)  
2.13.4 Professions involved in the rehabilitation sessions  
 　Nurses  
 　Intensivist  
 　Physician (other than an intensivist)  
 　Physiotherapist  
 　Occupational therapist  
 　Respiratory therapist  
 　Nutritionist / Dietitian  
 　Pharmacist  
 　Medical engineer / Clinical engineering  
 　Research Assistance  
 　Policy maker

* 1. Could the patient meet with the family in person or see the family using a monitor such as a phone and a video today? (click all that apply)  
     　No (the patient could not meet or see the family)  
     　In person  
     　Talking over the phone (no visitation/ no meeting)   
     　Visiting and meeting through the glass outside the room  
     　Using an electronic device (meeting over the monitor of smartphone, tablet, or PC)   
     　Seeing a recorded video (no visitation/ no meeting)  
     　Others (free text)  
     2.14 (if select other than “No” above) Who involved in the meeting?  
      　Partner  
      　Parent  
      　Child  
      　Sibling  
      　Other relative  
      　Friend  
      　Other (free text)
  2. Route for nutrition therapy used today (click all that apply)  
     　Oral  
     　Enteral nutrition (non-oral)  
     　Parenteral nutrition  
     　No nutrition  
     3.20.1 (if **Oral** clicked) Energy (kcal) of **ORAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)  
     3.20.2 (if **Oral** clicked) Protein (g) of **ORAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)  
     3.20.3 (if **Enteral nutrition** clicked) Energy (kcal) of **ENTERAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)  
     3.20.4 (if **Enteral nutrition** clicked) Protein (g) of **ENTERAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)  
     3.20.5 (if **Parenteral nutrition** clicked) Energy (kcal) of **PARENTERAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)  
     3.20.6 (if **Parenteral nutrition** clicked) Protein (g) of **PARENTERAL** nutrition provided on the day (for 24 hours, When the patient stayed in the ICU for less than 24 hours today, please calculate it as per 24 hours)
  3. Was an ICU diary entry completed for the patient today?  
     　Yes  
     　No  
     3.21.1 (if yes) Who wrote the ICU diary today?  
     　Nurses  
     　Patient  
     　Family  
     　Intensivist  
     　Physician (other than an intensivist)  
     　Physiotherapist  
     　Occupational therapist  
     　Respiratory therapist  
     　Nutritionist / Dietitian  
     　Pharmacist  
     　Medical engineer / Clinical engineering  
     　Research Assistance  
     　Policy maker  
     　Others (free text)
  4. Did the patient receive an arterial blood gas test today?  
     　Yes  
     　No  
     2.17.1 (if yes) Please fill in the following blanks with the results when the PaO2/FIO2 ratio was worst on the day.   
       pH  
       PaO2  
       PaCO2   
       Lactate
  5. Did the patient receive invasive/non-invasive mechanical ventilation today?  
     　**NON-invasive** mechanical ventilation  
     　**Invasive** mechanical ventilation  
     　No  
     2.18.1 (if **NON-invasive** mechanical ventilation or **NON-invasive** mechanical ventilation is selected) Please fill in the following blanks with the data of mechanical ventilation at the time when the PaO2/FIO2 ratio was worst on the day.   
      Mode  
      FIO2 (%)  
      Actual Respiratory Rate (times/min)  
      Actual Tidal Volume (ml/time)  
      PEEP (cmH2)  
      Plateau Pressure (cmH2)  
      Peak Inspiratory/Airway Pressure (cmH2)
  6. Was the patient spontaneously breathing when the PaO2/FIO2 ratio was worst today?  
     　Yes  
     　No  
     2.19.1 (if yes) P0.1(cmH2O: please write the absolute value when the PaO2/FIO2 ratio was worst)
  7. Please answer the following questions related to the patient’s state today.　(This aims to calculate the SOFA score)  
     　Cardiovascular system  
     　Respiratory system  
     　Kidneys  
     　Liver  
     　Coagulation  
     　Nervous system

1. **Treatment during the ICU stay** **(this data set will be completed upon the ICU or hospital discharge)**The day the patient was admitted to the ICU was the first day of your ICU stay: ICU Day 1
   1. Use of Steroid  
      　Yes  
      　No  
      3.1.1 (if yes)  
      (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of steroid (time and date: select on the calendar and adjust the time afterwards)  
      (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of steroid  
      3.1.2 (if yes) type of steroid  
      　Hydrocortisone

　Cortisone

　Betamethasone

　Prednisone

　Prednisolone

　Triamcinolone

　Methylprednisolone

　Paramethasone

　Dexamethasone

　Others (free text)  
3.1.3 (if yes) Highest dose of steroid given per day except for the steroid pulse (mg/day)

* 1. Use of steroid pulse  
     　Yes  
     　No  
     3.2.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of the steroid pulse (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of the steroid pulse   
     3.2.2 (if yes) type of steroid  
     　Hydrocortisone

　Cortisone

　Betamethasone

　Prednisone

　Prednisolone

　Triamcinolone

　Methylprednisolone

　Paramethasone

　Dexamethasone

　Others (free text)  
3.2.3 (if yes) Highest dose of steroid pulse given per day (mg/day)

* 1. Use of continuous neuromuscular blockade  
     　Yes  
     　No  
     3.3.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of continuous neuromuscular blockade (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of continuous neuromuscular blockade   
     3.3.2 (if yes) How many days did the patient receive continuous neuromuscular blockade? (days)  
     3.3.3 (if yes) type of neuromuscular blockade  
     　Atracurium

　Mivacurium

　Pancuronium

　Rocuronium

　Succinylcholine

　Vecuronium

　Others (free text)

* 1. Use of CRRT: continuous renal replacement therapy  
     　Yes  
     　No  
     3.4.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of CRRT (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of CRRT
  2. Use of IRRT: intermittent renal replacement therapy  
     　Yes  
     　No  
     3.5.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of IRRT (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of IRRT
  3. Use of cytokine absorption treatment  
     　Yes  
     　No  
     3.6.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of cytokine absorption treatment (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of cytokine absorption treatment   
     3.6.2 (if yes) Type of cytokine absorption treatment  
     　PMX; polymyxin B-immobilized fiber column  
     　AN69ST  
     　CytoSorb  
     　Others (free text)
  4. Tracheostomy   
     　Yes  
     　No  
     3.7.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of Tracheostomy (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of Tracheostomy
  5. Use of esophageal pressure monitoring  
     　Yes  
     　No  
     3.8.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of esophageal pressure monitoring (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of esophageal pressure monitoring
  6. Use of EIT: Electrical impedance tomography  
     　Yes  
     　No  
     3.9.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of EIT (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of EIT
  7. Use of Swan-Ganz catheter  
     　Yes  
     　No  
     3.10.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of Swan-Ganz catheter (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of Swan-Ganz catheter
  8. Use of transpulmonary thermodilution method (e.g., PICCO)  
     　Yes  
     　No  
     3.11.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of transpulmonary thermodilution method (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of transpulmonary thermodilution method
  9. Use of **LUNG** ultrasonography monitoring  
     　Yes  
     　No  
     3.12.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of **LUNG** ultrasonography monitoring (time and date: select on the calendar and adjust the time afterwards)  
     (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of **LUNG** ultrasonography monitoring
  10. Use of **CARDIAC** ultrasonography monitoring  
      　Yes  
      　No  
      3.13.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of **CARDIAC** ultrasonography monitoring (time and date: select on the calendar and adjust the time afterwards)  
      (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of **CARDIAC** ultrasonography monitoring
  11. Use of recruitment maneuvers  
      　Yes  
      　No  
      3.14.1 (if yes) (For the ICUs, not under the regulations of the GDPR in Europe) Date of initiating use of recruitment maneuvers (time and date: select on the calendar and adjust the time afterwards)  
      (For the ICUs under the regulations of the GDPR, especially the ICUs in Europe) ICU Day of initiating use of recruitment maneuvers   
      3.14.2 Maximum airway pressure during the recruitment maneuvers (cmH2O)  
      3.14.3 Time on the maximum airway pressure of the recruitment maneuvers (sec)
  12. Pharmacologic Interventions for **PAIN** during ICU stay (Click all that apply)  
      　None  
      　IV opioids  
      　Acetaminophen  
      　Ketamine  
      　Gabapentin or pregabalin  
      　Lidocaine  
      　NSAIDs  
      　Others (free text)  
      3.15.1 (If clicked) ICU Day of initiating the selected pharmacologic intervention
  13. Nonpharmacologic Interventions for **PAIN** during ICU stay (Click all that apply)  
      　None  
      　Relaxation and or distraction techniques  
      　Information/education  
      　Massage/touch  
      　Music therapy  
      　Cold therapy  
      　Cybertherapy and hypnosis  
      　Pet therapy  
      　Family presence for support and distraction  
      　Others (free text)  
      3.16.1 (if clicked) ICU Day of initiating the selected non-pharmacologic intervention
  14. Pharmacologic Interventions for **DELIRIUM** during ICU stay (Click all that apply)  
      　None  
      　Reviewing drugs daily to avoid deliriogenic drugs including benzodiazepines and anticholinergics  
      　Optimizing pain control  
      　Goal-directed and minimal sedation  
      　Use of antipsychotics (i.e., Haloperidol)  
      　Others (free text)3.17.1 (if clicked) ICU Day of initiating the selected pharmacologic Intervention
  15. Nonpharmacologic Interventions for DELIRIUM during ICU stay (Click all that apply)  
      　None

　Daily and regular orientation to the environment

　Physical environment intervention (use of a mirror, acoustic or visual stimulation, restraint use avoidance)

　Family participation (orientation in family’s voice, nurse‐facilitated family participation in psychological care, )

　Removing urinary catheters and invasive devices as early as possible

　Reducing visual or hearing impairment by providing hearing aids and glasses as needed

 Reducing sedation (spontaneous awaking trials, stopping use of benzodiazepine or narcotics, etc.)

　Early involvement of rehabilitation team and daily mobility goals

　Optimizing nutrition and hydration

　Promoting sleep at night and clustering patient care activities during the daytime

 Exposure to sunlight during the daytime and dimming lights and minimizing noise at night

　ICU diaries

　Others (free text)  
3.18.1 (if clicked) ICU Day of initiating the selected non-pharmacologic intervention

* 1. What elements of ICU care did the family members participate in during ICU stay? (Click all that apply)

　ICU rounds

　Case Conference

　Planning of tailored care for the patient

　ABCDEF bundle-related care

　Re-orientation for the patient

　Calming talks with the patient

　Beneficial communication with clinicians

　Others

　Nothing

3.18.1 (if clicked) ICU Day of initiating the family members participation

* 1. Did the patient require Physical restraint during the ICU stay?  
     　Yes  
     　No  
     3.20.1 (if yes) ICU Day of initiating Physical restraint  
     3.20.2 (if yes) On average, how long per day was the patient physically restrained during ICU stay?  
     3.20.3 (if yes) Did the patient receive Physical restraint during sleeping?
  2. Did the patient receive interventions/sessions by a speech-language therapist during the ICU stay?  
     3.21.1 What did the speech-language therapist do for the patient during ICU stay? (Click all that apply)  
     　Assessment: Repetitive Saliva Swallowing Test (RSST)  
     　Assessment: Modified Water Swallowing Test (MWST)   
     　Assessment: Swallowing videofluorography (VF)  
     　Assessment: Videoendoscopic examination of swallowing (VE)  
     　Care: Direct training  
     　Care: Indirect training  
     　Care: Electrical stimulation for the swallowing muscle  
     　Care: Dental/Oral care  
     　Care: Determine dietary content  
     　Other assessment (free text)  
     　Other care (free text)  
     3.21.1.1  
      (if yes) ICU Day of initiating the selected intervention
  3. Swallowing Function: Functional Oral Intake Scale (FOIS) at **ICU discharge** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  4. Swallowing Function: Functional Oral Intake Scale (FOIS) at **hospital discharge** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  5. (if received invasive mechanical ventilation) Swallowing Function: Functional Oral Intake Scale (FOIS) at 1 day after **EXTUBATION** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  6. (if received invasive mechanical ventilation) Swallowing Function: Functional Oral Intake Scale (FOIS) at 3 days after **EXTUBATION** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  7. (if received invasive mechanical ventilation) Swallowing Function: Functional Oral Intake Scale (FOIS) at 7 days after **EXTUBATION** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  8. (if received invasive mechanical ventilation) Swallowing Function: Functional Oral Intake Scale (FOIS) at 14 days after **EXTUBATION** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  9. (if received invasive mechanical ventilation) Swallowing Function: Functional Oral Intake Scale (FOIS) at 28 days after **EXTUBATION** (Differences of around 1 day are acceptable) (The definition for each item will be placed beside the question)
  10. Did you take a blood test at around 14 days after ICU admission, regardless of being in ICU or general ward (Differences of around 2 days are acceptable)  
      　Yes  
      　No  
      4.22.1 (if yes) WBC (×1000/μL)  
      4.22.2 (if yes) Neutrophil count (×1000/μL)  
      4.22.3 (if yes) Lymphocyte count (×1000/μL)  
      4.22.4 (if yes) Alb (g/dL)  
      4.22.4 (if yes) CRP (mg/dL)

1. **X-ray or CT scan images during the hospital stay** **(this data set will be completed upon the hospital discharge)**
   1. Please click any of the below timepoints if an X-ray image was taken at that time. Click all that apply. (The images that were taken within one day before or after are acceptable)   
      　At ICU admission  
      　At the time of initiation of non-invasive mechanical ventilation  
      　At the time of initiation of invasive mechanical ventilation  
      　At the time of initiation of ECMO support  
      　At the time of initiation of weaning from ECMO support  
      　At the time of initiation of weaning from invasive mechanical ventilation  
      　At the time of initiation of weaning from non-invasive mechanical ventilation  
      　At ICU discharge  
      　At hospital discharge
   2. Please click any of the below timepoints if a CT- image was taken at that time. Click all that apply. (The images that were taken within one day before or after are acceptable)  
      　At ICU admission  
      　At the time of initiation of non-invasive mechanical ventilation  
      　At the time of initiation of invasive mechanical ventilation  
      　At the time of initiation of ECMO support  
      　At the time of initiation of weaning from ECMO support  
      　At the time of initiation of weaning from invasive mechanical ventilation  
      　At the time of initiation of weaning from non-invasive mechanical ventilation  
      　At hospital discharge
2. **General outcomes** **(this data set will be completed upon the hospital discharge)**

(For the ICUs, not under the regulations of the GDPR in Europe)

5.1 Date of initiation: **NON-invasive** mechanical ventilation. (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.2 Date of discontinuation: **NON-invasive** mechanical ventilation. (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.3 Date of initiation: **Invasive** mechanical ventilation. (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.4 Date of discontinuation: **Invasive** mechanical ventilation. (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.5 Date of initiation: **ECMO** support (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.5.1 What mode of ECMO did you use during this period?  
 　VV-ECMO  
 　VA-ECMO  
 　VVA-ECMO  
 　VAV-ECMO  
 　ECPR  
 　Others (free text)

5.6 Date of discontinuation: **ECMO** support (Time and date: select on the calendar and you can manually adjust the time afterwards)  
5.7 Date of **ICU** discharge. (Time and date: select on the calendar and you can manually adjust the time afterwards)

5.8 Date of HOSPITAL discharge. (Time and date: select on the calendar and you can manually adjust the time afterwards)

(For the ICUs under the regulations of the GDPR, especially the ICUs in Europe)

* 1. ICU Day of initiation: **NON-invasive** mechanical ventilation
  2. ICU Day of discontinuation: **NON-invasive** mechanical ventilation + duration
  3. ICU Day of initiation: **Invasive** mechanical ventilation
  4. ICU Day of discontinuation: **Invasive** mechanical ventilation + duration
  5. ICU Day of initiation: **ECMO** support   
     5.5 (if selected) What mode of **ECMO** did you use during this period?  
      　VV-ECMO  
      　VA-ECMO  
      　VVA-ECMO  
      　VAV-ECMO  
      　ECPR  
      　Others (free text)
  6. ICU Day of discontinuation: **ECMO** support + duration
  7. **ICU** LOS (length of stay) (Days):Please describe the duration between ICU admission and ICU discharge.
  8. **Hospital** LOS (length of stay) (Days): Please describe the duration between hospital admission and hospital discharge.

5.8 Did this patient die in the ICU?  
 　Yes  
 　No

5.8 Did this patient die within 28 days of the hospital admission?

　Yes  
 　No

5.8 Did this patient die in the hospital?

　Yes  
 　No

(Common data for all ICUs)

* 1. Death during the hospital stay  
     　Yes  
     　No  
     5.9.1 (if no) Destination after hospital discharge  
      　Direct to home  
      　Another hospital  
      　Rehabilitation facility  
      　Nursing facility  
      　Hospice care facility  
      　others (free text)
  2. Main cause of death  
     　Multi-organ failure  
     　Respiratory failure  
     　Cardiac Failure  
     　Liver Failure  
     　Cardiovascular accident  
     　Cerebrovascular  
     　Septic shock  
     　Hemorrhagic shock  
     　others (free text)
  3. Complications during ICU stay (click all that apply)  
     　VAP: ventilator associated pneumonia  
     　CRBSI: catheter related blood stream infection  
     　Sepsis  
     　Septic shock  
     　Bacteremia  
     　Pneumothorax  
     　Cardiomyopathy  
     　Myocardial infarction  
     　Congestive heart failure  
     　Seizure  
     　Stroke  
     　Meningitis/Encephalitis  
     　PE: Pulmonary embolism  
     　DVT: Deep vein thrombosis  
     　Acute renal failure  
     　Acute liver failure  
     　Gastrointestinal hemorrhage  
     　Hyperglycemia  
     　Hypoglycemia  
     　Clostridium difficile-associated diarrhea  
     　Diarrhea (other than Clostridium difficile-associated)   
     　Vomiting  
     　Aspiration  
     　others (free text)
  4. Presence of tracheostomy at **HOSPITAL** discharge  
     　Yes  
     　No
  5. Respiratory support device at the time of **HOSPITAL** discharge  
     　No oxygen support  
     　Oxygen supply by nasal cannula, face mask, etc.  
     　Non-invasive mechanical ventilation (including CPAP)  
     　Invasive mechanical ventilation  
     　others (free text)

1. **PICS related functional outcomes** **(this data set will be completed upon the hospital discharge)**

**At the time of ICU discharge (Please complete this data set upon the ICU discharge)**

* 1. Physical Function: Medical research council sum-score (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  2. Physical Function: Highest Intensive Care Unit Mobility Scale (The definition for each item will be placed beside the question) (“Please select the highest activity level **on the date of ICU discharge**, not the highest number during ICU stay”)  
      　Select from 11 scale
  3. Clinical Frailty Scale (The definition for each item will be placed beside the question)  
     　 Very fit  
     　 Well  
     　 Managing Well  
     　 Vulnerable  
     　 Mildly Frail  
     　 Moderately Frail  
     　 Severely Frail  
     　 Very Severely Frail  
     　 Terminally ill

**At the time of HOSPITAL discharge (Please complete this data set upon the HOSPITAL discharge)**

* 1. Physical Function: Hand grip strength (kg)
  2. The person who answered/completed the following questionnaires  
     　Patient-self  
     　Family (on behalf of the patient)  
     　Other (free text)

**(The following questions from 7.4 to 7.5 can be answered by either the patient, family, or the other (if clarified).) (Evaluation by the family is acceptable.)**

* 1. Physical Function: Barthel Index (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  2. Quality of Life: EQ-5D-5L (Each item can be selected on this EDC with the definition for each item beside)
  3. Clinical Frailty Scale (The definition for each item will be placed beside the question)  
     　 Very fit  
     　 Well  
     　 Managing Well  
     　 Vulnerable  
     　 Mildly Frail  
     　 Moderately Frail  
     　 Severely Frail  
     　 Very Severely Frail  
     　 Terminally ill

**(Please follow the instructions)**

* 1. Can the patient answer the Mini-Mental State Examination (MMSE)? (The questionnaire sheet will be placed beside the question)  
     　Yes  
     　No (not enough cognitive function to answer)  
     6.9.1 (if yes) Cognitive Function: Mini-Mental State Examination (MMSE) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  2. Can the patient answer the Hospital Anxiety and Depression Scale (HADS) and Impact of Events Scale-Revised (IES-R)? (The questionnaire sheets will be placed beside the question)  
     　Yes  
     　No (not enough state to answer)

7.10.1 (if yes) Mental Health: Hospital Anxiety and Depression Scale (HADS) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)

7.10.2 (if yes) Mental Health: Impact of Events Scale-Revised (IES-R) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)

* 1. Can the patient answer the EQ-VAS? (The questionnaire sheets will be placed beside the question)  
     　Yes  
     　No (not enough communication to answer)  
     6.11.1 (if yes) Quality of Life: EQ-VAS (The scale can be selected on this EDC from the 100-scale bar)

1. **The 3-month follow-up after hospital discharge: PICS-related functional outcomes** (this data set will be completed **by a phone call at the time of the 3-month follow-up after hospital discharge**. **Not after ICU admission**. Depending on your institution, collecting data via mail of the questionnaires or an in-person interview is allowed. It is recommended that these data should be obtained **2.5 to 3.5 months** after their hospital discharge.)
   1. How did you collect the following data?  
      　Phone call  
      　Mail  
      　In-person interview  
      　Other (free text)
   2. The person who answered the following questionnaires  
      　Patient-self  
      　Family (on behalf of the patient)  
      　Other (free text)

**(The following questions from 8.3 to 8.8 can be answered by either the patient, family, or the other (if clarified).) (Evaluation by the family is acceptable.)**

* 1. Survival or Death  
     　Survival  
     　Death  
     7.3.1 (if death) Date of death (time and date: select on the calendar and you can manually adjust the time afterwards)  
     7.3.1 (if survival) Date of confirming the survival (should correspond to the date of the phone call) (time and date: select on the calendar and you can manually adjust the time afterwards)
  2. Readmission to hospital in the 3 months following hospital discharge   
     　Yes  
     　No  
     7.4.1 (if yes) Readmission to ICU from the hospital discharge to this 3-month follow-up  
       Yes  
       No   
     7.4.2 (if yes) When was the patient admitted to the hospital after the hospital discharge (days)? (please count the number of days after the hospital discharge)
  3. Employment status  
      Full-time  
      Part-time  
      No employed  
      Others (free text)  
     7.5.1 (if full-time or part-time selected) Is the current job same as before the hospital admission?  
       Yes  
       No
  4. Physical Function: Barthel Index (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  5. Physical Function: Swallowing Function: Functional Oral Intake Scale (FOIS) (The definition for each item will be placed beside the question)
  6. Quality of Life: EQ-5D-5L (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  7. Clinical Frailty Scale (The definition for each item will be placed beside the question)  
     　 Very fit  
     　 Well  
     　 Managing Well  
     　 Vulnerable  
     　 Mildly Frail  
     　 Moderately Frail  
     　 Severely Frail  
     　 Very Severely Frail  
     　 Terminally ill

**(Please follow the instructions)**

* 1. Can the patient answer the telephone version of the Mini-Mental State Examination (MMSE)? (The questionnaire sheet will be placed beside the question)  
     　Yes  
     　No (not enough cognitive function to answer)  
     7.10.1 (if yes) Cognitive Function: telephone version Mini-Mental State Examination (MMSE) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)
  2. Can the patient answer the Hospital Anxiety and Depression Scale (HADS) and Impact of Events Scale-Revised (IES-R)? (The questionnaire sheets will be placed beside the question)  
     　Yes  
     　No (not enough state to answer)

7.11.1 (if yes) Mental Health: Hospital Anxiety and Depression Scale (HADS) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)

8.9.2 (if yes) Mental Health: Impact of Events Scale-Revised (IES-R) (Each item can be selected on this EDC with the definition for each item beside) (Total score will be automatically calculated after filling in each item.)

* 1. Can the patient answer the EQ-VAS? (The questionnaire sheets will be placed beside the question)  
     　Yes  
     　No (not enough communication to answer)  
     7.12.1 (if yes) Quality of Life: EQ-VAS (The scale can be selected on this EDC from the 100-scale bar)