

Supplementary material 4.

Results of the final model estimating the association between reorganisations and use of care effects on care management times: p-value of the type III global fixed effects test - Stroke cohort (N=4603)

Variable	p-value
Hospital reorganisations	
<i>Plan Blanc</i>	0.372
Separate COVID-19/non-COVID-19 patients pathway	0.830
Decrease in non-COVID-19 patients management and admission capacities	0.532
Specific access to imaging for COVID-19 patients	0.658
Deprogramming of non-urgent procedures or hospitalisations	0.752
Use of care	
Calls to emergency services	0.360
<i>Interaction period x calls to emergency services</i>	0.039
FMC	0.034
<i>Interaction period x FMC</i>	0.807

Results of multivariate linear regression mixed model; variable to be explained: Y = log (EU admission-to-imaging time); results adjusted on period, age, gender, urbanicity, FDep15, APL MG 18, residence-EU distance, presence of stroke unit, MRI 24 hours a day, presence of interventional neuroradiology unit, care during on-call activity, mode of transport, calls to emergency services activity, mRS less than 1 before stroke, NIHSS at entry, previous stroke or transient ischaemic attack

APL MG 2018=potential accessibility indicator to general practitioners; EU=emergency unit;

FDep15=deprivation index; FMC=first medical contact; MRI=magnetic resonance imaging; mRS=modified Rankin Scale; NIHSS=National Institute of Health Stroke Score.

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Results of the final model estimating the association between reorganisations and use of care effects on care management times: estimation of regression coefficients - Stroke cohort (N=4603)

Variable	Modalities	β	p-value			
Intercept		4.767	<0.001			
Hospital reorganisations						
<i>Plan Blanc</i>	yes (ref : no)	-0.061	0.372			
Separate COVID-19/non-COVID-19 patients pathway	yes (ref : no)	0.013	0.830			
Decrease in non-COVID-19 patients management and admission capacities	yes (ref : no)	-0.044	0.532			
Specific access to imaging for COVID-19 patients	yes (ref : no)	0.024	0.658			
Deprogramming of non-urgent procedures or hospitalisations	yes (ref : no)	0.021	0.752			
Use of care						
Calls to emergency services	yes (ref : no)	-0.137	0.087			
<i>Interaction period x calls to emergency services</i>	<i>pre-wave</i> no	-	.			
	<i>pre-wave</i> yes	-	.			
	<i>per-wave</i> no	-	.			
	<i>per-wave</i> yes	0.013	0.850			
	<i>post-wave</i> no	-	.			
	<i>post-wave</i> yes	0.210	0.014			
	FMC			MICU (ref : EU)	-0.369	0.027
	<i>interaction period x FMC</i>	<i>pre-wave</i> EU	-	.		
<i>pre-wave</i> MICU		-	.			
<i>per-wave</i> EU		-	.			
<i>per-wave</i> MICU		0.138	0.536			
<i>post-wave</i> EU		-	.			
<i>post-wave</i> MICU		0.008	0.968			

Results of multivariate linear regression mixed model; variable to be explained: $Y = \log$ (EU admission-to-imaging time); results adjusted on period, age, gender, urbanicity, FDep15, APL MG 18, residence-EU distance, presence of stroke unit, MRI 24 hours a day, presence of interventional neuroradiology unit, care during on-call activity, mode of transport, calls to emergency services activity, mRS less than 1 before stroke, NIHSS at entry, previous stroke or transient ischaemic attack

APL MG 2018=potential accessibility indicator to general practitioners; EU=emergency unit; FDep15=deprivation index; FMC=first medical contact; MICU=mobile intensive care units; MRI=magnetic resonance imaging; mRS=modified Rankin Scale; NIHSS=National Institute of Health Stroke Score.

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Results of the final model estimating the association between reorganisations and use of care effects on care management times: p-value of the type III global fixed effects test - STEMI cohort (N=1843)

Variable	p-value
Hospital reorganisations	
Increase in the telephone reception capacities	0.273
Restriction of helicopter transport for COVID-19 patients	0.637
<i>Plan blanc</i>	0.077
Systematic COVID-19 testing	0.013
Separate COVID-19/non-COVID-19 patients pathway	0.395
Decrease in non-COVID-19 patients management and admission capacities	0.135
Coronary angiography room dedicated to COVID-19 patients in cathlabs	0.907
Deprogramming of non-urgent procedures or hospitalisations	0.134
Decrease in bed capacity for non-COVID-19 patients	0.557
Use of care	
FMC	<0.001
Interaction period x FMC	0.492
Symptoms-to-care time (10 min step)	<0.001
Interaction period x symptoms-to-care time	0.206

Results of a multivariate linear regression mixed model; variable to be explained: $Y = \log(\text{FMC-to-procedure time})$; results adjusted on period, age, gender, urbanicity, FDep15, APL MG 18, residence-to-cathlab distance, cathlab hospital status, care during on-call activity, mode of transport, calls to emergency services activity, FMC-to-cathlab distance, diabetes mellitus, coronary artery disease or STEMI history).

APL MG 2018=potential accessibility indicator to general practitioners; EU=emergency unit;

FDep15=deprivation index; FMC=first medical contact; STEMI=segment elevation myocardial infarction.

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Results of the final model estimating the association between reorganisations and use of care effects on care management times: estimation of regression coefficients - STEMI cohort (N=1843)

Variable	Modalities	β	p-value	
Intercept		4.475	<0.001	
Hospital reorganisations				
Increase in the telephone reception capacities	yes (ref : no)	0.072	0.273	
Restriction of helicopter transport for COVID-19 patients	yes (ref : no)	0.034	0.637	
<i>Plan blanc</i>	yes (ref : no)	-0.212	0.077	
Systematic COVID-19 testing	yes (ref : no)	0.343	0.013	
Separate COVID-19/non-COVID-19 patients pathway	yes (ref : no)	-0.092	0.395	
Decrease in non-COVID-19 patients management and admission capacities	yes (ref : no)	-0.222	0.135	
Coronary angiography room dedicated to COVID-19 patients in cathlabs	yes (ref : no)	-0.010	0.907	
Deprogramming of non-urgent procedures or hospitalisations	yes (ref : no)	0.131	0.134	
Decrease in bed capacity for non-COVID-19 patients	yes (ref : no)	-0.043	0.557	
Use of care				
FMC	EU without cathlab (ref)	-	.	
	MICU	-1.061	<0.001	
	EU with cathlab	-0.326	<0.001	
<i>interaction period x FMC</i>	<i>pre-wave</i>	<i>EU without cathlab</i>	-	
	<i>pre-wave</i>	<i>MICU</i>	-	
	<i>pre-wave</i>	<i>EU with cathlab</i>	-	
	<i>per-wave</i>	<i>EU without cathlab</i>	-	
	<i>per-wave</i>	<i>MICU</i>	-0.094	0.419
	<i>per-wave</i>	<i>EU with cathlab</i>	0.102	0.505
	<i>post-wave</i>	<i>EU without cathlab</i>	-	
	<i>post-wave</i>	<i>MICU</i>	0.075	0.514
Symptoms-to-care time (10 min step)		0.221	0.14	
		0.002	0.016	
<i>Interaction period x symptoms-to-care time</i>	<i>pre-wave (ref)</i>	-		
	<i>per-wave</i>	0.003	0.137	
	<i>post-wave</i>	0.002	0.209	

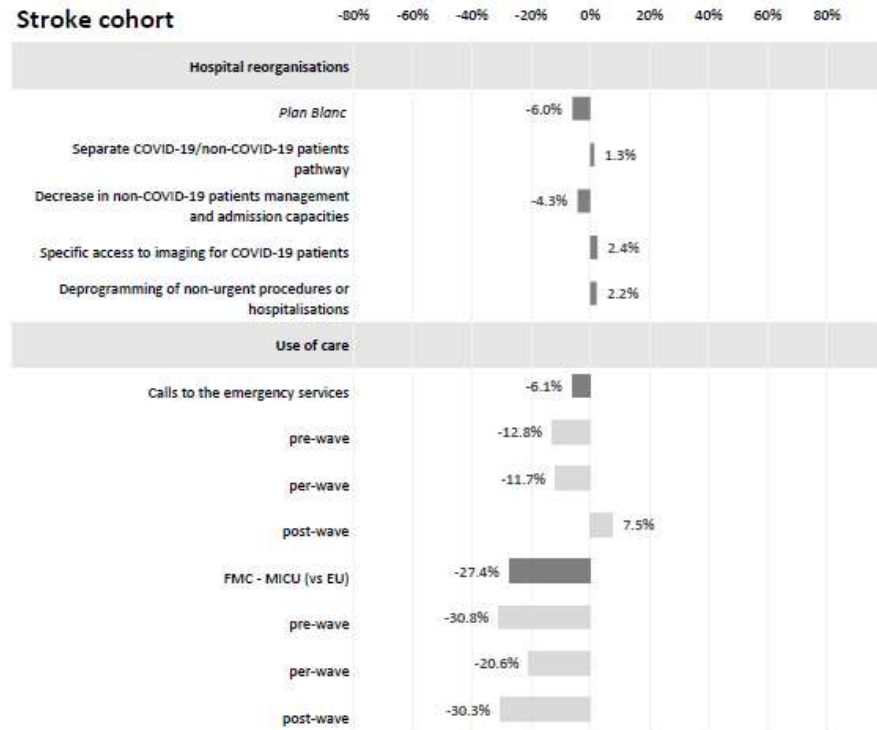
Results of a multivariate linear regression mixed model; variable to be explained: Y=log (FMC-to-procedure time); results adjusted on period, age, gender, urbanicity, FDep15, APL MG 18, residence-to-cathlab distance, cathlab hospital status, care during on-call activity, mode of transport, calls to emergency services activity, FMC-to-cathlab distance, diabetes mellitus, coronary artery disease or STEMI history).

APL MG 2018=potential accessibility indicator to general practitioners; EU=emergency unit;

FDep15=deprivation index; FMC=first medical contact; MICU=mobile intensive care units; STEMI=segment elevation myocardial infarction.

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Stroke cohort



STEMI cohort

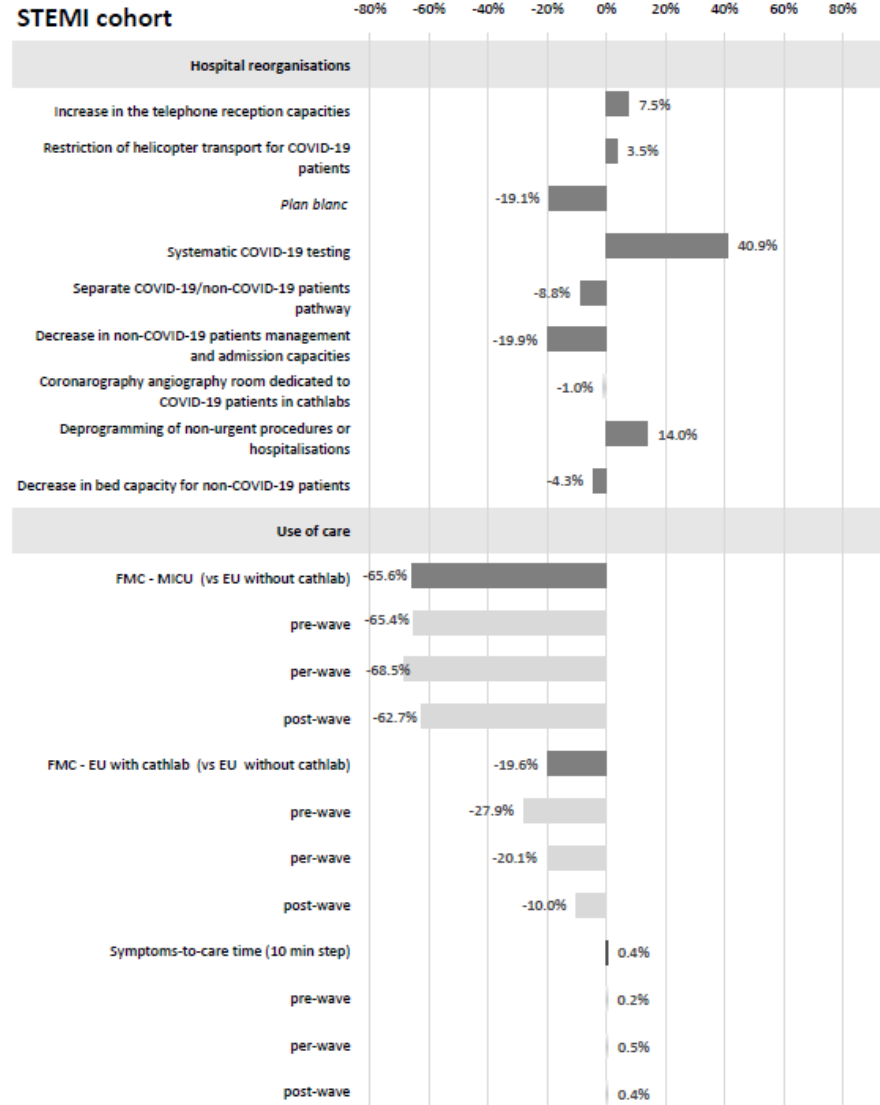


Figure. Stroke and STEMI cohorts. Variation percentages of the estimations of the reorganisations and use of care effects on care management times

A: Stroke cohort (N=4603) – Percentage change in overall effects; results of multivariate linear regression mixed models; variable to be explained: $Y = \log$ (EU admission-to-imaging time); results adjusted on period, age, gender, urbanicity of residence, FDep15, APL MG 18, residence-EU distance, presence of stroke unit, MRI 24 hours a day, presence of interventional neuroradiology unit, care during on-call activity, mode of transport, calls to emergency services activity, mRS less than 1 before stroke, NIHSS at entry, previous stroke or transient ischaemic attack.

B: STEMI cohort (N=1843) – Percentage change in overall effects; results of multivariate linear regression mixed models; variable to be explained: $Y = \log$ (FMC-to-procedure time); results adjusted on period, age, gender, urbanicity of residence, FDep15, APL MG 18, residence-to-cathlab distance, cathlab hospital status, care during on-call activity, mode of transport, calls to emergency services activity, FMC-to-cathlab distance, diabetes mellitus, coronary artery disease or STEMI history).

Light grey: interaction with the COVID-19 period, Dark grey: raw results without interaction with the COVID-19 period

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