DIVINE-datasets

Contents

Introduction

The **DIVINE-datasets** provides a collection of curated, anonymized datasets derived from the DIVINE project. These datasets include various clinical domains—such as patient demographics, comorbidities, symptoms, laboratory findings, treatments, and outcomes—allowing users to explore and practice different data manipulation and analysis workflows in a realistic setting.

Available Datasets

This repository includes the following datasets:

Dataset	Description
analytics	Laboratory parameters at hospital admission.
comorbidities	Baseline comorbid conditions and functional indices.
complications	In-hospital complications during COVID-19.
concomitant_medication	Chronic treatments before hospital admission.
demographic	Baseline demographic and lifestyle data.
end_followup	Outcomes and follow-up information.
icu	ICU admissions and critical care interventions.
inhosp_antibiotics	In-hospital antibiotic treatments.
inhosp_antivirals	In-hospital antiviral treatments.
inhosp_other_treatments	Other in-hospital supportive therapies.
scores	Disease severity scores at admission.
symptoms	Clinical symptoms at hospital admission.
vital_signs	Vital parameters and oxygenation data.
vaccine	COVID-19 vaccination status.

Dataset Descriptions

Each dataset is described below, including its dimensions and variable definitions.

analytics

Laboratory data collected at hospital admission.

Dimensions: 5813 rows × 9 columns

Variable	Description
record_id	Identifier of each record (anonymized).
covid_wave	COVID-19 wave (`Wave 1`, `Wave 2`, `Wave 3`, `Wave 5`).
center	Hospital of admission (`Hospital A-E`).
analytics_available	Availability of laboratory results.
total_leukocytes	Total leukocytes (mil/mm³).
hemoglobin	Hemoglobin (g/dL).
total_lymphocytes	Total lymphocytes (mil/mm³).
d_dimer	D-dimer (µg/L).
c_reactive_protein	C-reactive protein (mg/L).

comorbidities

Information on pre-existing conditions, functional status, and comorbidity indices at admission.

Dimensions: 5813 rows × 37 columns

Variable	Description
record_id	Identifier of each record.
covid_wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
sociofunctional	Sociofunctional status.
frailty	Chronic condition classification (`No`, `PCC`, `MACA`).
barthel_score	Barthel functional index.
weight	Weight (kg).
height	Height (cm).
body_mass_index	Body mass index (kg/m²).
dm	Diabetes mellitus type 2.
type_dm	Type of diabetes mellitus.
chronic_lung_disease	Chronic lung disease.
chronic_kidney_disease	Severe chronic kidney disease.
mild_kidney_disease	Mild chronic kidney disease.
renal_therapy	Receiving renal replacement therapy.
heart_disease	Heart failure.
coronary_disease	Coronary heart disease.
myocardial_infarction	Previous myocardial infarction.
hematologic_neo	Hematologic neoplasia.
hematologic_neo_type	Type of hematologic neoplasia.
non_metastatic_neo	Non-metastatic neoplasia.
metastatic_neo	Metastatic neoplasia.
stroke_tia	Stroke or transient ischemic attack.
peripheral_vasculopathy	Peripheral vascular disease.
dementia	Dementia.
mild_liver_disease	Mild liver disease.
severe_liver_disease	Severe liver disease.
connective_tissue_disease	Connective tissue disease.
peptic_ulcer	Peptic ulcer disease.
hemiplegia	Hemiplegia.
hiv	Human immunodeficiency virus infection.
charlson_index	Charlson comorbidity index.
hypertension	Hypertension.
dyslipidemia	Dyslipidemia.
depression	Depression.
ceiling	Therapeutic ceiling of care.
ceiling_dico	Dichotomized therapeutic ceiling of care.

complications

Complications experienced during hospitalization.

Dimensions: 5809 rows × 9 columns

Variable	Description
record__id	Record identifier.
covid__wave	COVID-19 wave.
center	Hospital of admission.
comp	Any complication during hospitalization.
kidney__failure	Kidney failure.
mental__status__change	Altered mental status.
nosocomial__infection	Nosocomial infection.
comp__cardiac	Cardiac complications.
comp__respiratory	Respiratory complications.

concomitant__medication

Medications taken before hospital admission.

Dimensions: 5813 rows × 11 columns

Variable	Description
record__id	Identifier of each record.
covid__wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
statins__pre	Previous treatment with statins.
cortis__pre	Previous treatment with corticosteroids.
acei__pre	Previous treatment with ACE inhibitors.
ara2__pre	Previous treatment with angiotensin II receptor antagonists (ARA-II).
cortis__systemic__pre	Routine use of systemic corticosteroids.
cortis__inhaled__pre	Routine use of inhaled corticosteroids.
anticoagulants__pre	Previous treatment with anticoagulants.
immunosuppre__pre	Previous treatment with immunosuppressants.

demographic

Baseline demographic and lifestyle characteristics.

Dimensions: 5813 rows × 8 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
sex	Sex at birth.
age	Age at hospital admission (years).
smoker	Smoking status (`No`, `Yes`, `Ex-smoker`).
alcohol	Alcohol consumption (`No`, `Yes`).
residence_center	Living in a long-term care facility (`No`, `Yes`).

end_followup

Patient outcomes and end-of-follow-up information.

Dimensions: 5813 rows × 8 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
clinical_stability_days	Days from hospital admission to clinical stability.
exitus_days	Days from hospital admission to death.
discharge_days	Days from hospital admission to discharge.
discharge	Discharged from hospital (`Yes`, `No`).
exitus	Died during hospital admission (`Yes`, `No`).

icu

Information on ICU admissions and interventions during hospitalization.

Dimensions: 5813 rows × 14 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
icu	Admitted to the ICU (`Yes`, `No`).
icu_enter_days	Days from hospital admission to ICU admission.
icu_exit_days	Days from hospital admission to ICU discharge.
vent_mec	Received invasive mechanical ventilation (`Yes`, `No`).
vent_mec_start_days	Days from hospital admission to start of invasive mechanical ventilation.
vent_mec_end_days	Days from hospital admission to end of invasive mechanical ventilation.
vent_mec_no_inv	Received non-invasive mechanical ventilation (`Yes`, `No`).
vent_mec_no_inv_start_days	Days from hospital admission to start of non-invasive mechanical ventilation.
vent_mec_no_inv_end_days	Days from hospital admission to end of non-invasive mechanical ventilation.

inhosp_antibiotics

In-hospital antibiotic treatments administered during COVID-19 hospitalization.

Dimensions: 5809 rows × 17 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave (`Wave 1-5`).
center	Hospital of admission.
any_antibiotic	Received any antibiotic during hospital stay.
amoxicillin	Treatment with amoxicillin.
amoxicillin_clavulanic_acid	Treatment with amoxicillin/clavulanic acid.
azithromycin	Treatment with azithromycin.
ceftriaxone	Treatment with ceftriaxone.
ciprofloxacin	Treatment with ciprofloxacin.
cotrimoxazole	Treatment with cotrimoxazole.
levofloxacin	Treatment with levofloxacin.
linezolid	Treatment with linezolid.
meropenem	Treatment with meropenem.
piperacillin	Treatment with piperacillin.
piperacillin_tazobactam	Treatment with piperacillin/tazobactam.
teicoplanin	Treatment with teicoplanin.
other_antibiotic	Treatment with another antibiotic.

inhosp_antivirals

Antiviral treatments received during hospitalization.

Dimensions: 5809 rows × 10 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
any_antiviral	Any antiviral treatment.
hydroxychloroquine	Hydroxychloroquine.
interferon_b	Interferon beta.
kaletra_ritonavir_lopinavir	Kaletra (ritonavir-lopinavir).
remdesivir	Remdesivir.
tocilizumab	Tocilizumab.
other_antiviral	Other antiviral therapy.

inhosp_other_treatments

Other in-hospital supportive or pharmacologic treatments.

Dimensions: 5809 rows × 6 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
corticosteroids	Corticosteroid treatment.
lmwh	Low-molecular-weight heparin (LMWH) use.
oral_anticoagulants	Oral anticoagulant therapy.

scores

Disease severity and prognostic indices recorded at admission.

Dimensions: 5813 rows × 10 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
psi	Pneumonia Severity Index.
group_psi	PSI severity group (1-4).
curb65	CURB-65 score.
group_curb65	CURB-65 group (1-3).
mulbsta	MULBSTA score.
group_mulbsta	MULBSTA risk group (Low, High).
rox_index	ROX index (SpO_2/FiO_2 / respiratory rate).

symptoms

COVID-19–related symptoms reported at admission.

Dimensions: 5813 rows × 24 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
symptoms_days	Days from symptom onset to hospitalization.
rhinorrhea	Rhinorrhea (nasal discharge).
anosmia	Anosmia (loss of smell).
ageusia	Ageusia (loss of taste).
arthromyalgia	Arthromyalgia (joint/muscle pain).
odynophagia	Odynophagia (painful swallowing).
fever	Fever.
cough	Cough.
dyspnea	Dyspnea (shortness of breath).
expectoration	Expectoration.
diarrhea	Diarrhea.
vomit	Vomiting.
nausea	Nausea.
asthenia	Asthenia (weakness).
anorexia	Anorexia (loss of appetite).
cephal	Headache.
chest_pain	Chest pain.
abdominal_pain	Abdominal pain.
confusional_syndrome	Confusional syndrome.
shock_admission	Shock on admission.
bacterial_infection	Bacterial co-infection.

vital_signs

Vital parameters, oxygen therapy, and chest imaging at admission.

Dimensions: 5813 rows × 13 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
temperature	Temperature (°C).
fio2_contributed	Inspired oxygen fraction (%).
syst_blood_press	Systolic blood pressure (mmHg).
diast_blood_press	Diastolic blood pressure (mmHg).
saturation	Oxygen saturation (%).
cardiac_freq	Heart rate (bpm).
supporto2	Oxygen support administered.
normal_radio	Normal chest radiograph.
pleural_effusion	Pleural effusion present.
saturation_fio2	SpO_2/FiO_2 ratio.

vaccine

COVID-19 vaccination status at admission.

Dimensions: 5813 rows × 6 columns

Variable	Description
record_id	Record identifier.
covid_wave	COVID-19 wave.
center	Hospital of admission.
vaccine	Vaccinated (`Yes`/`No`).
complete_vaccine	Vaccination completeness (`None`, `Partial`, `Complete`).
immune_vaccine	Vaccine-induced immunity (`None`, `Partial`, `Total`).

Citation

If you use these datasets in your research or teaching, please cite the original study:

Pallarès N., Tebé C., Abelenda-Alonso G., Rombauts A., Oriol I., Simonetti A. F., Rodríguez-Molinero A., Izquierdo E., Díaz-Brito V., Molist G., Gómez Melis G., Carratalà J., Videla S., & MetroSud and DIVINE study groups (2023). *Characteristics and Outcomes by Ceiling of Care of Subjects Hospitalized with COVID-19 During Four Waves of the Pandemic in a Metropolitan Area: A Multicenter Cohort Study.* Infectious Diseases and Therapy, 12(1), 273–289. DOI: 10.1007/s40121-022-00705-w