Early Rehab e ospedale: dentro, vicino e fuori. Unità intraospedaliere vs. unità free standing

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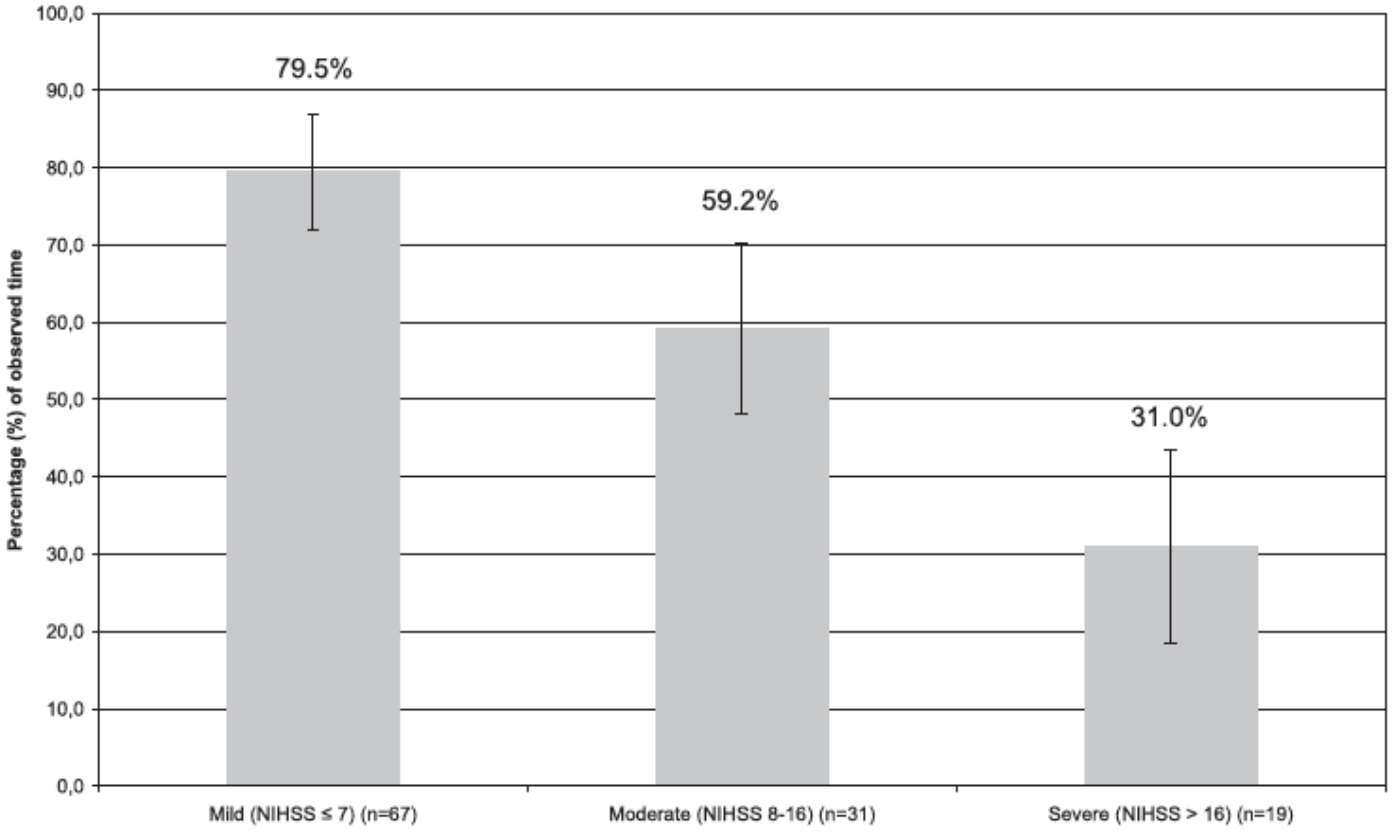
Schema della Presentazione

- E’ utile un intervento riabilitativa precoce ?
- Quando e come iniziare
- La complessità emergente
- Il percorso Riabilitativo

E utile ?

La Mobilizzazione precoce

Mean percentage of observed time spent out of bed for patients with mild, moderate, and severe stroke.



Matsui et al. BMC Health Services Research 2010, 10:213

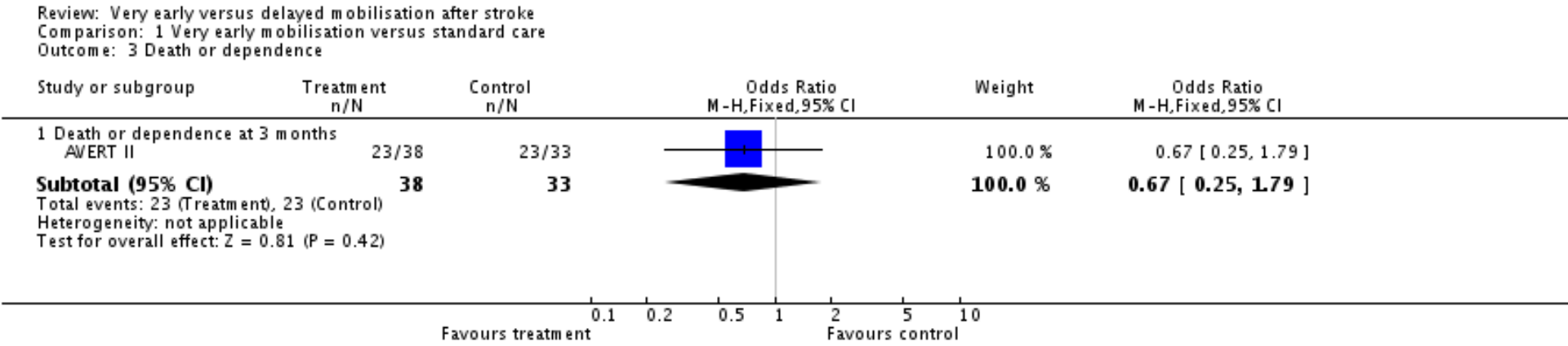
Comparison Very Early Intervention vs no VEI

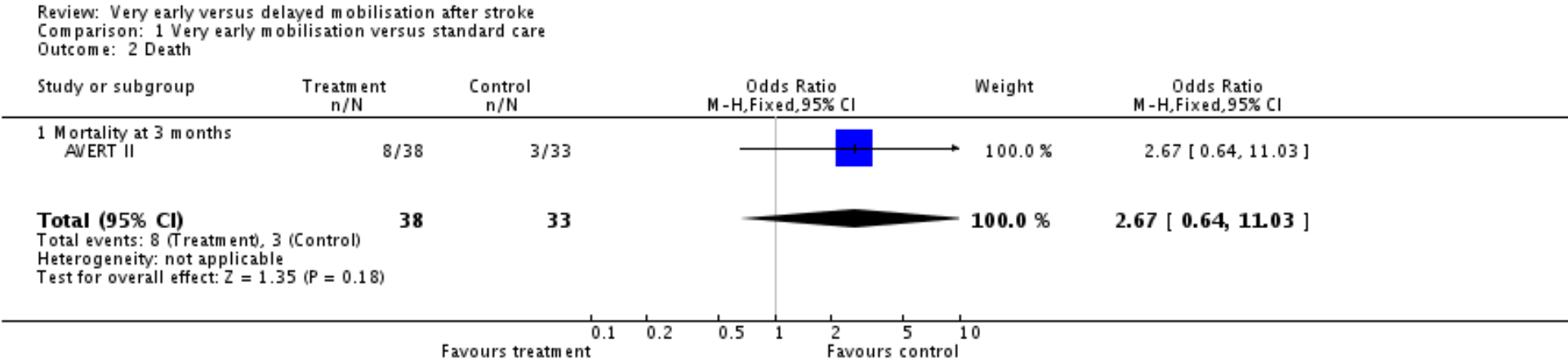
Table 2 Comparison of those with and without VEI

	VEI (-) N = 1,414 (25.8%)	VEI (+) N = 4,068 (74.2%)	Univariate analysis (P value)*
Age in years (SD)	73.6 (11.8)	72.9 (11.7)	0.045
Gender (female)	40.2%	39.5%	0.614
mRS pre-admission			
mRS = 0	61.7%	65.3%	
mRS = 1	19.7%	19.0%	0.007
mRS = 2	8.6%	8.4%	
mRS = 3	10.0%	7.3%	
Functional severity score, mean (SD) ¶	0.24 (1.78)	0.10 (1.69)	0.005
Functional capability score, mean (SD) ¶	-0.12 (1.1)	-0.29 (0.99)	< 0.001
Co-morbidity index (CI > 1)	48.4%	49.2%	0.629
Use of edaravone	56.5%	59.8%	0.032
Training intensity (unit/day), mean (SD)	1.04 (0.84)	1.71 (1.25)	< 0.001
mRS at discharge (0-1)	40.1%	45.3%	< 0.001
In-hospital mortality	1.7%	1.6%	0.799
Friday admission	23.9%	12.1%	< 0.001

Matsui et al. BMC Health Services Research 2010, 10:213

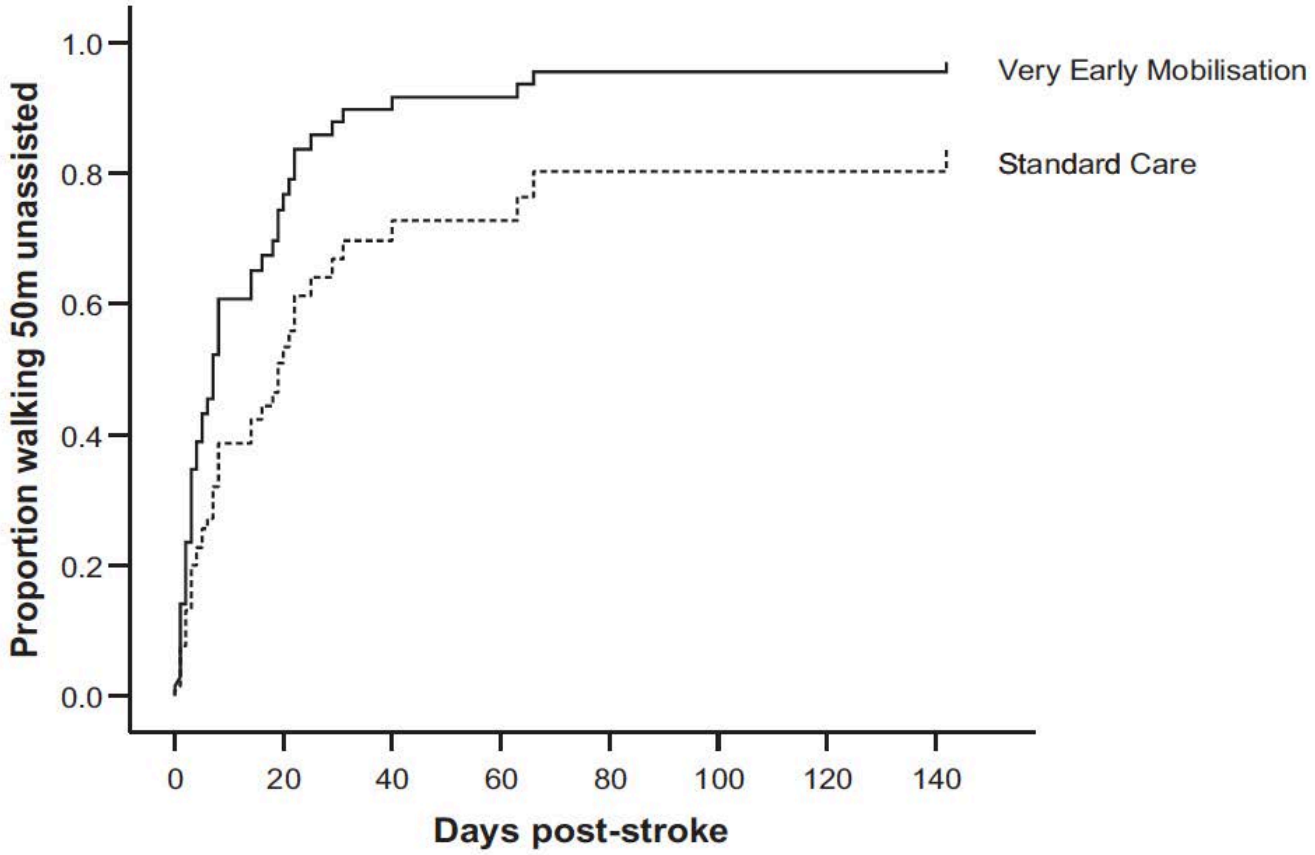
Very Early Versus Delayed Mobilization After Stroke





Bernhardt J, Thuy MNT, Collier JM, Legg LA. Very early versus delayed mobilisation after stroke. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD006187.

Number of days to walking 50 m unassisted



AVERT II – Walking Stroke. 2011;42:153-158

VEM
Mobililitation within 24 hours or 24 to48 hours

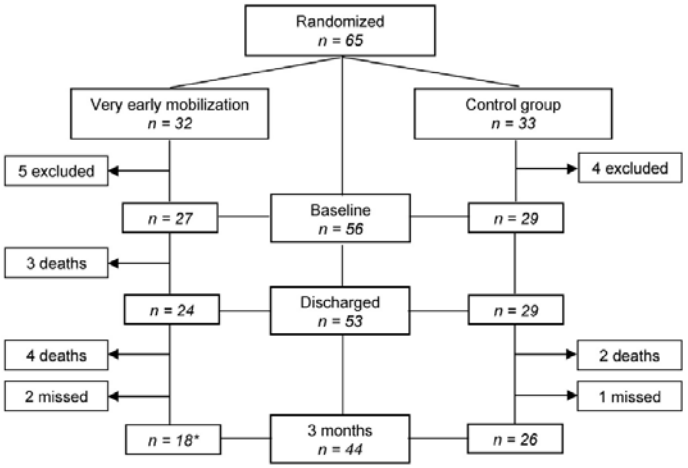


Table 2. Change in Neurological Impairment From Admission to 3-Month Follow-Up for Those Alive

NIHSS Score	VEM, n=17	CG, n=26	*P* Value
Admission	7.2 (5.3)	7.5 (4.4)	0.29
3 mo	3.3 (3.6)	2.0 (2.2)	0.19
Δ Admission/3 mo	3.9 (3.8)	5.5 (2.9)	0.02

Mortality at 3 months
VEM group compared with the CG (OR, 4.73; 95% CI, 0.89 –25.21; **P =** 0.07).

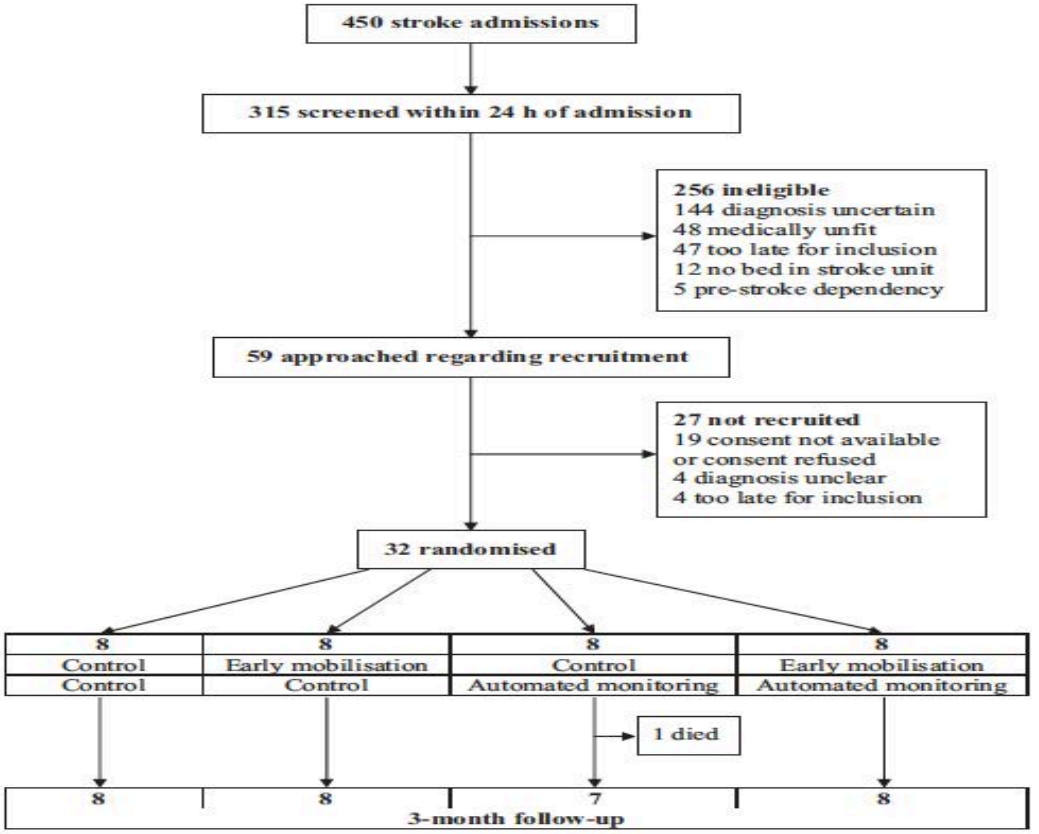
Stroke. 2012;43:2389-2394

Very Early Mobilisation and Complications in the First 3 Months after Stroke

Complications	Time after stroke					
	14 days		3 months		12 months	
	SC	VEM	SC	VEM	SC	VEM
Total complications	38	40	91	87	175	137
Immobility related	20	16	48	44	93	69
Stroke related	4	9	10	15	20	24
Severity						
Mild	14	7	35	25	63	45
Moderate	18	18	39	37	75	55
Severe	6	15	17	23	37	35
Unknown						2

Cerebrovasc Dis 2009;28:378–383

Very Early Rehabilitation or Intensive Telemetry after Stroke: A Pilot Randomised Trial (VERITAS)



Cerebrovasc Dis 2010;29:352–360

Better Outcome 3 months

	EM (n = 16)	Control EM (n = 16)	Significance p	AM (n = 16)	Control AM (n = 16)	Significance p
Three-month outcomes						
Rankin Score						
Independent (0–2)	12	7	0.07	10	9	0.72
Dependent (3–5)	4	8		5	7	
Dead	0	1		1	0	
Barthel Index						
Independent (18–20)	12	7	0.07	10	9	0.72
Dependent (0–17)	4	8		5	7	
Dead	0	1		1	0	
Total score	20 (18–20)	17 (2–20)	0.21	19 (8–20)	19 (16–20)	0.78
Complications (between days 5 and 90)						
None	8	7	0.99	4	11	0.22
Chest infection	1	1		2	0	
Other complications of immobility	3	2		5	1	
Other	4	5		5	4	

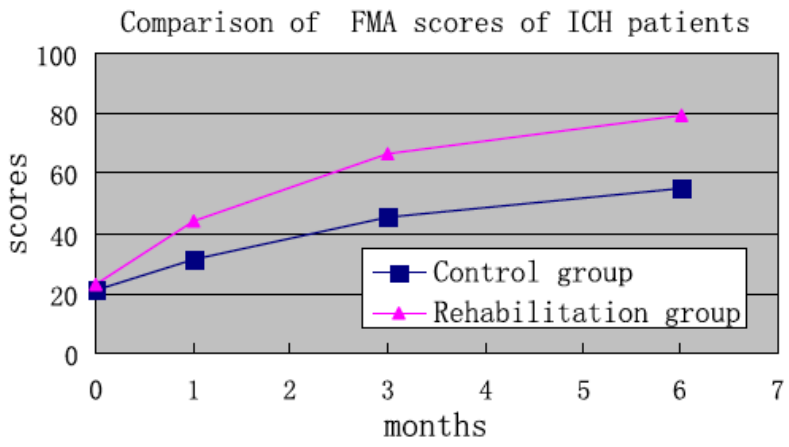
Cerebrovasc Dis 2010;29:352–360

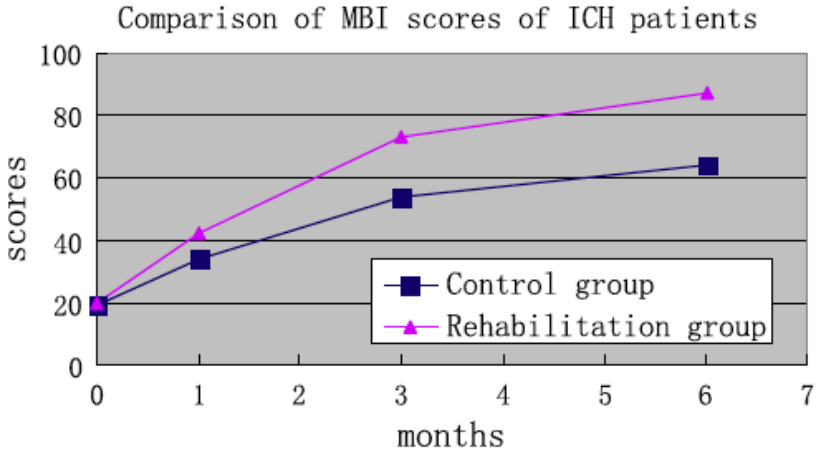
Less resource use during first 3 months

	EM (n = 16)	Control EM (n = 16)	Significance p	AM (n = 16)	Control AM (n = 16)	Significance p
Resource use during first 3 months						
Length of initial hospital stay	10 (5–14)	12 (6–16)	0.49	11 (6–19)	10 (5–13)	0.27
Readmitted to hospital	*0*	*5*	*0.01*	3	2	0.62
Home help visited	3	3	1.00	1	5	0.28
District nurse visited	0	0	1.00	0	0	1.00
GP visited	12	7	0.38	9	10	0.27
Physiotherapist visited	4	7	0.25	6	5	0.33
OT visited	4	6	0.28	5	5	1.00
Carer visited	4	7	0.20	6	5	0.25
Other visited	3	2	0.27	4	1	0.41
Total readmission days	0 (0–0)	0 (0–1)	0.10	0 (0–1)	0 (0–0)	0.61

Cerebrovasc Dis 2010;29:352–360

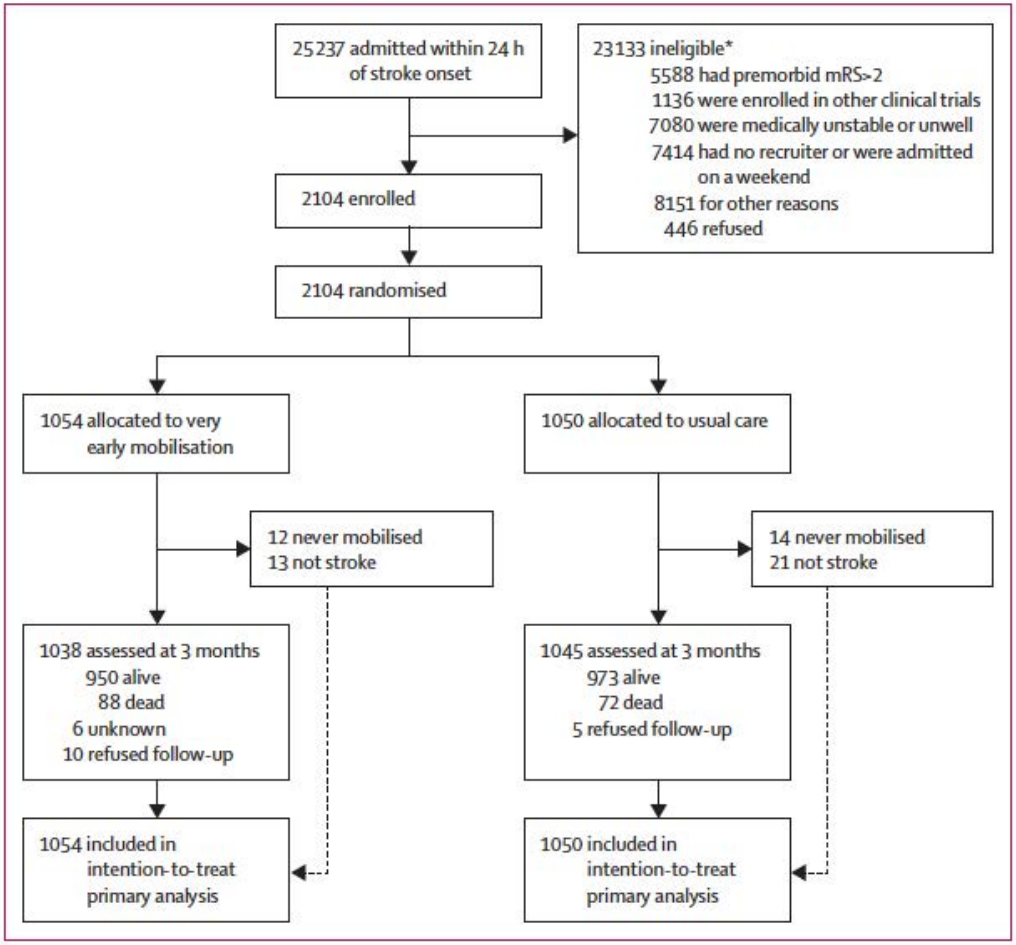
Randomized Controlled Trial of Early Rehabilitation After Intracerebral Hemorrhage Stroke





Stroke. - 2014; 45: 3502-3507

AVERT III



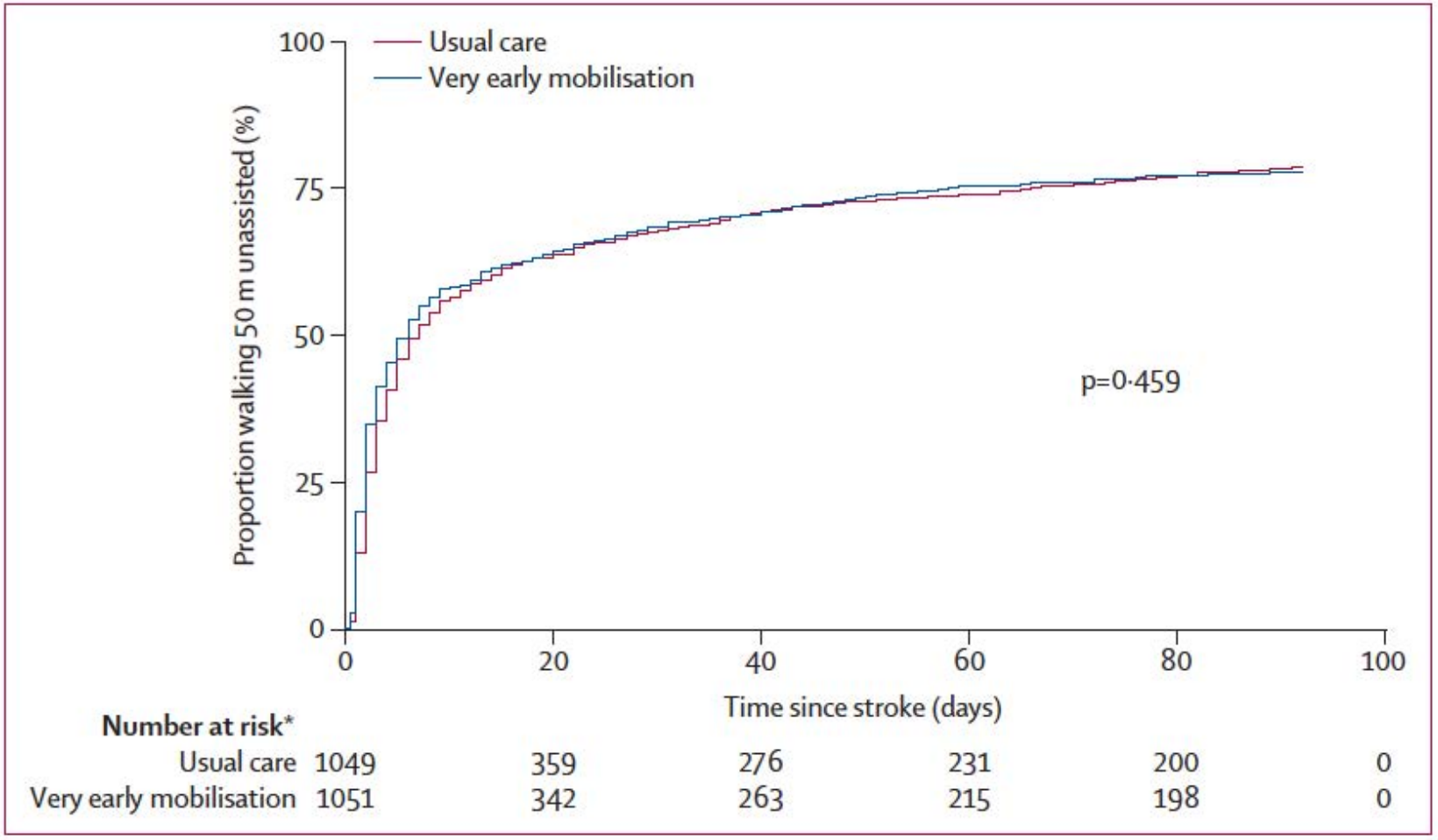
(1) begin within 24 h of stroke onset;

(2) Focus on sitting, standing, and walking (ie, out-of-bed) activity;

(3) result in at least three additional out-of-bed sessions to usual care.

AVERT Study - www.thelancet.com Published online April 17, 2015

Very early mobilisation within 24 h of stroke onset (AVERT)



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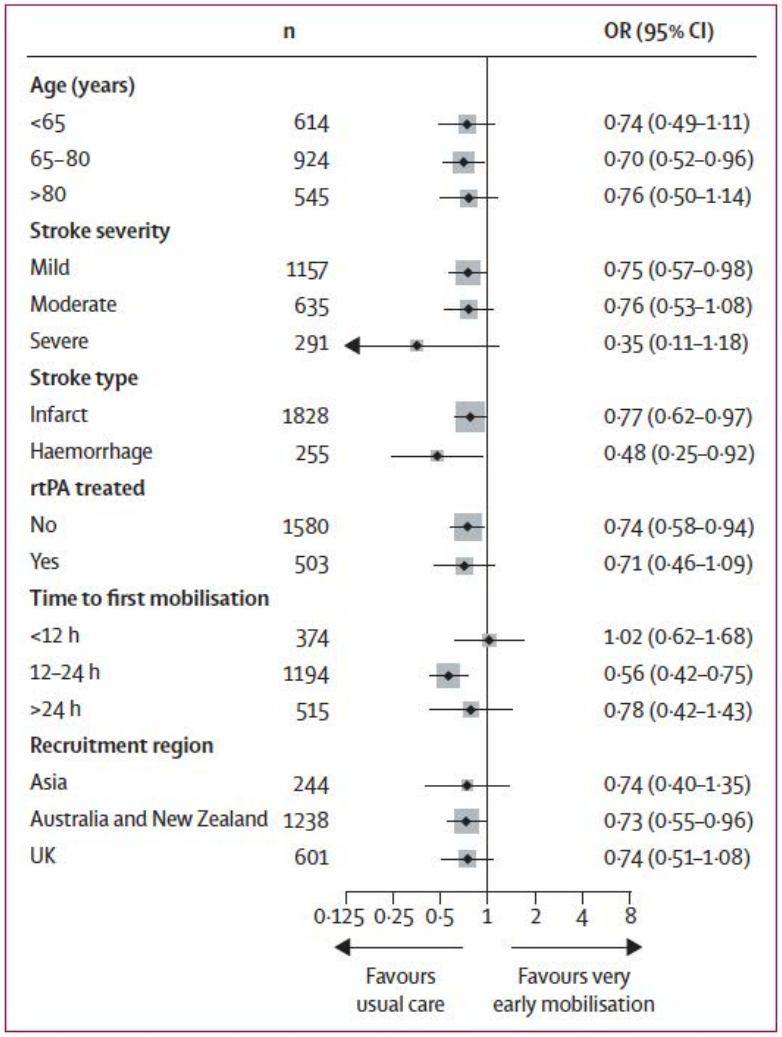
Very early mobilisation within 24 h of stroke onset (AVERT)



- Very early mobilisation was associated with a significant reduction in the odds of little or no disability at 3 months after stroke,
- no evidence of accelerated walking recovery,
- the number of patients who died or had serious adverse events at 3 months after stroke did not differ significantly between groups.
- an early, lower dose out-of-bed activity regimen is preferable to very early, frequent, higher dose intervention, but
- clinical recommendations should be informed by the future prespecified, detailed analysis of the dose–response association.

AVERT Study - www.thelancet.com Published online April 17, 2015

E' utile ?

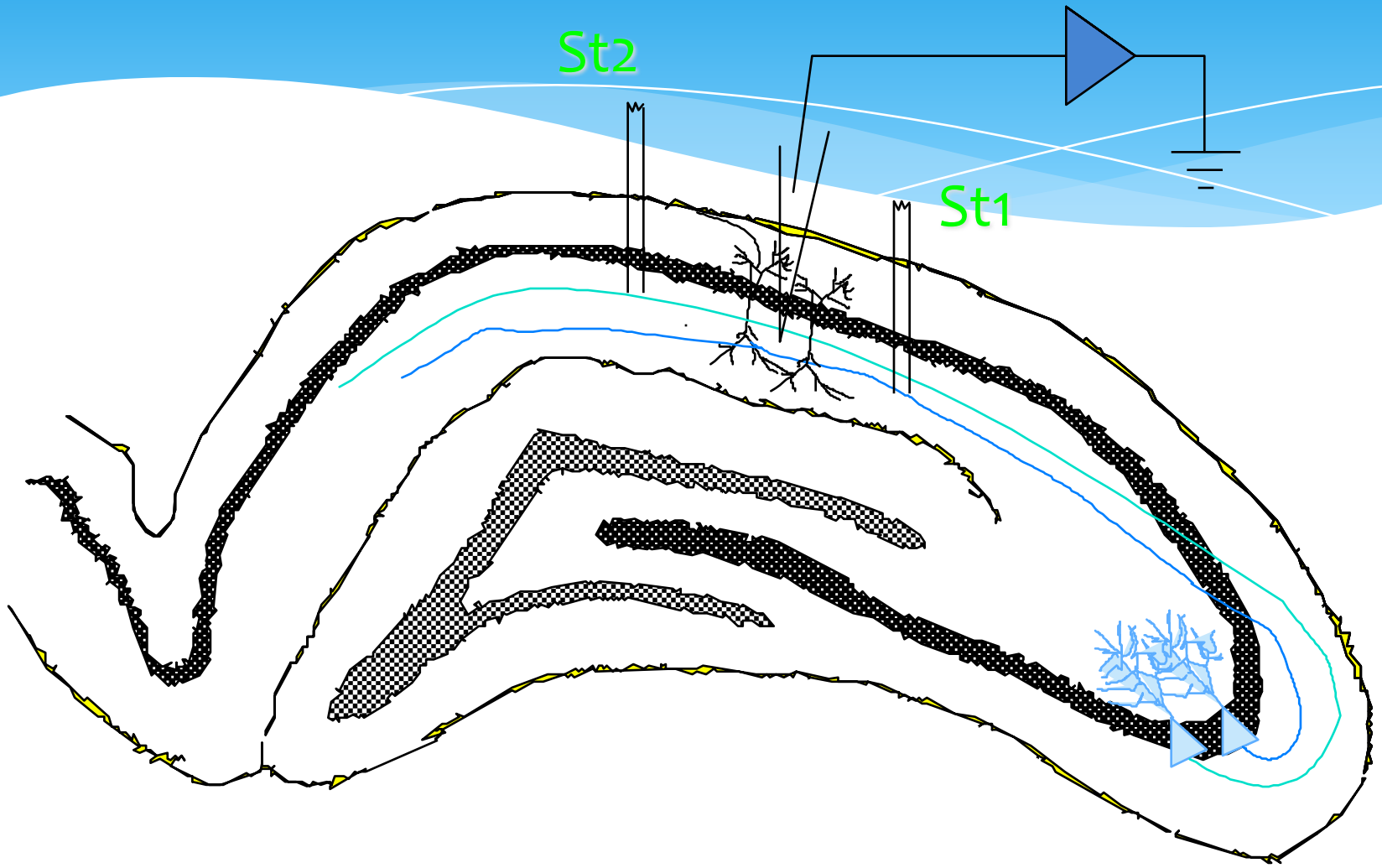
Esercizio Terapeutico precoce

Very Early Constraint-Induced Movement during Stroke Rehabilitation (VECTORS)

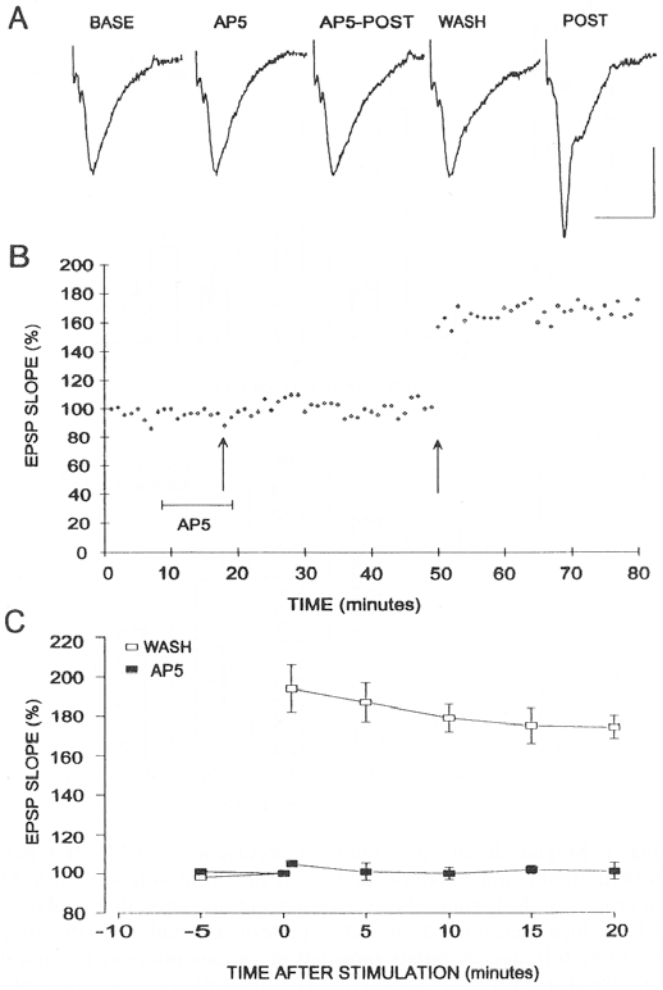
- A total of 52 participants (mean age 63.9 +/- 14 years) were randomized 9.65 +/- 4.5 days after onset. Mean NIHSS was 5.3 +/- 1.8; mean total ARAT score was 22.5 +/- 15.6; 77% had ischemic stroke
- As expected, all groups improved with time on the total ARAT score.
- There was a significant time x group interaction ($F = 3.1$, $p < 0.01$), such that the high intensity CIT group had significantly less improvement at day 90.
- No significant differences were found between the dose-matched CIMT and control groups at day 90.
- Higher intensity CIMT resulted in less motor improvement at 90 days, indicating an inverse dose-response relationship.
- Motor intervention trials should control for dose, and higher doses of motor training cannot be assumed to be more beneficial, particularly early after stroke.

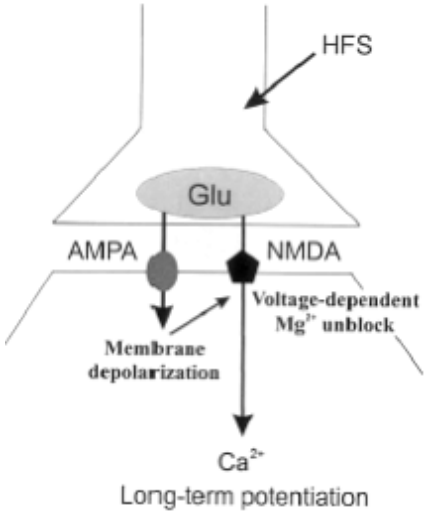
Dromerik et al. Neurology. 2009 Jul 21;73(3):195-201

Electrophysiological basis of learning



“Long term potentiation”





Theta burst stimulation is optimal for induction of LTP at both apical and basal dendritic synapses on hippocampal CA1 neurons.
Capocchi G, Zampolini M, Larson J. Brain Res. 1992 Sep 25;591(2):332-6.

Stroke Unit: what make the difference

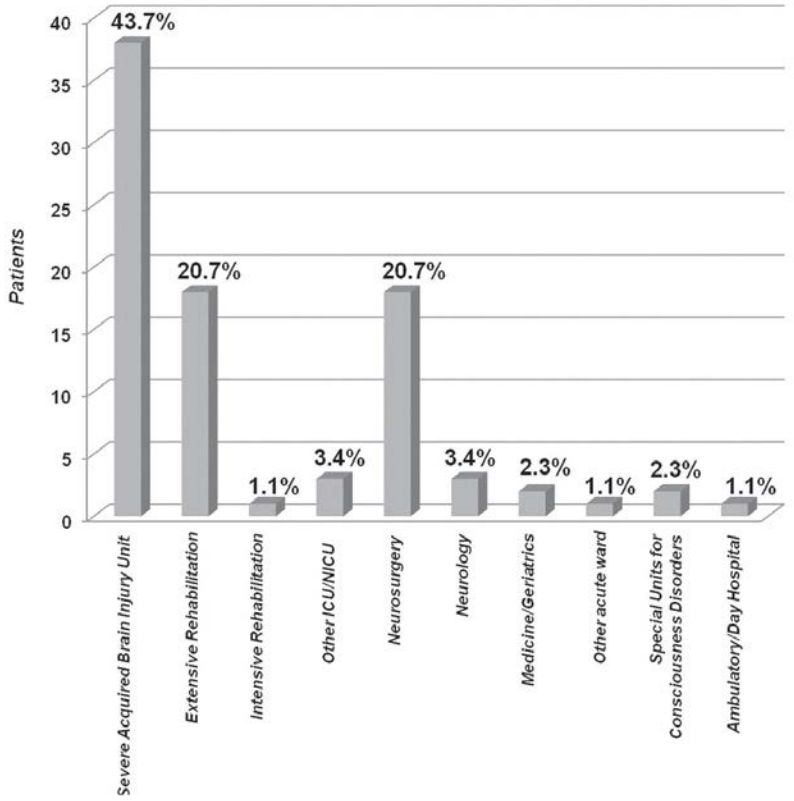
Table III. *Processes associated with good outcomes in organized care (29)*

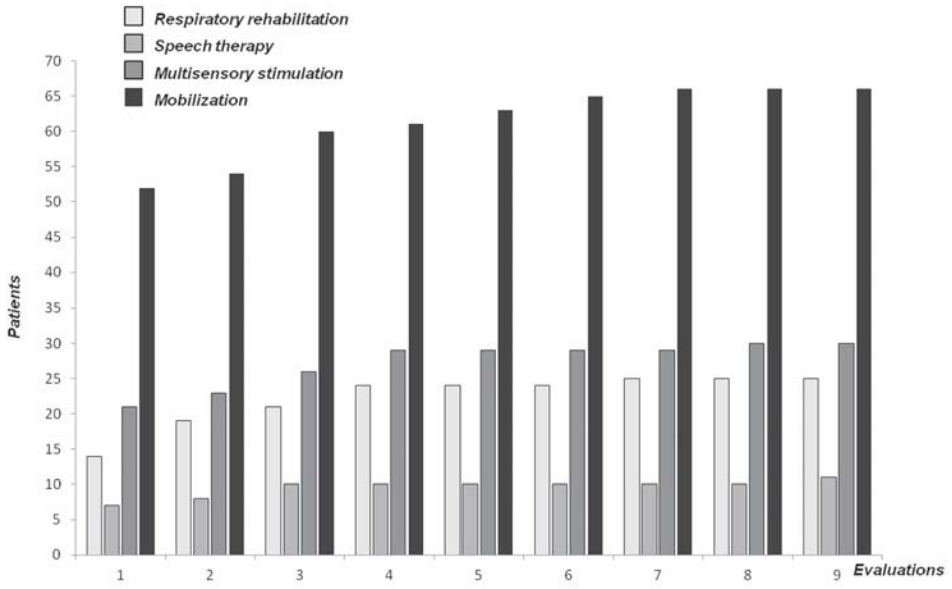
	SU (%)	Non-SU (%)	OR
Swallow assessment	89	71	3.1 (1.7–5.7)
O_2 therapy	69	52	2.0 (1.3–3.3)
Rx pyrexia	82	41	6.4 (1.5–27.4)
Rx aspiration	85	48	6.0 (2.3–15.5)
Early feeding	88	35	14.4 (5.1–40.9)
Early mobilization	82	67	6.4 (3.3–10.9)
OT in 7 days	40	21	2.4 (1.5–4.1)
SW in 7 days	15	5	2.8 (1.1–7.0)
Goals defined	92	78	3.2 (1.6–6.5)
Higher function	49	36	1.7 (1.1–2.8)
Carer involvement	77	21	12.4 (7.2–21.4)

OT: occupational therapy; SW: social worker; SU: stroke unit; OR: odds ratio; Rx: treatment.

J Rehabil Med 2007; 39: 97–102

Early rehabilitation for severe acquired brain injury in intensive care unit





Bartolo et al. European Journal of Physical and Rehabilitation Medicine 2016 February;52 (1):90-100

Early physical medicine and rehabilitation for patients with acute respiratory failure: a quality improvement project.

- OBJECTIVES: To (1) reduce deep sedation and delirium to permit mobilization, (2) increase the frequency of rehabilitation consultations and treatments to improve patients' functional mobility, and (3) evaluate effects on length of stay.
- Results: Patients had improved sedation and delirium status (MICU days alert [30% vs 67%, P<.001] and not delirious [21% vs 53%, P=.003]).
- There were a greater median number of rehabilitation treatments per patient (1 vs 7, P<.001) with a higher level of functional mobility (treatments involving sitting or greater mobility, 56% vs 78%, P=.03).
- there was a decrease in intensive care unit and hospital length of stay by 2.1 (95% confidence interval: 0.4-3.8) and 3.1 (0.3-5.9) days, respectively.

Arch Phys Med Rehabil. 2010 Apr; 91(4):536-42.

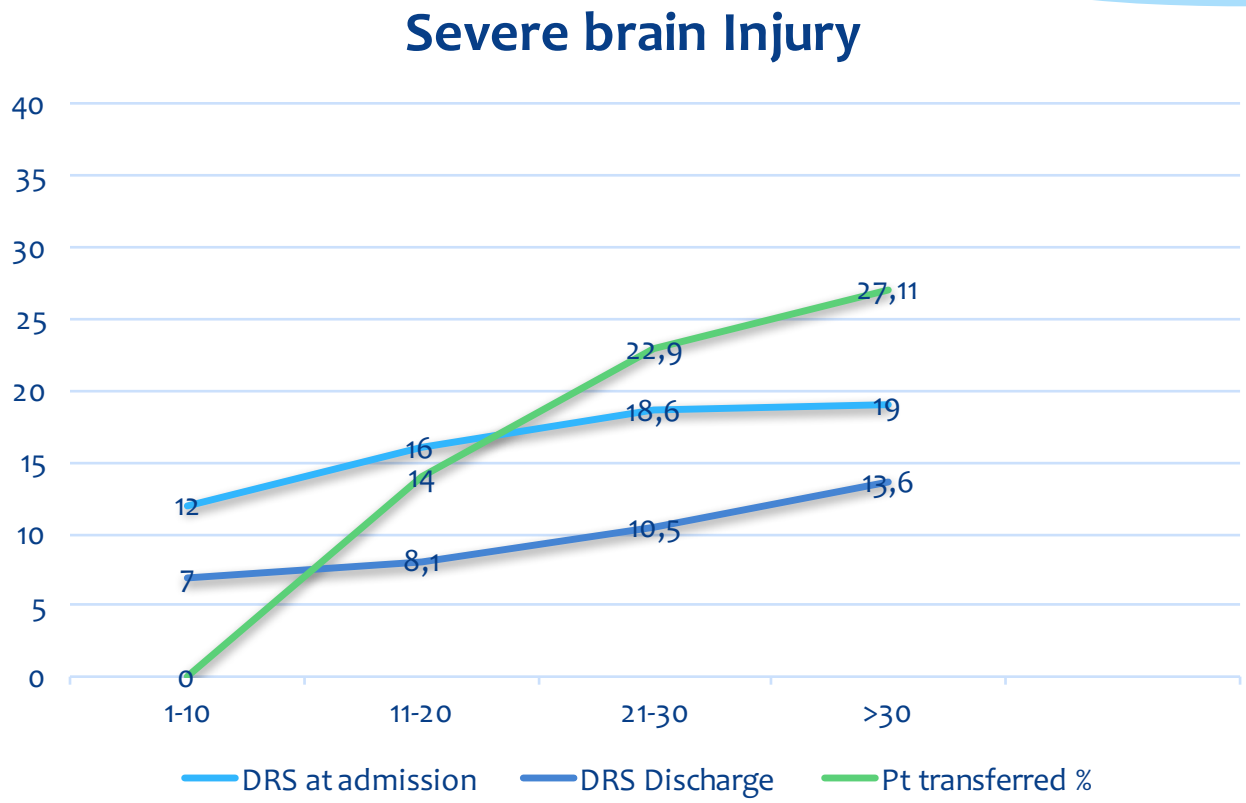
Randomized, controlled pilot study of early rehabilitation strategies in acute respiratory failure

- In this pilot study, early ICU rehabilitation was safe, and was associated with numerically although not statistically shorter hospital stay, greater strength and improved functional scores.
- Particularly, the SPPB demonstrated discriminatory ability in groups of ICU survivors with low physical function.
- Future early ICU rehabilitation studies should consider ICU survivor assessments using the SPPB due to its ease, reproducibility and discriminatory ability following ICU and hospital discharge.

Critical Care 2013, 17 (Suppl 2):P540

E’ Utile essere Così precoci ?

Is early rehabilitation actually useful for patients with severe brain injury?



Formisano, zampolini et al. et al 2016, submitted

Infection
August 2011, Volume 39, Issue 4, pp 353-358
First online: 08 July 2011

Healthcare-acquired infections in rehabilitation units of the Lombardy Region, Italy

M. Tinelli, S. Mannino, S. Lucchi, A. Piatti, L. Pagani, R. D'Angelo, M. Villa, L. Trezzi, M. G. Di Stefano and 3 more

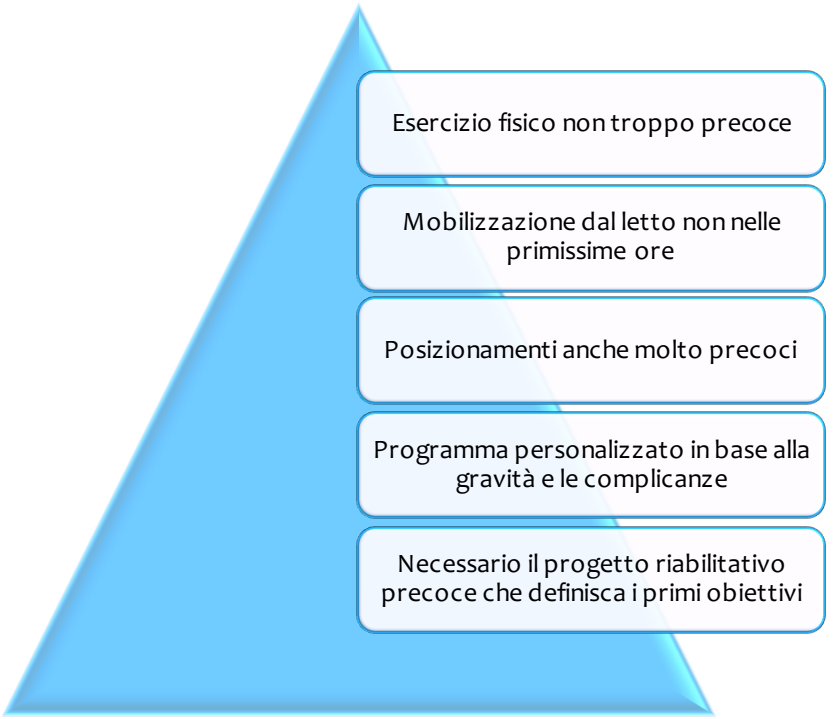
Conclusion

Infections are common in residents of these rehabilitation units, and risk factors may differ with type of infection. The proportion of infections which may be prevented and effective prevention strategies need to be determined.

La complessità che limita il recupero funzionale

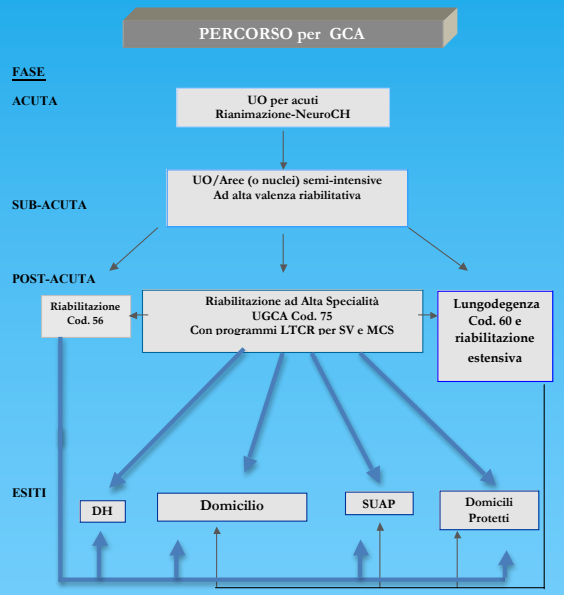
When should rehabilitation begin after stroke?

- The consensus view throughout the world is that physical activity should begin early after stroke;
- however, how early remains controversial, 113 and there are no specific protocols to guide the frequency, intensity, time, or type of physical activity in this early time frame.
- Recent small clinical trials have tested protocols promoting physical activity that commence within 24 to 72 hours of stroke onset, but results have been inconclusive



Stroke. 2014;45:2532-2553

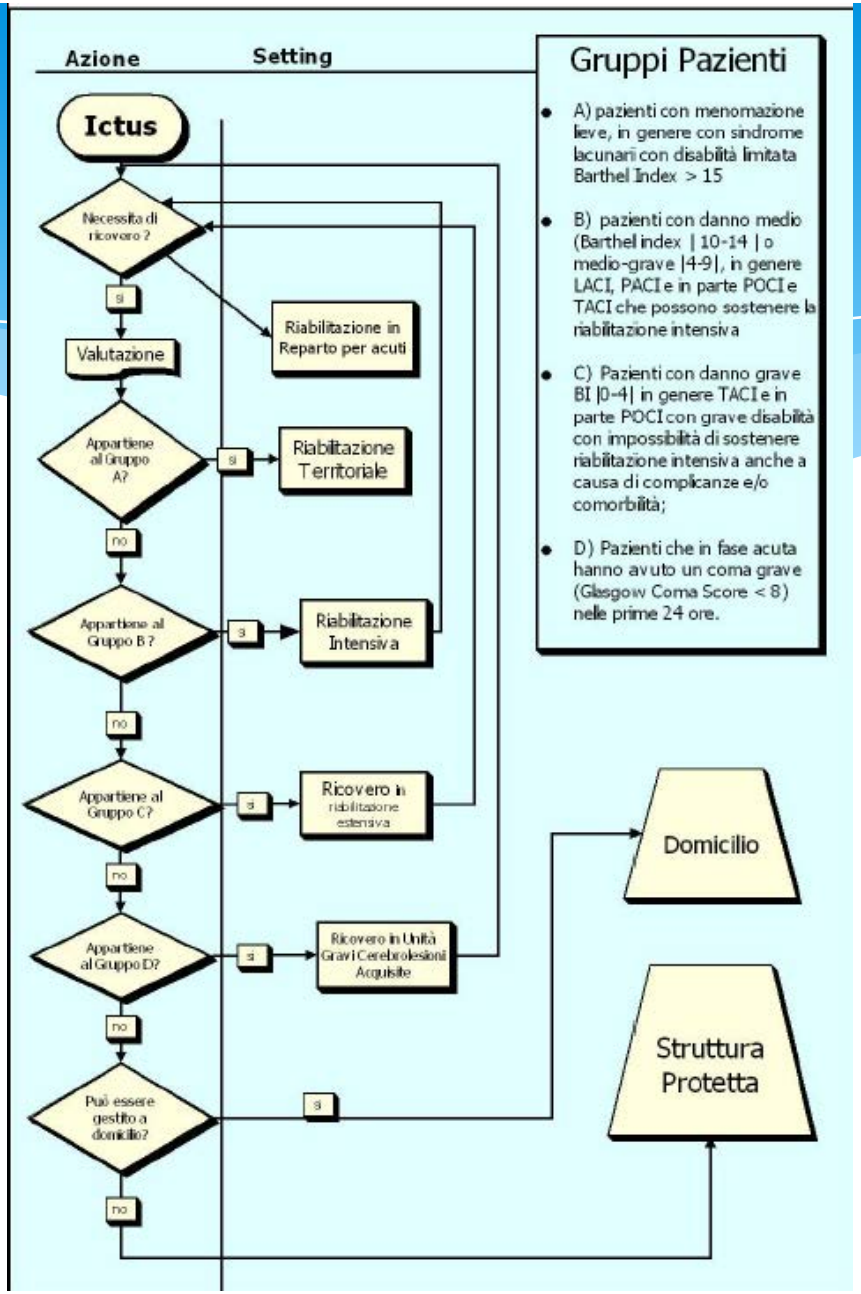
Il percorso riabilitativo



ISO- Spread

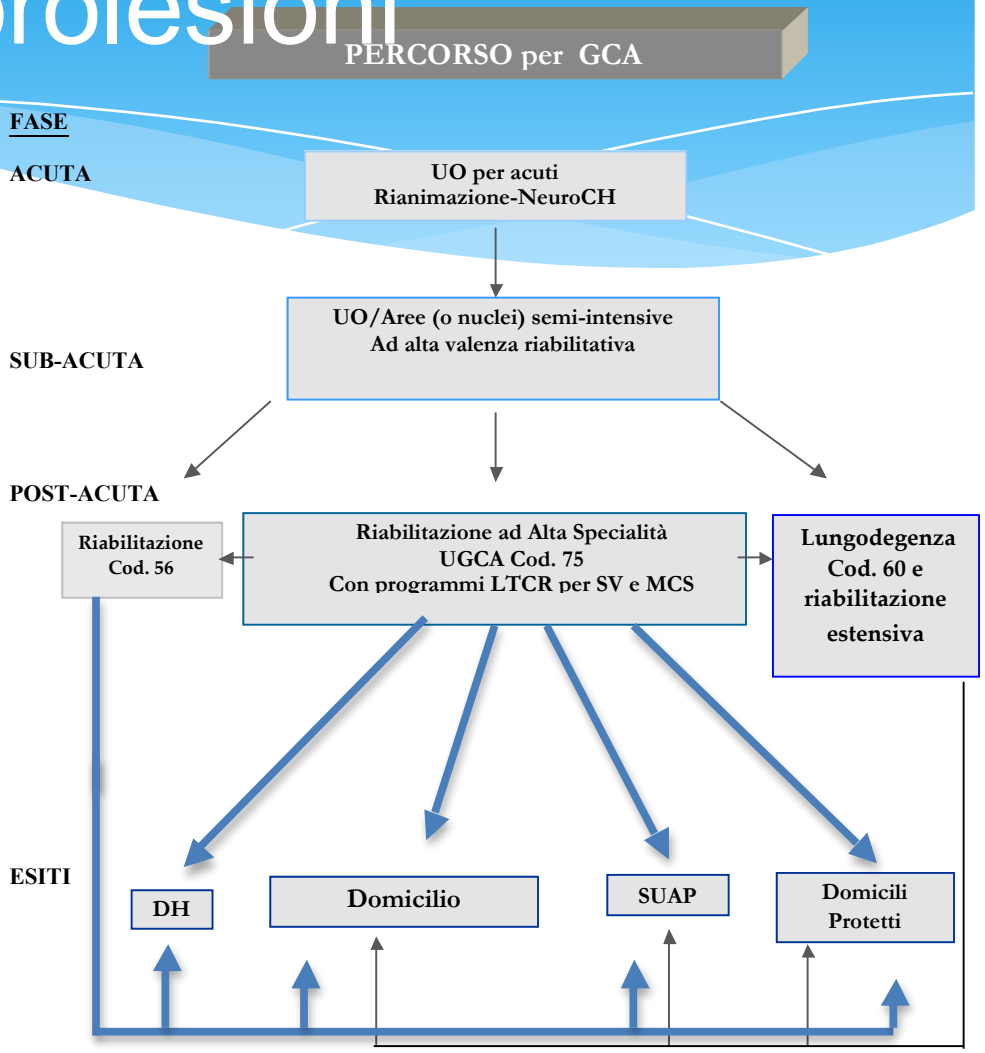
Percorsi della riabilitazione dell'ictus

http://www.iso-spread.it

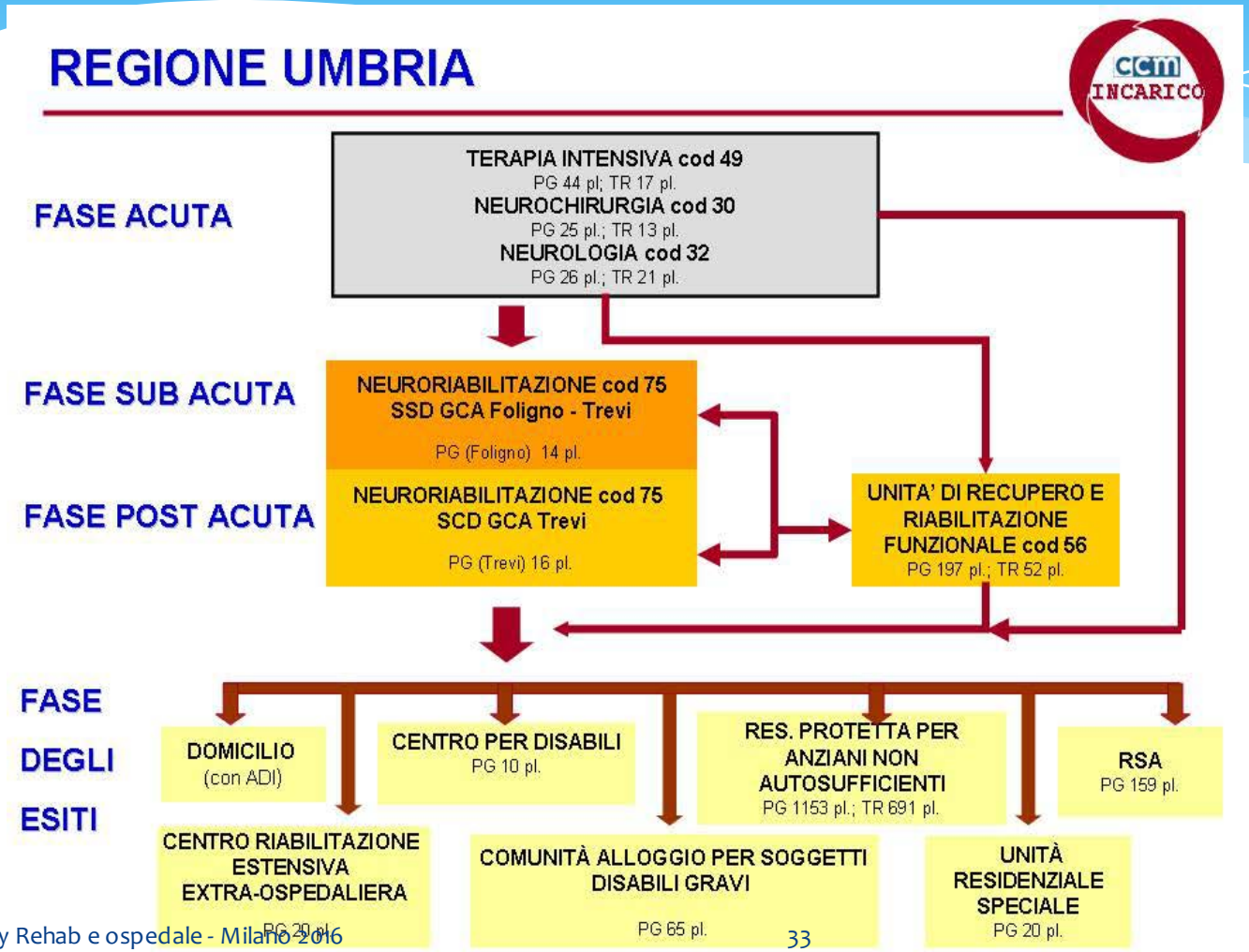


Il Percorso delle Gravi Cerebrolesioni

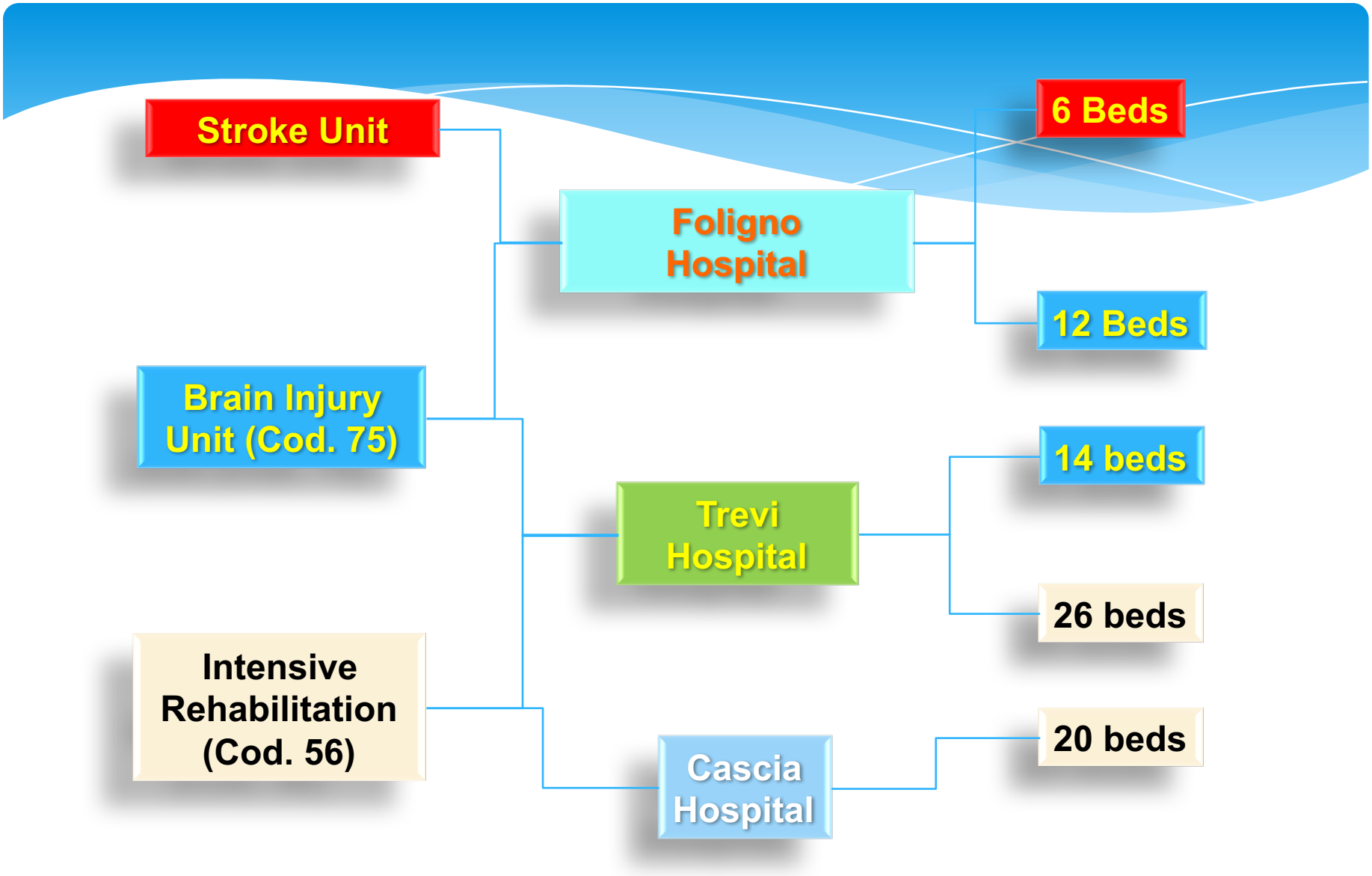
Doc. SV e SMC
Conferenza Stato Regione
Maggio 2011



Il percorso in Umbria delle persone con GCA



Scarponi, et al.


Stroke Unit
Foligno Hospital
6 Beds
12 Beds
Brain Injury Unit (Cod. 75)
Trevi Hospital
14 beds
26 beds
Intensive Rehabilitation (Cod. 56)
Cascia Hospital
20 beds

Topical Review

Section Editors: Michael Brainin, MD, and Richard D. Zorowitz, MD

Early Mobilization After Stroke

Early Adoption but Limited Evidence

Julie Bernhardt, PhD; Coralie English, PhD; Liam Johnson, PhD; Toby B. Cumming, PhD

Grazie