Opvang en triage in het ziekenhuis

Dr. Sam Van Boxstael, urgentiearts-anesthesist
Ziekenhuis Oost-Limburg

TIME IS BRAIN

TIME IS BRAIN

Estimated Pace of Neural Circuitry Loss in Typical Large Vessel, Supratentorial Acute Ischemic Stroke

	Neurons Lost	Synapses Lost	Myelinated Fibers Lost	Accelerated Aging
Per Stroke	1.2 billion	8.3 trillion	7140 km/4470 miles	36 y
Per Hour	120 million	830 billion	714 km/447 miles	3.6 y
Per Minute	1.9 million	14 billion	12 km/7.5 miles	3.1 wk
Per Second	32 000	230 million	200 meters/218 yards	8.7 h

Saver J. Stroke 2006;37:263–6

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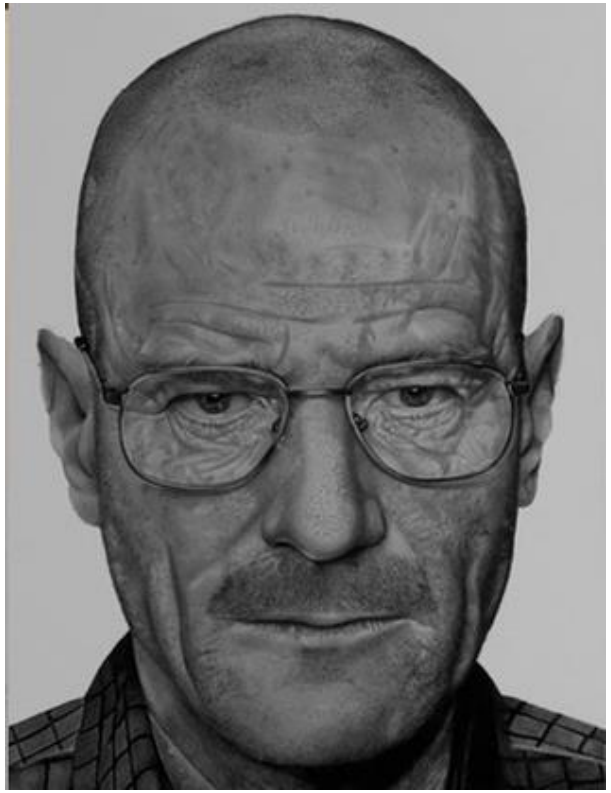
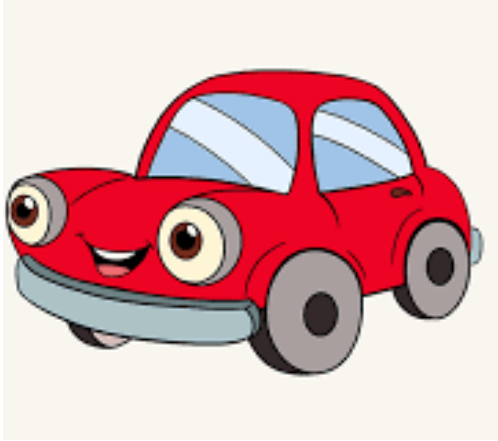


- Walter, 63 jaar
- Gepensioneerde leerkracht chemie
- 18h50 nog normaal
- 18h55 aangetroffen door echtgenote met halfzijdige verlamming rechts

Opvang en triage in het ziekenhuis



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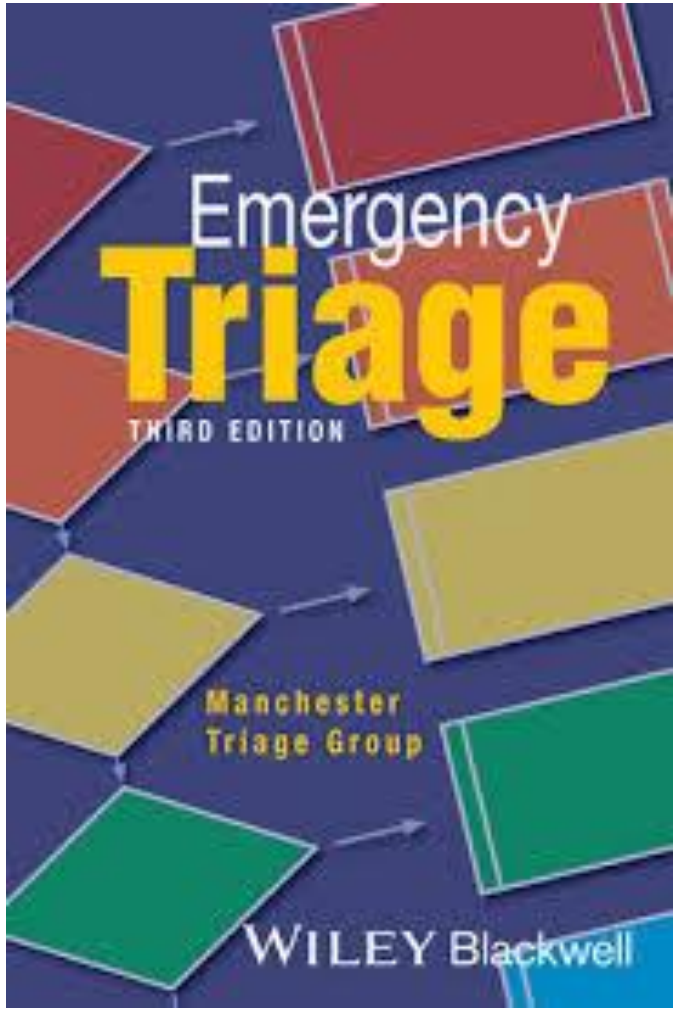

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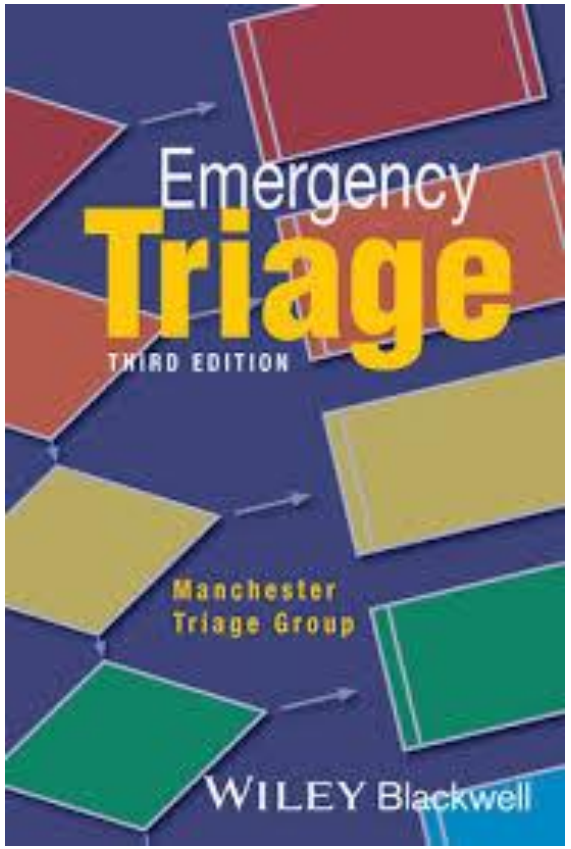
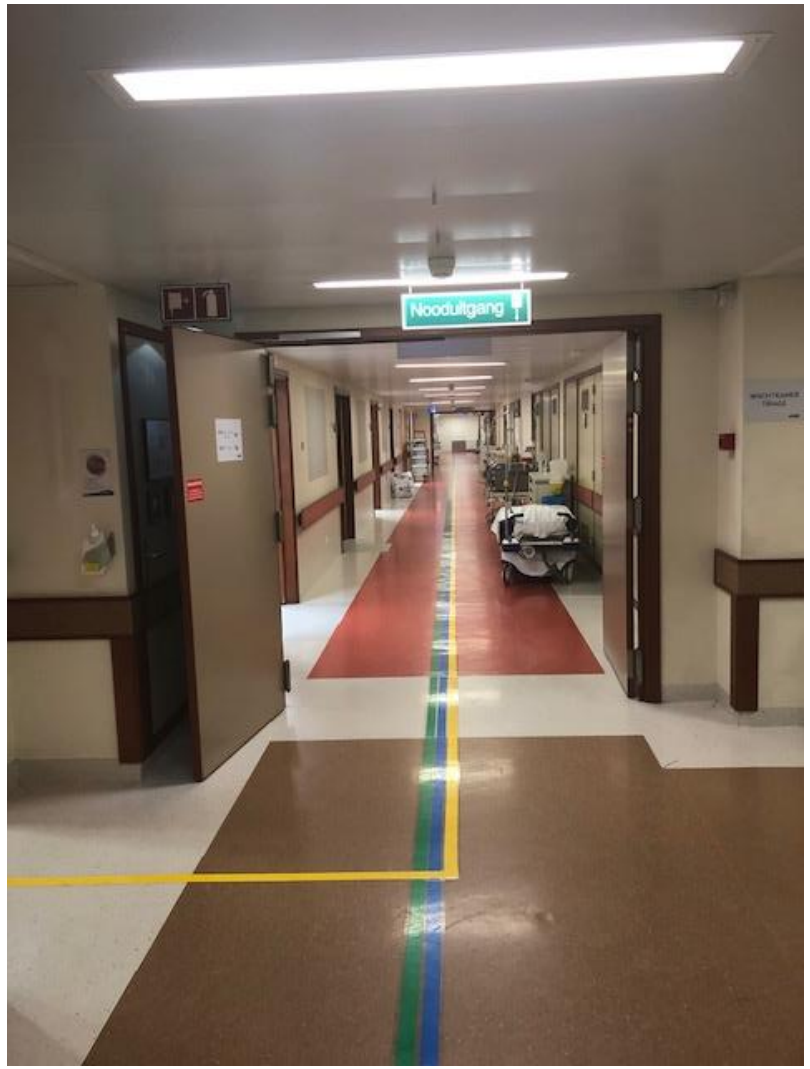


LEVEL OF PRIORITY	COLOUR	SAFETY MINUTES UNTIL FIRST MEDICAL EXAMINATION
IMMEDIATE	RED	IMMEDIATLY
VERY URGENT	ORANGE	Up to 10 MINUTES
URGENT	YELLOW	Up to 60 MINUTES
STANDARD	GREEN	Up to 120 MINUTES
NON-URGENT	BLUE	Up to 240 MINUTES

Mackway-Jones K. Emergency triage: Manchester Triage Group.

Opvang en triage in het ziekenhuis



Opvang en triage in het ziekenhuis

Conservatief

Opvang en triage in het ziekenhuis

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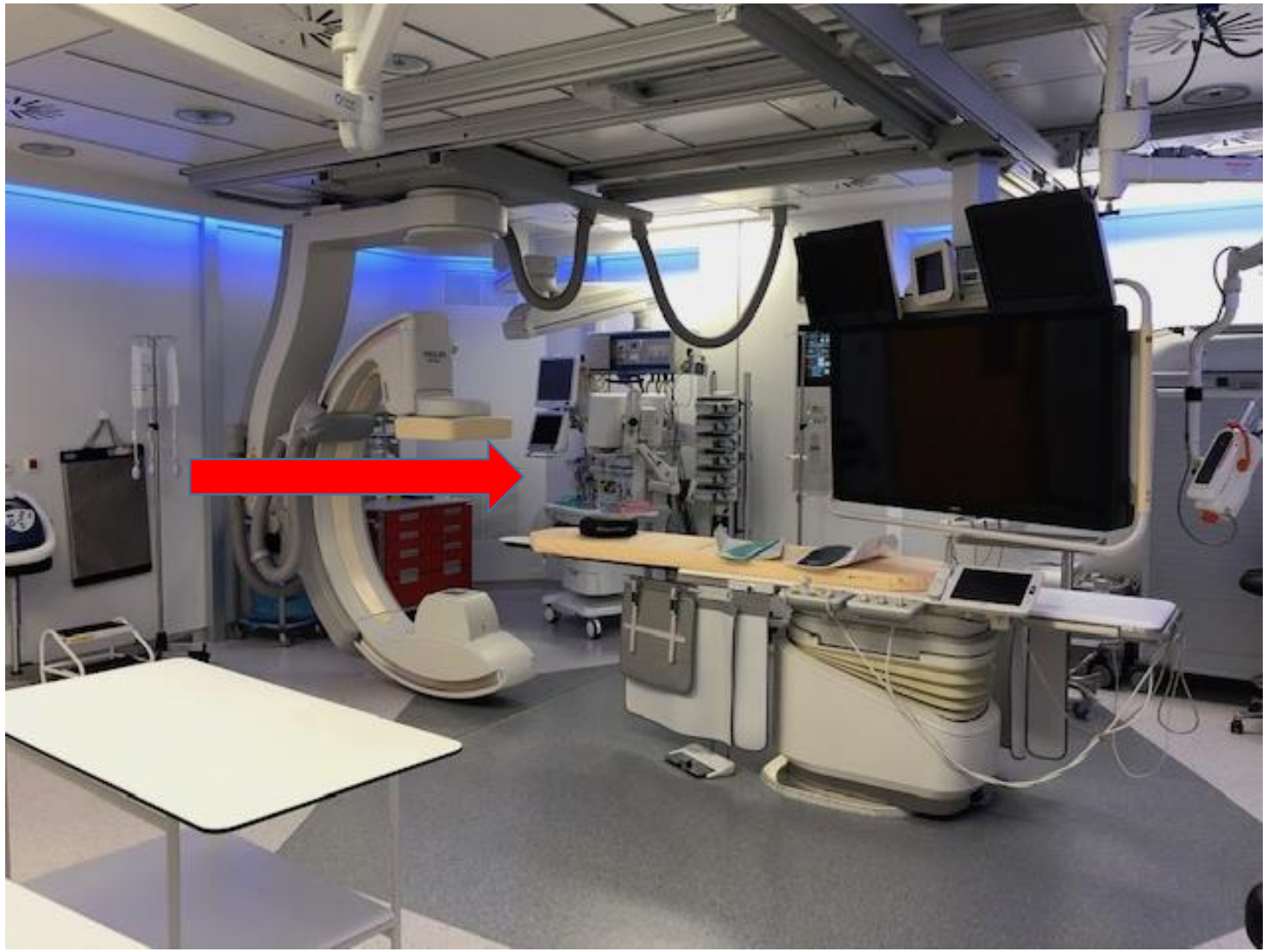

Opvang en triage in het ziekenhuis

Conservatief

Stroke unit

Intensieve Zorgen

TIME IS BRAIN

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1. An organized protocol for the emergency evaluation of patients with suspected stroke is recommended.	I	B-NR
2. Systems should be established so that brain imaging studies can be performed within 20 minutes of arrival in the ED in at least 50% of patients who may be candidates for IV alteplase and/or mechanical thrombectomy.	I	B-NR
2. It is recommended that DTN time goals be established. A primary goal of achieving DTN times within 60 minutes in ≥50% of AIS patients treated with IV alteplase should be established.	I	B-NR
3. It may be reasonable to establish a secondary DTN time goal of achieving DTN times within 45 minutes in ≥50% of patients with AIS who were treated with IV alteplase.	IIb	C-EO

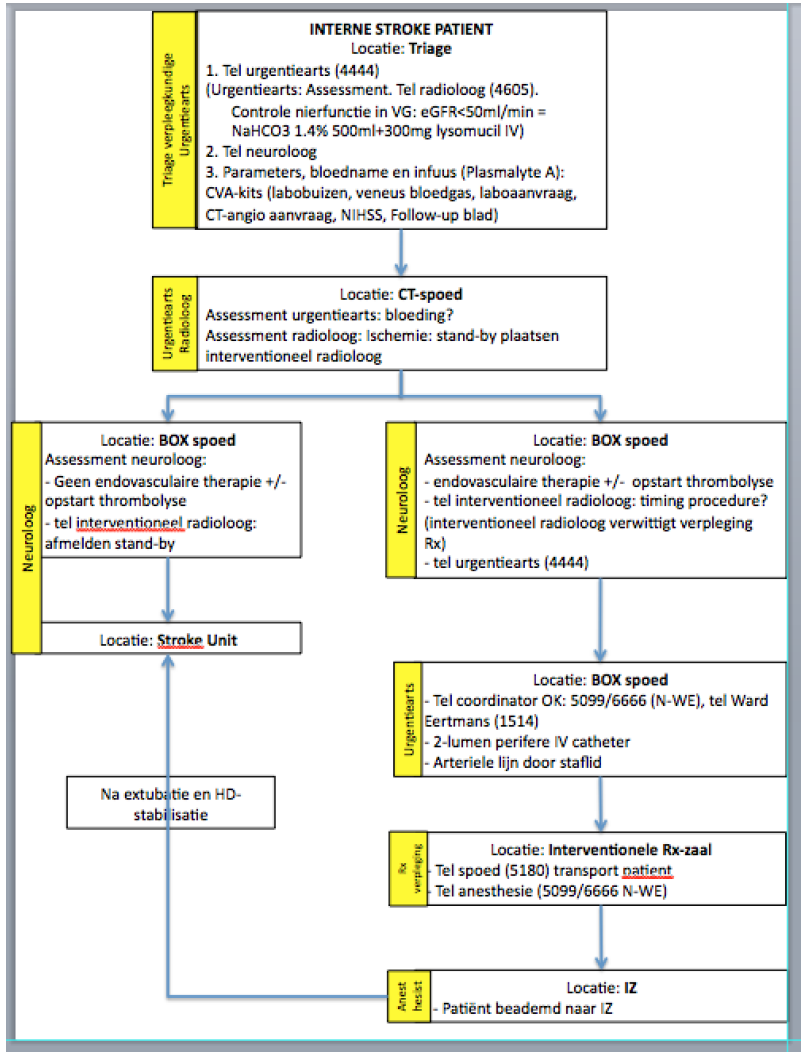
Powers WJ. Stroke 2018 Mar;49(3):e46-e110

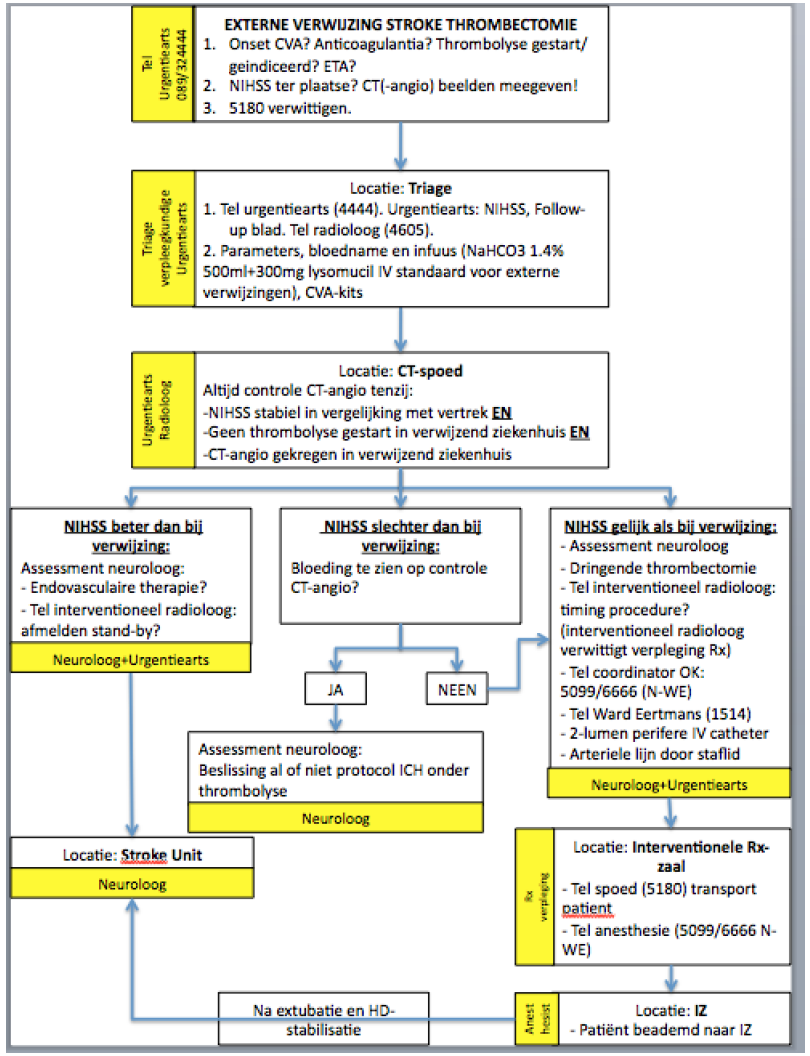
Opvang en triage in het ziekenhuis

Coördinatie tussen verschillende diensten:

- Spoedgevallen
- Neurologie
- Diagnostische radiologie
- Interventionele radiologie
- Anesthesie
- Intensieve Zorgen

Opvang en triage in het ziekenhuis





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Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

Impact of CT scanner location on door to imaging time for emergency department stroke evaluation

William Bonadio, MD *, Christina Beck, MD, Aaron Mueller, MD

Mount Sinai St. Luke's Medical Center, New York, NY, United States of America

ARTICLE INFO

Article history:
Received 11 August 2019
Accepted 14 August 2019
Available online xxxx

Keywords:
Stroke
CT scan
Door to CT time

ABSTRACT

Background and objectives: Stroke is a potentially serious condition commonly diagnosed in the ED. Time to diagnosis can be crucial to maximizing outcome in a majority of ischemic stroke cases amenable to thrombolytic therapy.
Methods: An analysis of 148 consecutive adults transported by EMS to an urban emergency department with a diagnosis of cerebro-vascular accident during a 12 month period was performed to determine the impact of CT scanner location on door-to-head CT [DTCT] scan time. The CT scanner was relocated from an upper floor of the hospital to within the ER department midway through the study period.
Results: The rate of DTCT scan time ≤20 min increased significantly from 47% [pre-relocation] to 74% [post-relocation]; and the rate of DTCT ultra-rapid scan time ≤10 min more than doubled.
Conclusions: Hospitals providing ED care for stroke patients can expedite management by ensuring CT scanner location is in closest possible proximity to the ED.

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Bonadio W. Am J Emerg Med 2019 Aug 14:158398. doi: 10.1016

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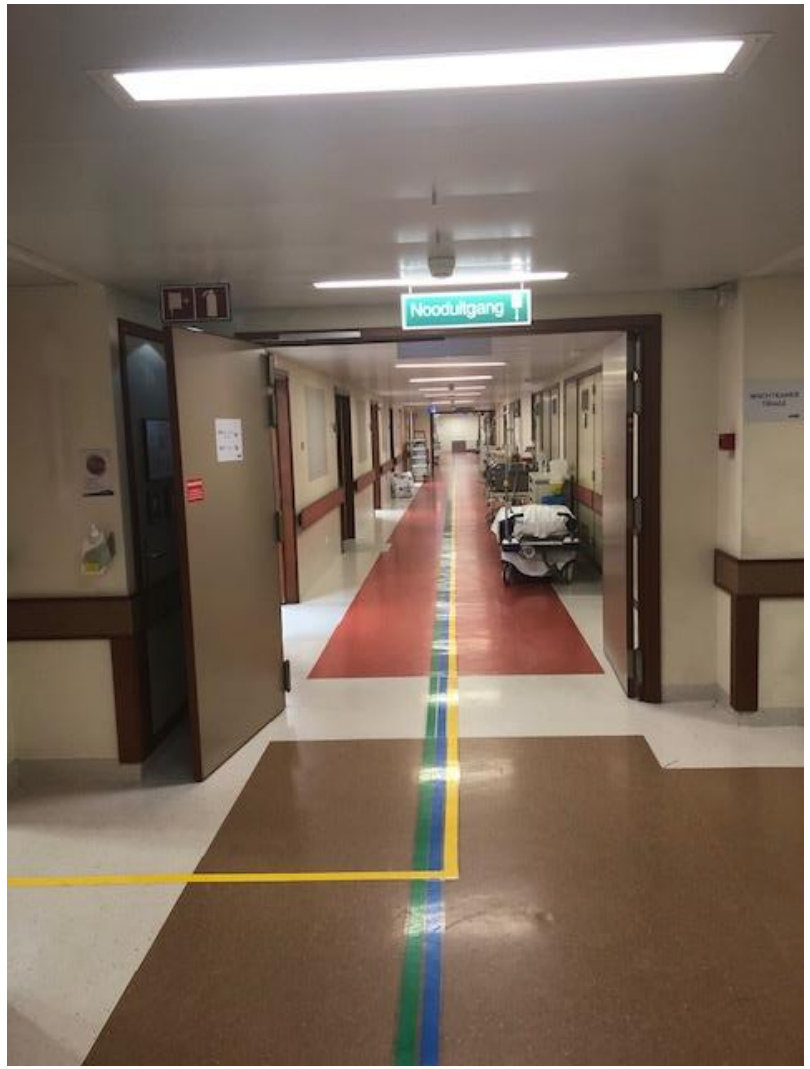

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Powers WJ. Stroke 2018 Mar;49(3):e46-e110

Opvang en triage in het ziekenhuis

ARTICLES

Reducing in-hospital delay to 20 minutes in stroke thrombolysis

Atte Meretoja, MD, PhD, MSc (StrokeMed)
Daniel Strbian, MD, PhD
Satu Mustanoja, MD, PhD, MSc (StrokeMed)
Turgut Tatlisumak, MD, PhD
Perttu J. Lindsberg, MD, PhD
Markku Kaste, MD, PhD

Correspondence & reprint requests to Dr. Meretoja: atte.meretoja@fimnet.fi

ABSTRACT

Objectives: Efficacy of thrombolytic therapy for ischemic stroke decreases with time elapsed from symptom onset. We analyzed the effect of interventions aimed to reduce treatment delays in our single-center observational series.

Methods: All consecutive ischemic stroke patients treated with IV alteplase (tissue plasminogen activator [tPA]) were prospectively registered in the Helsinki Stroke Thrombolysis Registry. A series of interventions to reduce treatment delays were implemented over the years 1998 to 2011. In-hospital delays were analyzed as annual median door-to-needle time (DNT) in minutes, with interquartile range.

Results: A total of 1,860 patients were treated between June 1995 and June 2011, which included 174 patients with basilar artery occlusion (BAO) treated mostly beyond 4.5 hours from symptom onset. In the non-BAO patients, the DNT was reduced annually, from median 105 minutes (65–120) in 1998, to 60 minutes (48–80) in 2003, further on to 20 minutes (14–32) in 2011. In 2011, we treated with tPA 31% of ischemic stroke patients admitted to our hospital. Of these, 94% were treated within 60 minutes from arrival. Performing angiography or perfusion imaging doubled the in-hospital delays. Patients with in-hospital stroke or arriving very soon from symptom onset had longer delays because there was no time to prepare for their arrival.

Conclusions: With multiple concurrent strategies it is possible to cut the median in-hospital delay to 20 minutes. The key is to do as little as possible after the patient has arrived at the emergency room and as much as possible before that, while the patient is being transported. *Neurology*® 2012;79:306–313

QUALITY IMPROVEMENT REPORT

Reducing door-to-needle times in stroke thrombolysis to 13 min through protocol revision and simulation training: a quality improvement project in a Norwegian stroke centre

Soffien Chadli Ajmi,[1,2] Rajiv Advani,[3] Lars Fjetland,[4] Kathinka Dehli Kurz,[4,5] Thomas Lindner,[6,7] Sigrunn Anna Qvindesland,[8] Hege Ersdal,[2,6] Mayank Goyal,[9] Jan Terje Kvaløy,[5,10] Martin Kurz[1,11]

Meretoja A. Neurology 2012;79:306-313

Ajmi SC. BMJ Qual Saf 2019;0:1–10. doi:10.1136

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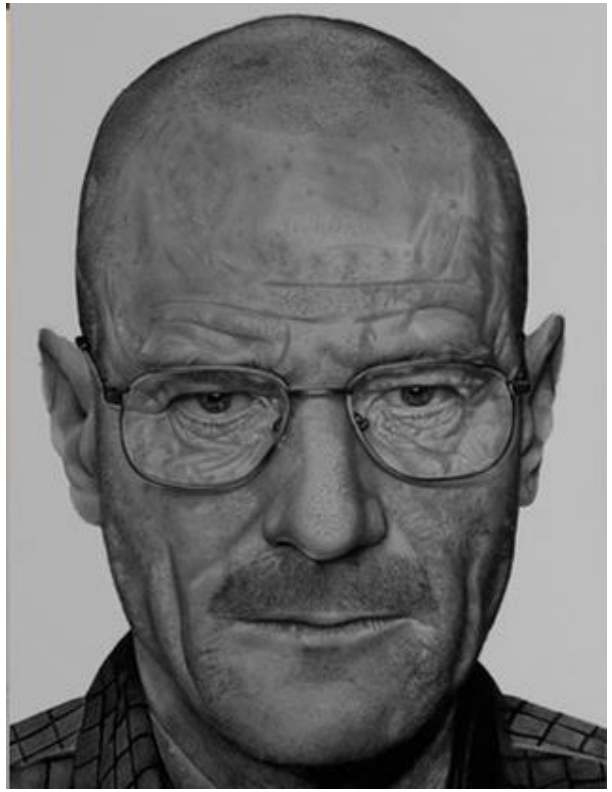

De klachten zijn gestart op: [redacted] 18:50.
Datum aankomst op SEH: [redacted] 20:13.
CT uitgevoerd op: [redacted] 20:24
Door-to-CT: 00:11 uur
[redacted]
Patient heeft zowel een intraveneuze trombolyse als een intra-arteriële trombect
Datum IV behandeling: [redacted] 20:30
Door-to-needle time: 00:17 uur
Dosis (mg): 81
Datum IA behandeling [redacted] 21:50
Door-to-groin: 01:37 uur
Interventie:
- Anesthesie: algemeen
- Aspiratie: ja
- Stent retriever: ja
- Ander device: nee
- Inter-arteriële trombolytica: nee
- Stent in toevoerende halsslagader: nee
- Reperfusiestatus: 3 volledige reperfusie
Revascularisatie heeft plaatsgevonden o [redacted] 22:30.
Door to revascularisation: 02:17 uur

Occlusieve trombose arteria carotis interna links met bijkomende thrombus in M1-gebied.

Opvang en triage in het ziekenhuis

- Aankomst ziekenhuis
- CT scan
- Behandeling

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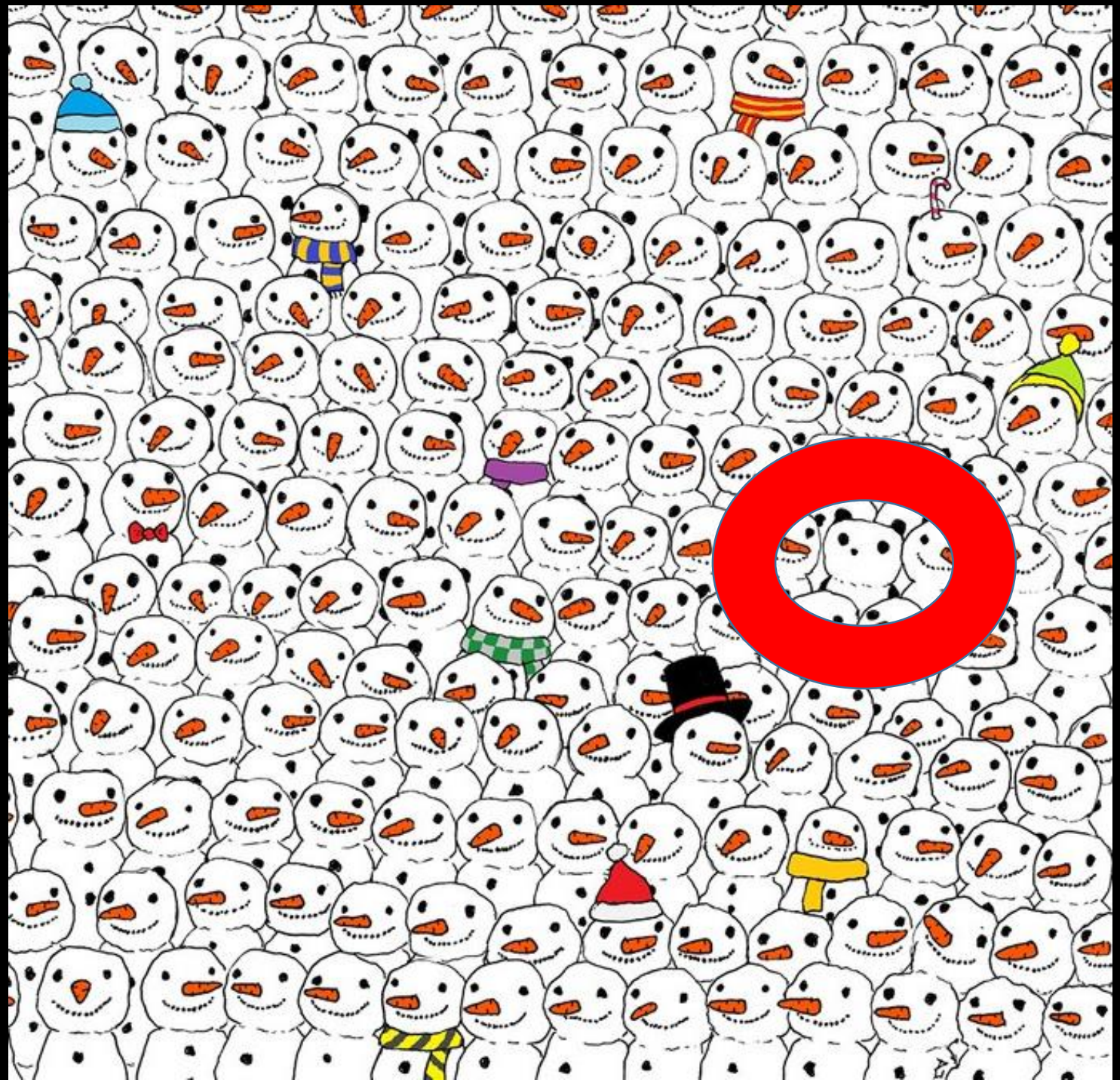

Ziekenhuis Oost-Limburg

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Bedankt voor uw aandacht!