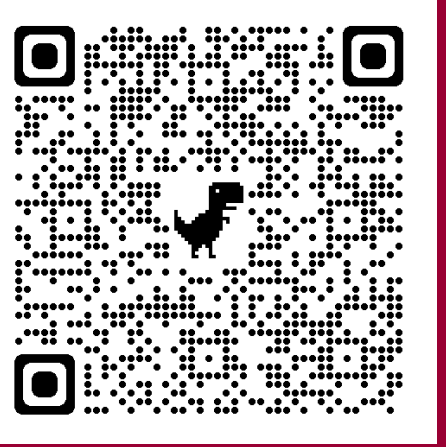


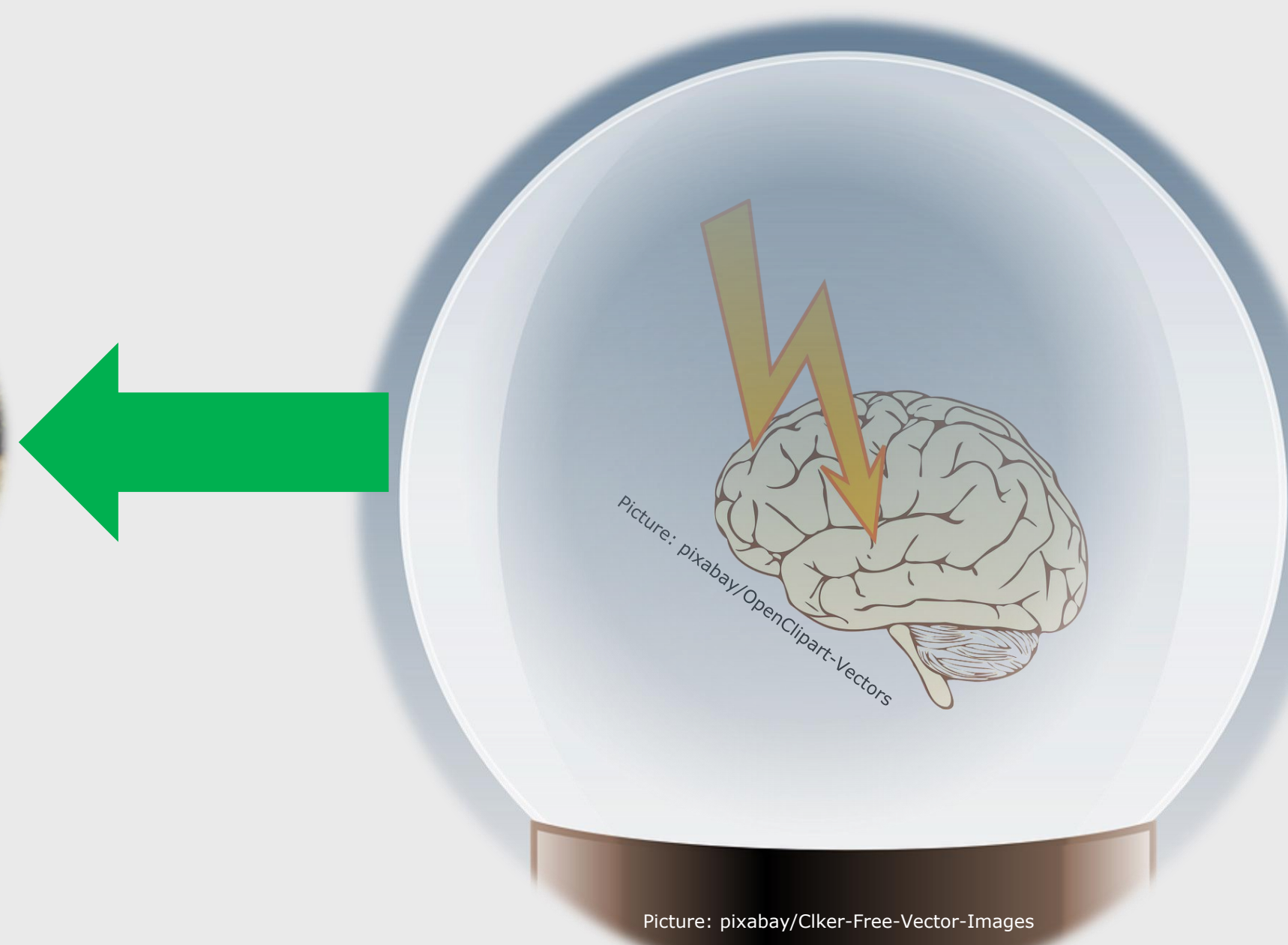
Mortality after discharge from post-acute rehabilitation following moderate to severe acquired brain injury – an overall prognosis study



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Picture: Colourbox



Picture: pixabay/Ciker-Free-Vector-Images



Picture: Lars Kruse, AU Photo

1. Background

What is the aim of rehabilitation?

- A meaningful life with optimal functioning

Then why investigate mortality in a rehabilitation setting?

- Optimised acute care treatment = increased overall survival rates
- Poor mortality prognosis post-rehabilitation in some patients
- Relevant to rehabilitation and post-discharge planning

Knowledge Gap:

Lack of post-rehabilitation mortality investigations

2. Objective

Describe the patterns of all-cause mortality rates post-rehabilitation

3. Methods

- Cohort of patients admitted to Hammel Neurorehabilitation Centre (2011 - 2022)
- Inclusion: First ever admission, distinct course of rehabilitation, complete referral information
- Extraction of personal health data from electronic healthcare records
- Estimation of crude and adjusted mortality rates, stratified for intensity of rehabilitation (Cox Hazard rates).

4. Results

Who?

- Cohort: 6,182 patients included
- Demographics: mostly middle aged or older (83%) males (62%) with a stroke (64%)
- Median follow-up time: 3.7 years

What?

- Mortality post-discharge:
 - 3-months: 2% (n=147)
 - 1-year: 5% (n=326) of patients died
- Crude Mortality rates:
 - drop after the first 3 months
 - similar across injury types, age or rehabilitation level

Why?

- Low levels of functioning at discharge appear to contribute considerably to mortality post-discharge

Table 1 Crude mortality rates per 100 person-years

Total	Person-time	Deaths	Rate	95% conf. interval
3-months	1478.20	147	9.94	8.46 - 11.69
3-months - 1-year	4168.76	179	4.29	3.71 - 4.97
> 1 year	21023.97	763	3.6	3.38 - 3.9
<i>Functional Independence Measure discharge score = 18</i>				
3-months	32.83	37	112.71	81.67 - 155.56
3-months - 1-year	78.45	20	25.49	16.45 - 39.52
> 1 year	341.88	40	11.7	8.58 - 15.95
<i>Functional Independence Measure discharge score 19-36</i>				
3-months	75.23	26	34.56	23.53 - 50.76
3-months - 1-year	199.23	25	12.55	8.48 - 18.57
> 1 year	864.16	62	7.17	5.59 - 9.20
<i>Functional Independence Measure discharge score 37-90</i>				
3-months	252.83	21	8.31	5.42 - 12.74
3-months - 1-year	719.52	32	4.45	3.15 - 6.29
> 1 year	3608.31	181	5.02	4.34 - 5.80
<i>Functional Independence Measure discharge score 91-126</i>				
3-months	665.35	7	1.05	.50 - 2.21
3-months - 1-year	1896.76	32	1.69	1.19 - 2.39
> 1 year	9278.8	224	2.41	2.12 - 2.75

Figure 2 Mortality based on cognitive functioning and age

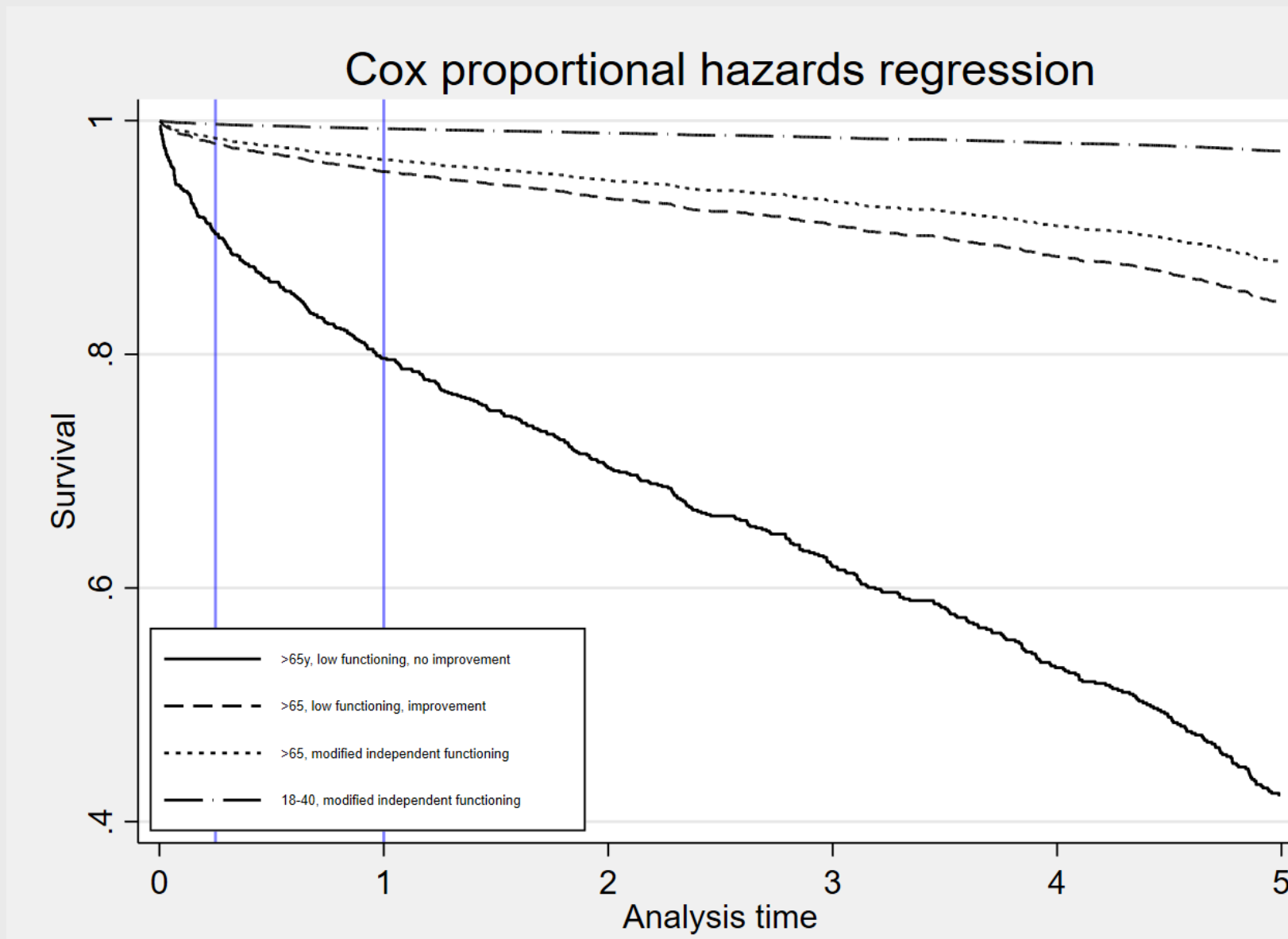


Figure 3 Mortality based on motor functioning and age

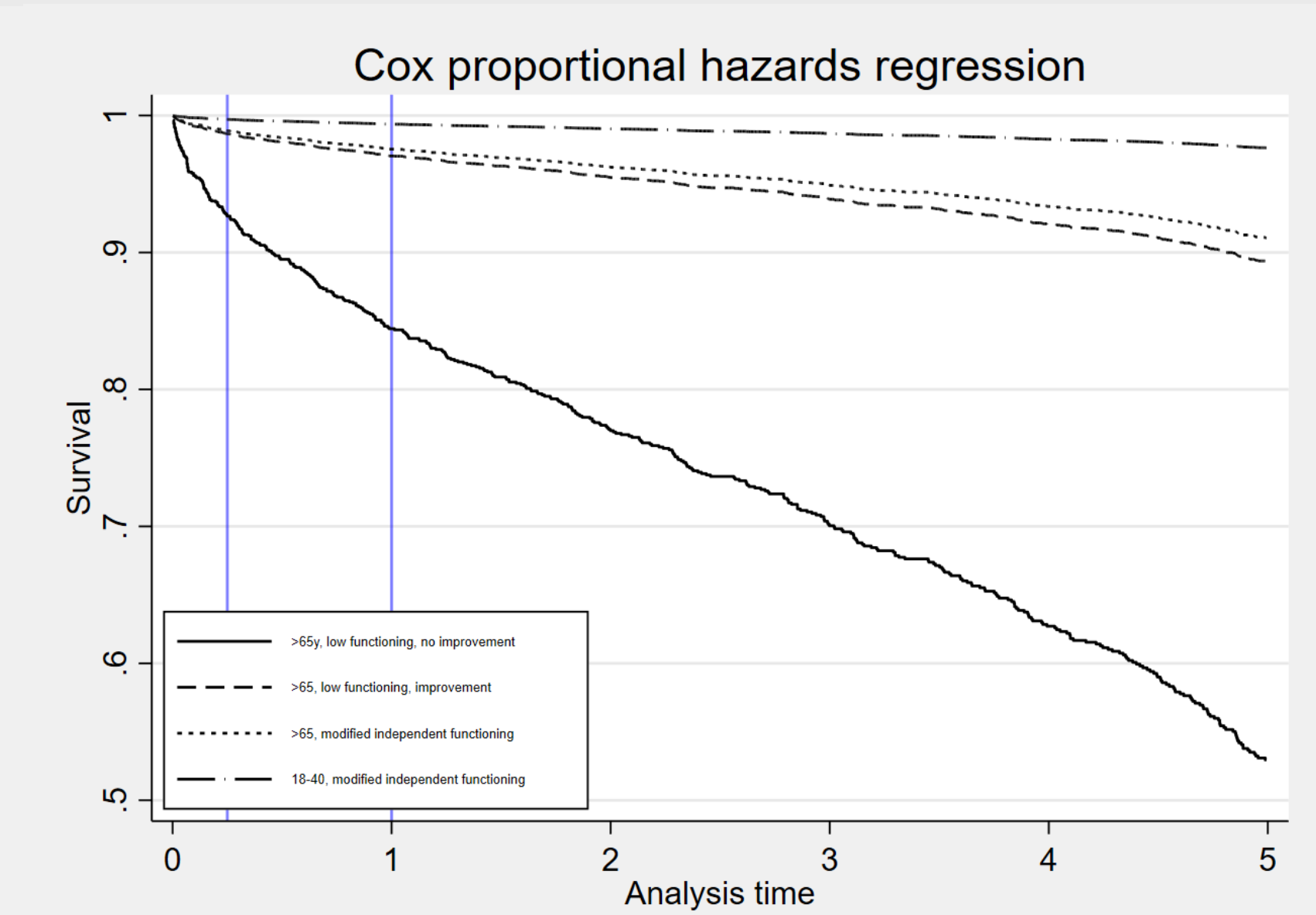
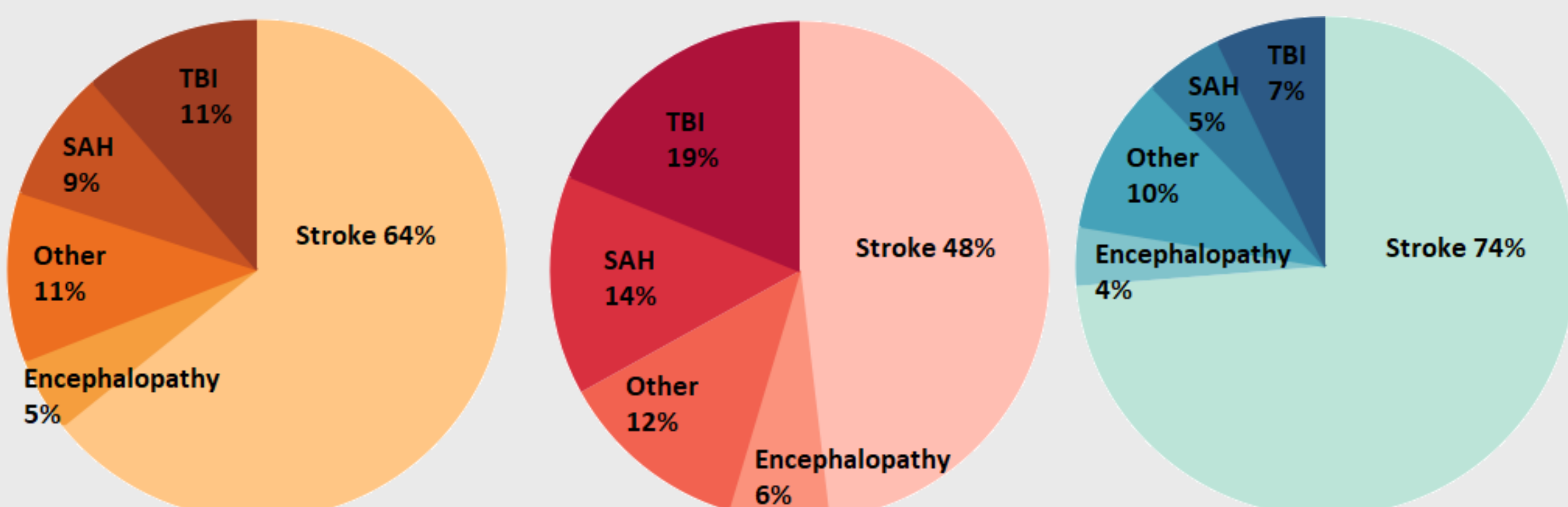


Figure 1 Brain injury types across rehabilitation service levels (Total, highly specialised-level, specialised level)



5. Conclusions

- I. A considerable 3-month mortality was observed
- II. Rehabilitation matters i.e. functioning at discharge
- III. These Observations should be investigated further

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