(Working title)
Comparison of tPA administrations between a centralized urban/suburban area system and a decentralized rural/suburban TeleStroke-Unit system

<u>Data collection:</u>
Data from Jan 2011 – Dec 2013 will be included

<u>Area included:</u>
Helsinki: the whole province of Uusimaa, including the city of Helsinki.
TEMPiS in 2011:13 districts included (one hospital– Pasing hospital – will be excluded as it is located in the city of Munich and therefore does not represent rural area and population served is not calculable with 4 other Stroke Units in Munich). One new hospital/district (Bad Reichenhall) was included during the end of 2011 to the network. Therefore, this will be excluded from the analysis in 2011.
TEMPiS in 2012: 14 districts included (with Bad Reichenhall)
TEMPiS in 2013: 14 districts included (two new hospitals/districts have been included during the year 2013 and will be excluded from the analysis)
TEMPiS 2011-2013: Patients of the two network centers (Munich and Regensburg) will not be included in any of the analyses.

<u>Baseline characteristics:</u>
Age and NIHSS of all patients receiving IVT

<u>tPA rate:</u>
Hospital based tPA rate:
     Numerator: all consecutive AIS patients receiving IVT (Stroke thrombolysis registries of both systems).
     Denominator: all consecutive AIS patients in the two systems (controlling data).
Population based tPA rate:
     Numerator: all consecutive patients receiving IVT in the area (Stroke thrombolysis registries and tPA number of two additional hospitals in the TEMPiS region)
     Denominator: number of inhabitants served in the area (see area included).

<u>Time delays:</u>
All consecutive patients receiving IVT (excluding basilar artery occlusions and in-hospital strokes)
Onset-to-Door, Door-to-Needle, Onset-to-treatment (Stroke thrombolysis registries). In patients with unclear time of onset, time of last-seen-well will be used.

Variables to be compared:

Table 1: Baseline characteristics

	Helsinki	TEMPiS
Age (median, IQR)		
NIHSS (median, IQR)		

Table 2: tPA rate (for tPA rate all i.v. tPA administrations will be included)

	Helsinki	TEMPiS
Hospital based tPA rate: tPA/all AIS in-hospital		
Population based tPA rate: tPA/ 100.000 population		

Table 3: Proportions depending on time of treatment

Proportions of tPA patients treated between	Helsinki	TEMPiS
8:01am – 5:00pm mo-fri		
5:01pm – 8:00am mo-fri + all sat&sun		

Table 4: Proportions of OTT subgroups:

Proportions of patients treated between	Helsinki	TEMPiS
0-90 min		
0-180 min		
181-270 min		

Table 5: Time delays

	Helsinki	TEMPiS
ODT (median, IQR)		
DNT (median, IQR)		
OTT (median, IQR)		

Table 6: Time delays dependent on time to treatment

In/out of working hours (arrival time)	Helsinki	TEMPiS
8:01am – 5:00pm mo-fri		
ODT (median, IQR)		
DNT (median, IQR)		
OTT (median, IQR)		
5:01pm – 8:00am mo-fri + all sat&sun		
ODT (median, IQR)		
DNT (median, IQR)		
OTT (median, IQR)		

All time delays will be analysed as median+IQR but will also be shown as mean for better comparison with some publications. For all time delays patients with basilar artery occlusion and in-hospital strokes will be excluded, in a sensitivity analysis BAOs and in-hospital strokes will be included.

Table 1: p-value will be analyzed with Man-Whitney-U-Test
Table 2, 3 and 4 will be shown as percentage and p-value analyzed with Chi-Square test
Table 5 and 6: time delays depending on centers (Helsinki/TEMPiS) and working hours (in/out) will be analyzed by a linear mixed model based on ranks looking at differences and interactions.