

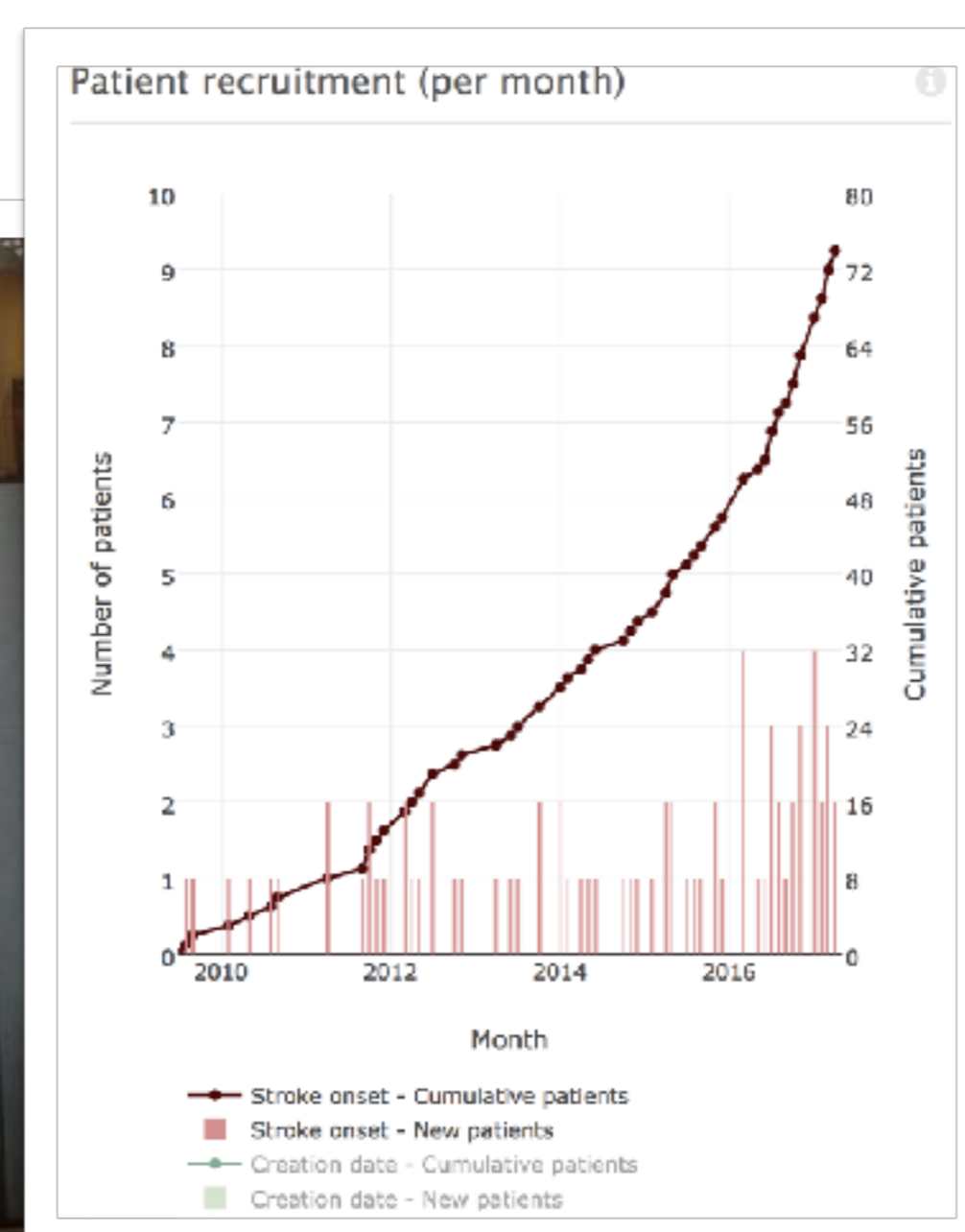
Telestroke network in internal areas of Umbria: the first case of remote assisted thrombolysis

Laura, Bernetti MD1, Francesco Corea MD2, Stefano Stefanucci MD2, Vilma Pierini MD2, Vera Rossi MD2, Arianna Guidubaldi MD2, Pierluigi Brustenghi MD2, Alessio Gamboni MD3, Valeria Caso MD4, Mauro Zampolini MD2

1 Neurologic Clinic, Department of Medicine, University of Perugia, Italy; 2 Stroke and Neurology Units, San Giovanni Battista Hospital, Foligno, Italy; 3 Pronto Soccorso, Santa M. Della Stella Hospital, Orvieto, Italy; 4 Stroke Unit, University of Perugia, Italy

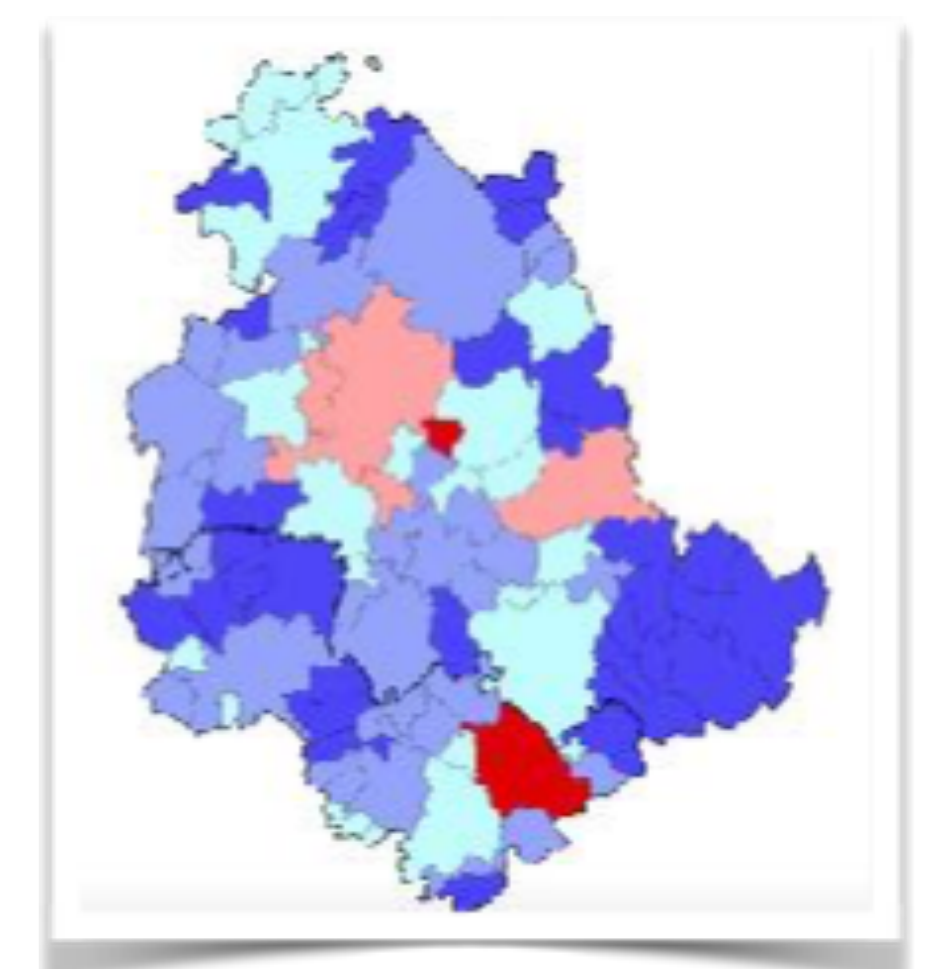
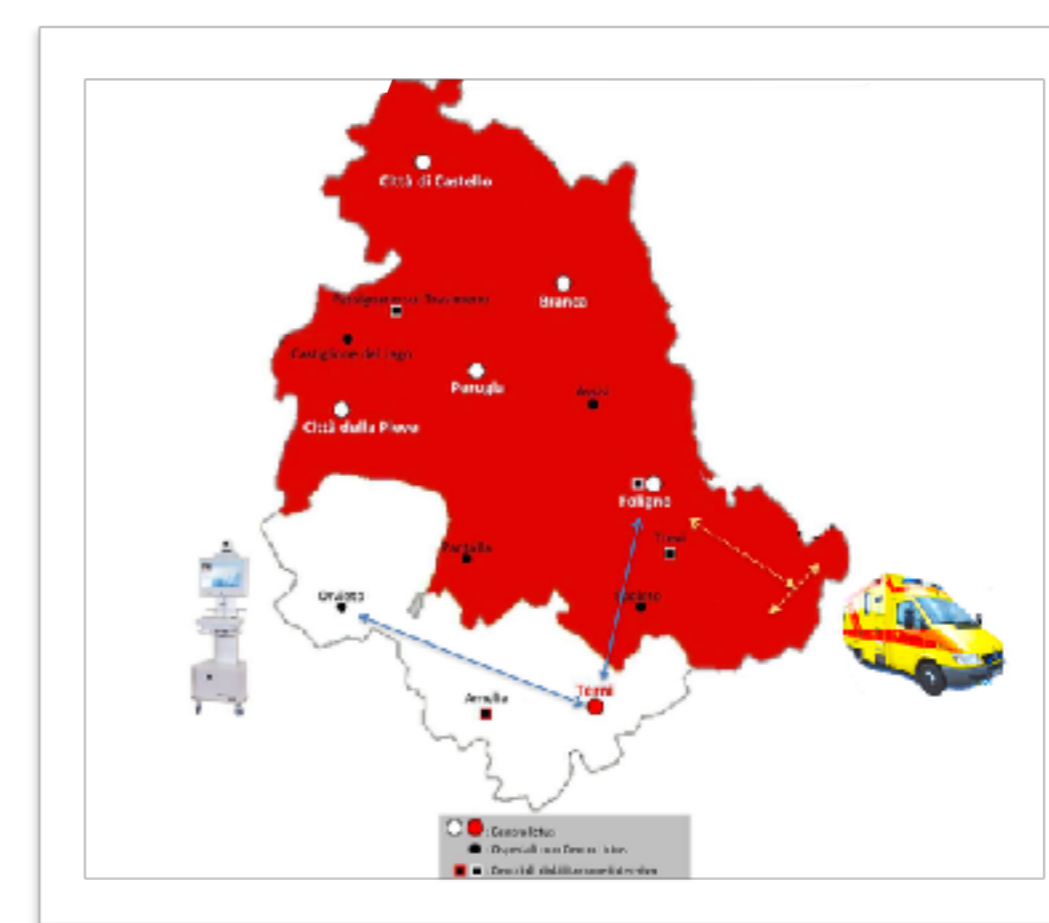
Background and Network organization:

Nowadays, clinical benefits of stroke units and thrombolysis in ischemic stroke are evidence-based. However, inequities in coverage and in treatment provided still persist due to geographical barriers, trained personnel availability, technological capacity and organization among health-care systems. In the catchment area of USL Umbria 2, five hospitals are running with coverage of 400.000 inhabitants and only one hospital has a Stroke Unit with a thrombolysis protocol. The largest hospital without access to stroke services is Orvieto Hospital (30k inhabitants and above 120 strokes/year). From May to December 1-2 cases per week were screened for stroke code in teleconsult. The centralization of lysis-eligible patients raised of a 30% from the previous year (134 to 179) and another 9% in 2015 (187) while the rate of lysis on ischemic stroke raised to 10% in 2015-2016 from 5-6% ($p > 0.05$ 95%) in 2013-2014. No mortality rate increase was found. The first case of successful tele-thrombolysis was registered in January 2017. From 2014 Stroke was prioritized as medical emergency and started a reorganization of services. Intensive CME training in all hospitals (>3hrs monthly) and an optimization of the dispatchment from satellite hospitals was chosen with policy of "always available" stroke beds. This was matched with a Teleconsult connection established using a videoconference system (Meytec TM, Werneuchen; Germany) for real-time evaluation of patients in Orvieto Hospital emergency room to Neurology of Foligno Hospital.



Case report

A 68-year-old female with medical history of hypercholesterolemia, hypertension, heart disease and hypothyroidism. The patient has acutely presented right hemiparesis and aphasia (NIHSS: 14). So she was admitted to Orvieto hospital. About 45 minutes from the stroke onset, tele-stroke protocol was activated. Brain CT scan showed no signs of acute ischemic lesion or bleeding (ASPECTS score 0). The patient was immediately evaluated by a dedicated videoconferencing that allowed neurologists of Foligno hub centre to assist remotely the physician at Orvieto. After a complete evaluation she was selected for i.v. thrombolysis. The patient showed a rapid clinical improvement during hospitalization. At discharge, the patient was fully autonomous in daily life.



Discussion

In internal areas of central Italy tele-stroke services can safely improve access to time-dependent stroke care. Leading to reduction of inequities in coverage and improving outcomes.



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