

E' CAMBIATO IL RUOLO DEL NEUROLOGO D'URGENZA DURANTE IL PERIODO COVID?

UNA ANALISI COMPARATIVA TRA IL NEUDAY 2019 E 2020

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PER IL NEUDAY GROUP



Did the role of the neurologist in the emergency department change during the Covid-19 pandemic? Evidence from an Italian nationwide survey

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AIMS OF NEUDAY PROJECTS

- TO INVESTIGATE THE OPPORTUNITY FOR AN APPROPRIATE NEUROLOGICAL EVALUATION AS WELL AS TO **EXPLORE RELEVANCE OF NEUROLOGIST IN ER IN ITALY**
- TO ASSESS WHETHER, AND TO WHAT EXTENT, **THE ROLE OF NEUROLOGIST IN THE EMERGENCY DEPARTMENT CHANGED DURING THE COVID-19 PANDEMIC** BY COMPARING THE DATA OF SURVEY OF DECEMBER 2020 WITH THOSE OF THE PREVIOUS SURVEY (2019)



Il Progetto NEUDAY

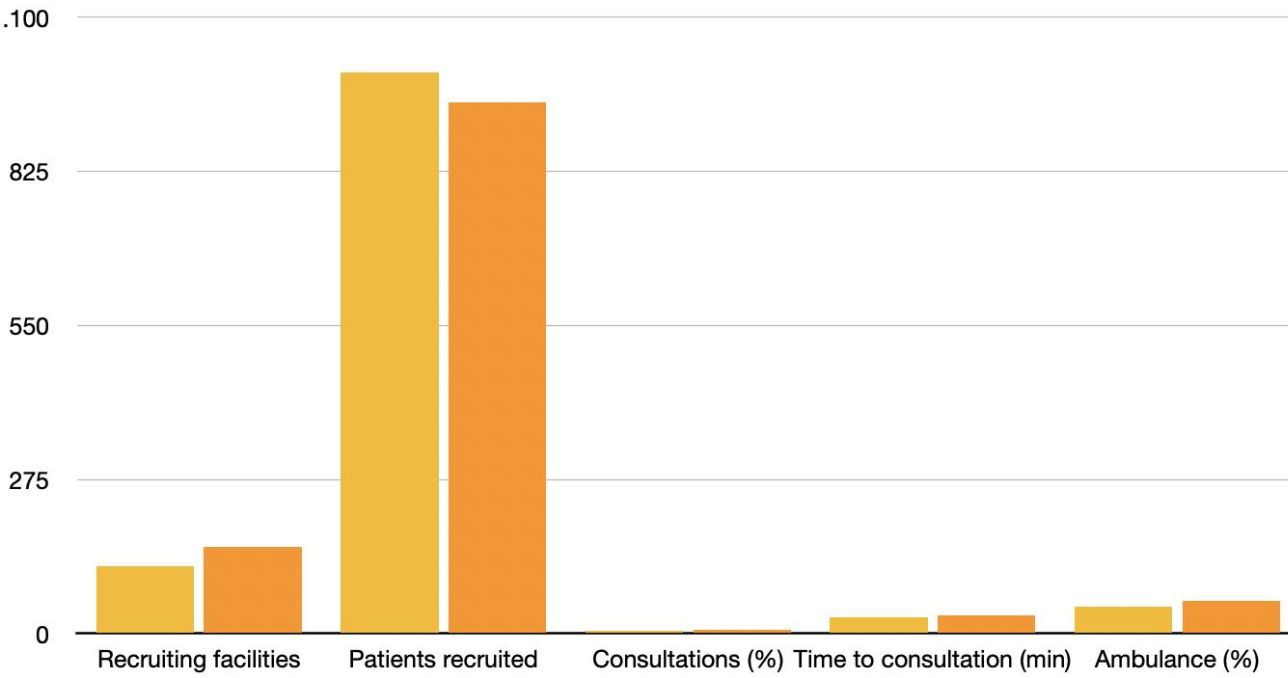
	NEUDAY 2018	NEUDAY 2019	NEUDAY 2020
CENTRI CENSITI	176	295	260
CENTRI PARTECIPANTI	93	121	154
CENTRI CHE NON HANNO PARTECIPATO	83	174	106

- **DEMOGRAPHIC CHARACTERISTICS**
- **ARRIVAL MODE (AMBULANCE, SELF-PRESENTATION)**
- **TRIAGE LEVEL**
- **TIME OF REQUEST FOR NEUROLOGICAL CONSULTATION AND TIME OF CONSULTATION**
- **REASON OF CONSULTATION**
- **NEUROLOGICAL EVALUATION**
- **DISCHARGE MODE**

NEUDAY QUESTIONNAIRE ITEMS



RESULTS

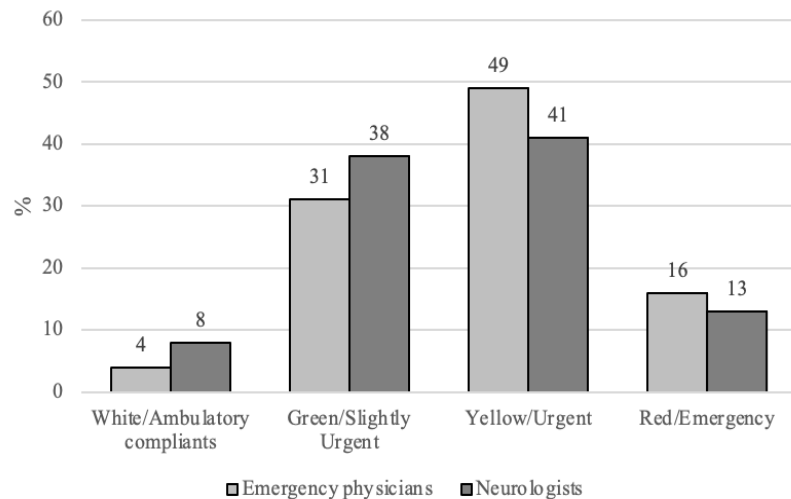


	NEUday 2019	NEUday 2020
Recruiting facilities	121	154
Patients recruited	1.001	948
Consultations (%)	6	7
Time to consultation (min)	30	32
Ambulance (%)	48	58

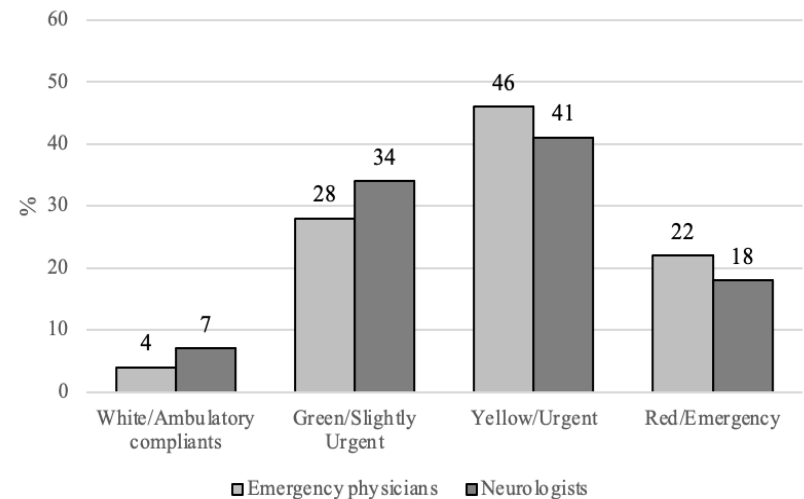


PERCENTAGE DISTRIBUTIONS OF TRIAGE LEVEL ACCORDING TO EMERGENCY PHYSICIANS AND NEUROLOGISTS

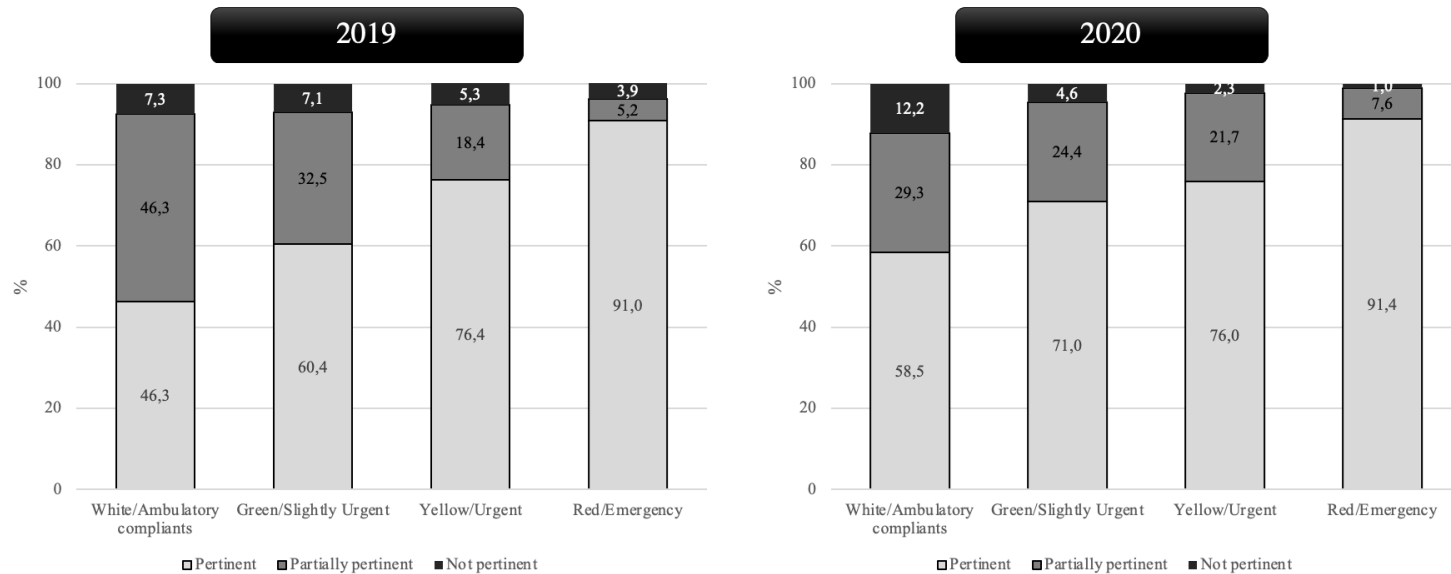
2019



2020



PERCENTAGE DISTRIBUTION OF REQUEST APPROPRIATENESS AMONG TRIAGE LEVELS ASSIGNED BY EMERGENCY PHYSICIANS



Reasons for the consultation	2019	2020
Focal neurological deficits	21.2%	22.8%
Transient loss of consciousness	12.8%	11.5%
Headache	12.5%	6.5%
Strength deficiency or sensory disturbances	11.5%	9.3%
Dizziness	9.1%	7.7%
Epileptic manifestation	8.6%	10.9%
Delirium / Acute <u>confusional state</u>	7.3%	7.6%
Head trauma	5.2%	5.2%
Acute visual disturbances	4.4%	3.9%
Muscle pain	1.9%	0.5%
Coma	1.5%	3.7%
Fever and neurological signs	1.5%	0.4%
Paraplegia / Quadriplegia	1.1%	1.1%
Movement disorders (hyper or hypokinesia)	1.0%	1.2%
Functional / psychiatric disorders	0.7%	1.7%
Other reason	0.0%	6.1%

DISTRIBUTION OF THE REASONS FOR NEUROLOGICAL CONSULTATION



Diagnoses	2019	2020
Ischemic stroke	16.2%	18.0%
Transient ischemic attack	9.4%	8.4%
Primary headache	8.3%	4.3%
Seizure in known epilepsy	5.7%	7.6%
Cardiogenic syncope	5.6%	3.7%
Peripheral vertigo	5.6%	5.8%
First epileptic seizure	5.3%	7.6%
Head trauma	4.8%	4.1%
Monoradiculo-plexopathy	4.2%	4.3%
Symptomatic headache	3.6%	3.4%
Psychiatric disorder	3.6%	3.4%
Delirium in dementia	3.2%	3.7%
Central vertigo	3.1%	2.0%
Neurologic syncope	3.0%	3.1%
Metabolic encephalopathy	2.0%	3.1%
Discopathy	1.9%	0.3%
Cerebral hemorrhage	1.7%	2.6%
CNS cancer	1.7%	2.3%
CNS infection (encephalitis, meningitis, meningoencephalitis, encephalomyelitis)	1.6%	0.7%
Multiple sclerosis	1.5%	1.5%
Aggravation of Parkinson's disease	1.2%	0.7%
Subdural hematoma	0.8%	1.6%
Subarachnoid hemorrhage	0.7%	1.1%
State of epileptic disease	0.2%	1.5%
Other ^a	5.1%	5.2%

DISTRIBUTION OF DIAGNOSTIC HYPOTHESIS FORMULATED BY THE NEUROLOGISTS AFTER CONSULTATION



Tests	2019	2020
Blood chemistry tests	80.7%	86.4%
Neuroimaging	75.0%	82.6%
EKG	67.3%	78.1%
Blood gas analysis	24.0%	34.5%
Neurophysiological examination	9.8%	12.9%
CSF analysis	1.4%	1.3%

Consultations	2019	2020
Cardiology	21.56%	19.40%
Otolaryngology	19.72%	17.54%
Ophthalmology	17.89%	11.94%
Neurosurgery	16.06%	16.79%
Internal Medicine	13.30%	9.33%
Resuscitation	7.80%	10.07%
Orthopedics	5.97%	7.64%
Surgery	3.67%	3.36%
Interventional Radiology	2.79%	2.61%

**TESTS AND
OTHER
CONSULTATIONS
AVAILABLE AT
THE TIME OF
THE DIAGNOSTIC
HYPOTHESIS**



Triage Code	COVID+	COVID-
White	3%	8%
Green	28%	34%
Yellow	31%	41%
Red	38%	17%

DIAGNOSTIC HYPOTHESIS	COVID+	COVID-
ISCHEMIC STROKE	26.67%	18.04%
EPILEPTIC SEIZURE	10.00%	7.59%
PD COMPLICATIONS	6.67%	0.74%
OTHER MOVEMENT DISORDERS	6.67%	0.42%
METABOLIC ENCEPHALOPATHY	6.67%	3.06%
FIRST EPILEPTIC CRISIS	6.67%	7.59%
CARDIOGENIC SYNCOPE	6.67%	3.69%
EPILEPTIC STATUS	6.67%	1.48%
TRANSIENT ISCHEMIC ATTACK	3.33%	8.44%
SYMPTOMATIC HEADACHE	3.33%	3.38%
DELIRIUM IN DEMENTIA	3.33%	3.69%
ENCEPHALOPATHY (SEPSIS)	3.33%	0.74%
CNS INFECTIONS	3.33%	0.74%
GUILLAN BARRE SYNDROME	3.33%	0.74%
CNS TUMOR	3.33%	2.32%

COVID+
TRIAGE CODE



- **Logistic Regression Model**

Outcome of interest: hospitalization (yes vs no)

Exposure: year (2020 vs 2019)

- **Unadjusted model**

**Significant increase in hospitalization
in 2020 when compared to 2019**

(OR: 1.40, 1.17-1.67)

- **Adjusted model (gender, age, diagnostic
hypothesis and neurologist triage)**

No association

(OR: 1.07, 0.83 - 1.39)

**GIVEN THE
REDUCTION IN BEDS
FOLLOWING THE
PANDEMIC, WERE
THERE ANY
DIFFERENCES IN THE
DESTINATION OF
THE PATIENT WHO
ARRIVED IN THE
ED?**



CONCLUSIONS

- Huge role of neurologists in emergency activity
- Neurologist usually downgraded the assessment of the Emergency Physician
- The agreement between clinicians was better in 2020
- Several request of consultancy were not or partially pertinent
- Italian healthcare system has been able to manage both the COVID-19 pandemic and the acute neurological patients, at least during the second wave

