

# PRODUCTIVITY LOSSES OF ISCHEMIC STROKE SURVIVORS: A CROSS SECTIONAL SURVEY ALONGSIDE POPULATION-BASED COHORT STUDY IN RHONE AREA, FRANCE

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# Objective

To evaluate productivity losses of stroke survivors at 1-year post-stroke

# Methods

- **Cross-sectional survey**, within STROKE69 prospective population-based cohort  
November 2015 - June 2016
- At 12 months post-stroke: a **questionnaire** was mailed
- **Productivity losses** (absenteeism and presenteeism) estimated for patients
  - with a **professional activity**
    - Human capital approach<sup>1</sup> (based on France's minimum wage/hour: 7.53€/h)
    - Friction cost method<sup>2</sup> (Friction cost=sick leave duration [days]xGDP/capita/d)
  - **retired or unemployed patients** for their volunteering activities
    - Substitution cost method<sup>3</sup> (hours of activities lost x France's minimum wage/h)



Year cost =  
2016

References: <sup>1</sup> Sultan-Taieb et al. 2009; <sup>2</sup> Koopmanschap et al. 1996; <sup>3</sup> Posnett J et al. 1996

# Results



World Stroke  
Organization

## At 12 months

**ACTIVE PATIENTS 58/228 (25%)**  
**Productivity losses/patient**  
 ≈ **8,713€** (including 6,5% of  
 presenteeism).



60% returned to work in the first year  
 (mean delay: 53 days)

**RETIRED OR UNEMPLOYED**  
**PATIENTS 170/228 (75%)**  
**Productivity losses/patient**  
 ≈ **1,213€**  
 (including 53% of presenteeism)



Patients' characteristics		Respondents	Non respondents
Number of patients, n		228	275
Men, n (%)		130 (57)	144 (52)
Age at inclusion, average (SD)		68.5 (14,4)	70.9 (15.3)*
Level of education	N (%)	155	132
	No diploma	34 (22)	44 (33)*
	Primary school certificate	66 (43)	62 (47)
	French baccalaureate	23 (15)	14 (11)
	Bachelor	10 (6)	3 (2)
	Master degree	22 (14)	9 (7)
Thrombolysis alone	N (%)	70 (31)	65 (24)
Thrombectomy alone	N (%)	34 (15)	22 (8)*
Thrombolysis and thrombectomy	N (%)	30 (13)	14 (5)*
mRS Score at 3 months	N (%)	186	179
	0 - 2	159 (85)	136 (76)
	3 - 5	27 (15)	43 (24)

# Results



Active patients	N (%)	Mean cost (min;max) in €	Adjusted mean cost
Absenteeism	HCA°	8,147 (228;13,895)	8,147 €
	FCM°	832 (369;4,608)	
Presenteeism	9 (26)	8,654 (228;6,510)	566 €
<b>Total (HCA+adjusted presenteeism/patient)</b>			<b>8,713 €</b>

°HCA= Human Capital Approach; FCM= Friction Cost Method

Retired or unemployed	N (%)	Mean cost (min;max) €	Adjusted mean cost
No impact	31 (18)	33 (9;621)	6 €
Total impact	30 (18)	832 (369;4608)	517 €
Partial impact	Absenteeism	61 (34)	138 (2;2,033)
	Presenteeism	48 (28)	1,420 (294;13,289)
<b>Total</b>		<b>170<sup>μ</sup></b>	<b>1,213 €</b>

<sup>μ</sup> 46/170 had no volunteering activity; 2/170 missing data

## Discussion/Conclusion

- First study to value cost of volunteering activities of retired or unemployed patients
- Productivity losses represent a significant cost for society compared to direct costs and should be accounted in future economic studies.