



International Database on Organ Donation and Transplantation - COVID19

USER GUIDE



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The following is a master data entry specification document, describing the expected data to be introduced for each variable of the IDOTCOVID database.

The database is expected to evolve during the following weeks, to which this document will also be adapted according to the modifications on some variables or introduction of new ones. It is advisable to download the latest version of the document (detailed on the footnote of every page).

If you have any doubt please contact the IDOTCOVID management at info@idotcovid.org.

SOLID ORGAN TRANSPLANTS

FieldLabel	Mandatory/Optional	Variables	Selection	Description
SOT Details				
External ID	Mandatory	Local identification Code		Introduce a local identification code which may allow de-identification for patient follow-up (if needed)
Type of SOT 1	Mandatory	Kidney Liver Heart Lung Pancreas Multivisceral Vascular composite graft	Select one value	Select type of solid organ transplant. In multiple organ transplant recipients, please select transplanted organ by date of transplant: If simultaneous transplant fill both variables (SOT1 % SOT2) with same date
Date of SOT 1	Mandatory	Date		Introduce date of SOT1
Months since SOT 1	Automatic	Time	Automatic	System calculates automatically time (months) from SOT to Hospital Admission due to COVID19
Type of SOT 2	Mandatory	Kidney Liver Heart Lung Pancreas Multivisceral Vascular composite graft	Select one value	Select type of solid organ transplant. In multiple organ transplant recipients, please select transplanted organ by date of transplant: If simultaneous transplant fill both variables (SOT1 % SOT2) with same date
Date of SOT 2	Mandatory	Date		Introduce date of SOT1
Months since SOT 2	Automatic	Time	Automatic	System calculates automatically time (months) from SOT to Hospital Admission due to COVID19
SOT last 12 months	Mandatory	No Yes	Toggle Switch	Select if current SOT performed in the last 12months -
COVID19 confirmed	Mandatory	PCR - Nasopharyngeal swab PCR - Bronchial Alveolar Lavage/Aspirate Serology No (clinical diagnosis)	Toggle Switch	Select if COVID19 was confirmed by PCR/serology

Date of COVID19 diagnosis	Optional	Date		Introduce date of diagnosis of COVID19 infection
Transplant Status	Mandatory	Functioning Failed	toggle switch	Select what is current SOT status at time of data entry
Patient Status	Mandatory	Alive Dead	toggle switch	Select what is patient status at time of data entry
Cause of Death	Only if "Patient status - death"	Refractory pneumonia Multiorgan Failure Other	Toggle Switch	Include patient cause of death
Biological Sample	Mandatory	No Yes	Toggle Switch	Select if any type of biological sample was stored for research purposes (i.e. Plasma, serum, urine, tissue)
Discharge Date	Optional	Date		Introduce date of discharge of Hospital Admission for COVID19 infection; - Note: if patient died during admission, introduce date of death;
Discharge Days	Automatic	Time	Calculation	System calculates automatically time (days) from Hospital Admission to discharge COVID19
Last Follow-up	Optional	Date		Introduce date of last day of patient follow-up

FieldLabel	Mandatory/Optional	Variables	Selection	Description
Recipient/donor				
Full Name	Optional			Patient's full name or other identification. Required only for local de-identification for patient follow-up (if needed)
Date Of Birth	Mandatory	Date		Introduce patient's date of birth
Gender	Mandatory	Male Female	toggle switch	Introduce patient's gender
Height (cm)	Optional	Number		Introduce patient's height (in cm)
Weight (Kg)	Optional	Number		Introduce patient's weight (in Kg)
BMI	Calculation	Number	Normal range 18-35	Calculate using the formula: [Patient weight/(patient height x patient height)]*100
Previous SOT	Optional	No Yes	toggle switch	Select if patient has received a previous SOT (other than the current one)
Number SOT	Only if "Previous SOT – yes"	Number		Introduce number of different previous SOTs
Date 1 st SOT	Only if "Previous SOT – yes"	Date		Introduce the date of the first SOT
Age at 1 st SOT	Only if "Previous SOT – yes"	Number	Calculation	System calculates automatically time (years) from date of birth and date of first SOT
Medical History	Mandatory	Hypertension Diabetes Mellitus Dyslipidemia COPD Obesity (BMI >30Kg/m ²) Chronic Kidney Disease Smoking	Multiselect	Select all previous medical conditions known
Liver transplantation	Optional	No Yes	Toggle Switch	Select if patient is recipient of a liver transplantation
Indication for liver transplantation	Only if "Liver Transplantation – Yes"	Decompensated cirrhosis Hepato cellular carcinoma Other	Toggle Switch	Select indication for liver transplantation
Aetiology of Liver Disease	Only if "Liver Transplantation – Yes"	Alcohol post NASH HBV HCV active or	Toggle Switch	Select aetiology of liver disease

		inactive Other		
MELD pre-COVID	Only if "Liver Transplanta tion – Yes"		Normal Range: <15	Introduce patients' MELD prior to COVID-19 infection
Date of lab results pre- COVID	Only if "Liver Transplanta tion – Yes"	Date		Introduce date of last lab results prior to COVID-19
Leucocyte (abs x10*6/L)	Only if "Liver Transplanta tion – Yes"	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) pre-COVID
Lymphocyte (abs x10*6/L)	Only if "Liver Transplanta tion – Yes"		Normal range: 900-4500	Introduce patient Lymphocyte count pre- COVID
Plat (x10*9/L)	Only if "Liver Transplanta tion – Yes"		Normal range: 100-450	Introduce patient Platelet count pre-COVID
C-Reactive Protein (mg/dL)	Only if "Liver Transplanta tion – Yes"		Normal range: <0,4	Introduce patient C- Reactive Protein pre- COVID
GOT/AST (U/L)	Only if "Liver Transplanta tion – Yes"		Normal range: 5- 40	Introduce patient GOT/AST pre-COVID
GPT/ALT (U/L)	Only if "Liver Transplanta tion – Yes"		Normal range: 5- 40	Introduce patient GPT/ALT pre-COVID
GGT (U/L)	Only if "Liver Transplanta tion – Yes"		Normal range: 5- 40	Introduce patient GGT pre-COVID
Alkaline Phosphatase (U/L)	Only if "Liver Transplanta tion – Yes"			Introduce patient Alkaline Phosphatase pre-COVID
Total Bilirubin (mg/dL)	Only if "Liver Transplanta tion – Yes"		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin pre-COVID

Creat (mg/dL)	Only if "Liver Transplantation – Yes"		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) pre-COVID
Prothrombin Time (PT) (seconds)	Only if "Liver Transplantation – Yes"		Normal range: 9.0-13.5 seconds	Introduce patient PT pre-COVID
HLA A1 Recipient	Optional	Number	(only serotype – i.e.: A02 – introduce 02)	HLA locus A allele
HLA A2 Recipient	Optional	Number	(only serotype – i.e.: A02 – introduce 02)	HLA locus A allele
HLA B1 Recipient	Optional	Number	(only serotype – i.e.: B08 – introduce 08)	HLA locus B allele
HLA B2 Recipient	Optional	Number	(only serotype – i.e.: B08 – introduce 08)	HLA locus B allele
HLA C1 Recipient	Optional	Number	(only serotype – i.e.: C03 – introduce 03)	HLA locus C allele
HLA C2 Recipient	Optional	Number	(only serotype – i.e.: C03 – introduce 03)	HLA locus C allele
HLA DR1 Recipient	Optional	Number	(only serotype – i.e.: DR01 – introduce 01)	HLA locus DR allele
HLA DR2 Recipient	Optional	Number	(only serotype – i.e.: DR01 – introduce 01)	HLA locus DR allele
HLA DQ1 Recipient	Optional	Number	(only serotype – i.e.: DQ02 – introduce 02)	HLA locus DQ allele
HLA DQ2 Recipient	Optional	Number	(only serotype – i.e.: DQ02 – introduce 02)	HLA locus DQ allele

FieldLabel	Mandatory/Optional	Variables	Selection	Description
COVID19Details				
symptoms	Mandatory	Fever Cough Disnea Diarrhea Conjunctivitis Anosmia Disgeusia	multiselect	Select all of patient's symptoms of COVID19
Appearance of first symptoms at:	Optional	Home Hospital	toggle switch	Introduce location where first symptoms presented
Date of First Symptoms	Mandatory	Date		Introduce date of patient's reported first symptoms began
Days from First Symptoms	Automatic	Time	Calculation	System calculates automatically time (days) from first symptoms up to Hospital Admission;
COVID-19 Manifestations	Mandatory	Unilateral viral pneumonia Bilateral viral pneumonia Bacterial pneumonia Fungal lung infection Cryptogenic Organizing Neumonia Seizures Stroke Myocarditis Endocarditis Heart failure Deep vein thrombosis Major vessel thrombosis Small vessel thrombosis Amputation lower extremities Amputation upper extremities Hemorrhage Acute Kidney Injury COVID-19 Toes Urticaria Diffuse maculopapular eruptions Livedo reticularis	multiselect	Select all of patient's clinical manifestations of COVID19

		Vesicular rashes Petechial rashes		
Chest X-ray	Optional	No Normal Abnormal (including condensation)		Introduce a Chest X-ray was performed
Thorax CT-scan	Optional	No Normal Abnormal (including ground glass opacities)		Introduce a Thorax CT scan was performed
Patient Management	Mandatory	Outpatient In Hospital admission		Introduce whether patient for COVID19 was managed as an outpatient of admitted to hospital
Date of Admission	Only if "Patient Management – Hospital Admission"	Date		Introduce date of patient's Hospital Admission for COVID19
Age COVID19 Diagnosis	Automatic	Time	Calculation	System calculates automatically time (years) from date of birth up to Hospital Admission;
Adm Hypertension	Optional	Hypotension Normal Hypertension	toggle switch	Select if patient presented arterial Hypertension at Hospital Admission
Leucocyte (abs x10*6/L)	Optional	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) at Hospital Admission
Lymphocyte (abs x10*6/L)	Optional		Normal range: 900-4500	Introduce patient Lymphocyte count at Hospital Admission
Hg (g/dL)	Optional		Normal range: 10-17	Introduce patient Hemoglobin level (g/dL) at Hospital Admission
Plat (x10*9/L)	Optional		Normal range: 100-450	Introduce patient Platelet count at Hospital Admission
GOT (U/L)	Optional		Normal range: 5-40	Introduce patient GOT/AST at Hospital Admission
GPT (U/L)	Optional		Normal range: 5-40	Introduce patient GPT/ALT at Hospital Admission
GGT (U/L)	Optional		Normal range: 5-40	Introduce patient GGT at Hospital Admission
Total Bilirubin (mg/dL)	Optional		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin at Hospital

				Admission
Indirect Bilirubin (mg/dL)	Optional		Normal range: <0.6mg/dL	Introduce patient indirect bilitubin at Hospital Admission
Direct Bilirubin (mg/dL)	Optional		Normal range: <0.6mg/dL	Introduce patient direct bilirubin at Hospital Admission
Albumin (mg/dL)	Optional		Normal range: 34-48mg/dL	Introduce patient serum Albumin at Hospital Admission
LDH (U/L)	Optional		Normal range: <234	Introduce patient LDH at Hospital Admission
C-Reactive Protein (mg/dL)	Optional		Normal range: <0,4	Introduce patient C-Reactive Protein at Hospital Admission
Ferritin (ng/mL)	Optional		Normal range: 20-400	Introduce patient Ferritin at Hospital Admission
High-sensitivity Troponin I (ng/mL)	Optional		Normal range: <0.04ng/mL	Introduce patient hsTnl at Hospital Admission
D-Dimer (ng/mL)	Optional		Normal range: <500	Introduce patient D-Dimer at Hospital Admission
CPK (U/L)	Optional		Normal range: <300 U/L	Introduce patient CPK at Hospital Admission
Haptoglobin (g/L)	Optional		Normal range: 0.5-2.2 g/L	Introduce patient Haptoglobin at Hospital Admission
Creat (mg/dL)	Optional		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) at Hospital Admission
BUN	Optional		Normal range: 6-25mg/dL	Introduce patient BUN at Hospital Admission
Na (mEq/L)	Optional		Normal range: 135-145	Introduce patient serum Sodium at Hospital Admission
K (mEq/L)	Optional		Normal range: 3,5-5,5	Introduce patient serum Potassium at Hospital Admission
Ca (mg/dL)	Optional		Normal range: 8,5-10,5	Introduce patient serum Calcium at Hospital Admission
Prothrombin Time (PT) (seconds)	Optional		Normal range: 9.0-13.5	Introduce patient PT at Hospital Admission

			seconds	
Partial Tromboplastin Time (PPT) (seconds)	Optional		Normal range: 23-70 seconds	Introduce patient aPTT at Hospital Admission
INR	Optional		Normal range: <1.5	Introduce patient INR at Hospital Admission
IL6	Optional		no range	Introduce patient plasma Interleucin-6 at Hospital Admission
O2 saturation (at room air)	Optional		Normal range: >92%	Introduce patient SatO2at room air (O2 21%) at Hospital Admission
PaO2 (at diagnosis)	Optional		Normal range: >60mmHg	Introduce patient PaO2 at room air (O2 21%) at hospital admission
PaO2/FiO2 (at room air)	Optional		Normal range: >300	Introduce patient PaO2/FiO2 at room air (O2 21%) at Hospital Admission
Need for ICU	Mandatory	No Yes	toggle switch	Select if patient required ICU admission during Hospitalization
Date of ICU	Only if "Need for ICU – yes"	Date		Introduce the date of ICU Admission
Days from Symptoms to ICU	Only if "Need for ICU – yes"	Time	Calculation	System calculates automatically time (days) from Symptoms to ICU Admission;
Date ICU discharge	Only if "Need for ICU – yes"	Date		Introduce the date of ICU Discharge
Time to ICU discharge	Only if "Need for ICU – yes"	Time	Calculation	System calculates automatically time (days) from ICU Admission to ICU discharge;
Need for Vasoactive Drugs	Mandatory	No Yes	toggle switch	Select if patient required Vasoactive drugs during Hospitalization
Need Mechanical Ventilation	Mandatory	- Non-Invasive Mechanical Ventilation - Invasive Mechanical Ventilation - No	toggle switch	Select type most severe type mechanical ventilation required: Invasive>Non-Invasive>No
Date of MV	Only if "Need for MV – yes"	Date		Introduce the date of most severe mechanical ventilation
Days from Symptoms to MV	Only if "Need for MV – yes"	Time	Calculation	System calculates automatically time (days) from Symptoms to MV;
Date MV Withdrawal	Only if "Need for	Date		Introduce the date of most severe MV

	MV – yes”			withdrawal
Time to MV Withdrawal	Only if “Need for MV – yes”		calculation	System calculates automatically time (days) from MV to MV withdrawal;
Need RRT	Mandatory	CVVHDF CVVHD CVVHF SLED Intermittent HD Intermittent HDF Other	toggle switch	Select if patient required Renal Replacement Treatment (RRT) during hospital admission
Date RRT	Only if “Need Dialysis – yes”	Date		Introduce the date of first dialysis session (either continuous or intermittent dialysis)
RRT Withdrawal Date	Only if “Need Dialysis – yes”	Date		Introduce the date of last dialysis session (either continuous or intermittent dialysis) ➔ If patient remained on dialysis leave it blank
RRT Withdrawal Days	Only if “Need Dialysis – yes”	Time	Calculation	System calculates automatically time (days) from dialysis date to dialysis withdrawal;
IS Withdrawal	Mandatory	No Tacrolimus Cyclosporine A Mofetil Mycophenolate Mycophenolate Sodium Everolimus Sirolimus Azathioprine Prednisone Belatacept	multiselect	Select all maintenance immunosuppressive treatments which were withdrawn during hospital admission
COVID-19 Treatments	Mandatory	Lopinavir/Ritonavir (Kaletra) Remdesivir Interferon Hydroxychloroquine Azithromycin Tocilizumab Siltuximab Clazakizumab Anakinra Baritinib Convalescent Plasma Broad Spectrum Antibiotics Other monoclonal antibody	multiselect	Select all COVID-19 treatments applied to patient during hospital admission

Date of first treatment	Optional	Date		Introduce date of beginning of COVID-19 Treatment
Days in Treatment	Optional	Number		Introduce total number of days with COVID-19 treatments
Other Treatments	Optional	Free text (max 100)		Introduce total other not previously specified COVID-19 treatments
ACEI/ARB Suspended		No Yes	toggle switch	In patients under treatment with ACEI/ARB, select if these were suspended during Hospital Admission
Leucocyte (abs x10 ⁶ /L) (peak)	Optional	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) at peak of COVID19 disease
Lymphocyte (abs x10 ⁶ /L) (peak)	Optional		Normal range: 900-4500	Introduce patient Lymphocyte count at peak of COVID19 disease
Plat (x10 ⁹ /L) (peak)	Optional		Normal range: 100-450	Introduce patient Platelet count at peak of COVID19 disease
GOT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GOT/AST at peak of COVID19 disease
GPT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GPT/ALT at peak of COVID19 disease
GGT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GGT at peak of COVID19 disease
Total Bilirubin (mg/dL) (peak)	Optional		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin at peak of COVID19 disease
LDH (U/L) (peak)	Optional		Normal range: <234	Introduce patient LDH at peak of COVID19 disease
C-Reactive Protein (mg/dL) (peak)	Optional		Normal range: <0,4	Introduce patient C-Reactive Protein at peak of COVID19 disease
Ferritin (ng/mL) (peak)	Optional		Normal range: 20-400	Introduce patient Ferritin at peak of COVID19 disease
High-sensitivity Troponin I (ng/mL) (peak)	Optional		Normal range: <0.04ng/mL	Introduce patient hsTnI at peak of COVID19 disease
D-Dimer (ng/mL) (peak)	Optional		Normal range: <500	Introduce patient D-Dimer at peak of COVID19

				disease
CPK (U/L) (peak)	Optional		Normal range: <300 U/L	Introduce patient CPK at peak of COVID19 disease
Creat (mg/dL) (peak)	Optional		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) at peak of COVID19 disease
Prothrombin Time (PT) (seconds) (peak)	Optional		Normal range: 9.0-13.5 seconds	Introduce patient PT at peak of COVID19 disease
INR (peak)	Optional		Normal range: <1.5	Introduce patient INR at peak of COVID19 disease
SatO2 (lowest value)	Optional		Normal range: >92%	Introduce patients lowest SatO2 during Hospital Admission
PaO2 (lowest value)	Optional		Normal range: >60mmHg	Introduce patients lowest PaO2 during Hospital Admission
O2 supply (maximum)	Optional		Normal range: 21-100%	Introduce maximum supplementary O2 administered to the patient during Hospitalization
Highest MELD	Optional		Normal Range: <15	Introduce patient highest MELD score during Hospital Admission
Rejection during COVID-19	Mandatory	No Indeterminate Acute Celular Grade 1 Acute Celular Grade 2 Acute Celular Grade 3 Chronic cellular Acute ABMR C4d+ Acute ABMR C4d- Chronic ABMR C4d+ No histology available	multiselect	Select if rejection was diagnosed during COVID-19 Hospitalization; <ul style="list-style-type: none"> - Whenever a biopsy was performed, select type of rejection; - Otherwise, select "No histology available"
Rejection Treatment	Mandatory	None Steroids Thymoglobulin Rituximab PE IVIG	multiselect	Select treatment alternatives used to treat SOT rejection: <ul style="list-style-type: none"> - If no rejection, select "None"

FieldLabel	Mandatory/ Optional	Variables	Selection	Description
Treatments				
ACEI/β-Bloq treatment	Optional	No ACEI ARB β-blockers NSAIs Unknown	Select one value	Select if patient was under treatment with ACEI/ β -blockers at COVID19 admission
Induction Immunosuppression	Optional	No Thymoglobulin Basiliximab Alemtuzumab OKT3	select one value	Select induction immunosuppression used at current organ transplantation
Maintenance IS	Mandatory	Prednisone Tacrolimus Cyclosporine A Mofetil Mycophenolate Mycophenolate Sodium Everolimus Sirolimus Azathioprine Belatacept	multiselect	Select patients' maintenance immunosuppression treatment prior to COVID-19 infection

FieldLabel	Mandatory/ Optional	Variables	Selection	Description
Rejections				
Previous SOT Rejection	Mandatory	No Indeterminate Acute Celular Grade 1 Acute Celular Grade 2 Acute Celular Grade 3 Chronic cellular Acute ABMR C4d+ Acute ABMR C4d- Chronic ABMR C4d+ No histology available	multiselect	Select if patient has had any previous episode of rejection of the current graft : - Whenever a biopsy was performed, select type of rejection; - Otherwise, select "No histology available"
Rejection Number Episodes	Optional	Number		Discriminate number of previous rejection episodes of the current graft
Rejection Last Date	Optional	Date		Date of latest rejection episode of the current graft
Months since last Rejection	Optional	Number	Calculation	System calculates automatically time (months) from last rejection episode to Hospital Admission;
Rejection Treatment	Optional	None Steroids Thymoglobulin Rituximab PE IVIG	multiselect	Select treatment alternatives used to treat SOT rejection: If no rejection, select "None"

WAITLISTED PATIENTS

FieldLabel	Mandatory/Optional	Variables	Selection	Description
Waitlist Details				
External ID	Mandatory	Local identification Code		Introduce a local identification code which may allow de-identification for patient follow-up (if needed)
Type of SOT Waitlist 1	Mandatory	Kidney Liver Heart Lung Pancreas Multivisceral Vascular composite graft	Select one value	Select type of solid organ transplant patient is on the waitlist for.
Date of Waitlist	Optional	Date		Introduce date of patient inclusion on the waitlist
Type of SOT Waitlist 2	Optional	Kidney Liver Heart Lung Pancreas Multivisceral Vascular composite graft	Select one value	In multiple organ transplant recipients, please select waitlist for SOT with same WL date
Months since WL	Automatic	Time	Automatic	System calculates automatically time (months) from inclusion on the waitlist to Hospital Admission due to COVID19
COVID19 confirmed	Mandatory	PCR - Nasopharyngeal swab PCR - Bronchial Alveolar Lavage/Aspirate Serology No (clinical diagnosis)	Toggle Switch	Select if COVID19 was confirmed by PCR/serology
Date of COVID19 diagnosis	Optional	Date		Introduce date of diagnosis of COVID19 infection
Patient Status	Mandatory	Alive Dead	toggle switch	Select what is patient status at time of data entry
Cause of Death	Only if "Patient status - death"	Refractory pneumonia Multiorgan Failure Other	Toggle Switch	Include patient cause of death
Biological Sample	Optional	No Yes	Toggle Switch	Select if any type of biological sample was stored for research

				purposes (i.e. Plasma, serum, urine, tissue)
Discharge Date	Optional	Date		Introduce date of discharge of Hospital Admission for COVID19 infection; - Note: if patient died during admission, introduce date of death;
Discharge Days	Automatic	Time	Calculation	System calculates automatically time (days) from Hospital Admission to discharge COVID19
Last Follow-up	Optional	Date		Introduce date of last day of patient follow-up

FieldLabel	Mandatory/Optional	Variables	Selection	Description
Recipient				
Full Name	Optional			Patient's full name or other identification. Required only for local de-identification for patient follow-up (if needed)
Date Of Birth	Mandatory	Date		Introduce patient's date of birth
Gender	Mandatory	Male Female	toggle switch	Introduce patient's gender
Height (cm)	Optional	Number		Introduce patient's height (in cm)
Weight (Kg)	Optional	Number		Introduce patient's weight (in Kg)
BMI	Calculation	Number	Normal range 18-35	Calculate using the formula: [Patient weight/(patient height x patient height)]*100
Previous SOT	Optional	No Yes	toggle switch	Select if patient has received a previous SOT (other than the current one)
Number SOT	Only if "Previous SOT – yes"	Number		Introduce number of different previous SOTs
Date 1 st SOT	Only if "Previous SOT – yes"	Date		Introduce the date of the first SOT
Age at 1 st SOT	Only if "Previous SOT – yes"	Number	Calculation	System calculates automatically time (years) from date of birth and date of first SOT
Medical History	Mandatory	Hypertension Diabetes Mellitus Dyslipidemia COPD Obesity (BMI >30Kg/m ²) Chronic Kidney Disease Smoking	Multiselect	Select all previous medical conditions known
ACEI/β-Block treatment	Optional	No ACEI ARB β-blockers NSAIs Unknown	Select one value	Select if patient was under treatment with ACEI/β-blockers at COVID19 admission
WL for Liver transplantation	Optional	No Yes	Toggle Switch	Select if patient is on the waitlist for a liver transplantation
Indication for liver transplantation	Only if "Liver Transplanta	Decompensated cirrhosis Hepato cellular	Toggle Switch	Select indication for liver transplantation

	tion – Yes”	carcinoma Other		
Aetiology of Liver Disease	Only if “Liver Transplantation – Yes”	Alcohol post NASH HBV HCV active or inactive Other	Toggle Switch	Select aetiology of liver disease
MELD pre-COVID	Only if “Liver Transplantation – Yes”		Normal Range: <15	Introduce patients’ MELD prior to COVID-19 infection
Date of lab results pre-COVID	Only if “Liver Transplantation – Yes”	Date		Introduce date of last lab results prior to COVID-19
Leucocyte (abs x10*6/L)	Only if “Liver Transplantation – Yes”	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) pre-COVID
Lymphocyte (abs x10*6/L)	Only if “Liver Transplantation – Yes”		Normal range: 900-4500	Introduce patient Lymphocyte count pre-COVID
Plat (x10*9/L)	Only if “Liver Transplantation – Yes”		Normal range: 100-450	Introduce patient Platelet count pre-COVID
C-Reactive Protein (mg/dL)	Only if “Liver Transplantation – Yes”		Normal range: <0,4	Introduce patient C-Reactive Protein pre-COVID
GOT/AST (U/L)	Only if “Liver Transplantation – Yes”		Normal range: 5-40	Introduce patient GOT/AST pre-COVID
GPT/ALT (U/L)	Only if “Liver Transplantation – Yes”		Normal range: 5-40	Introduce patient GPT/ALT pre-COVID
GGT (U/L)	Only if “Liver Transplantation – Yes”		Normal range: 5-40	Introduce patient GGT pre-COVID
Alkaline Phosphatase (U/L)	Only if “Liver Transplantation – Yes”			Introduce patient Alkaline Phosphatase pre-COVID

	tion – Yes”			
Total Bilirubin (mg/dL)	Only if “Liver Transplantation – Yes”		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin pre-COVID
Creat (mg/dL)	Only if “Liver Transplantation – Yes”		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) pre-COVID
Prothrombin Time (PT) (seconds)	Only if “Liver Transplantation – Yes”		Normal range: 9.0-13.5 seconds	Introduce patient PT pre-COVID
WL for Kidney Transplantation	Optional	No Yes	Toggle Switch	Select if patient is on the waitlist for a kidney transplantation
Dialysis	Only if “WL for Kidney Transplantation – Yes”	No Peritoneal Dialysis Hemodialysis	Toggle Switch	Select type of dialysis
Date dialysis	Only if “Dialysis – Peritoneal dialysis or hemodialysis”		Date	Introduce date of first dialysis
Time on dialysis	Only if “Dialysis – Peritoneal dialysis or hemodialysis”		automatic	Calculate automatic from “Date Dialysis” to “Hospital Admission”
HLA A1 Recipient	Optional	Number	(only serotype – i.e.: A02 – introduce 02)	HLA locus A allele
HLA A2 Recipient	Optional	Number	(only serotype – i.e.: A02 – introduce 02)	HLA locus A allele
HLA B1 Recipient	Optional	Number	(only serotype – i.e.: B08 – introduce 08)	HLA locus B allele
HLA B2 Recipient	Optional	Number	(only serotype – i.e.: B08 – introduce 08)	HLA locus B allele
HLA C1 Recipient	Optional	Number	(only serotype – i.e.: C03 – introduce 03)	HLA locus C allele
HLA C2 Recipient	Optional	Number	(only serotype – i.e.: C03 –	HLA locus C allele

			introduce 03)	
HLA DR1 Recipient	Optional	Number	(only serotype – i.e.: DR01 – introduce 01)	HLA locus DR allele
HLA DR2 Recipient	Optional	Number	(only serotype – i.e.: DR01 – introduce 01)	HLA locus DR allele
HLA DQ1 Recipient	Optional	Number	(only serotype – i.e.: DQ02 – introduce 02)	HLA locus DQ allele
HLA DQ2 Recipient	Optional	Number	(only serotype – i.e.: DQ02 – introduce 02)	HLA locus DQ allele

FieldLabel	Mandatory/Optional	Variables	Selection	Description
COVID19Details				
symptoms	Mandatory	Fever Cough Disnea Diarrhea Conjuntivitis Anosmia Disgeusia	multiselect	Select all of patient's symptoms of COVID19
Appearance of first symptoms at:	Optional	Home Hospital	toggle switch	Introduce location where first symptoms presented
Date of First Symptoms	Mandatory	Date		Introduce date of patient's reported first symptoms began
Days from First Symptoms	Automatic	Time	Calculation	System calculates automatically time (days) from first symptoms up to Hospital Admission;
COVID-19 Manifestations	Mandatory	Unilateral viral pneumonia Bilateral viral pneumonia Bacterial pneumonia Fungal lung infection Cryptogenic Organizing Neumonia Seizures Stroke Myocarditis Endocarditis Heart failure Deep vein thrombosis Major vessel thrombosis Small vessel thrombosis Amputation lower extremities Amputation upper extremities Hemorrhage Acute Kidney Injury COVID-19 Toes Urticaria Diffuse maculopapular eruptions Livedo reticularis	multiselect	Select all of patient's clinical manifestations of COVID19

		Vesicular rashes Petechial rashes		
Chest X-ray	Optional	No Normal Abnormal (including condensation)		Introduce a Chest X-ray was performed
Thorax CT-scan	Optional	No Normal Abnormal (including ground glass opacities)		Introduce a Thorax CT scan was performed
Patient Management	Mandatory	Outpatient In Hospital admission		Introduce whether patient for COVID19 was managed as an outpatient of admitted to hospital
Date of Admission	Only if "Patient Management – Hospital Admission"	Date		Introduce date of patient's Hospital Admission for COVID19
Age COVID19 Diagnosis	Automatic	Time	Calculation	System calculates automatically time (years) from date of birth up to Hospital Admission;
Adm Hypertension	Optional	Hypotension Normal Hypertension	toggle switch	Select if patient presented arterial Hypertension at Hospital Admission
Leucocyte (abs x10*6/L)	Optional	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) at Hospital Admission
Lymphocyte (abs x10*6/L)	Optional		Normal range: 900-4500	Introduce patient Lymphocyte count at Hospital Admission
Hg (g/dL)	Optional		Normal range: 10-17	Introduce patient Hemoglobin level (g/dL) at Hospital Admission
Plat (x10*9/L)	Optional		Normal range: 100-450	Introduce patient Platelet count at Hospital Admission
GOT (U/L)	Optional		Normal range: 5-40	Introduce patient GOT/AST at Hospital Admission
GPT (U/L)	Optional		Normal range: 5-40	Introduce patient GPT/ALT at Hospital Admission
GGT (U/L)	Optional		Normal range: 5-40	Introduce patient GGT at Hospital Admission
Total Bilirubin (mg/dL)	Optional		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin at Hospital

				Admission
Indirect Bilirubin (mg/dL)	Optional		Normal range: <0.6mg/dL	Introduce patient indirect bilitubin at Hospital Admission
Direct Bilirubin (mg/dL)	Optional		Normal range: <0.6mg/dL	Introduce patient direct bilirubin at Hospital Admission
Albumin (mg/dL)	Optional		Normal range: 34-48mg/dL	Introduce patient serum Albumin at Hospital Admission
LDH (U/L)	Optional		Normal range: <234	Introduce patient LDH at Hospital Admission
C-Reactive Protein (mg/dL)	Optional		Normal range: <0,4	Introduce patient C-Reactive Protein at Hospital Admission
Ferritin (ng/mL)	Optional		Normal range: 20-400	Introduce patient Ferritin at Hospital Admission
High-sensitivity Troponin I (ng/mL)	Optional		Normal range: <0.04ng/mL	Introduce patient hsTnl at Hospital Admission
D-Dimer (ng/mL)	Optional		Normal range: <500	Introduce patient D-Dimer at Hospital Admission
CPK (U/L)	Optional		Normal range: <300 U/L	Introduce patient CPK at Hospital Admission
Haptoglobin (g/L)	Optional		Normal range: 0.5-2.2 g/L	Introduce patient Haptoglobin at Hospital Admission
Creat (mg/dL)	Optional		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) at Hospital Admission
BUN	Optional		Normal range: 6-25mg/dL	Introduce patient BUN at Hospital Admission
Na (mEq/L)	Optional		Normal range: 135-145	Introduce patient serum Sodium at Hospital Admission
K (mEq/L)	Optional		Normal range: 3,5-5,5	Introduce patient serum Potassium at Hospital Admission
Ca (mg/dL)	Optional		Normal range: 8,5-10,5	Introduce patient serum Calcium at Hospital Admission
Prothrombin Time (PT) (seconds)	Optional		Normal range: 9.0-13.5	Introduce patient PT at Hospital Admission

			seconds	
Partial Tromboplastin Time (PPT) (seconds)	Optional		Normal range: 23-70 seconds	Introduce patient aPTT at Hospital Admission
INR	Optional		Normal range: <1.5	Introduce patient INR at Hospital Admission
IL6	Optional		no range	Introduce patient plasma Interleucin-6 at Hospital Admission
O2 saturation (at room air)	Optional		Normal range: >92%	Introduce patient SatO2at room air (O2 21%) at Hospital Admission
PaO2 (at diagnosis)	Optional		Normal range: >60mmHg	Introduce patient PaO2 at room air (O2 21%) at hospital admission
PaO2/FiO2 (at room air)	Optional		Normal range: >300	Introduce patient PaO2/FiO2 at room air (O2 21%) at Hospital Admission
Need for ICU	Mandatory	No Yes	toggle switch	Select if patient required ICU admission during Hospitalization
Date of ICU	Only if "Need for ICU – yes"	Date		Introduce the date of ICU Admission
Days from Symptoms to ICU	Only if "Need for ICU – yes"	Time	Calculation	System calculates automatically time (days) from Symptoms to ICU Admission;
Date ICU discharge	Only if "Need for ICU – yes"	Date		Introduce the date of ICU Discharge
Time to ICU discharge	Only if "Need for ICU – yes"	Time	Calculation	System calculates automatically time (days) from ICU Admission to ICU discharge;
Need for Vasoactive Drugs	Mandatory	No Yes	toggle switch	Select if patient required Vasoactive drugs during Hospitalization
Need Mechanical Ventilation	Mandatory	- Non-Invasive Mechanical Ventilation - Invasive Mechanical Ventilation - No	toggle switch	Select type most severe type mechanical ventilation required: Invasive>Non-Invasive>No
Date of MV	Only if "Need for MV – yes"	Date		Introduce the date of most severe mechanical ventilation
Days from Symptoms to MV	Only if "Need for MV – yes"	Time	Calculation	System calculates automatically time (days) from Symptoms to MV;
Date MV Withdrawal	Only if "Need for	Date		Introduce the date of most severe MV

	MV – yes”			withdrawal
Time to MV Withdrawal	Only if “Need for MV – yes”		calculation	System calculates automatically time (days) from MV to MV withdrawal;
Need RRT	Mandatory	CVVHDF CVVHD CVVHF SLED Intermittent HD Intermittent HDF Other	toggle switch	Select if patient required Renal Replacement Treatment (RRT) during hospital admission
Date RRT	Only if “Need Dialysis – yes”	Date		Introduce the date of first dialysis session (either continuous or intermittent dialysis)
RRT Withdrawal Date	Only if “Need Dialysis – yes”	Date		Introduce the date of last dialysis session (either continuous or intermittent dialysis) ➔ If patient remained on dialysis leave it blank
RRT Withdrawal Days	Only if “Need Dialysis – yes”	Time	Calculation	System calculates automatically time (days) from dialysis date to dialysis withdrawal;
COVID-19 Treatments	Mandatory	Lopinavir/Ritonavir (Kaletra) Remdesivir Interferon Hydroxycloquine Azithromycin Tocilizumab Siltuximab Clazakizumab Anakinra Baritinib Convalescent Plasma Broad Spectrum Antibiotics Other monoclonal antibody	multiselect	Select all COVID-19 treatments applied to patient during hospital admission
Date of first treatment	Optional	Date		Introduce date of beginning of COVID-19 Treatment
Days in Treatment	Optional	Number		Introduce total number of days with COVID-19 treatments
Other Treatments	Optional	Free text (max 100)		Introduce total other not previously specified COVID-19 treatments
ACEI/ARB Suspended		No Yes	toggle switch	In patients under treatment with ACEI/ARB,

				select if these were suspended during Hospital Admission
Leucocyte (abs x10 ⁶ /L) (peak)	Optional	Number	Normal range: 4000-11000	Introduce patient Leucocyte count (WBC) at peak of COVID19 disease
Lymphocyte (abs x10 ⁶ /L) (peak)	Optional		Normal range: 900-4500	Introduce patient Lymphocyte count at peak of COVID19 disease
Plat (x10 ⁹ /L) (peak)	Optional		Normal range: 100-450	Introduce patient Platelet count at peak of COVID19 disease
GOT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GOT/AST at peak of COVID19 disease
GPT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GPT/ALT at peak of COVID19 disease
GGT (U/L) (peak)	Optional		Normal range: 5-40	Introduce patient GGT at peak of COVID19 disease
Total Bilirubin (mg/dL) (peak)	Optional		Normal range: <1.2mg/dL	Introduce patient Total Bilirubin at peak of COVID19 disease
LDH (U/L) (peak)	Optional		Normal range: <234	Introduce patient LDH at peak of COVID19 disease
C-Reactive Protein (mg/dL) (peak)	Optional		Normal range: <0,4	Introduce patient C-Reactive Protein at peak of COVID19 disease
Ferritin (ng/mL) (peak)	Optional		Normal range: 20-400	Introduce patient Ferritin at peak of COVID19 disease
High-sensitivity Troponin I (ng/mL) (peak)	Optional		Normal range: <0.04ng/mL	Introduce patient hsTnI at peak of COVID19 disease
D-Dimer (ng/mL) (peak)	Optional		Normal range: <500	Introduce patient D-Dimer at peak of COVID19 disease
CPK (U/L) (peak)	Optional		Normal range: <300 U/L	Introduce patient CPK at peak of COVID19 disease
Creat (mg/dL) (peak)	Optional		Normal range: 0,6 - 1,3	Introduce patient serum creatinine (mg/dL) at peak of COVID19 disease
Prothrombin Time (PT) (seconds) (peak)	Optional		Normal range: 9.0-13.5 seconds	Introduce patient PT at peak of COVID19 disease

INR (peak)	Optional		Normal range: <1.5	Introduce patient INR at peak of COVID19 disease
SatO2 (lowest value)	Optional		Normal range: >92%	Introduce patients lowest SatO2 during Hospital Admission
PaO2 (lowest value)	Optional		Normal range: >60mmHg	Introduce patients lowest PaO2 during Hospital Admission
O2 supply (maximum)	Optional		Normal range: 21-100%	Introduce maximum supplementary O2 administered to the patient during Hospitalization
Highest MELD	Optional		Normal Range: <15	Introduce patient highest MELD score during Hospital Admission

List of acronyms

ACEI – Angiotensin Converting Enzyme Inhibitor

ARB – Angiotensin Receptor Blocker

AZA – Azathioprine

COPD – Chronic Obstructive Pulmonary Disease

CsA – Cyclosporin A

DBD – Donor after Brain Death

DCD – Donor after Cardiac Death

EVL - Everolimus

ICU – Intensive Care Unit

IMV – Invasive Mechanical Ventilation

IS – Immunosuppression

IVIG – Intravenous Immunoglobulin

MMF – Sodium Mycophenolate/Mofetil Mycophenolate

MV – Mechanical Ventilation

mTOR-I – mTOR inhibitors

NIMV – Non-Invasive Mechanical Ventilation

PDN - Prednisone

PE - Plasma Exchange

SRL - Sirolimus

SOT - Solid Organ Transplant

TAC – Tacrolimus