



Lo sviluppo delle Stroke Unit* in Italia: criticità e prospettive

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* Organized inpatient care for stroke

European Stroke Organisation Recommendations to Establish a Stroke Unit and Stroke Center

E. Bernd Ringelstein, Angel Chamorro, Markku Kaste, Peter Langhorne, Didier Leys, Philippe Lyrer, Vincent Thijs, Lars Thomassen and Danilo Toni for the ESO Stroke Unit Certification Committee

Stroke. 2013;44:828-840; originally published online January 29, 2013;

Stroke Unit

A dedicated, **geographically clearly defined area** or ward in a hospital, where stroke patients are admitted and cared for by a **multiprofessional team** (medical, nursing, and therapy staff) who have **specialist knowledge, training, and skills** in stroke care with well-defined individual tasks, **regular interaction with other disciplines**, and stroke leadership.

This team shall coordinate stroke care through regular (weekly) **multiprofessional meetings**.

Stroke Center

A hospital infrastructure and related processes of care that provide the full pathway of stroke unit care. A stroke center is the coordinating body of the entire chain of care. This covers prehospital care, emergency room assessment and diagnosis, emergency medical treatment, stroke unit care, ongoing rehabilitation and secondary prevention, and access to related neurosurgical and vascular intervention. **A stroke unit is the most important component of a stroke center**. ESO Stroke Center provides stroke unit services for the population of its own catchment area and serves as a referral center for peripheral hospitals with ESO Stroke Units in case their patients need services that are not locally available.

Cosa è una Stroke Unit per la European Stroke Organization- ESO

ESO Stroke unit criteria are organized along 7 fields of action

1. to ensure vital functions,
2. to provide early diagnostic investigations,
3. to allow basic surveillance and
4. stroke-specific therapeutic interventions,
5. to perform general therapeutic and diagnostic interventions,
6. to start secondary prevention, and
7. to combine this with multiprofessional early mobilization and rehabilitation procedures

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BMJ. 1997 Apr 19;314(7088):1151-9.
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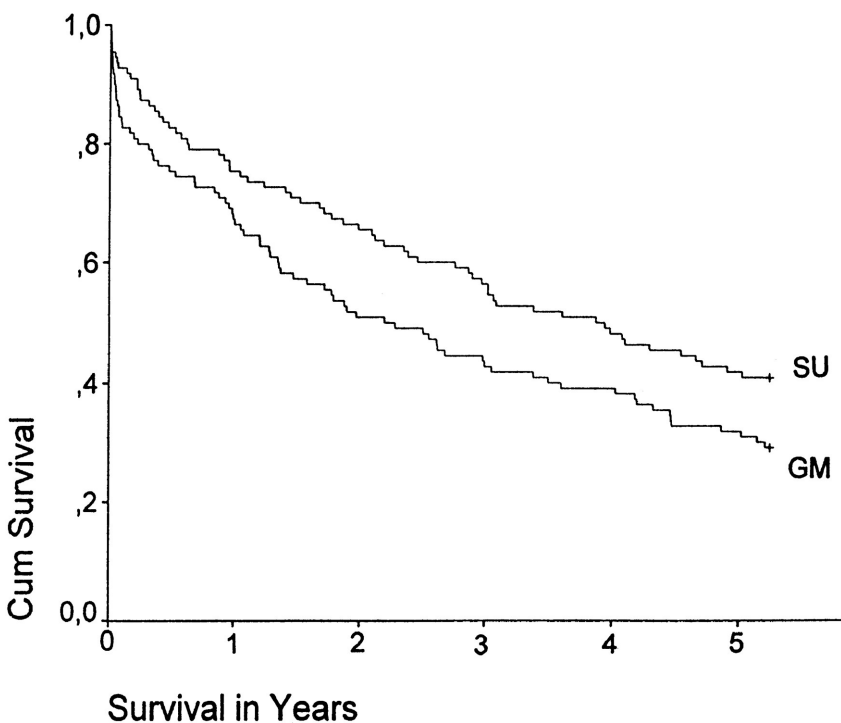
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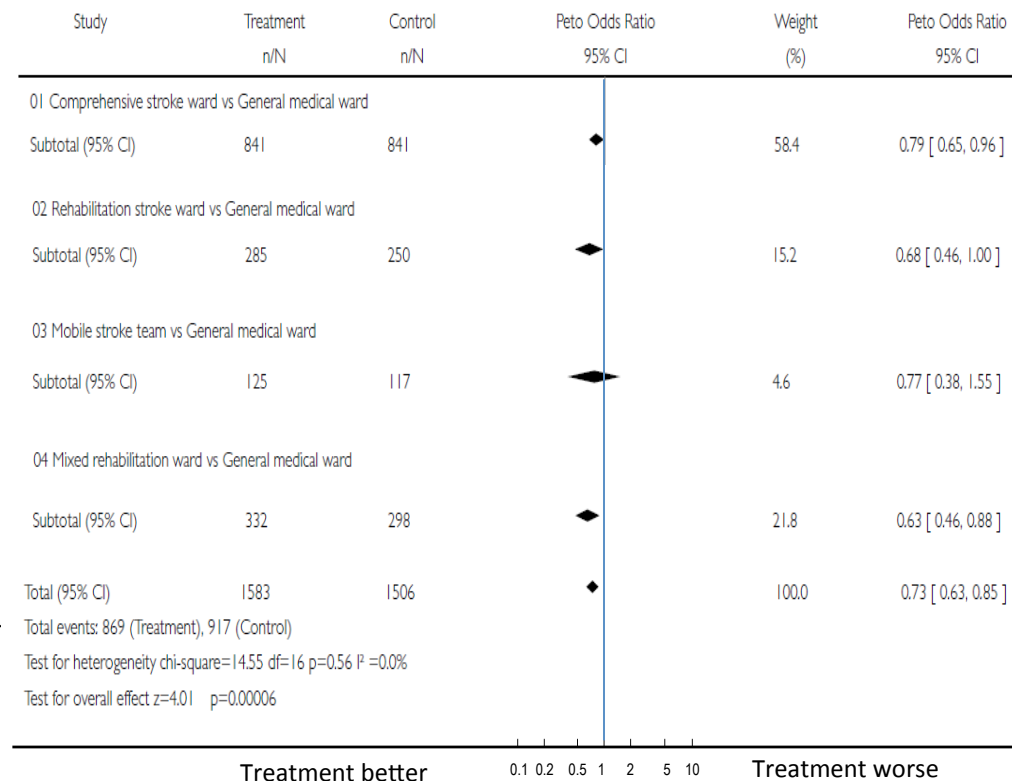
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Organised stroke unit care vs General medical wards Outcome Death or dependency by the end of scheduled follow up



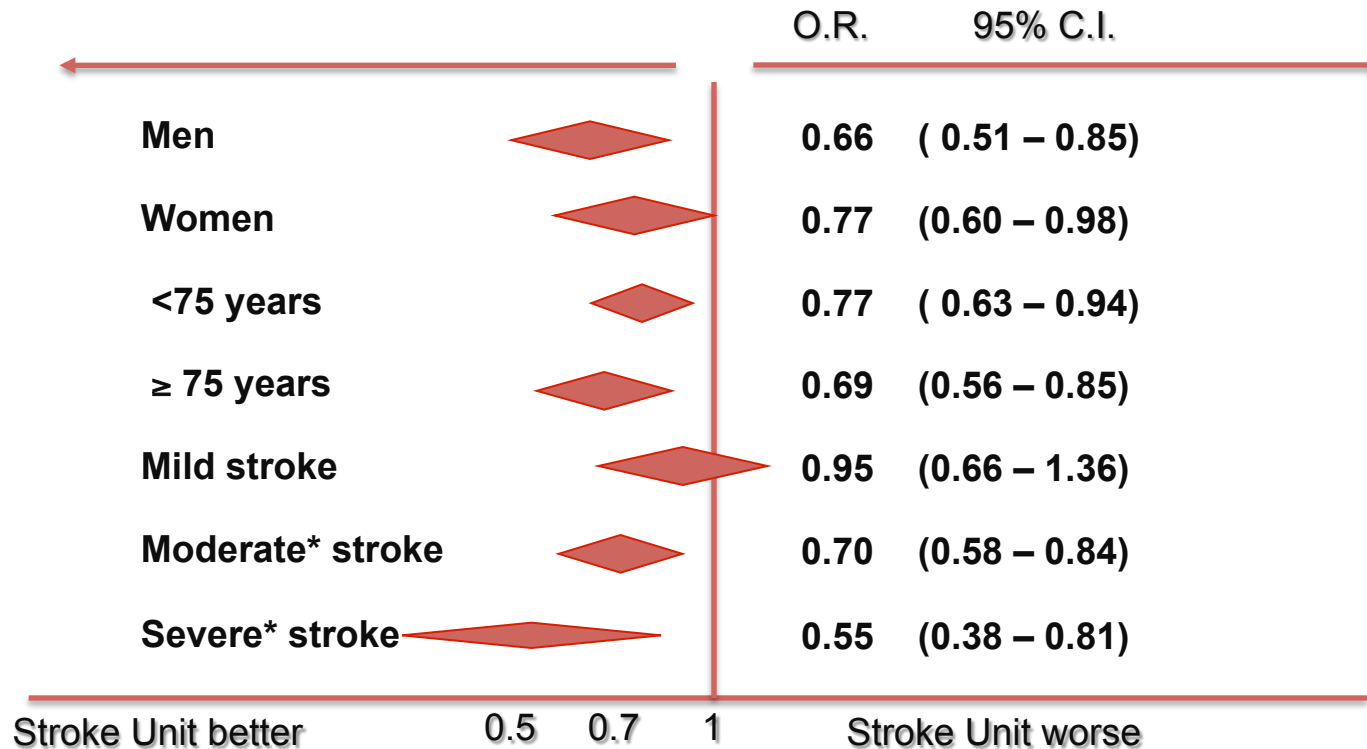
Indredavik B, et al. *Stroke*. 1997;28:1861-6.



Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. *Cochrane Database of Systematic Reviews* 2000, Issue 2. Art. No.: CD000197.

Organised inpatient (stroke unit) care for stroke (Review)

Stroke Unit Trialists' Collaboration



*mild stroke ≈ B.I. 10-20/20; moderate stroke ≈ B.I. 3-9/20; severe stroke ≈ B.I. 0-2/20

Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. *Cochrane Database of Systematic Reviews* 2000, Issue 2. Art. No.: CD000197.

Stroke Unit: Efficacia

Per prevenire	Numero di pazienti da trattare in stroke unit	
1 decesso	16	(CI 11-30)
1 perdita di indipendenza	14	(CI 9-26)
1 istituzionalizzazione	13	(CI 9-21)

Stroke Unit Trialists' Collaboration. *The Cochrane Library*, Issue 1, 2002.

Pan European Consensus Meeting on Stroke Management

SCOPE AND PURPOSE

A consensus meeting arranged by the WHO Regional Office for Europe and the European Stroke Council, in collaboration with the European Federation of Neurological Societies, the International Stroke Society, the World Confederation of Physical Therapy-Europe and the World Federation of Occupational Therapists, took place between 8 and 10 November 1995 in Helsingborg, Sweden. Representatives of Government Health Departments of the Member States of the WHO European Region, scientists, health decision makers, interdisciplinary stroke management experts, stroke patients and their organizations examined the latest evidence-based knowledge in the management of stroke and agreed upon a plan of action to implement this knowledge to enhance the quality of care for people with stroke.

Five main aspects of stroke management were covered:

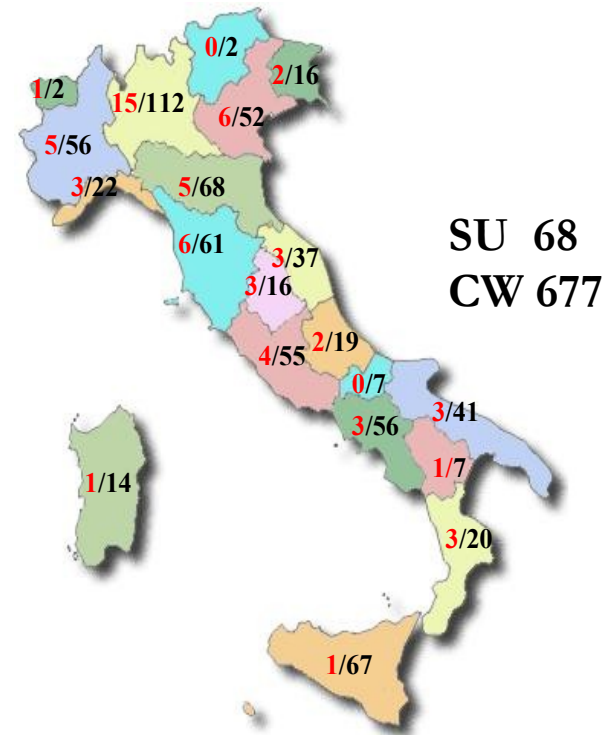
- management of acute stroke;
- rehabilitation;
- secondary prevention;
- evaluation of stroke outcomes and quality assessment;
- organisation of stroke services.

Targets for the Year 2005

1. All Member States should have established a system of organised management of acute stroke in order to reduce the proportion of patients dying within the first month to below 20%.
2. In patients surviving the acute phase, the incidence of recurrent fatal and non fatal stroke during the first two years should be reduced to below 20%. Death due to vascular disease should be below 40%.
3. More than 70% of surviving patients should be independent in their daily activities three months after onset of stroke.
4. All patients should have access to appropriate secondary prevention measures.
5. All patients after acute stroke should have easy access to early specialised assessment and treatment from stroke units if available and continuing as long as benefit to the patient and family exists or is likely.
6. Rehabilitation services should be provided by an interdisciplinary team which is trained in stroke management.
7. All Member States should establish quality assessment for evaluating stroke management.

2006: I dati dello Studio Prosit

- Su 677 ospedali che ricoverano almeno 50 ictus per anno, meno del 10% è dotato di una Stroke Unit (SU).
- La maggior parte è in ambito neurologico.





Presidenza
del Consiglio dei Ministri

CONFERENZA PERMANENTE PER I RAPPORTI
TRA LO STATO, LE REGIONI E LE PROVINCE AUTONOME
DI TRENTO E BOLZANO

2005

Accordo, ai sensi dell'art. 4 del decreto legislativo 28 agosto 1997, n. 281, tra il Ministro della salute, le Regioni e le Province autonome di Trento e di Bolzano, concernente "linee di indirizzo per la definizione del percorso assistenziale ai pazienti con ictus cerebrale".

Rep. n. 2195 del 3 Febbraio 2005

DOCUMENTO DI INDIRIZZO PER LA DEFINIZIONE DEL PERCORSO ASSISTENZIALE AI PAZIENTI CON ICTUS CEREBRALE.

Scopo del presente documento è, quindi, quello di presentare in un modo sintetico e ragionato le strategie, per trasferire nella pratica corrente gli elementi di provata efficacia oggi disponibili, allo scopo di identificare gli aspetti essenziali del percorso assistenziale al paziente con ictus, lasciando poi alle singole realtà regionali il compito di definire in modo più preciso i modelli organizzativi più confacenti al contesto locale.

- 1. Prevenzione**
- 2. Prove di efficacia per la stroke care e la trombolisi**
- 3. Percorso assistenziale (pre-ospedaliera, ospedaliera, post- ospedaliera)**
- 4. Monitoraggio dell'implementazione delle reti stroke (AUDIT)**

La Continuità delle cure



Organizzazione dell'assistenza all'ictus: le Stroke Unit



TAKE HOME MESSAGES

Secondo i dati dello studio PROSIT riferiti a un'indagine sui 677 ospedali che ricoverano almeno 50 ictus per anno, meno del 10% degli ospedali è dotato di una Stroke Unit (SU). La maggior parte (il 75%) delle SU è in ambito neurologico. L'attuale offerta assistenziale all'ictus acuto è dunque inadeguata e assolutamente basso è il numero dei pazienti con ictus ischemico che hanno accesso alla terapia trombolitica. È possibile migliorare la qualità dell'assistenza all'ictus con beneficio per i pazienti in termini di ridotta mortalità e disabilità e conseguentemente anche minori costi assistenziali e sociali nel lungo termine. Il miglioramento del processo assistenziale comporta inoltre una riduzione delle giornate di degenza e conseguentemente un risparmio in termini di posti letto. Con una degenza media di 8,4 giorni in SU, rispetto alla degenza media nazionale di 12,2 giorni per 129.200 ictus nel 2005 o di 10,4 giorni per 113.288 ictus nel 2008 (questi ultimi dati sono preliminari), si potrebbero risparmiare tra i 1512 e i 621 letti.

Il fabbisogno, su una popolazione di 57.500.000, corrisponde a circa 50 letti per milione di abitanti, in linea con quanto viene generalmente previsto nelle linee guida. L'obiettivo a lungo termine è quindi di sei SU di otto letti tra II e III livello per milione di abitanti. L'obiettivo a medio termine è la realizzazione almeno del 50% di SU di II e III livello, con la transitoria permanenza di SU di I livello che dovranno gradualmente acquisire il livello superiore. Questo può essere realizzato attraverso la riorganizzazione delle risorse sanitarie già impegnate nell'assistenza all'ictus acuto, a partire dalle UO di Neurologia, e attraverso la realizzazione di percorsi assistenziali e riabilitativi integrati.

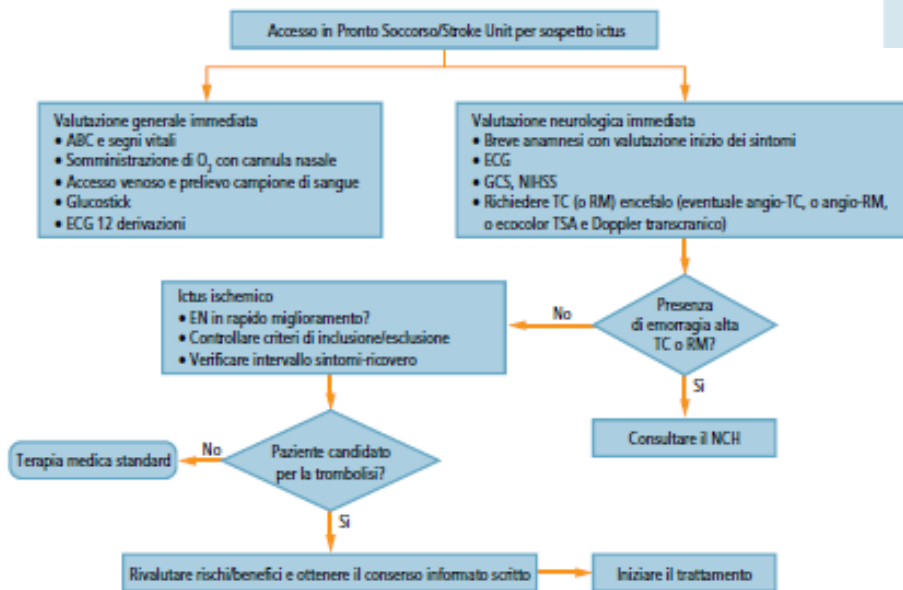


Figura 4.3 Percorso diagnostico-terapeutico: selezione dei pazienti.

Criteria di appropriatezza strutturale,
tecnologica e clinica nella prevenzione,
diagnosi e cura della patologia
cerebrovascolare

Le stroke unit: 3 livelli di complessità

- Il primo livello operativo è considerato necessario e deve far fronte ad un grande numero di eventi ictali che, per varie ordini di ragioni, non giungono in Ospedale in tempo utile per i trattamenti specifici del singolo caso (es.: trombolisi).
- Il secondo livello di SU garantisce una pronta e completa risposta assistenziale nella gestione della fase acuta
- Il terzo livello di SU contraddistingue i Centri di Riferimento (di Eccellenza) che fungono da Hub rispetto ai Centri di 2 livello i quali a loro volta possono esserlo per quelli di 1 livello.

95 Stroke Unit in Italia nel 2009



Italian regions	No. Of SU	No. Of inhabitants	km2	SU/inhabitants	SU/km ²
Valle D'Aosta	1	126,660	3,263	127,000	3,263
Piemonte	17	4,441,946	25,402	<u>261,000</u>	1,494
Lombardia →	34	9,826,142	23,863	289,000	702
Trentino Alto Adige	2	1,021,857	13,607	511,000	6,803
Veneto	15	4,912,438	18,339	327,000	1,227
Friuli Venezia Giulia	2	1,234,079	7,858	617,000	3,929
Liguria	5	1, 615,986	5,422	323,000	1,084
Emilia Romagna	12	4,337,435	22,446	361,000	1,870
Toscana	10	3,730,130	22,994	373,000	2,299
Marche	5	1,552,968	9,366	311,000	1,873
Umbria	4	900,790	8,456	225,000	2,114
Abruzzo	4	1,338,898	10,763	335,000	2,691
Lazio	5	5,681,868	17,236	1,136,000	3,447
Campania	2	5,820,795	13,590	<u>2,910,000</u>	6,795
Molise	1	320,229	4,438	320,000	4,438
Basilicata →	–	588,879	9,995	–	–
Puglia	4	4,084,035	19,358	1,021,000	4,839
Calabria	2	2,009,252	15,081	1,005,000	7,540
Sicilia	4	5,042,992	25,711	1,260,000	6,428
Sardegna	2	1,672,404	24,090	836,000	12,045
Total	130	60,259,782	301,336	464,000	2,318

Monitoring the implementation of the State-Regional Council agreement 03/02/2005 as to the management of acute stroke events: a comparison of the Italian regional legislations

Donata Guidetti · Marco Spallazzi · Eugenia Rota · Nicola Morelli · Paolo Immovilli · Danilo Toni · Marzia Baldereschi · Bianca M. Polizzi · Salvatore Ferro · Domenico Inzitari

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Table 3 Territorial organizational model and levels of stroke assistance by region

Region	Network	
	Hub and Spoke model	No of levels of the network
Valle D' Aosta	na	na
Piemonte	X	2
Liguria	x	–
Lombardia	X	3
Provincia di Trento	na	na
Veneto	X	3
Friuli Venezia Giulia	X	–
Emilia Romagna	X	2
Marche	X	2
Toscana	x	3
Umbria	X	2
Abruzzo	X	3
Lazio	X	3
Campania	X	3
Puglia	X	2
Basilicata	X	3
Calabria	X	3
Sicilia	X	3
Sardegna	x	–

na not applicable

x without specific reference

X with specific reference

Table 1 Operational protocols decreed for acute phase management of stroke by region

Region	Pre-hospital phase		Hospital phase		
	Early diagnosis	Transport to hospital	Patient management in the emergency department	Indications for intravenous thrombolysis	Indications for other treatments (intra-arterial thrombolysis, surgery)
Valle D' Aosta	x	–	–	–	–
Piemonte	X	X	X	X	X
Liguria	x	x	–	–	–
Lombardia	X	X	X	X	X
Provincia di Trento	–	–	–	–	–
Veneto	X	X	X	X	x
Friuli Venezia Giulia	X	X	X	X	–
Emilia Romagna	X	X	X	x	–
Marche	–	–	–	–	–
Toscana	X	x	X	X	X
Umbria	–	x	–	–	–
Abruzzo	x	x	x	x	–
Lazio	X	X	X	x	X
Campania	X	X	x	X	x
Puglia	X	X	X	x	x
Basilicata	–	x	X	x	–
Calabria	X	x	X	x	–
Sicilia	–	x	–	–	–
Sardegna	–	–	x	–	–

x without specific reference

X with specific reference and protocols

2006

Helsingborg Declaration on European Stroke Strategies
Edited by: T. Kjellström, B. Norrving, A. Shatchkute



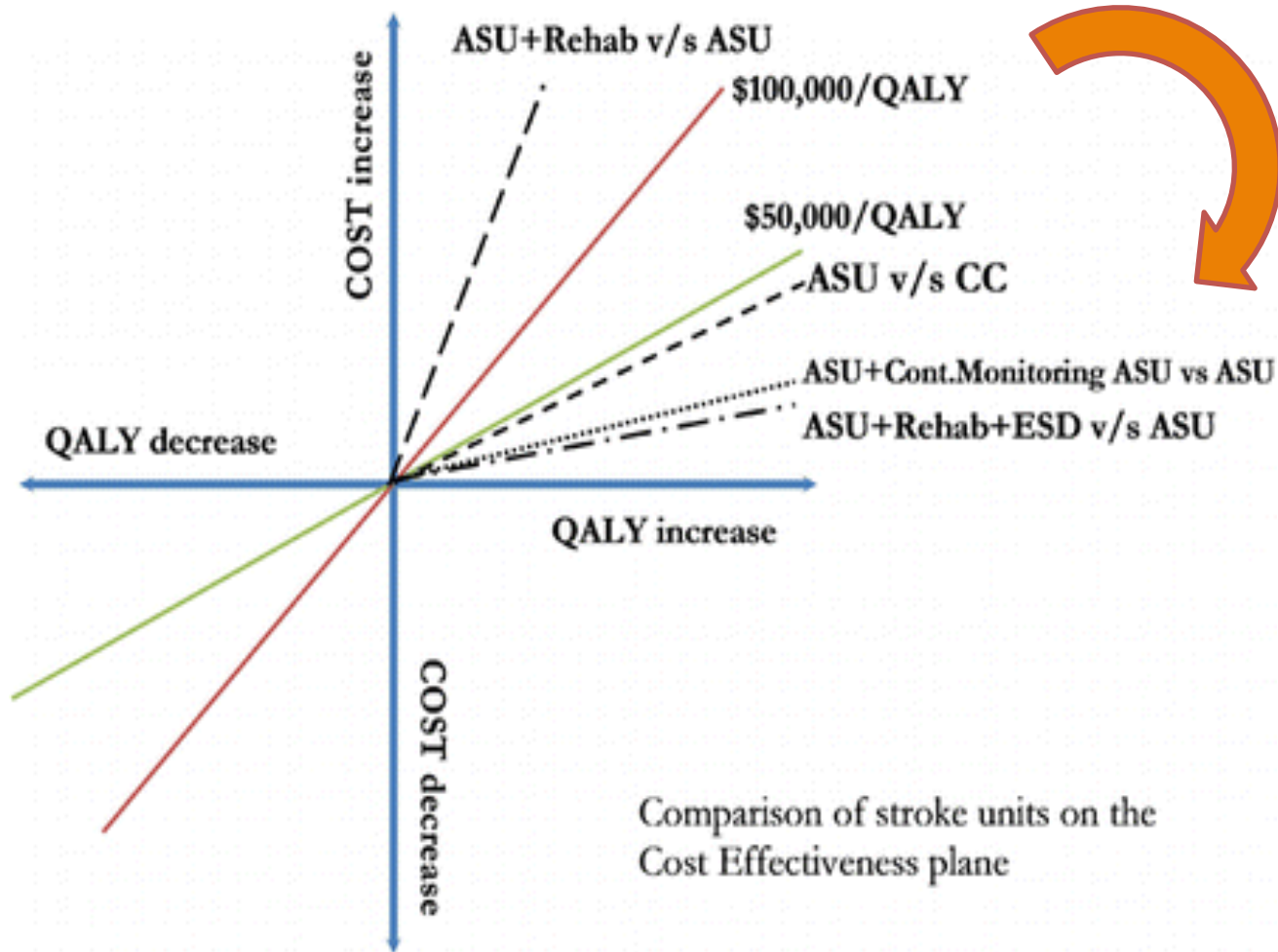
1. Organization of stroke services

Goal for 2015

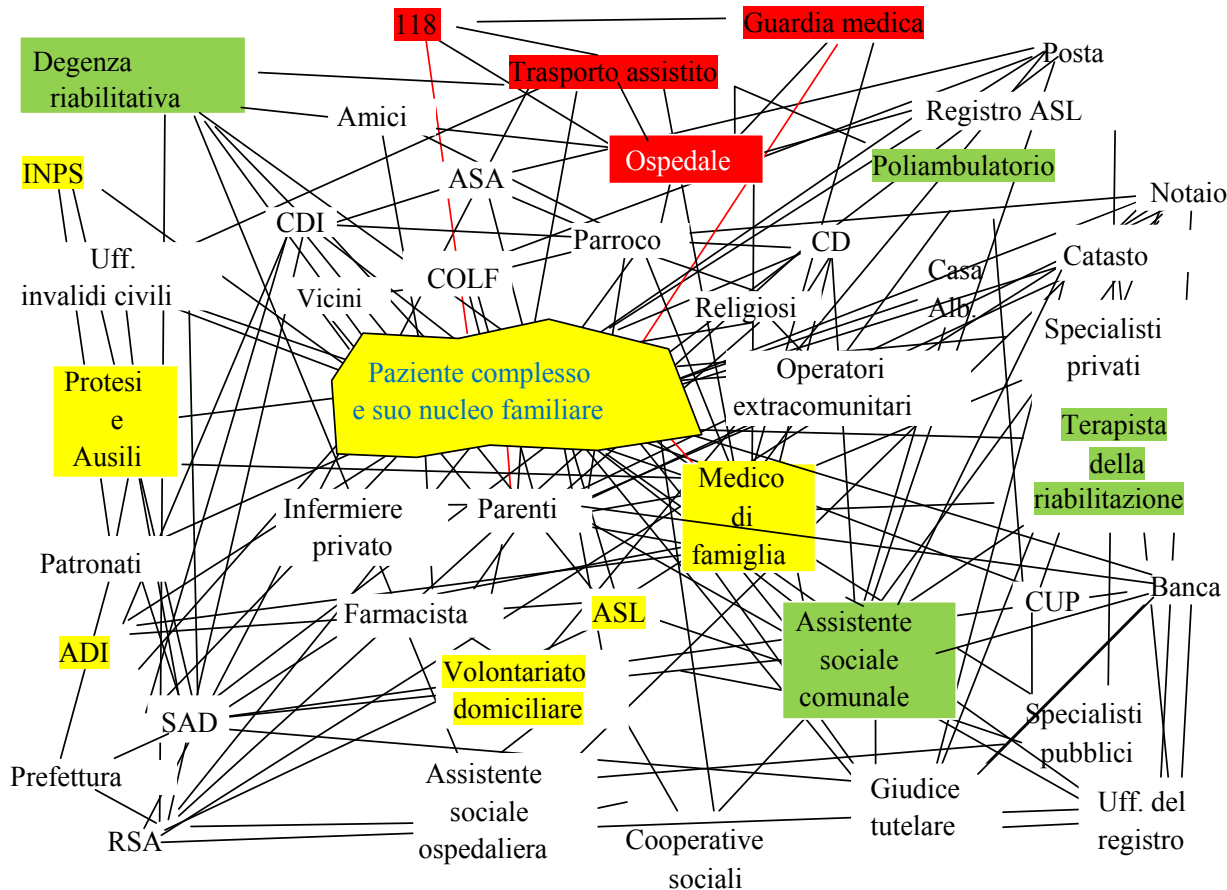
All patients in Europe with stroke will have access to a continuum of care from organized stroke units in the acute phase to appropriate rehabilitation and secondary prevention measures.

Meta-analysis of Cost Effectiveness of Different Stroke Unit Subtypes

International Stroke Conference 2012.



La continuità assistenziale e la “rete” del territorio





**Grazie per la vostra
attenzione!**