

NEWSLETTER



EUSEN

European Society for emergency Nursing

EuSEN e-newsletter, edition 9, 2015

Merry Christmas

HAPPY HOLIDAYS

AND A HAPPY NEW YEAR

FROM

EUSEN BOARD



NEWSLETTER

EuSEN

European Society for emergency Nursing

Dear members

EuSEN e-newsletter, edition 9, 2015

It's been a moving year for EuSEN and the Board would like to take the chance to thank you all for your support in 2015.

This year we had the opportunity to participate as an association at the EuSEM conference in Torino, Italy in October.(www.eusem.org)

We took the chance and organized a nursing track within the scientific program of the conference.

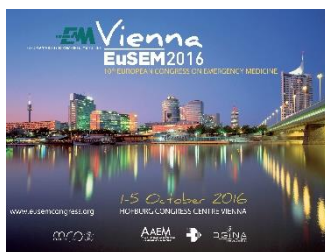
The day was filled with an interesting and diversified program. At this point we would like to sincerely thank the speakers for their participation.

It was pleasing and encouraging that all presentations, mainly delivered by nurses, enjoyed great attendance.

For those of you who missed the conference, we are happy to present the program within today's newsletter again. Furthermore, the speakers allowed us to share their papers or presentations with you in this newsletter.

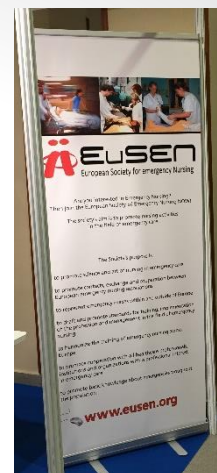
A major highlight during the conference was the exchange between the Boards of EuSEN and EuSEM. Within this meeting, ideas and future visions were exchanged. The interchange was very enriching and further collaboration for the conference 2016 in Vienna was discussed and planning will begin shortly.

Unfortunately, we missed many of you at our general assembly held (October 13th) So, hopefully we will see more of you again in 2016 when we all meet again during the EuSEM conference in Vienna, which will be held from 1-5 October 16.



The Executive Board of EuSEN wishes you all a good and healthy start into the new year and see you in Vienna at the next general assembly.

Petra Valk-Zwackl
Vice-President EuSEN



PROGRAM EuSEN TRACK EUSEM CONFERENCE 13/10/2015 TORINO

G31 – EuSEN Nursing Topic 1: TRAUMA

Chairs: Petra Valk-Zwinkl (Switzerland) and Door Lauwaert (Belgium)

- 9:00 Ole-Petter Vinjevoll (Norway): Post-trauma study on thorax-injury
- 9:30 Sigrun S Skuladottir (Iceland): Hip fractures among elderly- What did we find out in Iceland
- 10:00 Palù Katriona (Italy): Nursing care to trauma patients: local experience

G32 - EuSEN Nursing Topic 2: NURSING INTERVENTIONS & STANDING ORDERS

Chairs: Door Lauwaert (Belgium) and Ole-Petter Vinjevoll (Norway)

- 11:00 Standing Orders in: (presentation 10')
- - Switzerland (presentation by Petra Valk-Zwinkl)
- - Belgium (presentation by Yves Maule)
- - Norway (presentation by Ole-Petter Vinjevoll)
- - The Netherlands (presentation by Christien van der Linden)
- - Italy (presentation by Luciano Clarizia)
- - Iceland (presentation by Gudbjörg Pálsdóttir)
- 12:00 Door Lauwaert (Belgium): Summary recommendations for Europe

G33 - EuSEN Nursing Topic 3: Trends in ER Nursing

Chairs: Frans de Voeght (The Netherlands) and Gudbjörg Pálsdóttir (Iceland)

- 14:00 Yves Maule (Belgium): Echography by nurses in ED
- 14:30 Matthias Gijzen (Belgium): The role of a clinical pharmacist on the ED as benefit for the ER nurses
- 15:00 Rolf E. Egberink (The Netherlands): Emergency nurses and their impact on traumateam-approach

G34 - EuSEN Nursing Topic 4: ED organization from a nursing point of view

Chairs: Yves Maule (Belgium) and Luciano Clarizia (Italy)

- 16:00 Remco Ebben (The Netherlands): The briefing dilemma between pre-hospital and in-hospital
- 16:30 Doimo Ylenia (Italy): Code white" first assessment by emergency nurses"
- 17:00 Christien van der Linden (The Netherlands): Nursing solutions in an overcrowded ED

UNICO DEL MONDO IN CONTINUAZIONE
DALLA FERRIS DEL 1906
NEL SESTIERE DELL'INCANTATA CANTIERA MARINELLA

1916

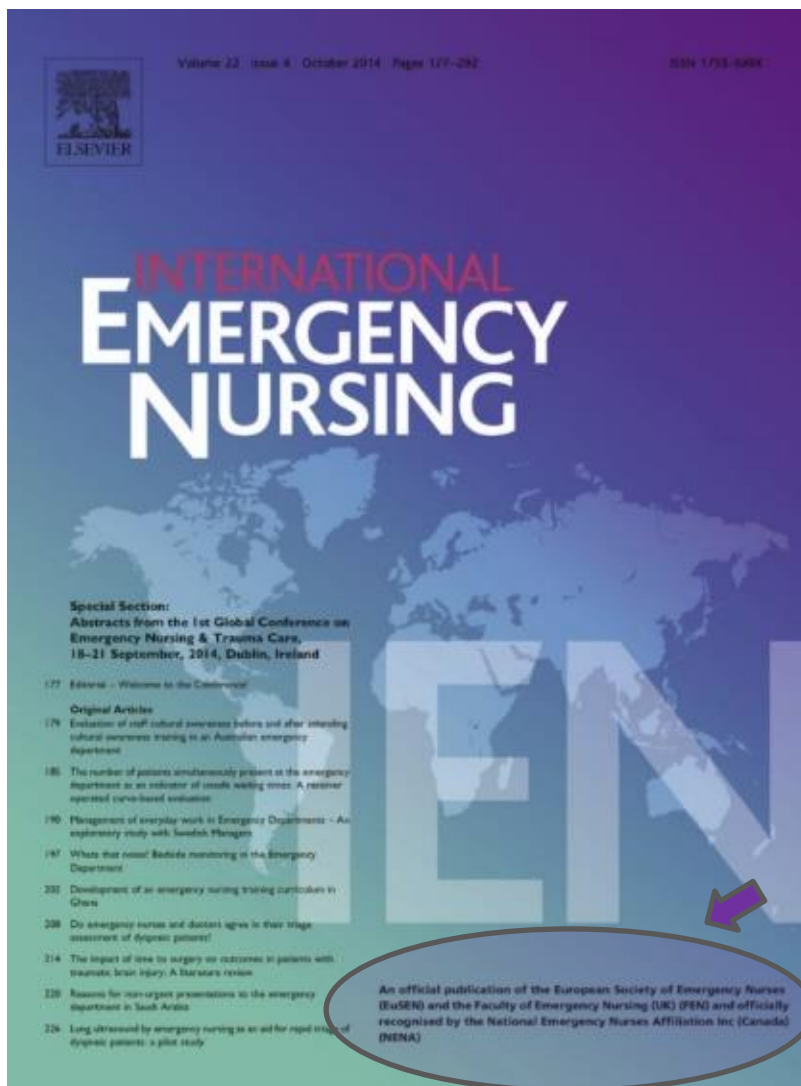
508 BALILLA

1934



Official Journal of European society for Emergency Nursing **EuSEN**

Subscription available with a
45% discount for EuSEN members





EuSEN

European Society for emergency Nursing

**Are you interested in Emergency Nursing?
Then join the European Society for Emergency Nursing NOW!**

The society's aim is to promote nursing activities in the field of emergency care

The Society's purpose is:

- to promote science and art of nursing in emergency care
- to promote contacts, exchange and cooperation between European emergency nursing associations
- to represent emergency nurses within and outside of Europe
- to draft and promote standards for training, implementation of the profession and management in the field of emergency nursing
- to harmonize the training of emergency nursing across Europe
- to promote cooperation with all healthcare professionals, institutions and organizations with a professional interest in emergency care
- to promote basic knowledge about emergencies throughout the population.

EuSEN is a NON-Profit association. To be a member with EuSEN you need to be a member of a local or national emergency nurse association. The association needs to have local standards and official statutes.

Do you want to learn more about the EuSEN Please contact :

The President of EuSEN

Door Lauwaert

Post address: UZ Brussel, Emerg. Dpt, Laarbeeklaan 101, 1090 Brussels, Belgium

Or door.lauwaert@uzbrussel.be

To join us - Fill in the admission form on the next page.



EUSEN

European Society for emergency Nursing

Application form EuSEN

Name of the Association

.....

Country.....

URL Website.....

Number of members.....

Does the association follow official statutes **Yes** **No**

The associations main purpose in emergency care

.....
.....
.....

Name of the President.....

Contact address, E-Mail and phone number

.....
.....

Second contact person of the association (if not the President is the contact person)

.....

Contact address, E-Mail and phone number

.....
.....

Send the application form and relevant documents presenting your organization to:

The President of EuSEN Door Lauwaert

Post address: UZ Brussel, Emerg. Dpt, Laarbeeklaan 101, 1090 Brussels, Belgium

Or door.lauwaert@uzbrussel.be



EUSEN

European Society for emergency Nursing



Board:

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Website: Yves Maule (B)

Newsletter editors:

Petra Valk-Zwicl (CH) - Door Lauwaert (B)

Other executive committee members:

Luciano Clarizia (I)

Frans de Voeght (NL)

Gudbjörg Palsdottir (ISL)

www.eusen.org



EuSEN

European Society for emergency Nursing

STANDING ORDERS

Summary Recommendations

Door Lauwaert

- preprinted order sets
- advanced nursing interventions
- advanced triage protocols
- computerized order sets

method of enhancing safety while
expediting patient care

Definition SO - protocol

- SO are **institution-based guidelines (national?)**, developed for **specific disease conditions** or **chief complaints**, that allow the emergency nurse to **initiate diagnostic tests** and **interventions** before the patient is evaluated by a provider

- Reports:

decrease patient LOS in the ED by

- making diagnostic test results available early
- improving patient time to care
- bed availability

.Retezar, R., Bessman, E., Ding, R., Zeger, S. L., & McCarthy, M. L. (2011). The effect of triage diagnostic standing orders on emergency department treatment time. *Annals of Emergency Medicine*, 57(2), 89–99. doi:10.1016/j.annemergmed.2010.05.016

Stauber, M. A. (2013). Advanced nursing interventions and length of stay in the emergency department. *Journal of Emergency Nursing*, 39(3), 221–225. doi: 10.1016/j.jen.2012.02.015

Early implementation of SO

- **facilitate** the early treatment of pain
- **decrease delays** in critical interventions
 - antibiotic administration for patients with pneumonia
 - thrombolytic therapy for patients with acute myocardial infarction

The use of SO

Recommendations

- The use of SO is an important strategy to
 - expedite care
 - improve patient flow
 - increase patient safety

Recommendation

- Emergency nurses **collaborate** with **interprofessional colleagues** to **develop, approve, and evaluate** evidence-based protocols and SO within the emergency nursing scope of practice to assure they are **consistent** with **current best practices**

Recommendation

- A significant and specific authorization from the issuer
- Clearly specify the issuer of each SO

Recommendation

- The issuer retains overall responsibility to:
 - ensure the legislative requirements for the standing order are met
 - ensure that anyone operating under the standing order has the appropriate training and competency
 - audit and review the standing order

Recommendation

- Contents of a standing order
- Period for which the standing order applies
- Record keeping
- Competency, including training
- Review of standing orders

Recommendation

Thank you

and ...

The paper is open for discussion



STANDING ORDERS IN ITALY FOR EMERGENCY NURSES

EUSEN Torino 13/10/2015

DOTT. LUCIANO CLARIZIA

In Italy there are not real "Standing Order" but a series of protocols varied from region to region (for exemple: See and Treat in Toscana), and in some cases between the regional hospitals.

The only national reference standards in which we can find indications are:

Decree of the President of the Republic of 27 March 1992 "act of agreement between the Region and state guidelines on concrete requirements and functional organization of the network of health emergency ... (Decree 118)

Art. 4 Section 2: "The Operations Centre is open 24 hours a day and employs nurses trained ... **the responsibility is entrusted to nurses** ... as part of the protocol decided by the doctor in charge of the Operations Centre"



Guidelines of the Ministry of Health to define the Triage ...



Even for Nurses who work in the emergency room with the publication of the guidelines for the system of emergency-urgency pursuant to Presidential Decree 27/03/1992 of the Ministry of Health, the state - regional Conference, **define function of the Nurse Triage** "... within the emergency department must be provided for the function of Triage, as first reception and evaluation of patients according to criteria for establishing priorities for action. This function is performed by the **nurse** trained, who operates according to protocols established by the Director "

These regulations impose on the nurse to acquire skills "advanced clinical skills and abilities that allow them to provide competent nursing care in Critical Area and emergency"

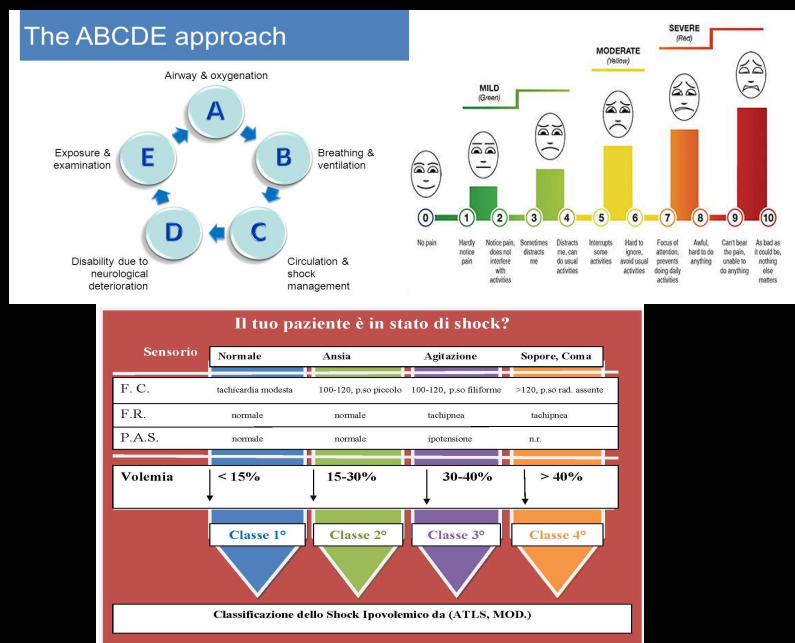
Provincial / Regional Protocols :

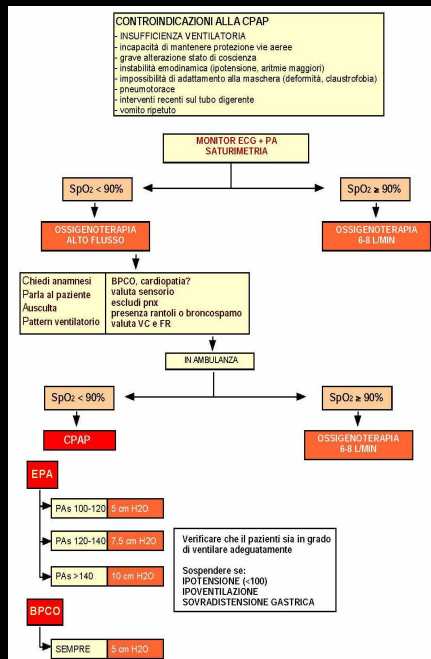
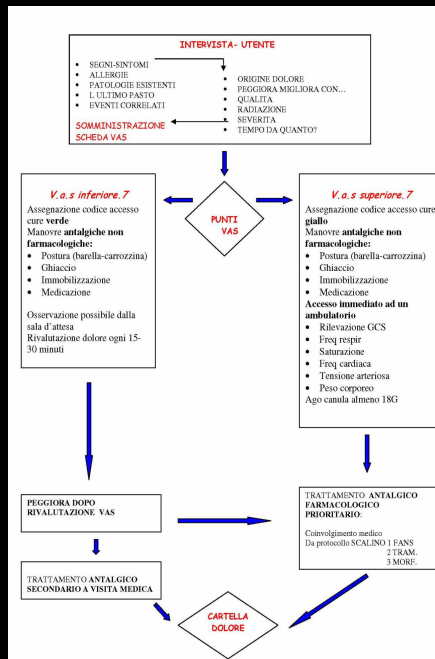
In most Italian regions are present **emergency vehicles (Ambulance) nursing (61%)**, where nurse can do following treatments utilizing protocols :



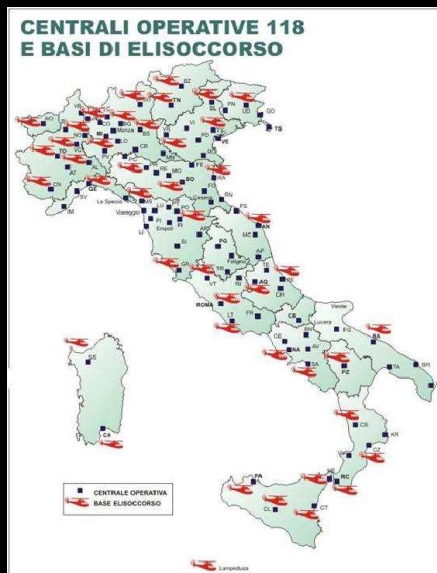
- treat the airway in stopping breathing (endotracheal intubation....)
- treat acute congestive respiratoria (CPAP /

Protocols: Some examples





In Italy
 20 Regions:
 C.O. 118 = 85
 HEMS = 44



University Training Nurses

The actual training to become nurses and to continue their studies - once obtained the title to exercise professional - is developed in accordance with the Decree of the Ministry of the University of 3 November 1999, n. 509 and subsequently amended by dm October 22, 2004, n. 270

Science in Nursing (University degree) - Dm 19 February 2009

It aims to provide students an adequate command of general scientific methods and contents. It is the right title for professional exercise. The academically duration is 3 years.

degree (5 years) - Decree 270/04

It aims to provide students an advanced level of education for the exercise of high complexity activities. The duration is 2 years.

Master of first level

deepening scientific and high permanent and recurrent training in specific areas (critical care, geriatrics, pediatrics, mental health, public health, nursing management etc.), Following the title of Science in Nursing.

Second level master

deepening scientific and high permanent and recurrent training in specific areas, following the achievement of the degree (5 years).

Ph.D (Research)

It provides the skills needed to practice at universities, public or private entities, research and highly qualified.

A short in ITALY: NURSE SPECIALIST

With paragraph 566, Parliament gave the green light to a potential and innovative questioning of the current organization of work in health care, re-evaluating and redefining the skills Nurses

The Stability Law 2015 have paved the way to the specialist skills of nurses: six areas of expertise (1. Geographical area, nurse Family. 2. Area intensive. 3. Area emergency-Urgency. 4. Area Medical. 5. Area surgical. 6. Area neonatology \ Pediatric) and a change of course for the profession and the assistance, an important and crucial for the profession and an opportunity to change the face of 'assistance.

Thanks

for

your

attention



Standing Orders for nurses in Switzerland Paediatric Hospitals

Petra Valk-Zwickl

Definition

"Standing Orders"

“Standing orders” :

- are generally written, valid regulations that the nursing staff administers independently to the patient
- have a general validity for all patients who meet the criteria
- show a significant difference to a medical prescription; which intends to be for a particular patient, particular date or a particular period of time
- will be replaced by doctor's prescription as soon as noted in writing
- stands always below a doctor's prescription

Regulations «Standing orders» in Switzerland

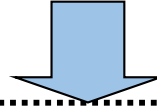
- “Standing orders” vary from hospital to hospital, no national standards
- Standing orders for nurses developed in interdisciplinary paediatric Swiss emergency departments to meet two important criteria:
 - **Promote patients comfort**
 - **Expedite care and patients flow**

Regulations «Standing orders» in Switzerland

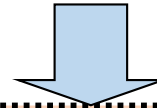
- “Standing orders” allow nurses a certain autonomy to treat a patient independently to a certain level
- To be qualified to use the “ Standing orders”, a specific training session needs to be attended, as well as appropriate knowledge needs to be given
- “Standing orders” stand in accordance with organisational guidelines for nurse initiated practice
- Based on the allocated triage category the patient will get the appropriate interventions

Triage process

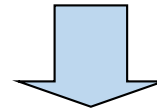
Patient presents to ED



Primary triage decisions
triage assessment
allocation of triage category
allocation of appropriate treatment area



Secondary triage decisions
initiation of interventions to expedite care & promote comfort



Ongoing assessment & care

3 groups of «standing orders» management

- Medication
- Diagnostics
- Initiating treatment

Medications

- Analgesia (61,3%)
- Antipyretics (45,1%)
- Oral rehydration solution (61,3%)
- Local anaesthetic gel /crème (61,3%)
 - skin preparation for wound suturing, blood taking or inserting i.v. cannula
- Administering Oxygen (61,3%)

- Antiepileptics (6,5%)
- Antiemetics (3.2%)
- Inhalation treatment (3.2%)

Medications:

the most common used «Standing orders»

- Paracetamol p.o. or i.v.
- Ibuprofen p.o.
- Nalbuphine i.v.
- Tramadol p.o.
- Glucose 10% p.o. babies < 6 month

Standing Orders Schmerztherapie: Nalbuphin Nalbuphin – Orpha®
(20mg/2mL) i.v.

| Gewicht kg | Einzel-dosis |
|------------|--------------|
| mg | |
| 05 – 10 | 0,5 – 1 |
| 10 – 14 | 1 – 2 |
| 15 – 19 | 1,5 – 3 |
| 20 – 24 | 2 – 4 |
| 25 – 29 | 2,5 – 5 |
| 30 – 34 | 3 – 6 |
| 35 – 39 | 3,5 – 7 |
| 40 – 44 | 4 – 8 |
| 45 – 49 | 4,5 – 9 |
| 50 – 100 | 5 – 10 |

Verdünnung: 1 ml Nalbuphin Orpha® + 9 ml NaCl 0,9% oder Glucose 5% ☐ 1
ml = 1 mg

Empfohlene Dosis: 0,2 mg / kg KG (fettgedruckte Zahl)

Diagnostics

- Pulmonary auscultation
- Urin specimen
- Nurse initiated X-ray; lower limb fractures
- Blood sugar level
- Blood gas analysis
- ECG

“First aid” interventions; initiating treatment

- Cooling burn wounds
- Stop bleeding - wound assessment
- Elevating, bandaging, cooling limb injury
- Repositioning of pulled elbow
- Tick removal
- Splinting of injured extremities



**Bye bye
Switzerland**

Welcome Belgium





Standing Orders Emergency Departments, the Netherlands



October 13, 2015



Dr. M.C. (Christien) van der Linden
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chris10vanderlinden@hotmail.com

Definition Standing Orders

Medical orders developed for particular patient conditions or complaints that nursing staff use to carry out specific studies and procedures in advance of physician evaluation*

* Ann.Emerg. Med 2011; 57:89-99

Klinische wachtlijstregistratie

Agenda: Lijst DBC's van SEH AH

Agenda: Lijst DBC's van SEH WZ

Patiënt overdracht

SEH overdracht WE

SEH DBC controle AH

SEH DBC controle WE

Digitaal Dossier

SEH Medisch Dossier

Behandelbeperking

SEH Verpleegkundig dossier

SEH triage MTS2 + HAP

Inzage Digitaal Dossier

Inzage SEH dossier

SEH opdrachten

Radiologieaanvraag SEH (nieuw)

EPD-dashboard

64 jaar V

6602303

12-09-1950



- Aandoeningen
- Aantekeningen
- Afspraken
- Allergien
- Ambulant-verrichtingen
- Archief dossiers
- Beantwoordingen
- DBC's
- Documenten
- ECG
- KCL
- Medicatieijst
- MMB
- Multimedia
- Operaties
- Overige

Routingscherm, Lokatie: Westeinde

15-12-2014

Aangemeld (1)

| T | RTijd | G | Patiënt | Klacht |
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| 11:10 | M | | | via ha to intern |

Wachtkamer (16)

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| M | | 16:09 | M | 85 | | br ha, t o heello | Nex |
| M | | 16:21 | V | 43 | | br ha, t o MDL | Nex |
| M | | 16:23 | V | 59 | | br ha, t o intern | Nex |
| L | | 16:45 | M | 61 | | fax ha to intern | Nex |
| | | 16:42 | V | 29 | | (niet in WK 17. | Nex |
| | | 16:56 | V | 50 | | (zit in observati | Nex |
| | | 17:14 | M | 18 | | skieeen gevallen | Nex |
| | | 17:21 | M | 45 | | pijn i arm; afwij | Nex |
| | | 17:28 | V | 38 | | buikpijn, koorts | Nex |
| | | 17:29 | V | 29 | | tel overl gyn, gi | Nex |
| | | 17:32 | M | 23 | | via hap tav inte | Nex |
| | | 17:35 | V | 61 | | benauwd; hoest | Nex |
| | | 17:36 | M | 12 | | gips laat los | Nex |
| | | 17:43 | V | 23 | | pijn bij plassen; | Nex |
| | | 17:46 | V | 64 | | retour seh; r vc | Nex |

Elders

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| 15:43 | M | | | via AHove t o kind |

Einde SEH

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| 12:47 | M | HEE | | | via rönt |
| 13:32 | M | HEE | | | op sport |
| 14:30 | V | HAP | | | kattenk |
| 12:29 | V | GAS | | | via ha, t |
| 13:33 | V | NEU | | | mg insu |
| 14:11 | V | HEE | | | hand ve |

Triage kamer

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| W200, 01 | pob; zweet | 58 | R |
| 17:51 | | | |

Grote traumakamer

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| W2GT, 01 | | | R |
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Kleine traumakamer

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| W2TR, 01 | via ha, t o HDL; o 09A2/0040/4 | 58 | R |
| 12:06 | | E.A. GAS | |

CT kamer

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| W2CT, 01 | | | R |
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Cardio kamer

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| W2CA, 01 | voelt zich zwak, i | 66 | R |
| 15:32 | | A | |

W2CA, 02

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| W2CA, 02 | afd is gebeld, via 05CC/0080/4 | 83 | R |
| 14:54 | | CAR | |

W201, 01

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| W201, 01 | verward | 54 | R |
| 17:13 | | A | |

W202, 01

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| W202, 01 | br ha to heelkun | 84 | R |
| 16:43 | | HEE | |

W203, 01

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| W203, 01 | collaps | 72 | R |
| 15:53 | | CAR | |

W205, 01

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| W205, 01 | pijn vastzittend i | 61 | R |
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W206, 01

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| W206, 01 | br ha, t o heelkur | 14 | R |
| 16:18 | | HEE | |

W206, 02

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| W206, 02 | | | R |
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Kinder kamer

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| W207, 01 | brief huisarts. t. i | 0 | R |
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W208, 01

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| W208, 01 | 17:20 naar echo l | 32 | R |
| 16:02 | | INT | |

W209, 01

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| W209, 01 | somatische screi | 78 | R |
| 16:11 | | INT | |

W210, 01

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|----------|------------------|----|---|
| W210, 01 | sub cad eruit na | 74 | R |
| 15:47 | | B | |

Gips kamer

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|----------|------------------|--------|---|
| W20K, 01 | br ha to heelkun | 33 | R |
| 12:33 | | va HEE | |

Familie kamer

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| W2FK, 01 | | | R |
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Nachthospitaal

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| W2NH, 01 | br ha, to int | | |
| 14:36 | | | |

W2NH, 02

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| W2NH, 02 | ontstoken sh | | |
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W2NH, 03

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| W2NH, 03 | | | |
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W2NH, 04

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| 13:37 | | | |

Low Care Unit

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| 15:50 | | | |

LCU, 02

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| LCU, 02 | via ha, t o inte | | |
| 14:26 | | | |

LCU, 03

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| LCU, 03 | | | |
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LCU, 04

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| 17:10 | | | |

Spreekkamer

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| W2SK, 01 | | | |
|----------|--|--|--|

Dagmeldingen (0)

Wijzigen

Toevoegen

Verwijderen

Verversen

Behandelaars

Personeel

Opname

Sluiten

Objectives SO's

- To improve operational efficiency
- To reduce ED length of stay
- To reduce ED overcrowding (and thus reduce adverse clinical outcomes, patient dissatisfaction and stress on clinical staff)
- To reduce patients LWBS

- Institution-based since 2000
- Uniformed standardized in the new triage system (Dutch Triage Standard), implemented gradually throughout the country



SO's at triage

Advantages

- Decreases LOS
- Improves patient satisfaction
- Particularly useful in certain diagnostic groups
- Enhances quality of care
- Decreases patients LWBS

Disadvantages

- Unnecessary ancillary diagnostics?
- Increase in elapsed target times to treatment
- Increase in patients LWBS

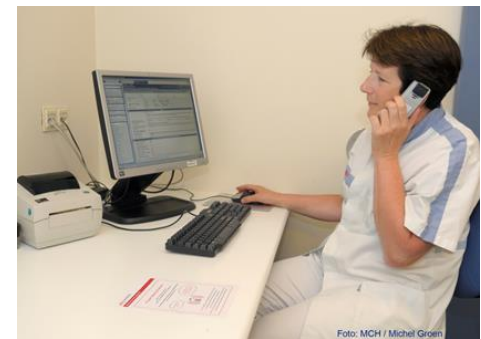
SO's at triage I

- CEN-driven pain protocol, including opioids
- Vaccines (influenza, tetanus)
- Radiology when suspected # (using OAR, OKR)
- Abdominal complaints: urine, lab, HCG
- Scheduled return abdominal complaints: ultrasound
- Asthma: nebulizer treatment, bloodgas



SO's at triage II

- Genitourinary complaints: urine
- Fever: Tylenol, lab
- Chest pain: EKG, lab, oxygen, IV
- SOB: X-thorax, EKG, lab, bloodgas, oxygen, IV
- HVS: EKG, bloodgas
- Hypoglycaemie: glucose, IV, lab, bloodgas



Conditions SO's at triage

- Approved guidelines (emergency physicians): evidence based protocols
- CEN's performing triage (it costs money to perform SO's, not only for the insurance compagny, but also the patients' own risk)
- Target times to triage are priority 1; advanced triage or SO's priority 2
- Needed: knowledge (CEN) & flexibility
- Quality control: radiologist at ED, targets emergency physician, daily evaluation



Diagnostic testing
at triage using
standing orders
is associated with
a reduction
in ED LOS

Thank you!



ORIGINAL RESEARCH

Open Access



Trauma team activation varies across Dutch emergency departments: a national survey

Rolf E. Egberink^{1,2*}, Harm-Jan Otten², Maarten J. IJzerman², Arie B. van Vugt³ and Carine J. M. Doggen²

Abstract

Background: Tiered trauma team response may contribute to efficient in-hospital trauma triage by reducing the amount of resources required and by improving health outcomes. This study evaluates current practice of trauma team activation (TTA) in Dutch emergency departments (EDs).

Methods: A survey was conducted among managers of all 102 EDs in the Netherlands, using a semi-structured online questionnaire.

Results: Seventy-two questionnaires were analysed. Most EDs use a one-team system (68 %). EDs with a tiered-response receive more multi trauma patients ($p < 0.01$) and have more trauma team alerts per year ($p < 0.05$) than one-team EDs. The number of trauma team members varies from three to 16 professionals. The ED nurse usually receives the pre-notification (97 %), whereas the decision to activate a team is made by an ED nurse (46 %), ED physician (30 %), by multiple professionals (20 %) or other (4 %). Information in the pre-notification mostly used for trauma team activation are Airway-Breathing-Circulation (87 %), Glasgow Coma Score (90 %), and Revised Trauma Score (85 %) or Paediatric Trauma Score (86 %). However, this information is only available for 75 % of the patients or less. Only 56 % of the respondents were satisfied with their current in-hospital trauma triage system.

Conclusions: Trauma team activation varies across Dutch EDs and there is room for improvement in the trauma triage system used, size of the teams and the professionals involved. More direct communication and more uniform criteria could be used to efficiently and safely activate a specific trauma team. Therefore, the implementation of a revised national consensus guideline is recommended.

Keywords: Emergency medical services, Emergency service hospital, Emergency nursing, Multiple trauma, Triage, Patient care team, Decision making, Emergency department, In-hospital trauma triage, Trauma team activation

Background

Trauma team activation

The activation of a multidisciplinary trauma team to assess and treat seriously injured patients is an integral part of the management of trauma and has been shown to improve health outcomes [1–5]. Since the introduction of trauma teams, most emergency departments (EDs) worldwide use a one-team trauma response: one type of trauma team is activated for every incoming trauma patient. Due to growing concerns of overtriage and increasing costs, tiered-response trauma team activation (TTA)

was introduced in the nineties [4, 6–15]. If a one-team response is used, a full trauma team is required in the ED for every trauma patient. When using a tiered-response, the size and expertise of a trauma team is tailored to the condition of the patient: activation of a full trauma team for severely injured patients and a modified trauma team for patients with minor injuries [3–5]. Activating a modified team means using less staff and resources, and therefore also results in less disruption of other clinical activities elsewhere in the hospital. The decision to activate a specific team usually is an in-hospital triage decision and is mostly guided by protocols or algorithms using multiple criteria and scoring systems [1–8, 10, 13, 14, 16].

In-hospital trauma triage systems have particularly focussed on the appropriate use of resources within the

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hospital [6]. Triage criteria for TTA must balance the required resources to provide care and the probability of undertriage: under-treatment resulting in avoidable morbidity or mortality [1]. Overtriage obviously is costly and may be considered an inefficient use of staff and resources [6, 14]. Internationally, size and composition of trauma teams and the process and criteria for in-hospital TTA are reported to vary on a local basis depending on resources, experience and level of adoption [2, 4, 5, 14, 17–21]. A system with a tiered-response has been shown to contribute to a safe and efficient TTA by reducing the amount of resources required and by improving patient outcomes, but may be inappropriate in EDs with a low number of trauma patients or with less experience in trauma care [4, 6–8, 10–14, 16].

Trauma teams in the Netherlands

Since 1997 trauma care in the Netherlands has been part of eleven regional healthcare systems, incorporating regional organisation of individual Emergency Medical Services (EMS), the designation of trauma centres, and the creation of a national network of Helicopter Emergency Medical Services (HEMS) [22]. Hospitals with an ED are classified in three levels of care facilities, namely: level 1 hospitals with full facilities (trauma centres) providing multi trauma care; level 2 hospitals with intermediate facilities for trauma without the need for neurosurgery; and, level 3 hospitals with basic facilities for the care of a trauma patient [1, 22]. Allocation of trauma patients to a hospital with the appropriate level of facilities is organized according to a pre-hospital trauma triage flowchart from the Dutch national protocol for EMS [6, 22–24]. ED staff is preferably pre-notified of an incoming trauma patient, directly by the (H)EMS team, or indirectly by an Emergency Medical Dispatcher (EMD), and activates a trauma team according to the hospital protocol [6].

In the Netherlands, an algorithm is available from the Dutch national protocol for the ED on when to upgrade the standard ED team and recommendations for communication of the pre-hospital information and the size and composition of Dutch trauma teams are available in national EMS and ED guidelines and standards for trauma surgeons [23, 25, 26]. It is unknown to what extent these protocols and guidelines are used in practice and if uniform criteria are being used in the different EDs.

In 2010 concentration of high complex patients, such as multi trauma patients, took place in the Netherlands. The number of multiply injured patients presented to level 2 and 3 EDs has reduced since then [22, 27]. The infrequency of trauma patients in these EDs should not deter the formation of trauma teams, in fact it is a major reason for forming such teams [18]. Only one study described the use of tiered trauma team response in the Netherlands [6]. No information on the national level on

TTA is available. The primary objective of the present study therefore is to evaluate the existing practice of TTA in EDs in the Netherlands. More specifically, we investigated size and composition of different teams, communication and decision making using patient information, and satisfaction with the current system, comparing EDs with a one-team and with a tiered-response in-hospital trauma triage system. Results might facilitate the implementation of a revised national consensus or guideline that contributes to a safe and efficient deployment of trauma teams in the Netherlands.

Methods

Study design and population

A semi-structured online questionnaire was sent out to all ED managers of Dutch hospitals providing trauma care. ED managers were identified using a list of 102 Dutch hospitals with an ED [28]. A brief explanation of the objectives of the study was given using a telephone call. ED managers that wished to participate received an e-mail with further explanation of the study and a hyperlink to fill out the questionnaire online. Reminders were sent after four weeks. Questionnaires were filled out between May 30, and July 26, 2011. The study was submitted to the regional medical ethics committee and was deemed exempt from ethical review according to Dutch law governing scientific research with humans.

Questionnaire

The questionnaire consisted of the following topics: general characteristics of the ED (including number of multi trauma patients and number of trauma team alerts per year), type of in-hospital trauma triage system, composition of different trauma teams, type of communication between ED and (H)EMS, available information from the pre-hospital setting, criteria used in the decision making process at the ED, satisfaction and usefulness of currently used trauma triage system.

The items in the questionnaire were selected based on a review of the literature on in-hospital trauma triage, supplemented with information obtained through participant observation at a level 1 trauma centre and a regional ambulance service. The questionnaire was further developed and evaluated for content and readability by an expert panel, consisting of an ED physician, trauma surgeon, ED manager, epidemiologist and a policy advisor on trauma care.

Statistical analysis

Data were analysed using descriptive statistics. Results are presented in frequencies, percentages, medians and range (min-max). Counts for different categories were compared by the Chi-square test. Statistics were performed with the use of SPSS version 18 (SPSS Inc., Chicago, IL).

Results

Ninety out of 102 (88 %) ED managers responded to the on-line questionnaire. Thirteen questionnaires were excluded because less than 50 % of the questions were answered and another five were excluded because no formalized trauma team was used in the ED. This resulted in 72 (71 %) questionnaires used for analysis. Eleven of the 13 level 1 EDs in the Netherlands participated (85 %), 32 of the 45 level 2 (71 %) and 29 of the 44 level 3 EDs (66 %). See Additional file 1: Table S1a, which presents characteristics of the participating EDs by in-hospital trauma triage system used.

In-hospital trauma triage systems in practice

Most EDs use a one-team trauma triage system ($n = 49$, 68 %), 23 EDs (32 %) use a tiered trauma response system, with either two or three teams (Table 1). EDs using a one-team trauma triage system can be level 1, 2 or 3 EDs. Most of these EDs receive less than 50 multi trauma patients (80 %) and have less than 50 trauma team alerts (80 %) each year. More than 50 % of the one-team EDs are intermediate in size, according to the total number of ED patients per

year (10,000 to 25,000) and number of full-time equivalent (FTE) emergency nurses (15 to 30 FTE). EDs using a tiered-response are mostly level 1 and 2 EDs. The EDs with a tiered-response receive more multi trauma patients annually ($p < 0.01$), have more trauma team alerts per year ($p < 0.05$) and are larger than the one-team EDs, according to the total number of ED patients per year and number of FTE emergency nurses (Table 1).

Size and composition of trauma teams

The overall number of trauma team members varies from three to 16 professionals from different medical, nursing and other health specialties (see Additional file 1: Table S1b, which illustrates the composition of the different trauma teams by in-hospital trauma triage systems used). Trauma teams in a one-team ED have a median of seven team members (three to 13 team members). Of the 23 EDs with a tiered-response 19 have two teams and four EDs have three teams. The median number of team members for the largest team is ten (five to 16 team members), eight for the intermediate team (five to 12 team members) and for the smallest team five (three to seven team members). Composition of the different teams varies widely, but more than 50 % of the one-team teams and the largest teams of tiered-response EDs consist of at least two ED nurses, an emergency physician, a (trauma)surgeon, a surgery/orthopaedics resident, an anaesthesiologist, a radiologist and a radiographer. More than 50 % of the smallest teams of tiered-response EDs consist of at least one ED nurse, an emergency physician, a surgery/orthopaedics resident and a radiographer. Some EDs describe the possibility to activate specific additional staff next to the formalized composition of the various teams, dependent on the needs of the patient, e.g. a thoracic surgeon.

Communication and decision making using patient information

Sixty-nine of the 72 EDs (96 %) receive a pre-notification from (H)EMS about the incoming trauma patient, mostly by telephone (93 %) (Table 2). Of the pre-notifications 39 % is communicated directly by (H)EMS to ED, 32 % indirectly to the ED through an EMD and 20 % by both (H)EMS and EMD. The ED nurse usually receives the pre-notification (97 %). There were no differences between the one-team and tiered-response EDs with regard to the professional communicating the pre-notification (Table 2). The decision for TTA is made by an ED nurse (46 %; of which 20 % by the ED nurse receiving the pre-notification), ED physician (30 %), or by multiple professionals (20 %). In EDs with a tiered-response nurses more often appeared to decide about TTA compared to one-team EDs (59 % versus 40 %). ED physicians make less decisions on TTA in tiered-response EDs compared to one-team EDs (18 % versus 36 %). However, the

Table 1 Characteristics of EDs

| | One team $n = 49$ (68.1 %) | Tiered response $n = 23$ (31.9 %) | <i>P</i> -value* |
|---|----------------------------------|---|------------------|
| Level of ED, n (%) | | | 0.05 |
| Level 1 ($n = 11$) | 5 (10.2) | 6 (26.1) | |
| Level 2 ($n = 32$) | 20 (40.8) | 12 (52.2) | |
| Level 3 ($n = 29$) | 24 (49.0) | 5 (21.7) | |
| Number of multi trauma patients per year, n (%) | | | <0.01 |
| <50 ($n = 51$) | 39 (79.6) | 12 (52.2) | |
| 50-200 ($n = 12$) | 8 (16.3) | 4 (17.4) | |
| >200 ($n = 9$) | 2 (4.1) | 7 (30.4) | |
| Number of trauma team alerts per year, n (%) | | | <0.05 |
| <50 ($n = 51$) | 39 (79.6) | 12 (52.2) | |
| 50-200 ($n = 13$) | 8 (16.3) | 5 (21.7) | |
| >200 ($n = 8$) | 2 (4.1) | 6 (26.1) | |
| Total number of ED patients per year, n (%) | | | 0.29 |
| <10,000 ($n = 8$) | 7 (14.3) | 1 (4.3) | |
| 10,000-25,000 ($n = 40$) | 28 (57.1) | 12 (52.2) | |
| >25,000 ($n = 24$) | 14 (28.6) | 10 (43.5) | |
| FTE ED nurses, n (%) | | | 0.59 |
| <15 ($n = 10$) | 8 (16.3) | 2 (8.7) | |
| 15-30 ($n = 44$) | 30 (61.2) | 14 (60.9) | |
| >30 ($n = 18$) | 11 (22.4) | 7 (30.4) | |

ED Emergency Department, FTE Full-Time Equivalent

*Chi-square test

Table 2 Communication and decision making using patient information

| | Total <i>n</i> = 69* <i>n</i> (%) | One team <i>n</i> = 47 <i>n</i> (%) | Tiered response <i>n</i> = 22 <i>n</i> (%) | <i>P</i> -value** |
|---|---|---|--|-------------------|
| Type of pre-notification | | | | 0.28 |
| Telephone call | 64 (92.8) | 42 (89.4) | 22 (100.0) | |
| Digital on mobile device | 1 (1.4) | 1 (2.4) | 0 (0.0) | |
| Other ^a | 4 (5.8) | 4 (8.5) | 0 (0.0) | |
| Professional sending pre-notification from pre-hospital setting | | | | 0.94 |
| EMD (indirect) | 22 (31.9) | 15 (31.9) | 7 (31.8) | |
| (H)EMS (direct) | 27 (39.1) | 19 (40.4) | 8 (36.4) | |
| (H)EMS and EMD (direct and indirect) | 14 (20.3) | 9 (19.1) | 5 (22.7) | |
| Other ^b | 5 (7.2) | 3 (6.4) | 2 (9.1) | |
| Unknown | 1 (1.4) | 1 (2.1) | 0 (0.0) | |
| Professional receiving pre-notification at ED | | | | 0.27 |
| ED nurse | 67 (97.1) | 46 (97.9) | 21 (95.5) | |
| first ED nurse present | 39 (56.5) | 26 (55.3) | 13 (59.1) | |
| triage nurse | 17 (24.6) | 14 (29.8) | 3 (13.6) | |
| coordinator/senior nurse | 11 (15.9) | 6 (12.8) | 5 (22.7) | |
| ED physician | 1 (1.4) | 0 (0.0) | 1 (4.5) | |
| Other ^c | 1 (1.4) | 1 (2.1) | 0 (0.0) | |
| Professional making decision for TTA | | | | 0.29 |
| ED nurse | 32 (46.4) | 19 (40.4) | 13 (59.1) | |
| ED nurse receiving pre-notification | 14 (20.3) | 9 (19.1) | 5 (22.7) | |
| triage nurse | 10 (14.5) | 5 (10.6) | 5 (22.7) | |
| coordinator/senior nurse | 8 (11.6) | 5 (10.6) | 3 (13.6) | |
| ED physician | 21 (30.4) | 17 (36.2) | 4 (18.2) | |
| emergency physician | 11 (15.9) | 8 (17.0) | 3 (13.6) | |
| (trauma) surgeon | 8 (11.6) | 7 (14.9) | 1 (4.5) | |
| other physician (not specified) | 2 (2.9) | 2 (4.3) | 0 (0.0) | |
| Multiple professionals | 14 (20.3) | 9 (19.1) | 5 (22.7) | |
| ED nurse and EMS | 1 (1.4) | 1 (2.1) | 0 (0.0) | |
| ED nurse and emergency physician | 6 (8.7) | 4 (8.5) | 2 (9.1) | |
| meeting with whole ED team | 7 (10.1) | 4 (8.5) | 3 (13.6) | |
| Other ^d | 2 (2.9) | 2 (4.3) | 0 (0.0) | |

ED Emergency Department, EMD Emergency Medical Dispatcher, EMS Emergency Medical Service, HEMS Helicopter Emergency Medical Services, TTA Trauma Team Activation

*Three of the EDs do not receive pre-notification; at these EDs decision for TTA is made by an ED nurse (coordinator/senior nurse) and other (*n* = 2; ED floor manager and protocol)

**Counts for different categories were compared by the Chi-square test

^aBy telephone call and electronically (*n* = 3), only electronically (screen on ED)

^bMultiple possibilities (*n* = 2), electronically, mostly by EMS nurse and sometimes by EMD

^cED nurse or emergency physician or secretary

^dNot specified

differences in the professional making the decision was not significantly different (*p* = 0.29).

The information most frequently available in a pre-notification is: blood pressure (83 %), pulse rate (80 %), and age and gender (both 77 %) (Table 3). However, other less available (<75 %) parameters are most often used as a

criterion for TTA: Airway-Breathing-Circulation (87 %), Glasgow Coma Score (90 %) and the Revised Trauma Score (85 %) or Paediatric Trauma Score (86 %). Fifty-four of the 72 EDs (75 %) have a protocol for in-hospital trauma triage. EDs with a tiered response more often have a protocol than EDs with one team.

Table 3 Availability of information in pre-notification ($n = 69$) and use in ED as a criterion for TTA

| | Available in pre-notification n (%) | Of which used as a criterion n (%)* |
|---------------------------------|--|--|
| Demographic information | | |
| Age | 53 (76.8) | 22 (41.5) |
| Gender | 53 (76.8) | 5 (9.4) |
| Pregnancy | 37 (53.6) | 21 (56.8) |
| Mechanism of Injury information | 51 (73.9) | 41 (80.4) |
| Physiologic parameters | | |
| Respiratory rate | 45 (65.2) | 27 (60.0) |
| Oxygen saturation | 49 (71.0) | 26 (53.1) |
| Pulse rate | 55 (79.9) | 29 (52.7) |
| Blood pressure | 57 (82.6) | 30 (52.6) |
| Airway-Breathing-Circulation | 52 (75.4) | 45 (86.5) |
| Glasgow Coma Score | 48 (69.9) | 43 (89.6) |
| Body temperature | 18 (26.1) | 11 (61.1) |
| Revised Trauma Score | 39 (56.5) | 33 (84.6) |
| Paediatric Trauma Score | 28 (40.6) | 24 (85.7) |
| Treatment given | 48 (69.6) | 33 (68.8) |
| Other information | | |
| Medical history | 25 (36.2) | 9 (36.0) |
| Infectious diseases | 20 (29.0) | 4 (20.0) |

ED Emergency Department, TTA Trauma Team Activation

*Percentage was calculated dividing number of used criteria by number of available criteria

Overall usefulness

Of the 72 respondents 56 % were satisfied with the current situation on in-hospital trauma triage and found their system useful. Satisfaction was higher in EDs with a tiered-response (65 % versus 53 %) and in EDs with a protocol present (62 % versus 44 %). Twenty-five respondents gave suggestions for improvement, including improvements for the ED or trauma care in general. Nine suggestions concern the communication between the pre-hospital setting and the ED, e.g. better use of the (electronic) pre-notification. Twelve of the 18 EDs without a protocol stated that a protocol with clear criteria for TTA would be an improvement for the whole trauma triage process.

Discussion

This study found that most Dutch EDs use a one-team trauma triage system, although a large variation was found in size and composition of trauma teams and the TTA process. Our results are largely consistent with the local variation found in several international studies on TTA [2, 4, 5, 14, 17–21]. Nonetheless, this is somewhat surprising considering that the quality improvement

activities for trauma care in the Netherlands since 1997 [22, 24] and the existence of national guidelines [23, 25, 26, 29] should suggest a more uniform TTA.

In-hospital trauma triage systems in practice

In the Netherlands, 94 % of the responding EDs indicate the presence of a trauma team, compared to 21 % to 98 % in other countries [12, 14, 15, 17, 18, 30]. Moreover, two-thirds of Dutch EDs use a one-team system. The relative low percentage of hospitals using tiered-response system is surprising, because previous studies have shown that a tiered-response is a safe and effective trauma triage method. Efficiency may also be improved because undertriage does not exist and overtriage has decreased from 70 % to 27 % [6]. In the latter study the in-hospital trauma triage was performed only after arrival of the patient, implying that for every trauma patient a full team was activated initially. Although tiered-response may be efficient, its benefits will not be reported if it is used after pre-notification of a trauma patient. Tiered-response after arrival of the patient also introduces delays in the management of the severely injured patient and is insufficiently sensitive to prevent under-activation of the team [9]. In our study, two EDs with more than 200 trauma team alerts, and another eight with 50 to 200 trauma team alerts per year used a one-team response. These relatively large EDs could possibly benefit from introducing a tiered-response system. We also found 12 EDs receiving less than 50 multi trauma patients per year and with less than 50 trauma team alerts per year using a tiered-response system. These EDs could probably best use a one-team system to maintain sufficient expertise and quality of trauma care. The overtriage in these cases then provides a training-opportunity [15].

Required size and expertise of trauma teams

In general, the optimum size of a trauma team varies from five (modified trauma team) to eight (full trauma team) team members [1, 2, 5, 31]. However, this study showed that Dutch trauma teams varied from three to 16 members. Internationally, the size of trauma teams also varies but less widely, i.e. from two to ten team members [2, 4, 5, 8, 14, 17–21]. Based on these figures, this study suggests that a reduction in the number of trauma team members is possible. Such reduction may lead to a cost-saving of at least \$431 in indirect cost savings per trauma team activation [10].

In addition to the size of the team the expertise required in the trauma team is vital to its function and efficiency [5]. The vast majority of full trauma teams in the Netherlands consists of a minimum required expertise that is close to what is observed in other countries [1, 2, 5, 14, 18]. The only deviation is the presence of a neurologist which is recommended according to the

Dutch guidelines, yet only found in 31 % of the EDs in our study [22, 25, 26]. In other countries the neurological status of a trauma patient often is assessed by an emergency physician, who is not yet 24/7 present in all Dutch EDs [27, 32]. Our study shows that the smallest of the modified trauma teams have an emergency physician and/or a surgical or orthopaedic resident, a radiographer and one ED nurse present. Whether this corresponds to the optimum composition of a modified team is not known, recommendations from scientific studies or Dutch guidelines are not available.

The ideal team should at least be available at all hours and consists of appropriately trained staff, such that junior members are not left alone in dealing with trauma cases [5, 14, 31, 33]. Surprisingly, the minimum level of expertise for full trauma teams differs between office-hours and out-of-office-hours [26], even though 47 % of all trauma patients arrive at the ED between 5 PM and 8 AM [34]. Therefore, future research should address the optimum composition of (modified) trauma teams, keeping in mind that commitment, organisation, training, experience and 24/7 availability are found to be more important than specialty or seniority of the individual professionals [2, 5, 14, 31, 33].

To contribute to a reduction of team size, the standard initial involvement of a neurologist, orthopaedic surgeon, ICU physician, neurosurgeon, and paediatrician could be reconsidered, especially since their participation in Dutch trauma teams is already limited and emergency physicians are being introduced as a 24/7 senior specialist in Dutch EDs. This professional could well play a more important role in initial trauma team care in the near future [27, 32], as they do in several countries [14, 30].

Communication and decision making using patient information

For a timely activation and preparation of an appropriate trauma team, ED staff need accurate information from the pre-hospital setting, preferably before patient's arrival [1–5, 14, 16]. To avoid errors, such pre-notification should ideally be communicated directly from the pre-hospital caregiver to the trauma triage decision maker in the hospital. Our study shows that the pre-notification is communicated indirectly through an emergency medical dispatcher in 32 % of the EDs, and the decision on TTA is not made by the same person who receives the information initially.

In several countries, the decision on TTA was mostly found to be a medical staff decision and not a decision made by ED nursing staff, except in some EDs in the US and Australia [3, 7, 11]. ED nurses in the Netherlands are well trained, are 24/7 present in the ED [22, 24] and this study shows they receive the pre-notification in 97 % of the EDs. Nevertheless, it is not clear if ED

nurses are the best suited professionals to make the decision on TTA.

Internationally, most EDs use a combination of anatomical, physiological and mechanistic criteria to activate a trauma team. However, none are universally accepted and criteria vary on a local or regional basis [2, 3, 9, 11, 14–16, 18]. Our results also show a wide variation in the criteria used by the ED staff to activate their trauma team. Variability in TTA criteria within the same country and region likely depends on the available resources and personnel responsible for setting up the trauma system, and are guided by a combination of experience from other hospitals, local adjustments and expert opinion, rather than based on an analysis of the trauma population [13, 15, 16]. TTA criteria should be a result from an analysis of in-hospital triage performed using the local or regional trauma population to achieve desired sensitivity [3, 5, 7, 13, 16].

Improved standardisation of activation criteria across EDs is needed. Advantages in standardization of criteria in a region or country with comparable trauma populations include: compatibility with EMS protocols improving communication; optimization of patient care; training; enabling staff-rotation between EDs; research and audit [16]. In addition, it is questionable whether the widespread use of the US ACS-COT field triage criteria for TTA [1, 15] is suitable for in-hospital use in other (European) countries. Despite the fact that the ACS-COT already deleted the Revised Trauma Score in 2006 [1, 35] as a triage criterion, it is still present in Dutch guidelines [23, 25] and when available to the ED (57 %) used in 85 % as a criterion for TTA.

Because of the existence of national guidelines [23, 25, 26, 29] a more uniform TTA was expected. Unfortunately, a study on the use of the Dutch national ED protocol also shows poor adherence (38 %) [36] and the recently developed Netherlands Triage Standard, for use in the ED, general practitioners and EMS, contains no algorithm for TTA [27, 29]. With the introduction of a new version of the national EMS protocol in 2014, the methodology for communication of pre-hospital information to the hospital changes [37]. Guidelines, training, local protocols and registration systems should be aligned with this pre-hospital protocol.

Strengths and limitations

By using online questionnaires, we were able to obtain an overview of nationwide clinical practice on this specific subject, in a relatively quick way with relatively low cost. By inviting all Dutch EDs to participate in this first national survey we were able to analyse the mechanisms for possible differences in in-hospital trauma triage between and within the different types of EDs in the Netherlands. With a high response rate and the participation of EDs at

all levels of trauma care from all over the country, the results are representative for the situation on TTA in the Netherlands. Unfortunately 13 questionnaires of initial responders had to be excluded because less than 50 % of the questions were answered, possibly due to the length of the questionnaire. As this is likely to be a random event we do not expect this to have influenced our results. Due to registration shortcomings, most EDs could not provide exact numbers on trauma team alerts and therefore these numbers were probably estimated close to the number of multi trauma patients. In practice EDs probably have more trauma team alerts than multi trauma patients and therefore even more EDs could probably benefit from a tiered-response trauma triage system.

Conclusions

In contrast to other countries, the concept of a trauma team is adopted by the majority of Dutch EDs involved in trauma care. Nevertheless there is room for improvement on several aspects: 1. Large EDs may benefit from introducing a tiered-response system and intermediate to small EDs may be better off using a one-team system; 2. Size and composition of trauma teams varies more widely than reported in other countries and a reduction of trauma team members may be possible and cost-saving; 3. Information that is used for in-hospital decision making could be communicated directly from pre-hospital caregiver to the decision maker, however, it is uncertain which professional is the best suited to make the decision on TTA; 4. The variety in TTA criteria employed and the in-hospital trauma triage process suggests the need for a more uniform set of criteria that could be used to efficiently and safely activate a specific trauma team. To address all aspects mentioned above, we recommend additional research which facilitates the development of a decision support instrument and secondly, the implementation of a revised national or European consensus guideline that contributes to a safe and efficient deployment of trauma teams.

Additional file

Additional file 1: Table S1a: Characteristics of the participating EDs by in-hospital trauma triage systems used Table S1b: Composition of the different trauma teams by in-hospital trauma triage systems used. (PDF 31 kb)

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

RE Study design, data collection, data analyses, writing manuscript, critically reviewed the manuscript. HJO Study design, data collection, data analyses, writing manuscript. MIJ Study design and critically reviewed the manuscript. AvV Study design and critically reviewed the manuscript. CD Study design, co-wrote and critically reviewed the manuscript. All authors have read and

approved the final manuscript and agree to be accountable for all aspects of the work.

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Conflict of Interest Disclosure

Speaker: Rolf Egberink & Manon Bruens

Title: Changing the triage method of self-referrals at the front door:
what does this mean for the patient population in a Dutch ED?

Member of a scientific committee ☐ YES ☐ NO

If so: ...

Speaking or writing in exchange for remuneration ☐ YES ☐ NO

If so: ...

Travel expenses and/or registration to congresses or other events covered ☐ YES ☐ NO

If so: travel expenses

Leader of research of clinical study ☐ YES ☐ NO

If so: ...

Changing the triage method of self-referrals at the front door: what does this mean for the patient population in a Dutch ED?

Rolf Egberink & Manon Bruens

October 13th, 2015

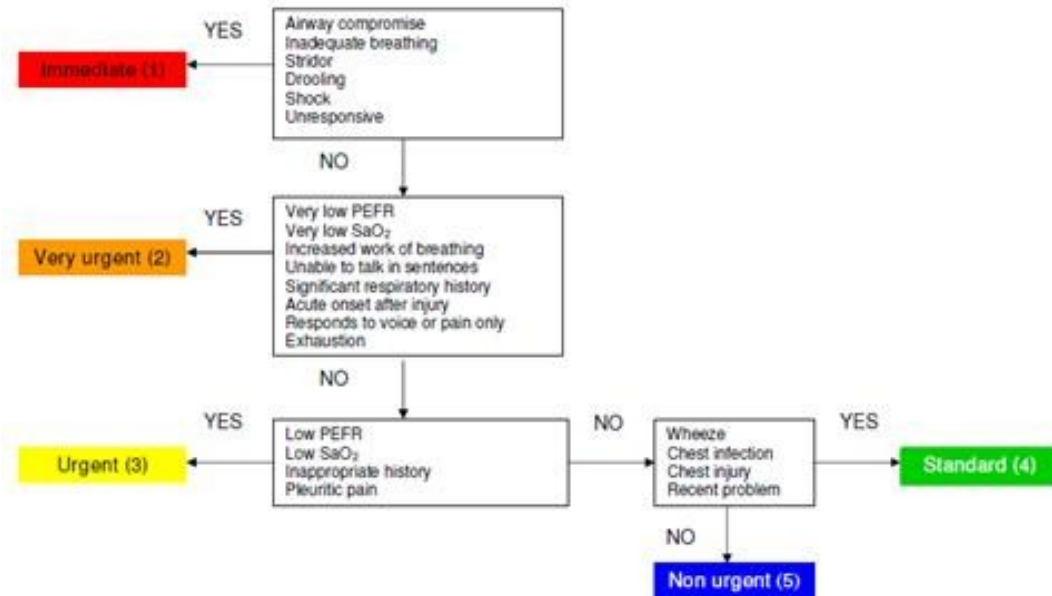
Introduction S-TriaGE

- Motive
- Method
 - Manchester Triage System (MTS) versus Netherlands Triage Standard (NTS)



MTS versus NTS

- Triage of ED patients
- Triage performed by ED nurse
- Reason to encounter
- → Level of urgency



MTS versus NTS

- Triage for every acute care setting (GP, ED, etc)
- Triage performed by experienced GP assistant (triagist)
- Reason to encounter
 - Level of urgency
 - Type of care needed

Richard van Duijn
22 jaar

ABC/D veilig

Ingangsklachten

Urgentie

Subjectief

Klacht/beloop:

Voorgeschiedenis:

Medicatie:

Hulpvraag:

Algemeen:

Informatie

Bijkwond:
Beet van mens of der.
Zie ook:
Insectensteeke, Tetanusvragen

Patient pathways



Case 1

- Saturday 15:32 h. 46 year old man with open wound



Case 2

- Friday 19:25 h, 20 day old baby boy



Case 3

- Sunday 11:30 h, 27 year old man



Case 4

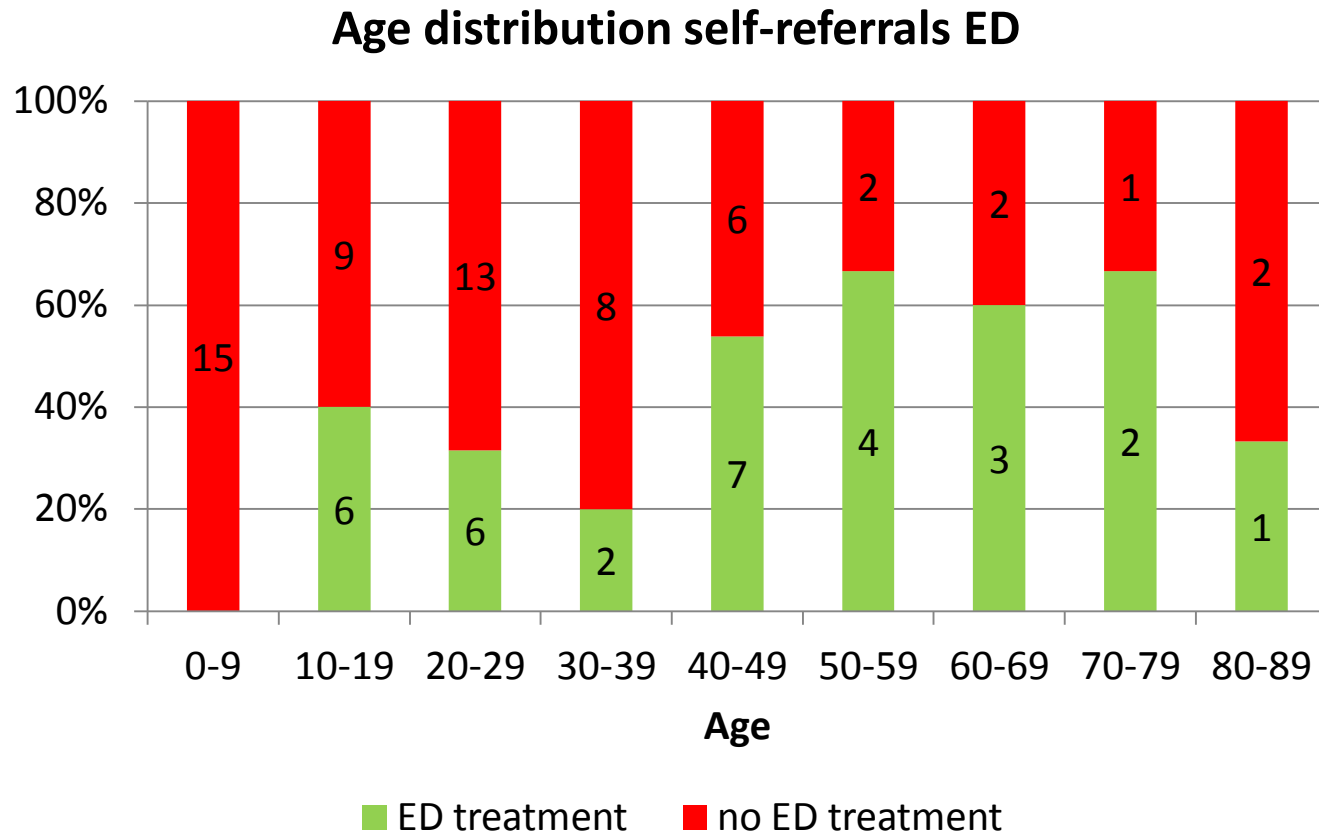
- Sunday 21:32 h, 72 year old man



Consequences ED I

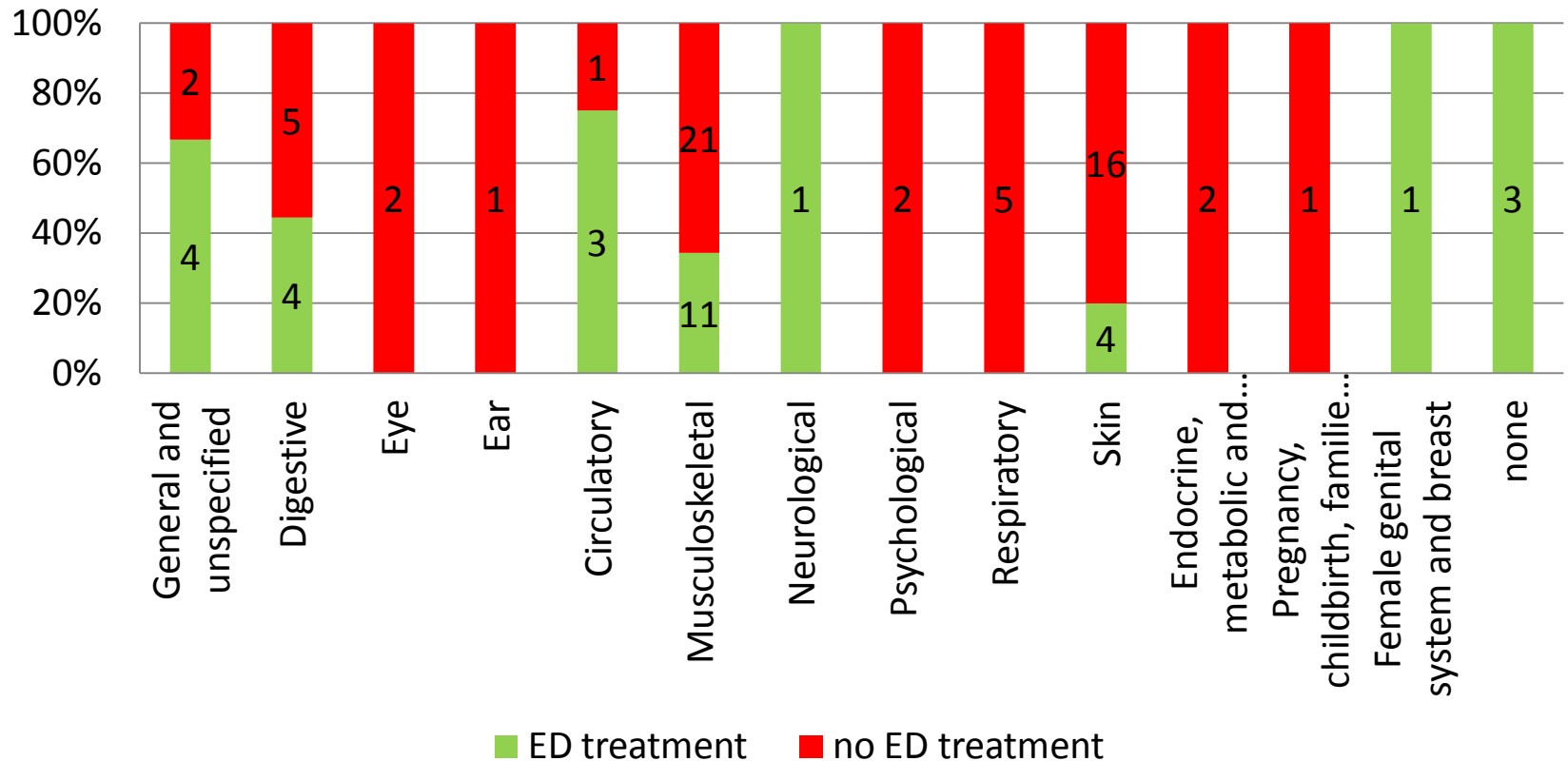
- Less patients to ED
(31 of 89 self-referrals, 35%)
- Total ED population will be more complex

Consequences ED II



Consequences ED III

Distribution of diagnoses (ICPC)
of self-referrals ED



Consequences ED nurse

- Experienced workload
 - less patients
 - more complex patients
 - less staff?
- Skills and routine

What do you think?

Thanks for your attention

For more information contact:



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r.egberink@acutezorgeuregio.nl

+31 53 487 2733



Manon Bruens

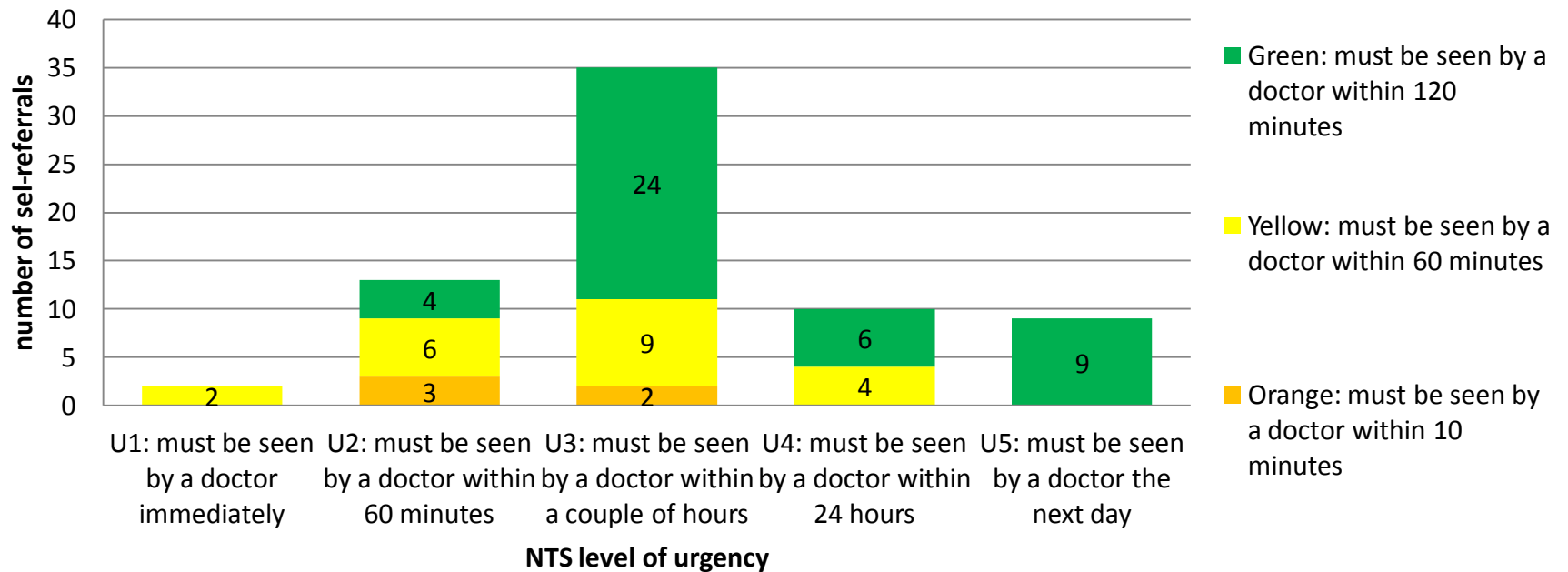
m.bruens@acutezorgeuregio.nl

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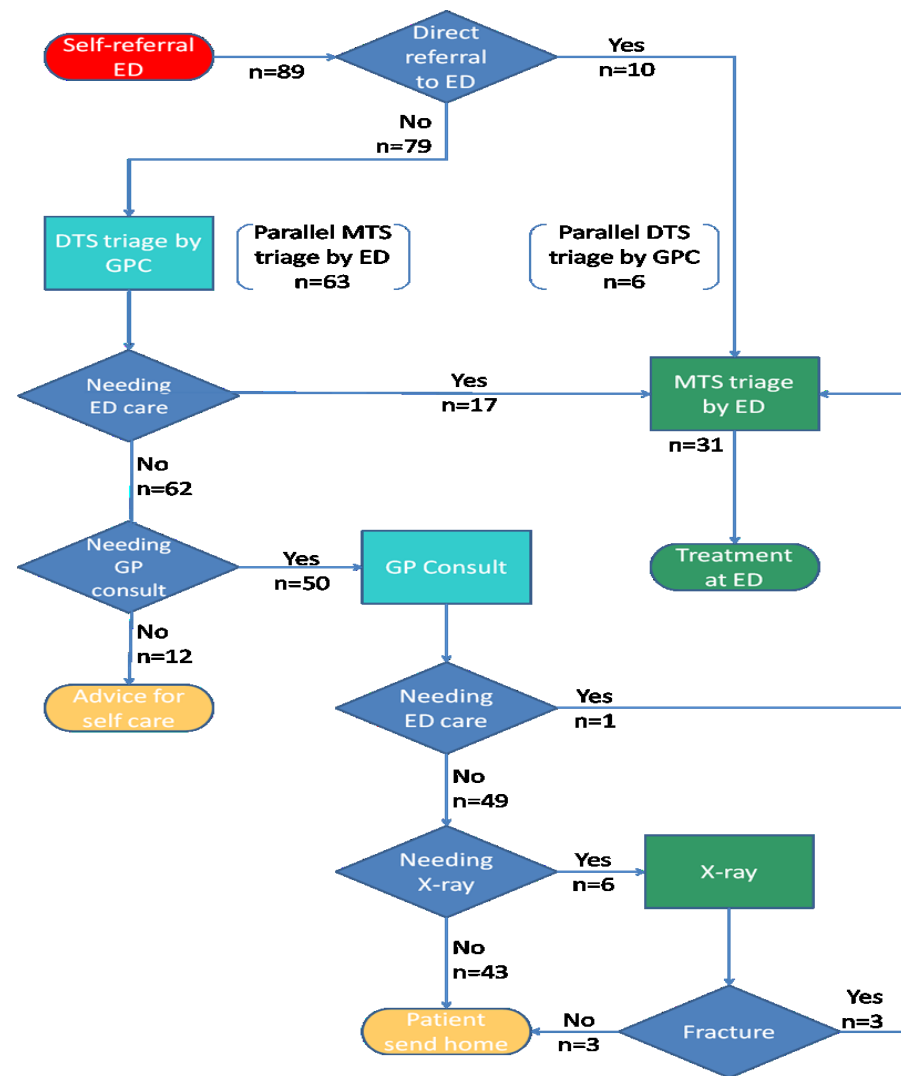
Back up slide

NTS level of urgency versus
MTS level of urgency



Results back up

- 89 self-referrals
- 70% GP
 - 13% advice for self care
- 4% both GP and ED consult
- 65% only GP care





EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

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LINGOTTO

EuSEM 2015 10-14 OCTOBER

Conflict of Interest Disclosure

Speaker: Rolf Egberink

Title: Emergency nurses and their impact on trauma team approach

No conflict of interest regarding
the content of this presentation

Emergency nurses and their impact on trauma team approach



UNIVERSITY OF TWENTE.



@RolfEgberink

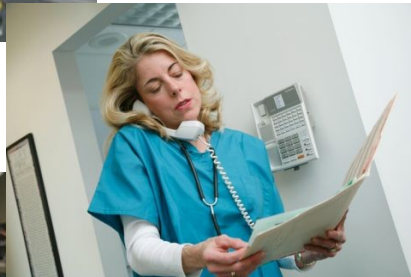




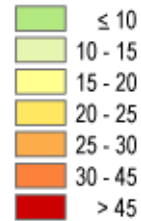
Content

- Dutch practice of trauma team activation in EDs
 - results of a national survey
 - emergency nurses' role
- Factors influencing emergency nurses' decisions on trauma team activation
 - results of a clinical vignette study on perceived importance of patient factors

Trauma care in the Netherlands

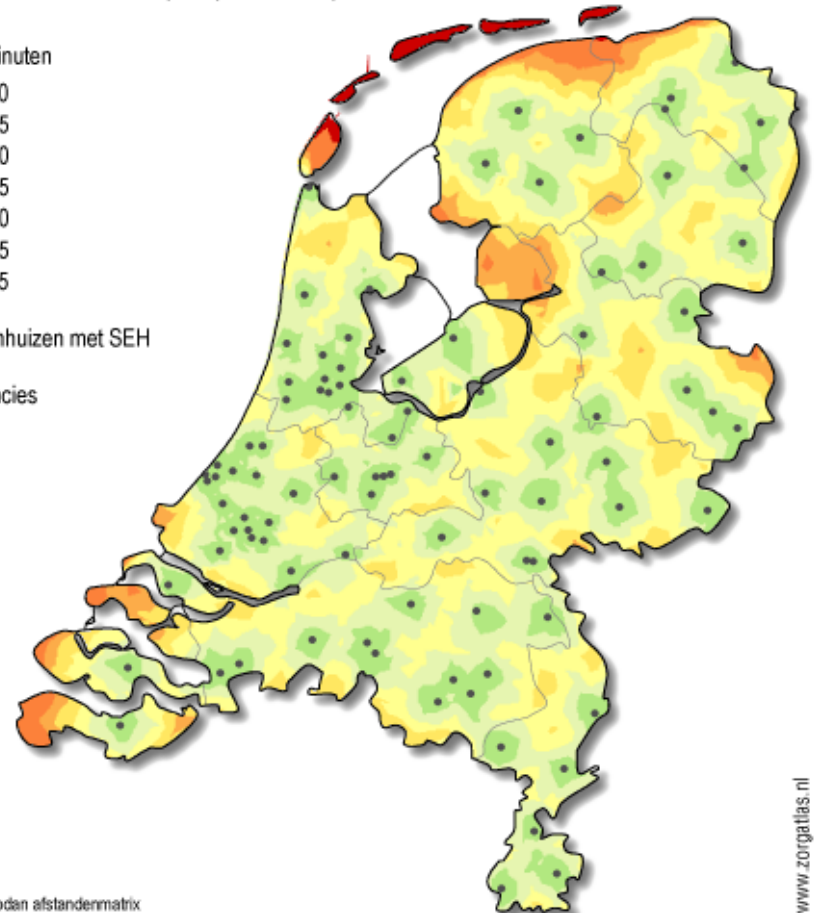


Reistijd in minuten



• ziekenhuizen met SEH

— provincies



Bron: RIVM, Geodan afstandenmatrix

www.zorgatlas.nl

Driving time to nearest hospital with ED
(by car; ED 24/7 open (n=94; 2013))

Methods

- Semi-structured online questionnaire
 - general characteristics of the ED (including number of multitrauma patients and number of trauma team alerts per year)
 - type of in-hospital trauma triage system
 - composition of different trauma teams
 - type of communication between ED and (H)EMS
 - available information from the pre-hospital setting
 - criteria used in the decision making process at the ED
 - satisfaction and usefulness of current practice
- All 102 hospitals with an ED in the Netherlands

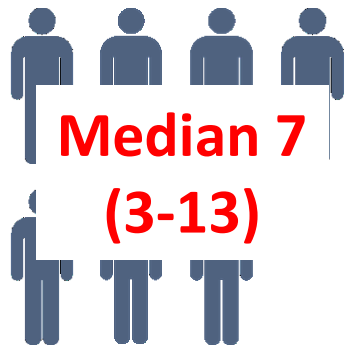
Results

- 72 (71%) of questionnaires analyzed
 - 11/13 level 1 EDs (85%)
 - 32/45 level 2 EDs (71%)
 - 29/44 level 3 EDs (66%)
- Most EDs use a **one-team system** (68%)
 - Of which 80% receives < 50 multitrauma patients
- EDs with a **tiered-response** receive **more multitrauma patients** ($p < 0.01$) and have **more trauma team alerts per year** ($p < 0.05$)

Results

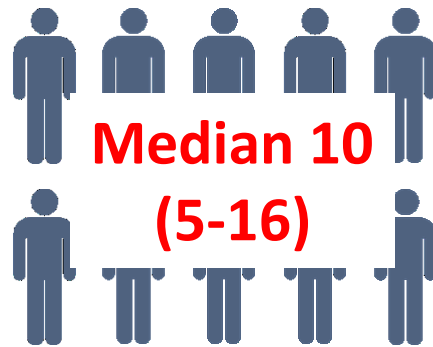
- trauma teams vary from 3 to 16 members

One team system

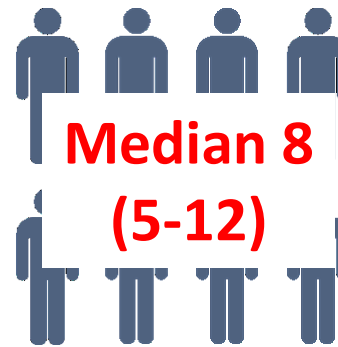


n=49

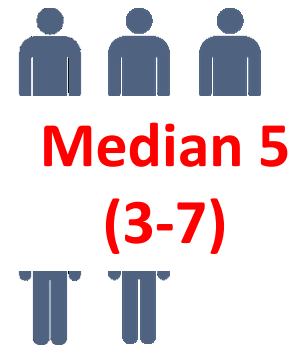
Tiered response system



n=23



n=4



n=23

- composition of the different teams varies widely
- in every team at least 1 or 2 **ED nurses**

Results

- 32% of pre-notification communicated indirectly to the ED through a dispatch center
- ED nurse usually receives the pre-notification (97%)
- Decision for trauma team activation is made by:
 - ED nurse (46%)
 - 20% by the ED nurse receiving the pre-notification
 - ED physician (30%)
 - multiple professionals (20%)

How is this done in your ED?

Conclusions

- Size and composition of trauma teams could be optimized
- More direct communication is needed
 - Information to decision maker
- Development of a national consensus guideline and decision support
- Insight in decision making by ED nurses
 - Are they the best trauma team activators?

Please find out more:



ORIGINAL RESEARCH

Open Access



Trauma team activation varies across Dutch emergency departments: a national survey

Rolf E. Egberink^{1,2*}, Harm-Jan Otten², Maarten J. IJzerman², Arie B. van Vugt² and Carline J. M. Doggen²

Abstract

Background: Tiered trauma team response may contribute to efficient in-hospital trauma triage by reducing the amount of resources required and by improving health outcomes. This study evaluates current practice of trauma team activation (TTA) in Dutch emergency departments (EDs).

Methods: A survey was conducted among managers of all 102 EDs in the Netherlands, using a semi-structured online questionnaire.

Results: Seventy-two questionnaires were analysed. Most EDs use a one-team system (68 %). EDs with a tiered-response receive more multi trauma patients ($p < 0.01$) and have more trauma team alerts per year ($p < 0.05$) than one-team EDs. The number of trauma team members varies from three to 16 professionals. The ED nurse usually receives the pre-notification (97 %), whereas the decision to activate a team is made by an ED nurse (46 %), ED physician (30 %), by multiple professionals (20 %) or other (4 %). Information in the pre-notification mostly used for trauma team activation are Airway-Breathing-Circulation (87 %), Glasgow Coma Score (90 %), and Revised Trauma Score (85 %) or Paediatric Trauma Score (86 %). However, this information is only available for 75 % of the patients or less. Only 56 % of the respondents were satisfied with their current in-hospital trauma triage system.

Conclusions: Trauma team activation varies across Dutch EDs and there is room for improvement in the trauma triage system used, size of the teams and the professionals involved. More direct communication and more uniform criteria could be used to efficiently and safely activate a specific trauma team. Therefore, the implementation of a revised national consensus guideline is recommended.

Keywords: Emergency medical services, Emergency service hospital, Emergency nursing, Multiple trauma, Triage, Patient care team, Decision making, Emergency department, In-hospital trauma triage, Trauma team activation

Background

Trauma team activation

The activation of a multidisciplinary trauma team to assess and treat seriously injured patients is an integral part of the management of trauma and has been shown to improve health outcomes [1–5]. Since the introduction of trauma teams, most emergency departments (EDs) worldwide use a one-team trauma response: one type of trauma team is activated for every incoming trauma patient. Due to growing concerns of overtriage and increasing costs, tiered-response trauma team activation (TTA)

was introduced in the nineties [4, 6–15]. If a one-team response is used, a full trauma team is required in the ED for every trauma patient. When using a tiered-response, the size and expertise of a trauma team is tailored to the condition of the patient: activation of a full trauma team for severely injured patients and a modified trauma team for patients with minor injuries [3–5]. Activating a modified team means using less staff and resources, and therefore also results in less disruption of other clinical activities elsewhere in the hospital. The decision to activate a specific team usually is an in-hospital triage decision and is mostly guided by protocols or algorithms using multiple criteria and scoring systems [1–8, 10, 13, 14, 16].

In-hospital trauma triage systems have particularly focussed on the appropriate use of resources within the

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Incoming trauma patient

Pre-notification from dispatch center or EMS to ED:

- Age category
- **Mechanism of injury**
- Injuries found / suspected
- **Signs (RTS / PTS)**
- Treatment given
- Estimated time of arrival
- Particularities

National Protocol

Prenotification and Transfer

Prenotification Form ED

* High Energy Trauma (HET):

- Fall of height >5 m (>16 ft)
- Traffic accident >65 km/h (>40 mph)
- Intrusion vehicle, occupant site >30 cm (>12 in)
- Intrusion vehicle, any site >50 cm (>18 in)
- Vehicle rollover
- Ejection (partial or complete) from vehicle
- Death in same passenger compartment
- Auto versus pedestrian, thrown, run over, or with >30 km/h (>20 mph)

- ABC-unstable
RTS < 11 / PTS < 9
- HEMS on scene
- 2-4 trauma patients at once
- Major incident

no

- Flail chest
- Inhalation injury
- Body temperature < 32° C (< 90° F)
- Drowning
- Burns > 15% BSA
- Penetrating injury head, thorax or abdomen
- Pelvic fractures
- ≥ 2 Proximal long-bone fractures
- Paralysis
- Amputation proximal to wrist or ankle
- Chemical injury

yes

no

- * High Energy Trauma (HET)
- Transfer < 24 h after trauma

yes

no

Full traumateam

Modified traumateam

No traumateam

Patient Factors

Mechanism of Injury
Injuries
Signs
Treatment
Age
RTS

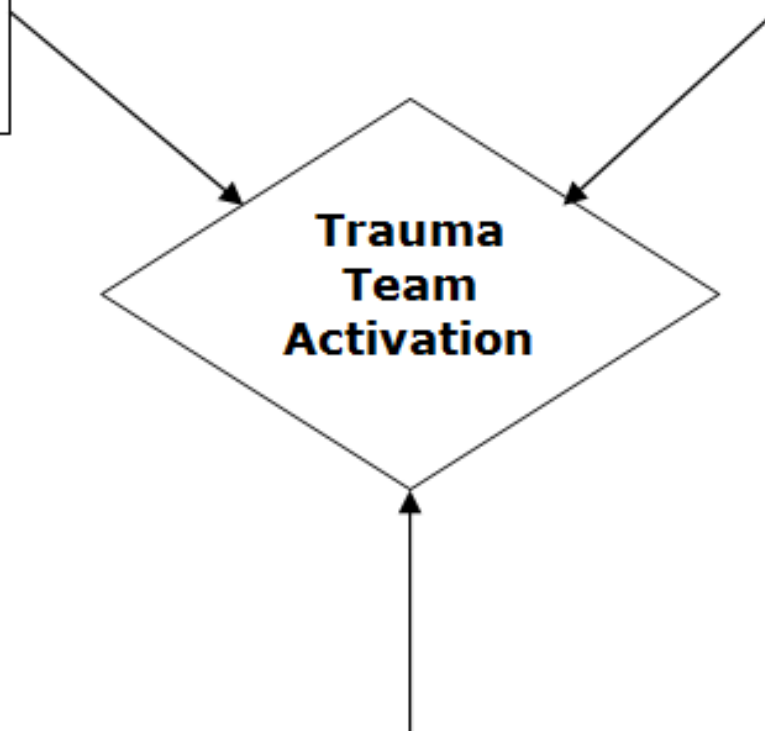
Individual Factors

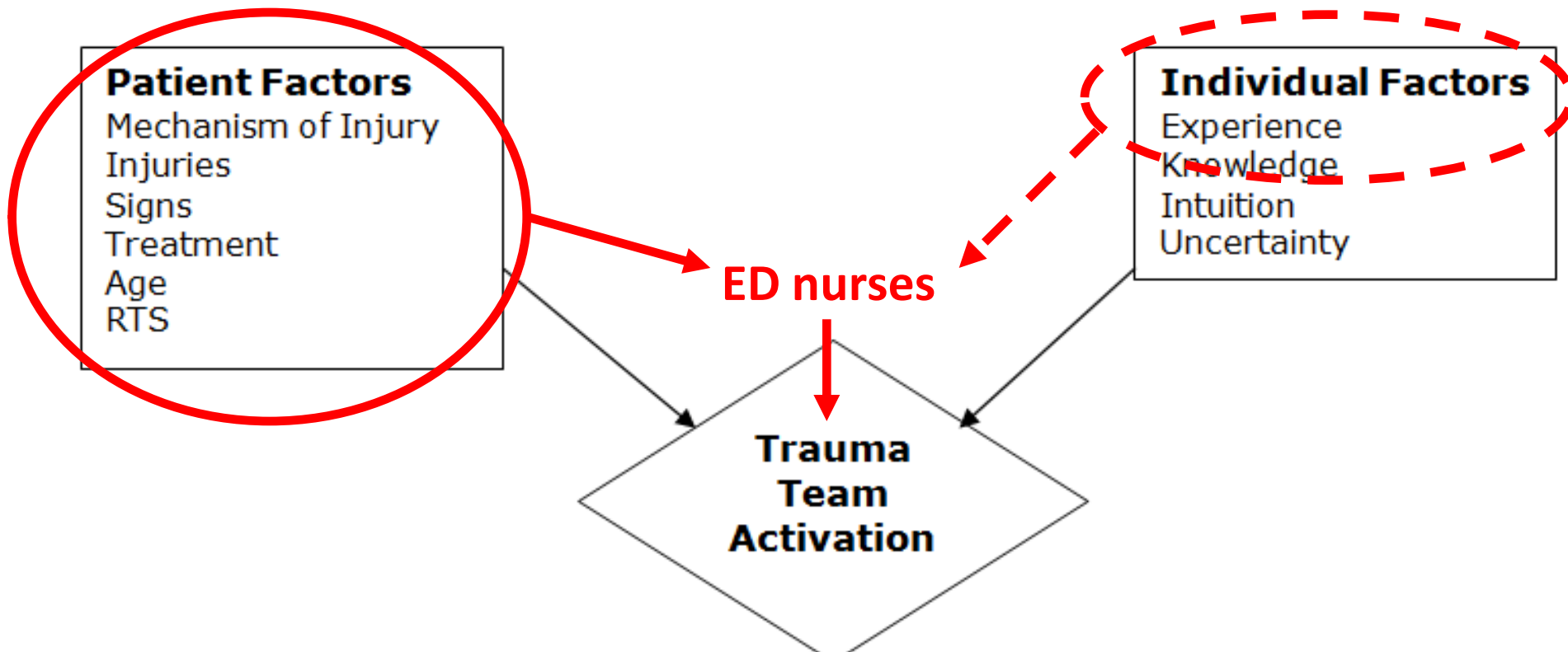
Experience
Knowledge
Intuition
Uncertainty

Trauma Team Activation

Contextual Factors

Busyness of ED
Recent errors in the ED
Time constraint
Lack of feedback
MMT





Research question:

What is the perceived importance of patient factors in the trauma team activation decision making process, for ED nurses at a Dutch Level 1 trauma centre?

- Is there an influence of the ED nurses' years of experience on the decision making process?

Methods

- Cross-sectional fractional factorial design
- 6 patient factors
- Questionnaires with 26 clinical vignettes
- 44 ED nurses of a Level 1 ED with a two-tiered trauma response
 - 27,000 ED patients/year
 - 200 multi trauma patients/year (ISS > 15)
 - 320 team activations/year (60% full and 40% modified TT)

6 Attributes - 22 levels

| | | | | |
|------------------------------|-----------------------------------|-----------------------------------|-------------------------|--------------------------------|
| Age | Child | Adult | Elderly | No information |
| Mechanism of Injury | Traffic accident >65km/hour (HET) | Fall height >5m (HET) | Fall with bicycle (LET) | Fall from stairs halfway (LET) |
| Injuries sustained | Blunt abdominal trauma (minor) | 2 fractures femur/humerus (major) | 1 fracture (minor) | Head wound (minor) |
| Airway Breathing | Stable | Unstable | Intubation | No information |
| Circulation | Stable | Unstable | No information | |
| RTS (PTS in children) | >11 (PTS >9) | <11 (PTS <9) | No information | |

Example Clinical Vignette

Vignette 12

Pre-notification from ambulance:

“We will arrive at your ED with a female patient who fell down the stairs halfway. She sustained possible fractures to her right upper arm and right femur. Airway and Breathing are stable. RTS 12.”

What kind of team would you activate for this patient?

- ☐ Normal ED team (ED physician and ED nurse)
- ☐ Modified trauma team
- ☐ Full trauma team

Why? Please rank the 3 most important factors in your decision.

(1=most important)

- 1.
- 2.
- 3.

Results

- 27/44 Questionnaires completed (61%)
 - ED nurses age: mean 43.4 y (25-61)
 - Years of experience: mean 16.3 y (3-36)
- Team activations per respondent:

| | Normal ED team | Modified trauma team | Full trauma team |
|------------------|----------------|----------------------|------------------|
| Mean (SD) | 2.2 (0.9) | 3.5 (2.2) | 17.0 (2.6) |
| Min-max | 1 - 5 | 0 - 9 | 9 - 20 |
| Total | 59 (9.6%) | 95 (15.5%) | 460 (74.9%) |

Results – importance of factors

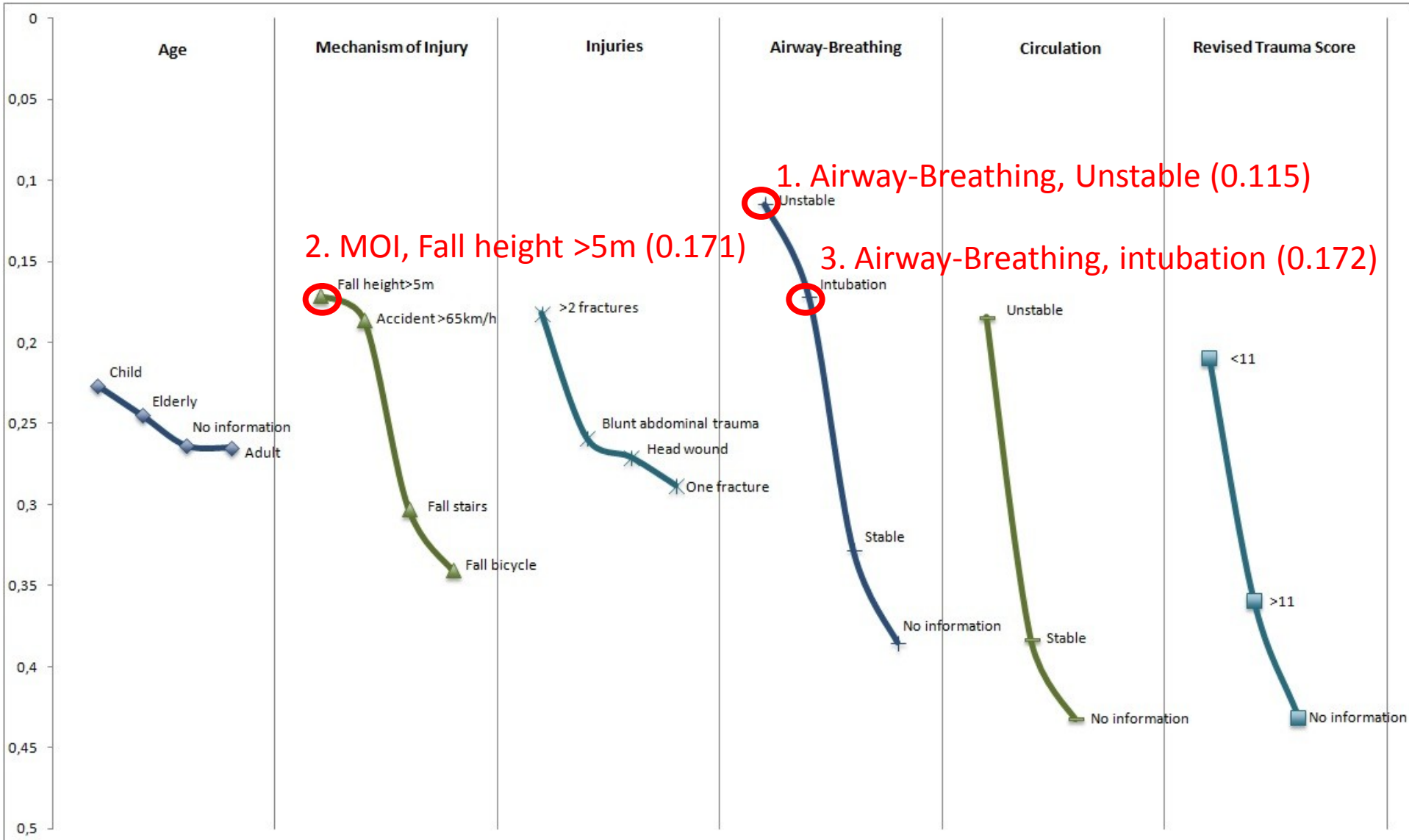
Mean rank scores

(low score = highest rank = most important)

1. Airway-Breathing: 2.85
2. Mechanism of Injury: 3.19
3. Circulation: 3.27
4. Revised Trauma Score (RTS): 3.71
5. Injuries: 3.89
6. Age: 4.59



Results – Relative rank sum weight



Conclusions

- Large variation in decisions for trauma team activation
- *Unstable Airway-Breathing, Fall from height >5m and Intubation* were ranked the most important patient factors in trauma team activation decisions
- Years of work experience no influence
 - data not shown

Discussion

- Improve uniformity in trauma team activation decision-making
 - Use of a decision support system?
- Other possible influencing factors
- Repeat study to generalize results
 - ED nurse best suited decision maker?



**To activate, or not to activate?
That is the question**



Rolf Egberink

Medisch Spectrum Twente



Arie van Vugt

UNIVERSITY OF TWENTE.

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Danique Hesselink
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Lianne Boshuizen
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Thank you for your attention!

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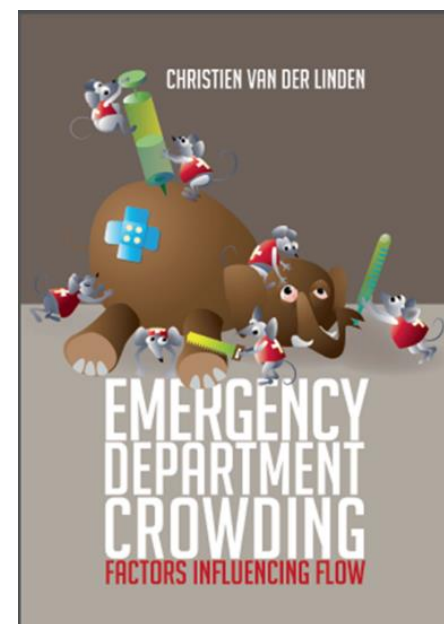


Nursing Solutions in an Overcrowded Emergency Department



October 13, 2015

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- Overcrowding occurs when the identified need for emergency services exceeds available resources for patient care in the ED, hospital, or both*

* ACEP, Ann Emerg Med 2006; 47:585

Consequences of overcrowding I*

- Increasing wait times
- Extended length of stay
- Decreased quality of analgesia delivery
- Delays in administration of antibiotics
- Delays in administration of thrombolytics
- Increased time to treatment

* References on request by mail

Consequences II*

- Delays in diagnosis
- Risk of preventable medical errors
- Higher complication rate
- Adverse cardiovascular outcomes
- Patients LWBS
- Excess mortality
- Undermines patient privacy and dignity
- Reduced satisfaction scores

* References on request by mail

Consequences III*

- Decreases in physician productivity
- Staff burnout
- High staff turnover
- Ambulance diversion
- Boarding
- Longer hospital stays → less inpatient capacity

* References on request by mail



Need to address overcrowding

- Overcrowding compromises care quality*
- Overcrowding is costly*
- Overcrowding compromises community trust*

* References on request by mail

Input

Emergency care

- Seriously ill and injured patients from the community
- Referral of patients with emergency conditions from other providers

Unscheduled urgent care

- Lack of capacity for unscheduled care in the ambulatory care system
- Desire for immediate care (eg, convenience, conflicts with job, family duties)

Safety net care

- Vulnerable populations (eg, Medicaid beneficiaries, the uninsured)
- Access barriers (eg, financial, transportation, insurance, lack of usual source of care)

Ambulance diversion

Demand for ED care

Throughput

Patient arrives at ED

Triage and room placement

Diagnostic evaluation and ED treatment

ED boarding of inpatients

Lack of access to follow-up care

Leaves without treatment complete

Patient disposition

Ambulatory care system

Transfer to other facility (eg, skilled nursing, referral hospital)

Admit to hospital

Lack of available staffed inpatient beds

ACUTE CARE SYSTEM

Output

Factors that impact patient flow, input factors*

- Increases in the number of ED presentations
- Increasingly ageing populations
- Increasing incidence of chronic conditions
- Difficulty accessing primary/general practice and community services

* References on request by mail



Factors that impact patient flow, throughput factors*

- Inadequate numbers of medical staff
- Inadequate numbers of nursing staff
- Waiting cue for triage
- Waiting time for physician's examination
- Waiting time for blood work
- Radiological investigations
- Poor ED design

* References on request by mail



Factors that impact patient flow, output factors*

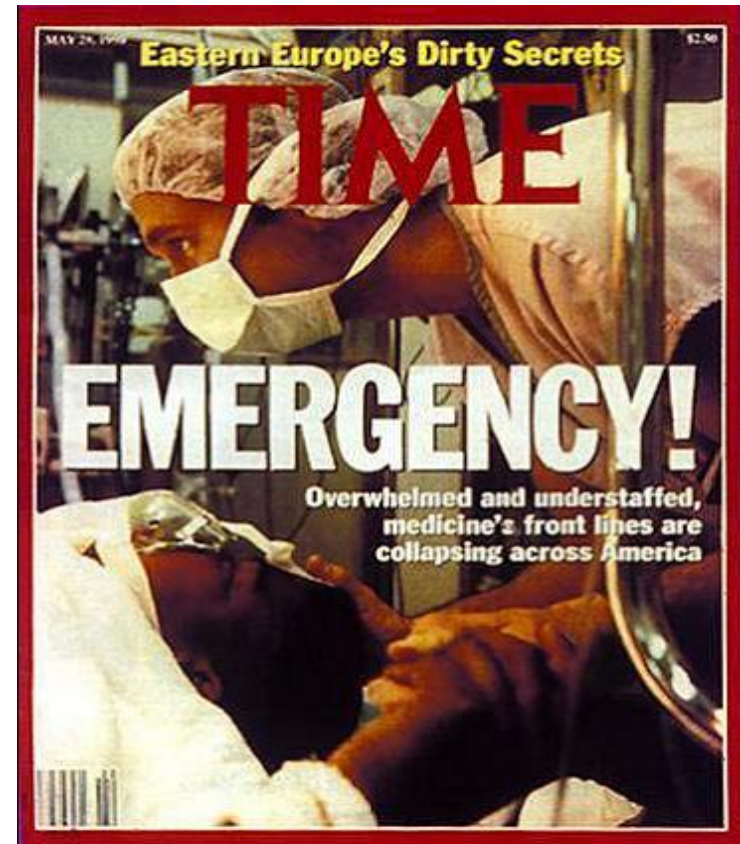
- Lack of appropriate follow-up
- Lack of hospital capacity
- Shortage of critical care beds
- Transfers to other hospitals,
nursing homes

* References on request by mail



Good news!

Emergency department
overcrowding can be
reduced by
improving patient flow
through
the emergency
department



- Klinische wachtlijstregistratie
 Agenda: Lijst DBC's van SEH AH
 Agenda: Lijst DBC's van SEH WZ

Patiënt overdracht

- SEH overdracht WE
 SEH DBC controle AH
 SEH DBC controle WE

Digitaal Dossier

- SEH Medisch Dossier
 Behandelbeperking
 SEH Verpleegkundig dossier
 SEH triage MTS2 + HAP

Inzage Digitaal Dossier

- Inzage SEH dossier

SEH opdrachten

- Radiologieaanvraag SEH (nieuw)

EPD-dashboard

64 jaar V
 6602303 12-09-1950



- Aandoeningen
 Aantekeningen
 Afspraken
 Allergien
 Ambulant-verrichtingen
 Archief dossiers
 Beantwoordingen
 DBC's
 Documenten
 ECG
 KCL
 Medicaalijst
 MMB
 Multimedia
 Operaties

Aangemeld (1)

| T | RTijd | G | Patiënt | Klacht |
|-------|-------|---|---------|------------------|
| 11:10 | M | | | via ha to intern |

Wachtkamer (16)

| T | U | Tijd | G | Lft | Patiënt | Klacht | H |
|---|---|-------|---|-----|---------|-------------------|-----|
| L | | 16:53 | M | 7 | | speekverwond | Ja |
| M | | 16:09 | M | 85 | | br ha, t o heello | Nei |
| M | | 16:21 | V | 43 | | br ha, t o MDL | Nei |
| M | | 16:23 | V | 59 | | br ha, t o intern | Nei |
| L | | 16:45 | M | 61 | | fax ha to intern | Nei |
| | | 16:42 | V | 29 | | (niet in WK 17. | Nei |
| | | 16:56 | V | 50 | | (zit in observati | Nei |
| | | 17:14 | M | 18 | | skieeen gevallen | Nei |
| | | 17:21 | M | 45 | | pijn i arm; afwij | Nei |
| | | 17:28 | V | 38 | | buikpijn, koorts | Nei |
| | | 17:29 | V | 29 | | tel overl gyn, gi | Nei |
| | | 17:32 | M | 23 | | via hap tav inte | Nei |
| | | 17:35 | V | 61 | | benauwd; hoest | Nei |
| | | 17:36 | M | 12 | | gips laat los | Nei |
| | | 17:43 | V | 23 | | pijn bij plassen; | Nei |
| | | 17:46 | V | 64 | | retour seh; r vc | Nei |

Elders

| T | Tijd | G | Patiënt | Klacht |
|-------|------|---|---------|----------------------|
| 13:25 | V | | | t o kind; koorts |
| 13:40 | V | | | (ambulance gebel |
| 09:48 | V | | | via ha, t o kind; be |
| 15:43 | M | | | via AHove t o kind |

Einde SEH

| T | Tijd | G | Spec | Patiënt | Klacht |
|-------|------|-----|------|---------|-----------|
| 12:47 | M | HEE | | | via rönt |
| 13:32 | M | HEE | | | op sport |
| 14:30 | V | HAP | | | kattenk |
| 12:29 | V | GAS | | | via ha, t |
| 13:33 | V | NEU | | | mgl insu |
| 14:11 | V | HEE | | | hand ve |

Routingscherm, Lokatie: Westeinde

15-12-2014

Triage kamer

| | | | |
|----------|------------|----|---|
| W200, 01 | pob; zweet | 58 | R |
| 17:51 | | | |

Grote traumakamer

| | | | |
|----------|--|--|---|
| W2GT, 01 | | | R |
|----------|--|--|---|

Kleine traumakamer

| | | | |
|----------|--------------------------------|----------|---|
| WZTR, 01 | via ha, t o HDL; o 09A2/0040/4 | 58 | R |
| 12:06 | | E.A. GAS | |

CT kamer

| | | | |
|----------|--|--|---|
| WZCT, 01 | | | R |
|----------|--|--|---|

Cardio kamer

| | | | |
|----------|--------------------|----|---|
| WZCA, 01 | voelt zich zwak, i | 66 | R |
| 15:32 | | A | |

WZCA, 02

| | | | |
|----------|--------------------------------|-----|---|
| WZCA, 02 | afd is gebeld, via 05CC/0080/4 | 83 | R |
| 14:54 | | CAR | |

WZ01, 01

| | | | |
|----------|---------|----|---|
| WZ01, 01 | verward | 54 | R |
| 17:13 | | A | |

WZ02, 01

| | | | |
|----------|------------------|-----|---|
| WZ02, 01 | br ha to heelkun | 84 | R |
| 16:43 | | HEE | |

WZ03, 01

| | | | |
|----------|---------|-----|---|
| WZ03, 01 | collaps | 72 | R |
| 15:53 | | CAR | |

WZ05, 01

| | | | |
|----------|--------------------|-----|---|
| WZ05, 01 | pijn vastzittend i | 61 | R |
| 14:07 | | LON | |

WZ06, 01

| | | | |
|----------|--------------------|-----|---|
| WZ06, 01 | br ha, t o heelkur | 14 | R |
| 16:18 | | HEE | |

WZ06, 02

| | | | |
|----------|--|--|---|
| WZ06, 02 | | | R |
|----------|--|--|---|

Kinder kamer

| | | | |
|----------|----------------------|-----|---|
| WZ07, 01 | brief huisarts. t. i | 0 | R |
| 15:37 | | KIN | |

WZ08, 01

| | | | |
|----------|-------------------|-----|---|
| WZ08, 01 | 17:20 naar echo l | 32 | R |
| 16:02 | | INT | |

WZ09, 01

| | | | |
|----------|------------------|-----|---|
| WZ09, 01 | somatische screi | 78 | R |
| 16:11 | | INT | |

WZ10, 01

| | | | |
|----------|------------------|----|---|
| WZ10, 01 | sub cad eruit na | 74 | R |
| 15:47 | | B | |

Gips kamer

| | | | |
|----------|------------------|--------|---|
| WZ0K, 01 | br ha to heelkun | 33 | R |
| 12:33 | | va HEE | |

Familie kamer

| | | | |
|----------|--|--|---|
| WZFK, 01 | | | R |
|----------|--|--|---|

Nachthospitaal

| | | | |
|----------|---------------|--|--|
| WZNH, 01 | br ha, to int | | |
| 14:36 | | | |

WZNH, 02

| | | | |
|----------|---------------|--|--|
| WZNH, 02 | ontstoken shu | | |
| 17:04 | | | |

WZNH, 03

| | | | |
|----------|--|--|--|
| WZNH, 03 | | | |
|----------|--|--|--|

WZNH, 04

| | | | |
|----------|---------------|--|--|
| WZNH, 04 | afd gebeld om | | |
| 13:37 | | | |

Low Care Unit

| | | | |
|---------|----------------|--|--|
| LCU, 01 | pijn onderbuit | | |
| 15:50 | | | |

LCU, 02

| | | | |
|---------|------------------|--|--|
| LCU, 02 | via ha, t o inte | | |
| 14:26 | | | |

LCU, 03

| | | | |
|---------|--|--|--|
| LCU, 03 | | | |
|---------|--|--|--|

LCU, 04

| | | | |
|---------|-------|--|--|
| LCU, 04 | onwel | | |
| 17:10 | | | |

Spreekkamer

| | | | |
|----------|--|--|--|
| WZSK, 01 | | | |
|----------|--|--|--|

Wijzigen

Toevoegen

Verwijderen

Verversen

Behandelaars

Personeel

Opname

Sluiten

Dagmeldingen (0)

Throughput interventions I

- Nurse-initiated activities, such as analgesia and X-rays at triage
- Expanding the scope of practice of nursing

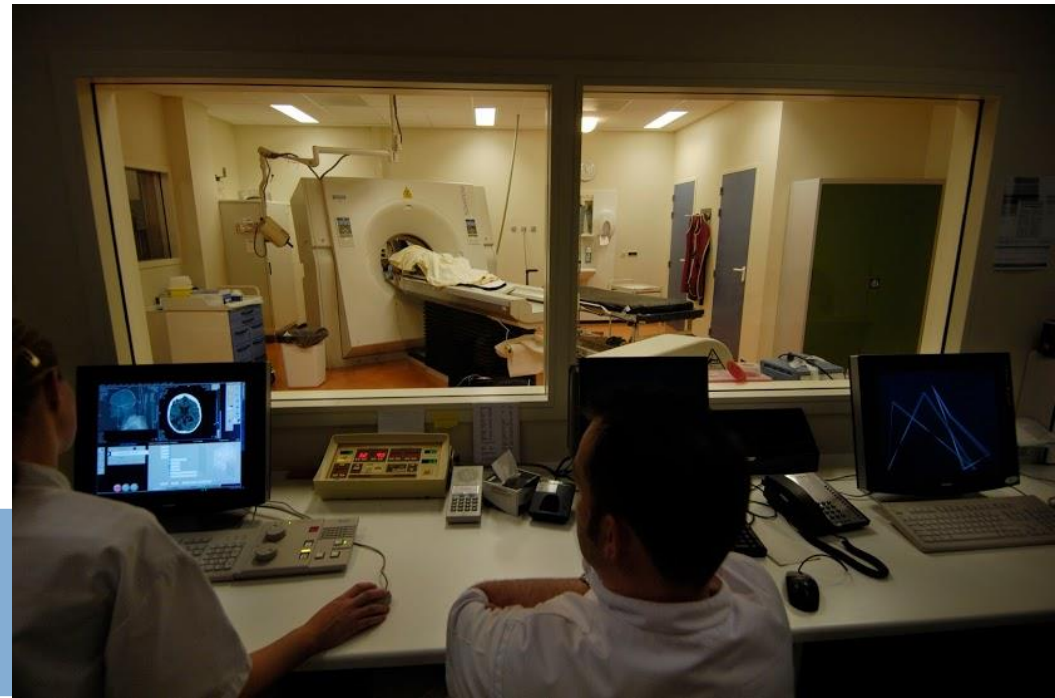


Throughput interventions II

- Advanced triage & double triage coverage
- General Practitioner Cooperative 24/7
- Emergency Nurse Practitioners & Emergency Physicians

Throughput interventions III

- SLOTS with lab and radiology
- SLOTS with inpatient units
- Radiologist at the ER



Output interventions

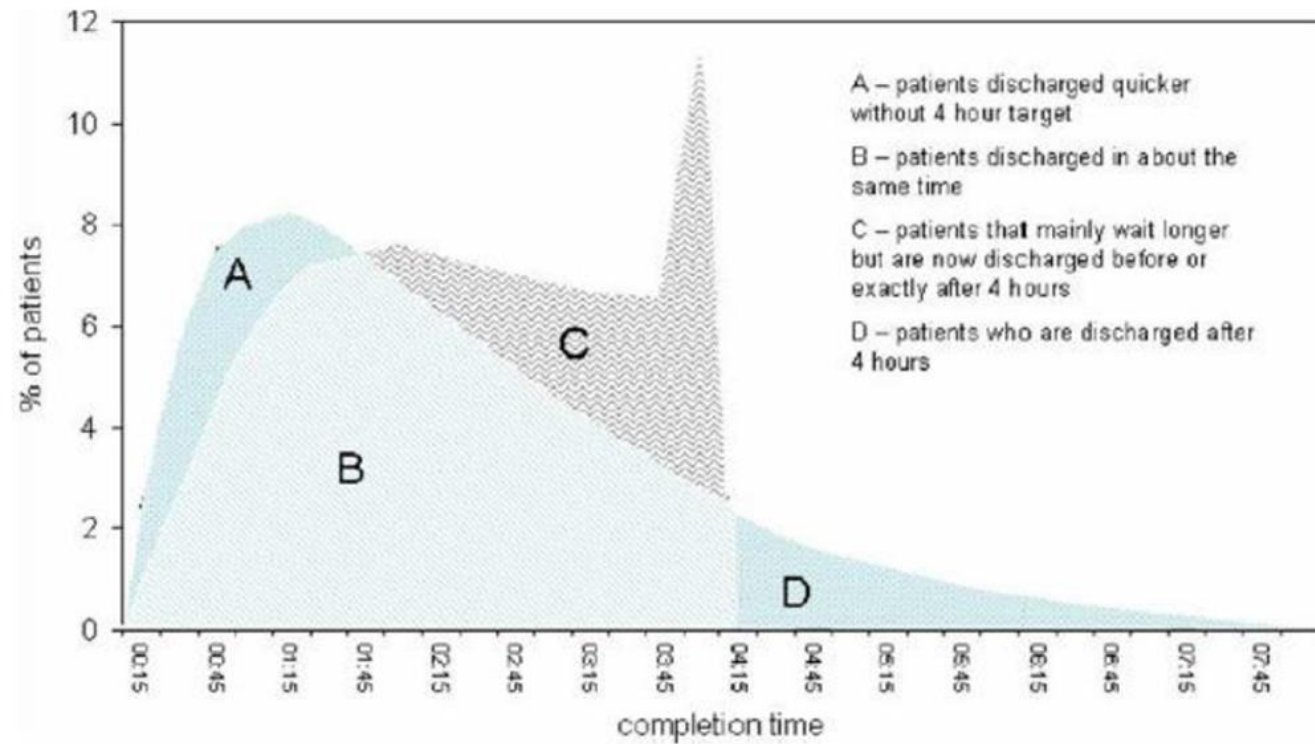
- Telephonic follow-up for geriatric patients
- Telephonic follow-up for patients LWBS
- Flexible Acute Admission Unit
- Acute Admission Unit for Internal Medicine
- Internal professional standards for inpatient units and supporting units

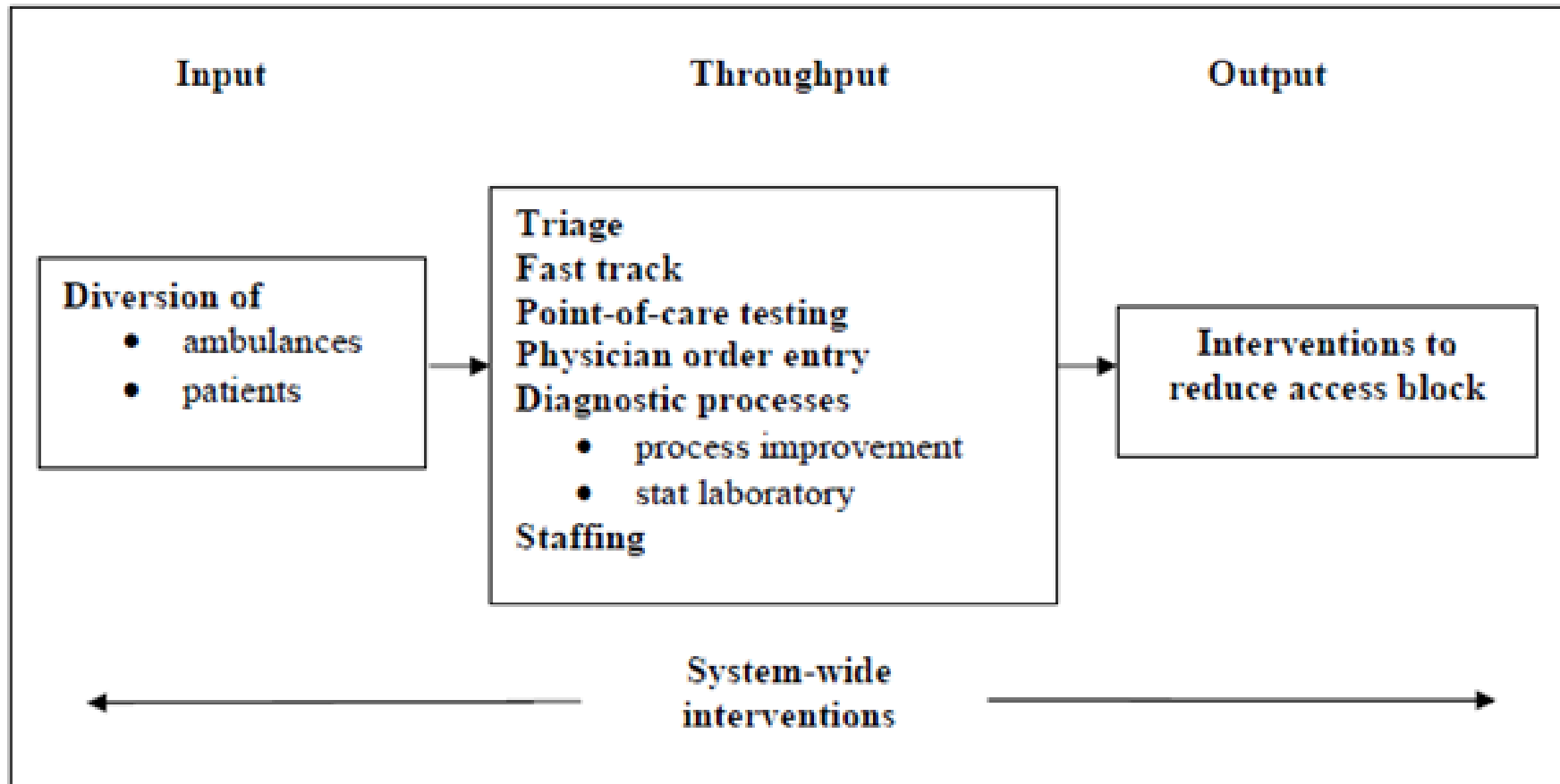
Considerations for the coming year

- Expanding the AAU /MCU
- Specific patient groups per hospital location
- Consultants' rounds at 9 am and 17 pm
- Maximum LOS 4 hrs?



Fig. 10 A comparison of completion times in 2 months in 2003 and 2006 before and after the introduction of the 98% in 4 h target



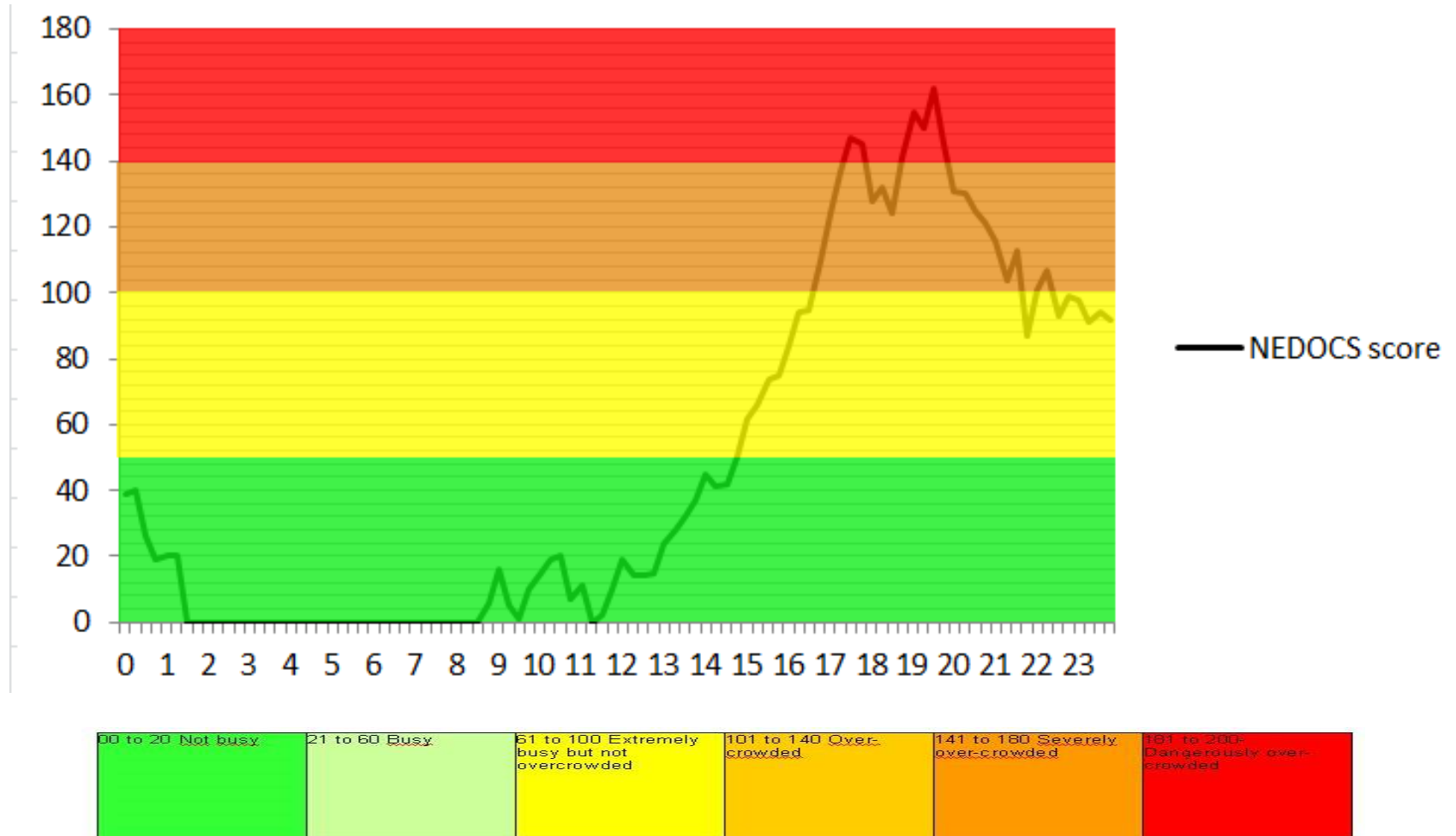


Multidimensional scales

- EDWIN (Emergency Department Work Index)
- IC MED (International Crowding Measure Emergency Department)
- NEDOCS (National Emergency OverCrowding Scale)



| | |
|----------------|-----|
| ED Beds | 40 |
| Hospital Beds | 150 |
| Total Patients | 20 |
| Respirators | 4 |
| Longest Admit | 4 |
| Total Admit | 5 |
| Last Bed Time | 4 |



A local manifestation of a systemic disease

- No single solution
- Multiple interventions
- Hospital wide



Often multiple causes

- Increase in patient visits
- Increase in patient acuity
- Radiology and laboratory delays
- Consultation delays
- Delays for admitted patients
- Hospital bed shortages

Improving patient flow

- Efficient triage (SO or PAT)
- Expanding scope of practice nurses
- Early senior review
- Focus on discharge & prevent revisits
- Match capacity to demand
- Internal professional standards

Thank you!





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Hip fracture in Iceland what did we find

Sigrún Sunna Skúladóttir

Emergency nurse,

RN, M Sc, PhD student



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Iceland

Reykjavík

70 230 annual
visits ER

Population of
329 100





Background

- 90% of hip fractures are 50 years or older
- 2-3 times more common in women than men
- Most fractures in the elderly are from
low energy trauma
- Mortality within 6 month from operation:
 - 24% in UK
 - 18% in USA and Scandinavia



Hip fractures - what we know

- Osteoporosis is considered the main cause of fractures in older people
- Many do not recover fully, or 25-50%
- Risk of pressure sores is greatly increased in elderly patients
- Pain relief is important



Aim

1. Fracture rate
 - by gender
 - type of fracture
 - Arrival time – hours – days and months
2. Do demographic factors affect the waiting time for hospitalization and surgery?
3. Mortality rate in Iceland



What was done ?

- A retrospective epidemiological study
- Medical Records Data from data warehouses
Landspitali University Hospital
- Descriptive statistics and regression analysis
- Part of a larger study Visit of 67 years and older at the University Hospital emergency department in 2008-2012



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Hip fractures:

ICD

72.0

72.1

72.2

Neck of
femur
fracture

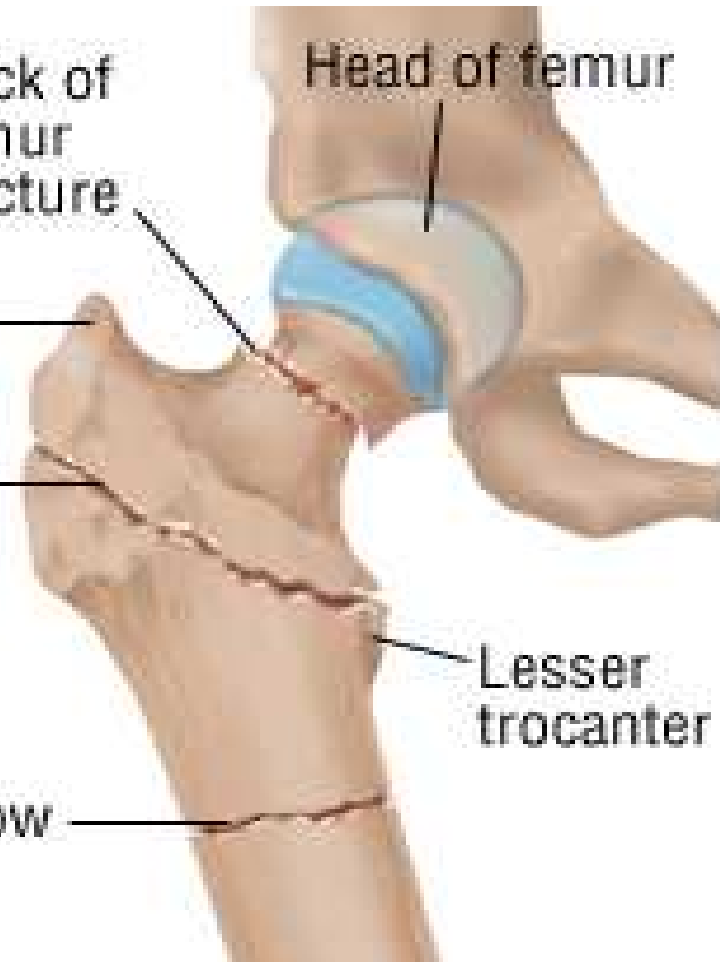
Greater
trochanter

Fracture
between
trochanters

Fracture below
trochanters

Head of femur

Lesser
trochanter



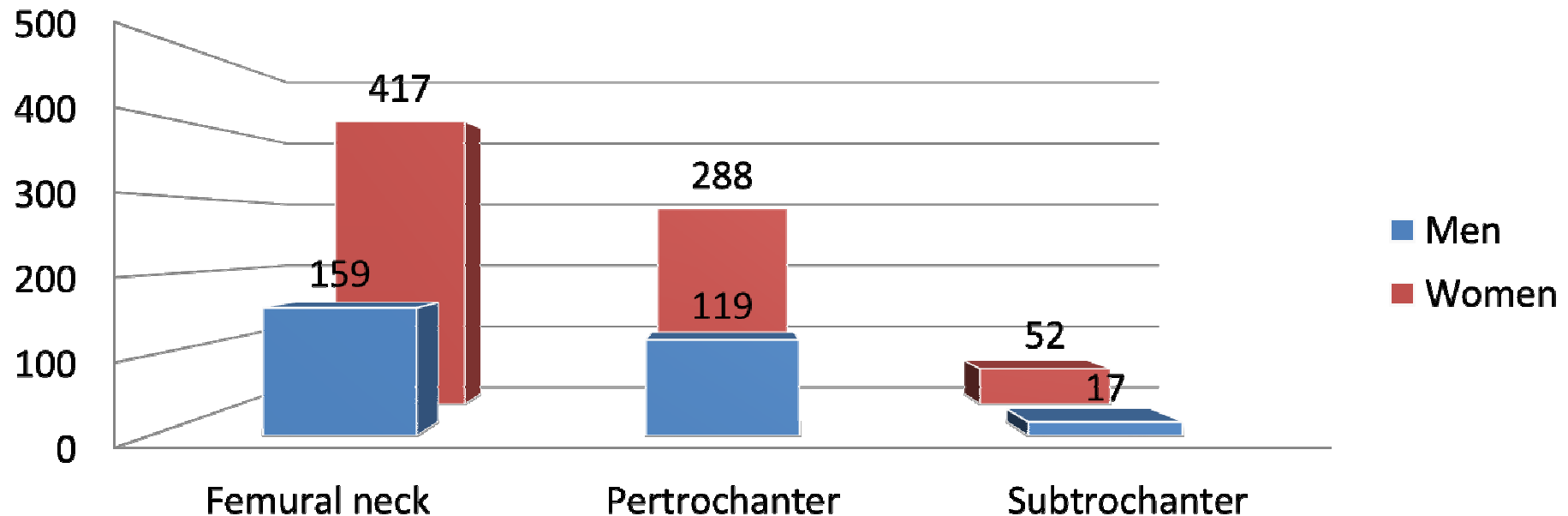


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Types of fractures



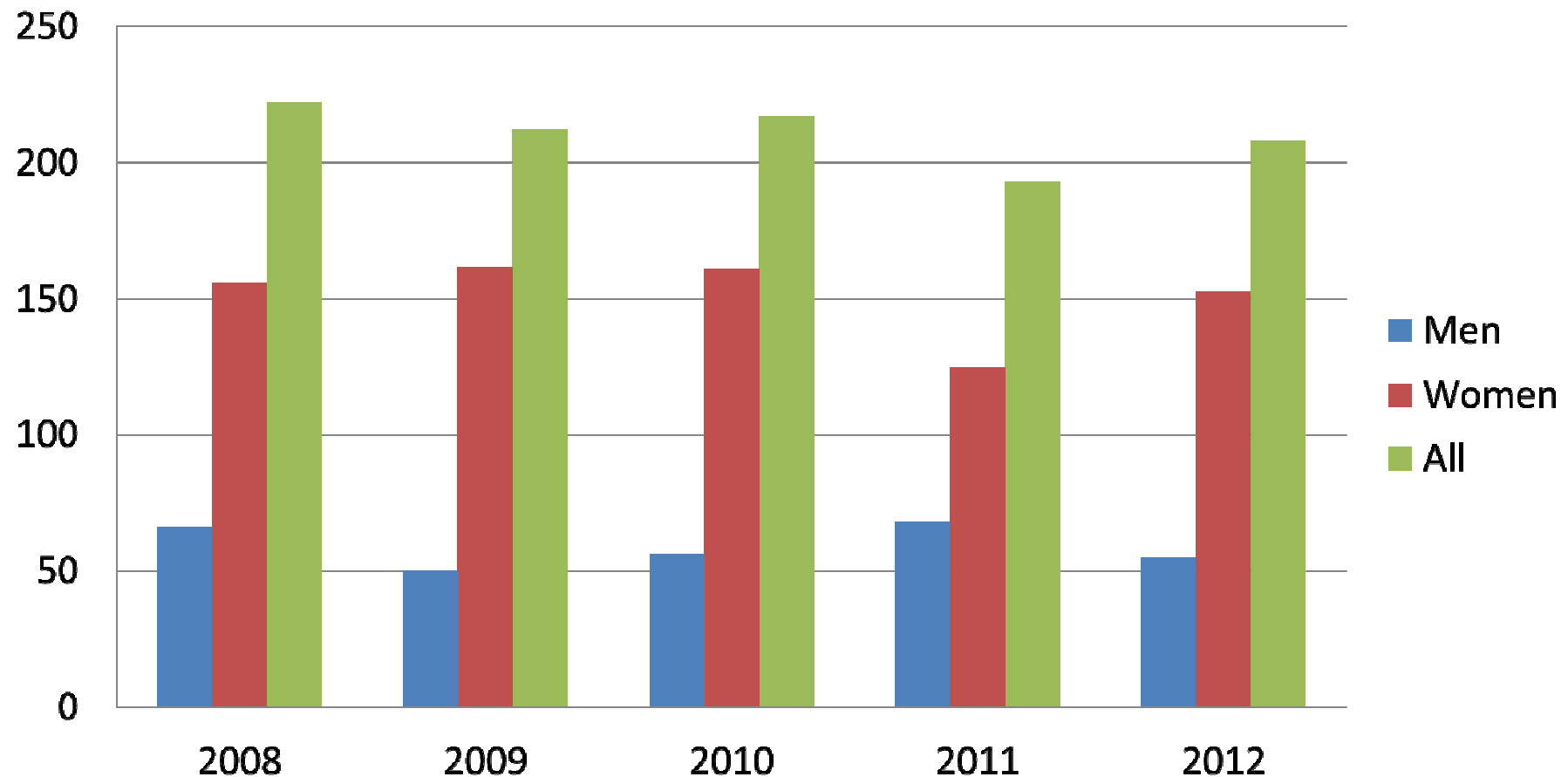


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Hip fracture, gender by years





Hip fracture

- Fractures from 2008 -2012
 - Total: 1052
 - Men: 295 or 28%
 - Women: 757 or 72%
- Averages fracture in 67 or older residents
 - Men: 0.39%
 - Women: 0.83%

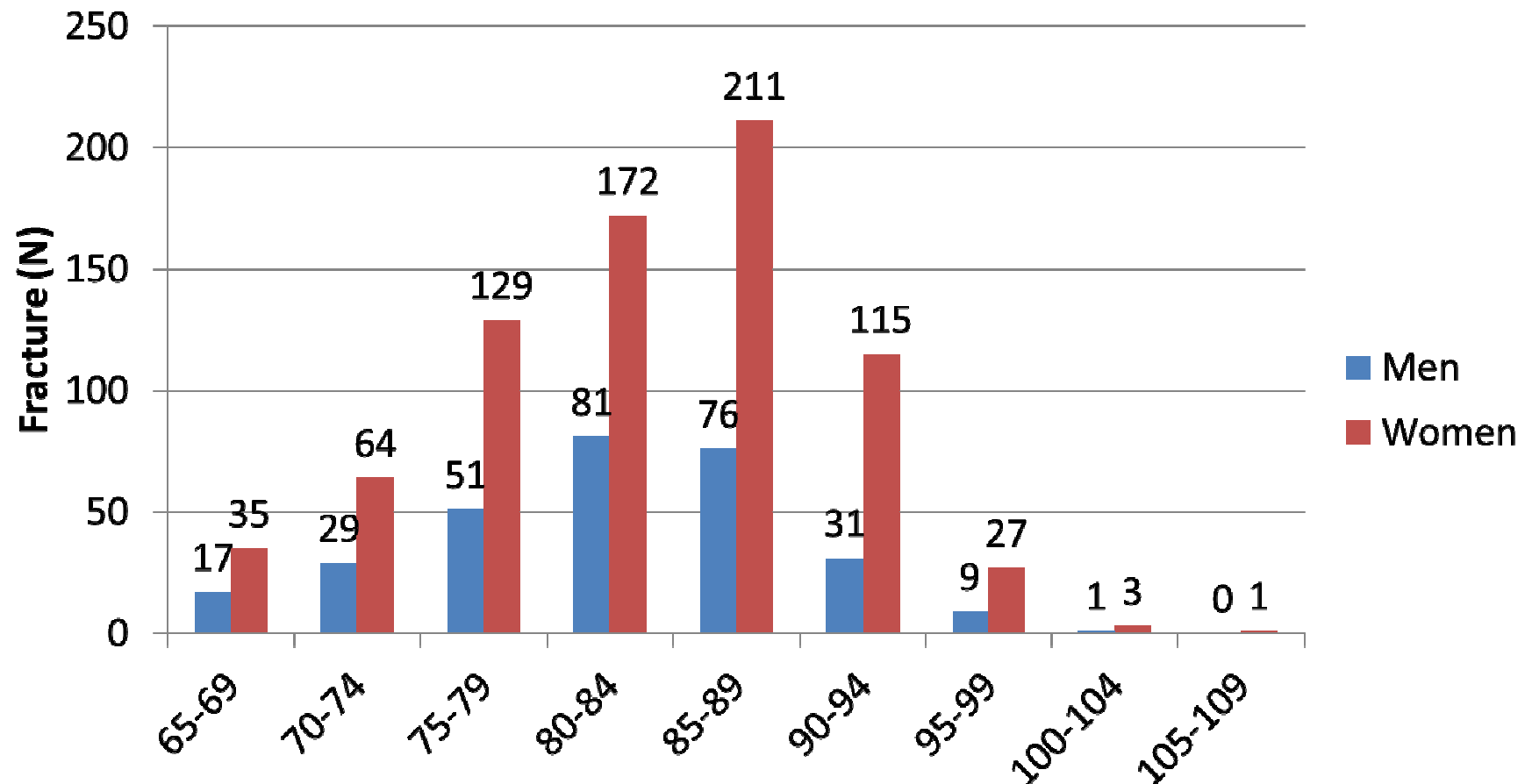


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Division of hip fractures by age and sex



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Hip fractures according to age group

| Age | Fractures (N) | Rate |
|---------|---------------|-------|
| 65-69 | 52 | 0,17% |
| 70-74 | 94 | 0,22% |
| 75-79 | 180 | 0,46% |
| 80-84 | 253 | 0,87% |
| 85-89 | 287 | 1,74% |
| 90-94 | 146 | 2,46% |
| 95-99 | 36 | 2,75% |
| 100-104 | 4 | 2,11% |
| 105-109 | 1 | 12,5% |

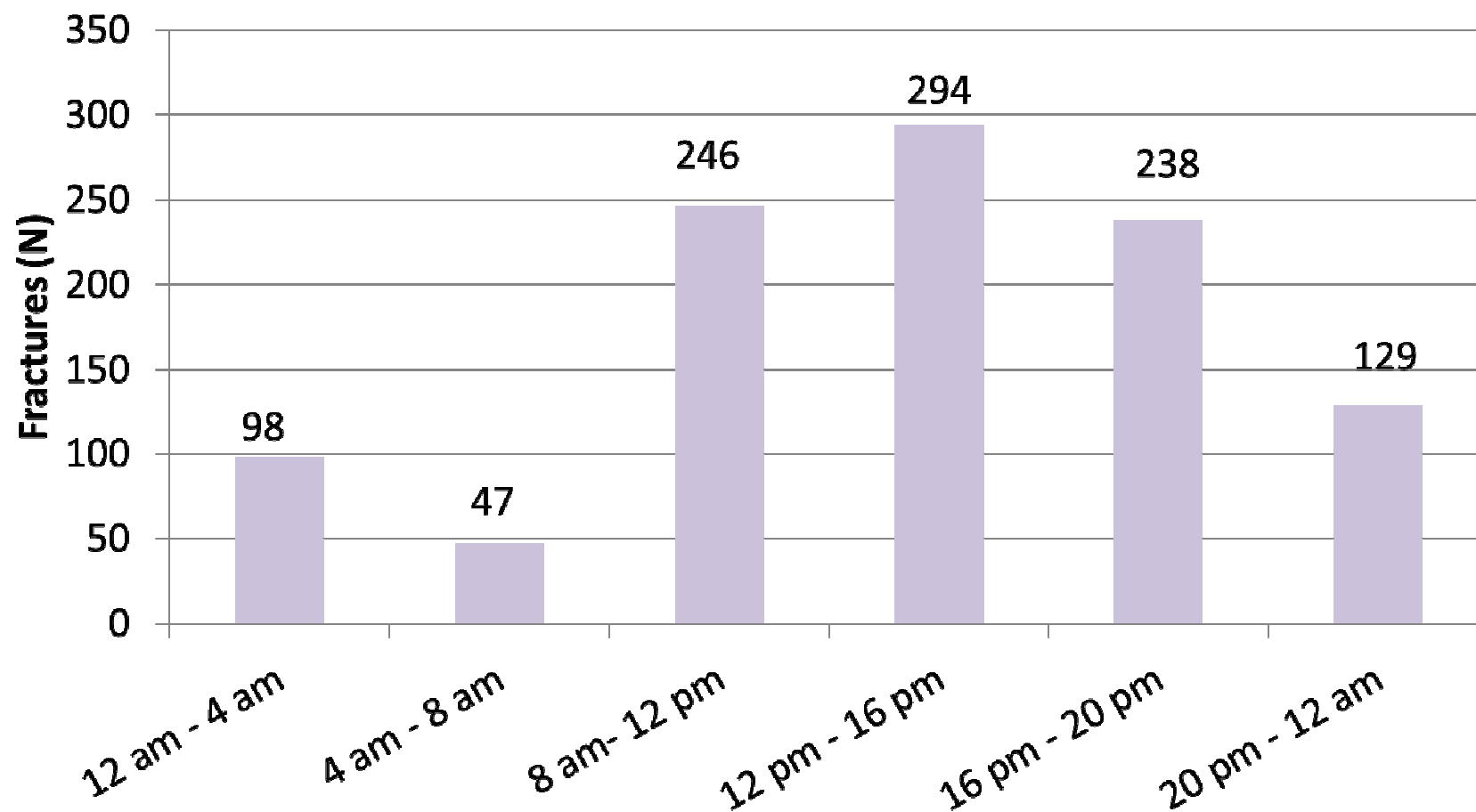


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Time of arriving



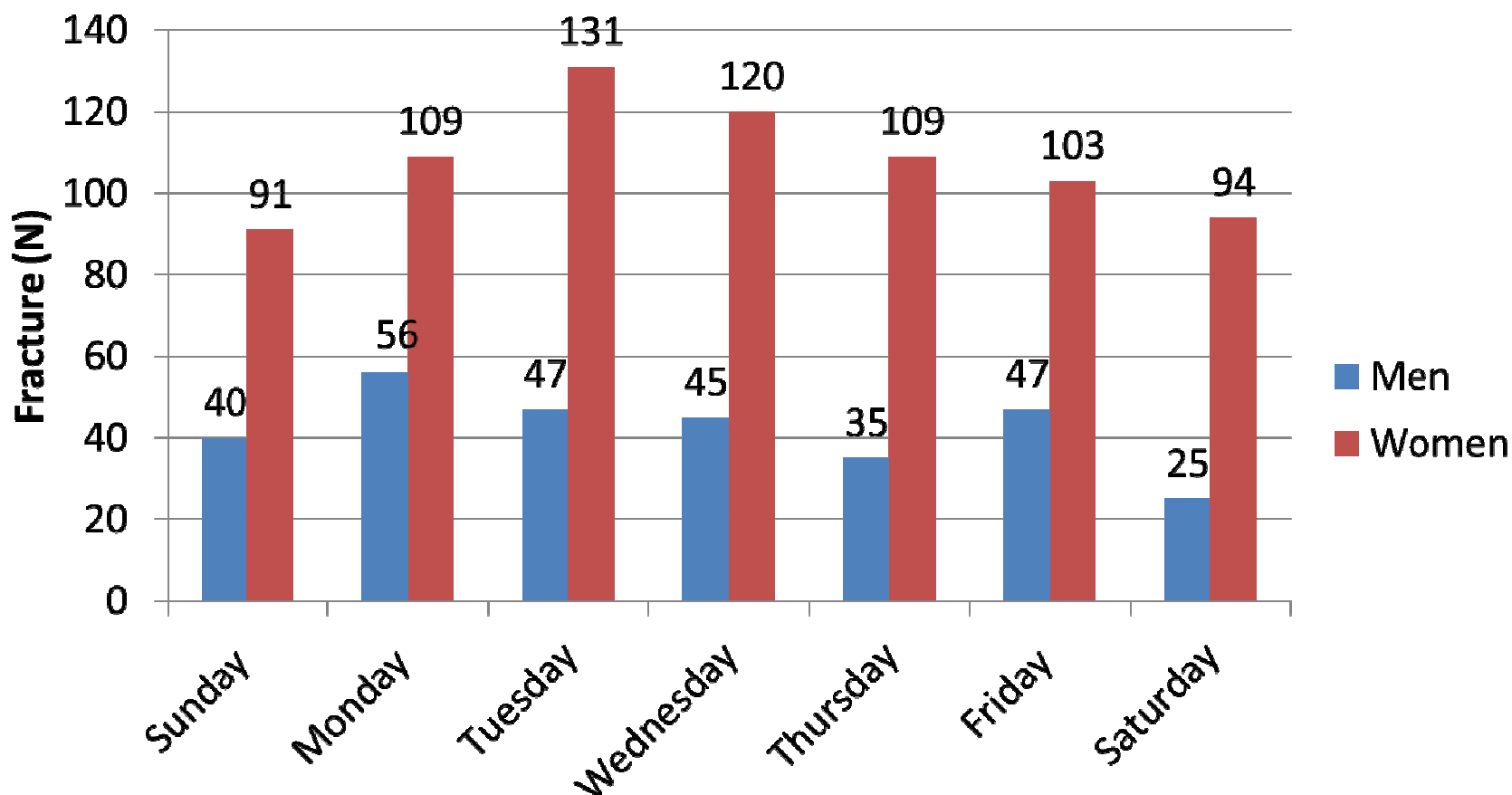


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Weekday of arrival to ER



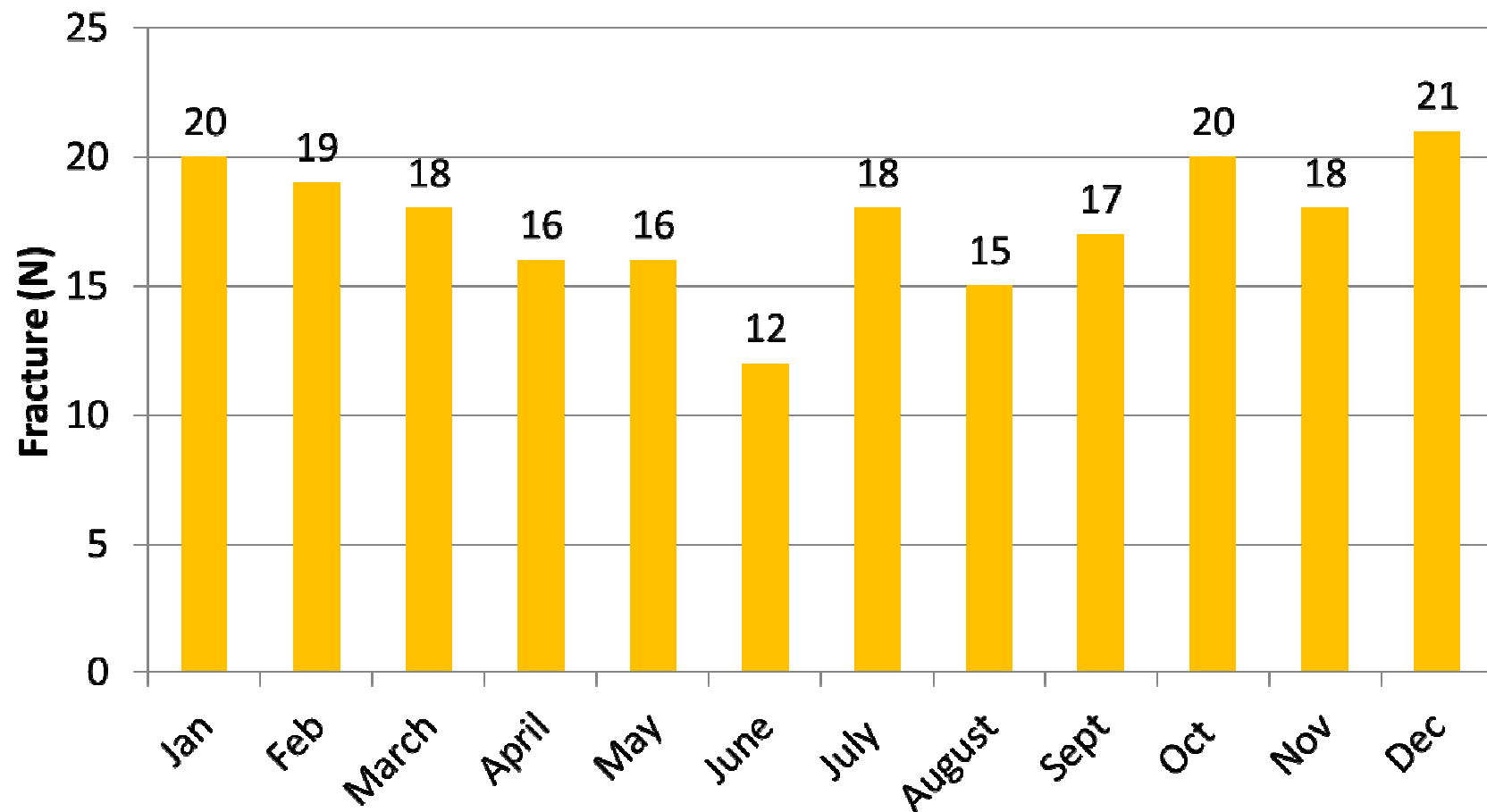


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Hip fractures frequency by month





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Waiting time in the ER

- The average waiting time for admission 3,4 hours
Range 35 min - 34,47 hours
- The average waiting time for surgery 19,6 hours
Range 1,55 hours - 331,5 hours
- Women 18,8 hours *
- Men 21,4 hours *

* $p < 0,05$



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Admission waiting time

| Time [hours] | Men N(%) | Women N(%) | All N(%) |
|--------------|------------|------------|------------|
| 0-3 hours | 152 (51,5) | 385 (50,9) | 537 (51) |
| 3-6 hours | 113 (38,3) | 323 (42,9) | 438 (41,6) |
| 6-9 hours | 21 (7,1) | 29 (3,8) | 50 (4,8) |
| 9-12 hours | 5 (1,7) | 8 (1,1) | 13 (1,2) |
| 12-24 hours | 3 (1) | 9 (1,2) | 12 (1,1) |
| > 24 hours | 1 (0,3) | 1 (0,1) | 2 (0,2) |

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Waiting time after surgery

| Time [hours] | Men N(%) | Women N(%) | All N(%) |
|--------------|------------|------------|------------|
| < 24 | 204 (69,2) | 536 (70,8) | 740 (70,3) |
| 24-48 | 73 (24,7) | 190 (25,1) | 263 (25) |
| 48-72 | 13 (4,4) | 29 (3,8) | 42 (4) |
| 72-96 | 2 (0,7) | 1 (0,1) | 3 (0,3) |
| > 96 | 3 (1) | 1 (0,1) | 4 (0,4) |

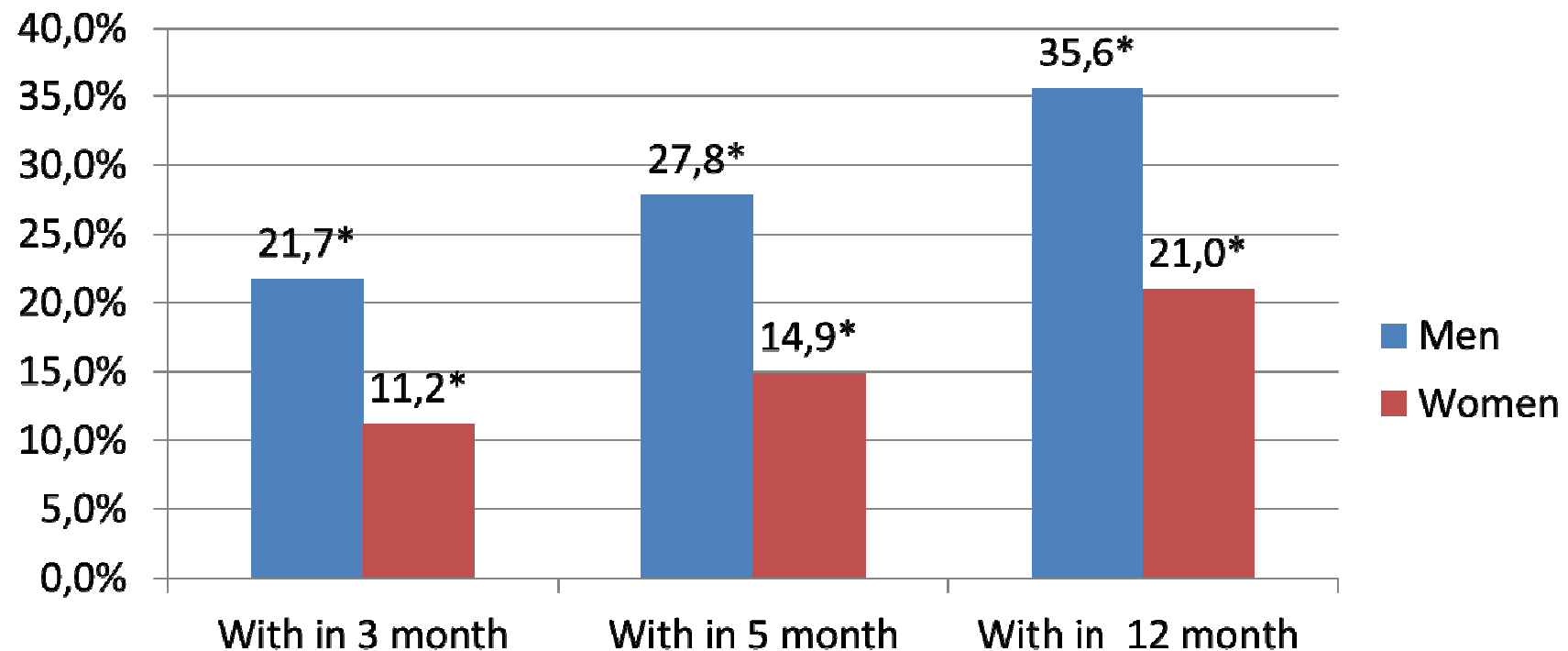


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Cumulative mortality rate [%]



***P<0,05**

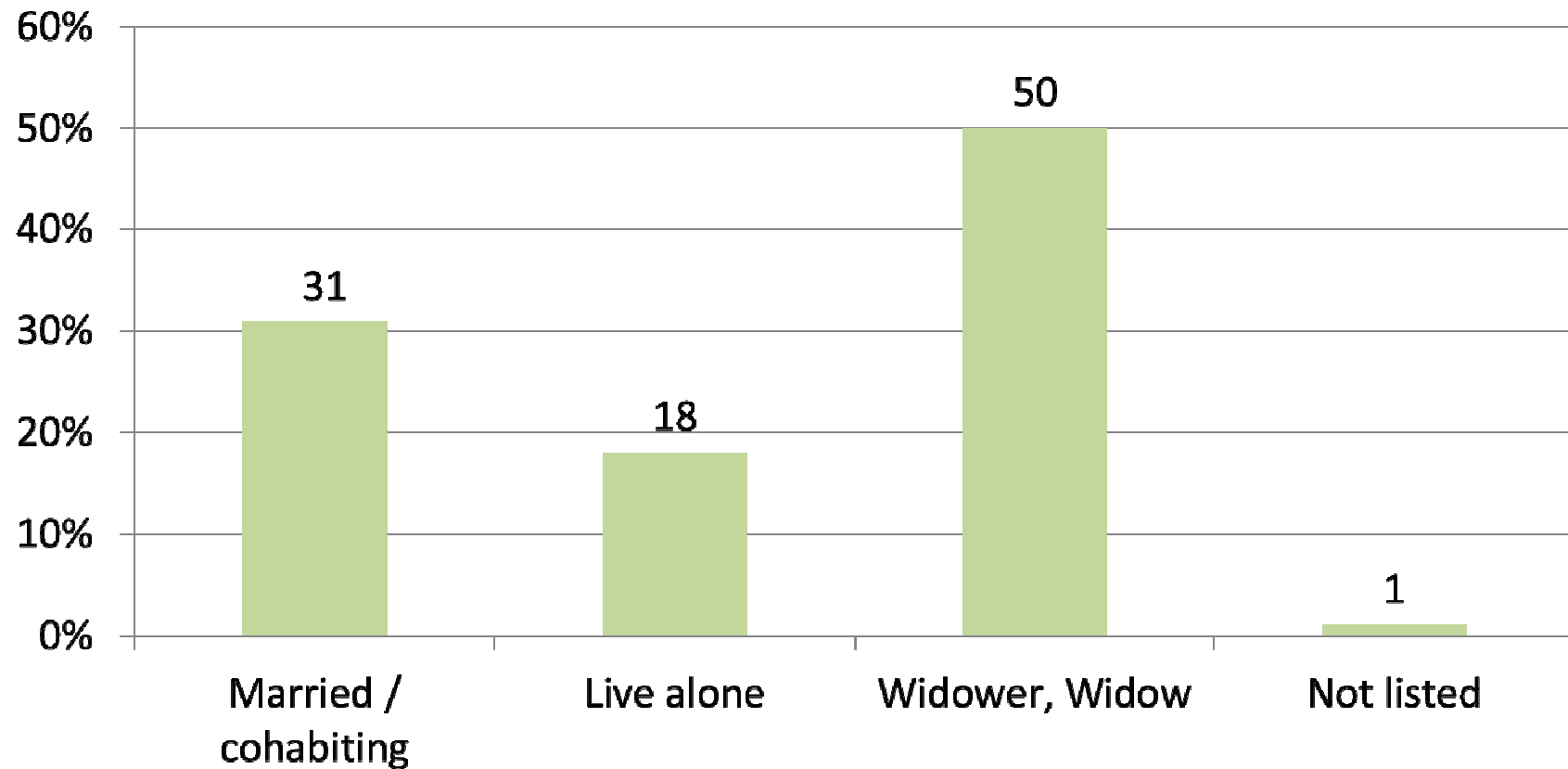


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Marital status of fracture patients





What can we learn ?

- Severe outcome of patients with hip fracture
- Prevention of hip fractures must be emphasized for the elderly - particularly among men and those who live alone
- Support for the patient and family is important - immediately in the emergency department from admission and through out the procession care



Thanks

A research group on arrival and return visits for the elderly in the emergency department in 2008-2012:

Elísabet Guðmundsdóttir MSc, Nurse

Helga Rósa Másdóttir MSc, Nurse

Hlíf Guðmundsdóttir MSc, specialist in gerontological nursing

Ingibjörg Sigurbórsdóttir MSc emergency nurse

Lovísa Jónsdóttir MSc, nurse

Pórdís K Þorsteinsdóttir PhD, MSc, nurse

- Science University Hospital and the Icelandic Nurses' Association for grants
- Laufey Steingrímsdóttir Professor, Nutritionist
- My coworkers in The Icelandic Gerontological Research Institute (RHLÖ)



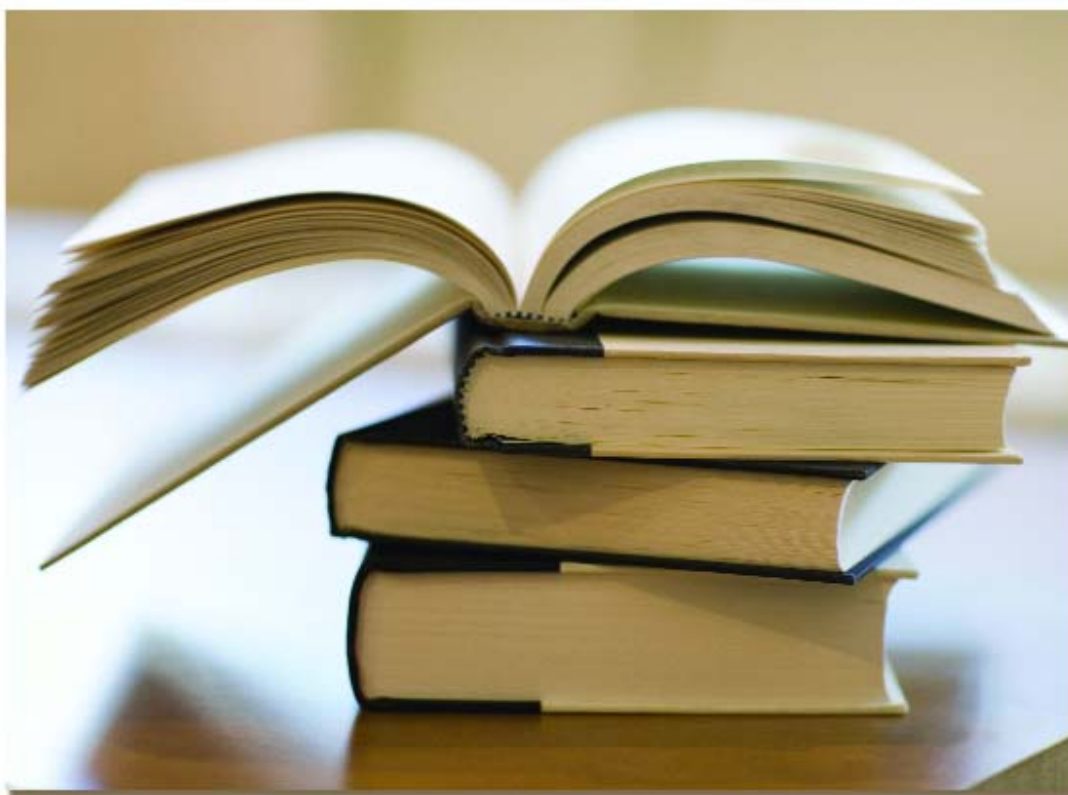
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EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

EuSEM 2015 10-14 OCTOBER

Emergency care



Emergency care

A HOPE survey

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PREAMBLE

HOPE, the European Hospital and Healthcare Federation, is a European non-profit organisation, created in 1966, representing national public and private hospital associations and hospital owners. With 37 organisations from the 28 Member States of the European Union, Switzerland and the Republic of Serbia, HOPE covers almost the 80% of the hospital activity.

HOPE mission is to promote improvements in the health of citizens and a uniformly high standard of hospital care throughout the European Union, and fostering efficiency, effectiveness and humanity in the organisation and operations of hospital and health services.

HOPE is representing its members in the European arena, covering all policies with an impact on hospitals and health services. HOPE contributes to the legislative agenda but also to the non-legislative activities, in particular through participation in European projects.

Since its creation, HOPE has produced comparative information on the ways healthcare systems are organised and financed, which among others is achieved by workshops and conferences, and in particular by a unique annual Exchange Programme for health professionals.

OBJECTIVE AND METHOD

The topic of the survey was identified as the priority for 2014 by the Board of Governors of HOPE, perceiving this as a growing issue, in particular in the context of the crisis. This issue is also linked to other issues: avoidable hospitalisation, chronicity, ageing, and integrated care.

The intention is neither to describe the ways emergencies or responses to emergency are organised, nor to compare countries in terms of access to emergency care or of number of emergency cases. Numbers are only necessary to understand the context. Therefore, the end result to get from this work is the description of the different issues identified by members and the possible worsening due to the crisis. It also brings several good practices to share at national, regional and local (individual healthcare organisation) level.

The survey is made up of two main sections.

The first section *"1. What is the scope of the issue"* strictly focuses on the scope of the investigation by questioning qualitative aspects and quantitative ones. Considered by HOPE Governors as a growing issue, the feeling on emergency departments is further examined in part *"1.1 Qualitative Aspects: perception"* to go into more details about it, i.e. to discover what are the perceived issues at stake and, then, the perceived reasons for such issues. The *"1.2 Quantitative: what do we know and how far?"* subsection relates to quantitative aspects, with the aim of knowing if information is available about emergency treatment and if yes what kind of information. This helps, on the one hand, to see if members have tangible sources to justify their perception and, on the other hand, if this could help complement the good practices identified.

The aim is not to report figures, because getting a presentation of all systems would be too difficult and too time consuming. European healthcare systems are extremely heterogeneous, hence reflecting in the way emergencies are dealt with.

In the table representing quantitative aspects, “√” indicates availability of information, “n.a.” indicates unavailability, and a blank cell means no knowledge about availability or no information.

The second section “2. *Proposed structure to gather solutions/good practices*” suggests a structure for gathering solutions and/or good practices related to the emergency topic. The extent of the disclosure for this part is based on an approach by case studies at national, regional and/or local/hospital level.

The information was provided by HOPE members or — to the extent it was available — was collected from The Health Systems and Policy Monitor of the WHO-European Observatory on Health Systems and Policies. This platform provides a description of health systems and up-to-date information on policy relevant reforms.

The “Emergency Care” section of the Health Systems and Policy Monitor has been analysed to answer the questions of the first part. The sections “Analysis of recent reforms” and “Future developments” have been studied to gather solutions/good practices.

For the first section, information about in-hospital treatment has only been considered. For case studies/good practices however, information on pre-hospital care and transportation has been included .

EMERGENCY CARE IN EUROPEAN COUNTRIES

AUSTRIA

ANSWERS PROVIDED BY HOPE LIAISON OFFICER

MRS DR ULRIKE SCHERMANN-RICHTER, FEDERAL MINISTRY OF HEALTH

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

Every public hospital has outpatient emergency units (*Notfallambulanzen*) to meet emergency needs. Actually, these emergency units are widely addressed to the population with any kind of (acute) health problems, especially during closing time (weekends included) of family doctors and other (mostly privately run) outpatient health facilities. Additionally, (especially younger) patients prefer a "one-stop-shop" where any care needed is available on the location, while GPs and specialists in private practice in the outpatient sector mostly work alone and thus frequently refer patients to (other) specialists or to hospitals outpatient units for further or additional diagnosis and treatment.

Many of the hospitals' outpatient units do not have sufficient resources and/or are not adequately funded for providing primary acute care, yet. Case studies in certain paediatric hospitals' outpatient units showed that the health problems of 80% of patients did not need a hospital but would have been treatable by doctors in private practice, and that only 20% needed immediate care. Thus, the resources dedicated to emergency care are widely used for non-emergency cases as everybody can address a hospital's emergency unit without referral and without coming by emergency transport, and everybody coming to an emergency unit has to be checked by a doctor.

This situation led to several main objectives of the recent healthcare reform started in 2013, particularly the establishment of multi-professional and multi-disciplinary primary care centres and networks with opening hours that meet the demand*. Additionally, hospitals increasingly establish first care units with effective triage systems so that emergency units are not overcharged. Furthermore, there will be a telephone- and web-based initial contact and advice service established which should help directing patients to the appropriate healthcare provider at the relevant time.

*http://www.bmgf.gv.at/home/Schwerpunkte/Gesundheitsreform/Neues_Konzept_zur_Primaerversorgung

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

Availability and type of information about Austrian emergency care are detailed in the table below.

| Information on | Availability | Type | Definition |
|--|-------------------|--------------|---|
| 1. Number of emergencies | v ¹ | Quantitative | Unplanned hospital admissions (only inpatient sector) |
| 2. Types of emergency | v ² | Quantitative | Diagnoses and procedures of unplanned admitted inpatients; time between admission and procedures (pre-operative waiting time) |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | % of unplanned admissions on total admissions |
| 4. Waiting time | n.a. | | |
| 5. Age of population concerned | v | Quantitative | Age of unplanned admitted inpatients |
| 6. Season/specific time | v | Quantitative | Day and hour of admission |
| 7. Type of professionals in emergency departments and emergency specialists | | Qualitative | Information on type of professionals (incl. emergency specialists) in a hospital as a whole but not in a certain department |
| 8. Type of patients' pathways | n.a. ³ | | |
| 9. Triage - implementation and functioning | n.a. | | |
| <p><i>Source: Hospital Statistics, Federal Ministry of Health</i></p> <p><i>1. Data on outpatients (including those in hospitals' outpatient units) will be available in 1 to 2 years (information on procedures, age of patients, day and hour of contact and of procedure/treatment)</i></p> <p><i>2. Need to define which diagnose/procedure could be classified as "emergency"</i></p> <p><i>3. Since 2015, data on outpatients and inpatients have to be coded for privacy related matters. With this information patients' pathways should be identifiable in the future</i></p> | | | |

CASE STUDY

Critical Incident Reporting System (CIRSmedical) is a pilot project on error reporting and learning. It is part of a national effort of setting up capacity for quality assurance for the overall healthcare system, emergency care included.

Objectives: CIRSmedical is a web based platform designed to serve as a practical instrument for risk management.

Measures taken and implementation tools: since November 2009, error reports have been published on the web site <http://www.cirsmedical.at/>. They are freely accessible.

Between November 2009 and January 2011, the web site was accessed a little over 14,000 times. During this time, there were 156 reports made, of which 113 were published. In reports where specifics could be ascertained (around 90), errors were largely reported by physicians (66%) as well as care staff and staff at physician surgeries (21%). One third of undesirable outcomes were reported by physicians' practices and 55% by hospitals. Undesirable results were most frequently seen in the area of organisation/interface communication (23%), followed by invasive measures (22%) and non-invasive measures in both diagnostics and treatment (21%). Misunderstandings in communication were seen as the most frequent contributory factor leading to undesirable results or errors. Only 15% of undesirable outcomes were seen in emergency cases, with the remaining 85% as part of routine care, the vast majority of which happened during the week. Errors in treatment largely occurred with people with over five years of professional experience. Undesirable outcomes led to lasting damage or uncertainty in the patients in 12% of cases. Minimal damage was recorded for 33% of patients, and severe lasting damage for 6%.

Results obtained: the report on quality systems in hospitals is available on Hospital Statistics (Federal Ministry of Health), 1995-2010, and on register of houses for the elderly and care homes in Austria (Federal Ministry of Labour, Social Affairs and Consumer Protection), 2004-2009. It describes the current state of quality assurance structures and work, in the large majority of Austrian acute care hospitals. Evaluations are carried out on the basis of a single agreed questionnaire, where hospitals evaluate the degree of implementation of quality assurance work, along different dimensions. The results show that quality assurance work has strong strategic foundations in most hospitals, for example, in their basic principles, and that quality assurance is largely carried out using specific instruments, such as patient surveys. In relation to comprehensive quality models or in the field of risk management, the report establishes some potential for development. The goal of evaluation of the pilot project on error reporting and learning (*CIRSmedical.at*) was to assess the practicality of this instrument for risk management, and the usefulness of further development of the platform. The report recommends the continuation of the project and emphasises the potential of error reporting systems, including for ambulatory provision outside of hospitals.

Implementation barriers: while the management of *CIRSmedical.at* was originally influenced by Austrian chamber of physicians, the implementation of the Act to Strengthen Public Ambulatory Health Care Provision, in 2011, increased the role of the federal authorities in this area. The accompanying changes in the bodies of Österreichisches Qualitäts Management System (ÖQMed), an organisation that forms part of Austrian chamber of physicians, mean that federal influence, on development of quality assurance programs, for generalist and specialist physician care, also increased.

BELGIUM

ANSWERS PROVIDED BY HOPE LIAISON OFFICERS

MRS MIEK PEETERS, ZORGNET-ICURO

MRS VALÉRIE VICTOOR, SANTHEA

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

The Belgian perception about the issues at the stake of emergency treatment relates to:

- an increasing number of emergency departments. The main reasons for this may be the possibility for a free choice of patients, except when they call the emergency number, along with an obligation, for every general hospital, to have a “numéro d’agrément”. This is a sort of ID number obtained when conditions are fulfilled. Indeed, because of rising fusions among hospitals (multi-sites hospitals), they acquire their ID number, even when they are very close to one another (e.g. 2 km), and therefore they keep having their own emergency department.
- waiting time, depending on whether hospitals use a triage system or not. Only some hospitals are using a real and systematic triage system (i.e. nurses dedicated to the triage), thus involving questions of risks management and responsibility.
- number of patients. It is increasing despite the implementation of several measures trying to stop this growth. Having a significant impact on costs and organisation of domestic emergency treatment, this trend can give rise to multiple causes. This trend may give rise partly to a failure in continuity of primary care and partly to a growing poverty. The latter is due to an increasing illegal immigration in the country, as happened in the last decade, and to parent families’ worsening financial conditions. A growing number of patients that ask for emergency services, though they are not necessary. Patients are not obliged to go to the General Practitioner (GP) before going to the hospital; existing centres of emergency medicine are not located next to the hospitals and there is a general habit to consider first an emergency treatment.
- finally, quality of Belgian emergency treatment.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

Availability and kind of information about Belgian emergency treatment are emerging from the table below.

| Information on | Availability | Type | Definition |
|---|------------------------|--------------|--|
| 1. Number of emergencies | v | Quantitative | Number of visits in emergency care facilities |
| 2. Types of emergency | v ¹ | Quantitative | % distribution of Belgian male population with: - orthopaedic problems - cardio vascular-respiratory problems % distribution of Belgian female population with: - orthopaedic problems - cardio vascular-respiratory problems |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | |
| 4. Waiting time | Depending on hospitals | | |
| 5. Age of population concerned | v ¹ | Quantitative | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | v ² | Quantitative | |
| | v | Qualitative | <ul style="list-style-type: none"> • GPs specialised in emergency care • Specialists' categories in emergency care |
| 8. Type of patients' pathways | v | Qualitative | Some hospitals have clinical pathways: - AMI (acute myocardial infarction) - CVA (cerebrovascular accident) |
| 9. Triage - implementation and functioning | Depending on hospitals | | |
| Source: 1. Health Interview Survey 2008, L'Institut Scientifique de Santé Publique (WIV-ISP) 2. RIZIV (Belgian Government for Health Insurance) | | | |

As for:

1.

Number of emergencies: in 2010 visits in emergency care facilities were 2 193 351.

2.

Types of emergency: 32% of Belgian male population and 27% of female one have orthopaedic problems, while the distribution for cardio vascular-respiratory problems is 12% for male population and 10% for female one.

3.

Number (proportion) of admissions following emergency or not: this indicator varies between 30% and 38% depending on reports.

4.

Waiting time: it is different from hospital to hospital because it depends on triage and classification of urgency.

7.

Type of professionals in emergency departments and emergency specialists. Not every hospital has to have a specialised emergency care service, but all hospitals must provide first emergency capabilities for the treatment of patients with an acute pathology. Specialised emergency care services are led by a recognised specialist in emergency care medicine and a nurse specialised in intensive and emergency care (or with at least five years of experience). The emergency physician can also be assisted by several specialists (organised within an out of hours service). A 24 hour service must be provided by at least one recognised physician in emergency care medicine or acute medicine, and two nurses. The number of medical staff members has to be adapted to the intensity of activities of the specialised emergency care. Besides medical care, the medical staff is also responsible for registration of the activities, and continuous training in resuscitation techniques of all personnel in the hospital. In 1998, a commission with representatives of all emergency caregivers was founded in order to organise the collaboration between all services, and to formalise protocols for emergency care (also in collective emergency situations).

8.

Type of patients' pathways: patients can go immediately to the emergency department; by ambulance or by referral by primary care physician.

CASE STUDIES

In Belgium, a unique number for calls for primary care interventions is in study (1733 number).

Objectives: in this case, the intention is defining a better way to find the primary care physician at duty after hours.

Measures taken: a unique telephone number with triage has been proposed.

Implementation tools, implementation costs, implementation barriers and results obtained: as this is a pilot study, these aspects are still unknown.

Some good practices complement the qualitative and quantitative picture of emergency treatment.

In 2014, Belgium made mandatory for hospitals to transmit several data to the administration, including organisational data (date and moment of arrival, when patients leave the hospital, date of birth, etc.) and medical data (symptoms and diagnosis, cares given, etc).

Objectives: in this way, Belgium aimed to create a monitoring and alert system for preventive measures or appropriate quick interventions when crisis; to sustain politics, as comparing efficiency and quality of these departments, with ones in other countries, eases the identification of good practices; to define indicators for facilitating comparisons with other emergency departments or, even, other departments in the country.

Measures taken: a legal text has been approved to define what expected.

Implementation tools: the proposed monitoring and alert system works as an on-going flow of data whose transmission is ensured by a secured access on the web (e-Health).

Implementation costs, implementation barriers and results obtained: they are still unknown.

Interesting to be cited is Project 1733: it is a pilot study for the proposing of a unique phone number for all emergencies, with a professional triage of the calls under the responsibility of the Federal State.

Objectives: this project is devoted to decreasing the number of people going to the emergency departments without a real necessity, and to enhancing access to primary care physician on duty after hours.

Measures taken: a homogeneous use and functioning of triage among hospitals, with sending of patient to GP/hospital emergency department/special units of intervention, is at stake.

Implementation tools: one phone number is the main implementation tool.

Implementation costs, implementation barriers and results obtained: also in this case, they are unknown so far.

In 2010, specialisation of nurses was supported through allocation of around €27 million at federal level.

Objectives: these financial resources were granted to enhance nursing specialisation and to develop evidence based nursing, by producing guidelines and recommendations on good practices.

Measures taken, implementation tools and implementation costs: with the cited budget, a gross annual premium was given for nurses with a professional title in intensive care and emergency medicine, geriatrics or oncology (of €3,341.50) and for nurses with a specific qualification in geriatrics (of €1,113.80). Professional titles and specific qualifications are obtained after a complementary training of 900 hours and 150 hours, respectively. To preserve these titles or qualifications, nurses also have to undergo continuous training and work in the corresponding sector. Finally, "VINCA II", a project for home nurses, was also started by Federal Public Service (FPS) Health, Food chain safety and Environment, in April 2010 (€800,000).

Since 2006, the federal government has financed an experimental project called Paramedical Intervention Teams (PITs): they are designed as an intermediate service between the single ambulance and the ambulance under medical supervision (MUG, mobiele urgentie groep - SMUR, service mobile d'urgence et de réanimation).

Objectives: to improve the organisation of medical emergency services accessible to the entire population.

Measures taken: a PIT is composed of a nurse specialised in emergency care and an ambulance driver, and covers emergency care needs when the presence of an emergency physician is not required. Moreover, they are supported by a physician via a secure radio connection. PITs are also attached to a hospital.

BULGARIA

The Regional Centres for emergency care (RCECs) and hospitals' emergency wards are the key units of emergency care in Bulgaria. The RCECs are public establishments financed by the Ministry of Health through its budget. They provide emergency care to ill and injured people at home, on the spot of the incident and during transportation to the hospital. Each centre comprises an administrative department, a district coordination office and branches for emergency care across the served district. As for hospitals' emergency wards, in 2007, their ownership was transferred to district hospitals. Previously, these units were governed by the RCECs. Such wards can be created in any hospital.

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

From a qualitative point of view, emergency care in Bulgaria faces different issues:

- the number of total emergency care contacts has been increasing in recent years. It is indicative of an inadequate capacity in primary and specialised outpatient care. In many cases, the population uses emergency care to directly access specialised medical care. For patients without social health insurance (SHI), this is also a way to obtain free of charge medical care.
- centres and wards for emergency care are often overburdened with providing non-emergency services that should instead be dealt with by GPs. This is due to the fact that most patients call an ambulance or go directly to emergency wards. Then, as centres normally respond to all calls, this leads to a waste of human, material and financial resources.
- the number of emergency workforce teams in each centre and ward depends on the population and size of the area served, but overall number have been decreasing in recent years. Thus, scant staffing levels, with shortages of physicians and paramedical staff, affect emergency treatment. This negative trend is particularly pronounced in the district of Sofia city and six other districts. Low wages, bad working conditions and limited career opportunities increase staff turnover, especially among physicians. The lack of sufficient medical equipment, a shortage of ambulances, and the underdeveloped road and communication infrastructure, particularly in rural areas, decrease the effectiveness into emergency care delivering. Mountainous terrain and the lack of sanitary air transport impede transportation of critically ill people living in remote areas.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

The trend described above can be observed from a quantitative point of view too.

| Information on | Availability | Type | Definition |
|---|----------------|--------------|---|
| 1. Number of emergencies | v ¹ | Quantitative | % proportion of actual emergencies on total calls |
| 2. Types of emergency | | | |
| 3. Number (proportion) of admissions following emergency or not | v ¹ | Quantitative | % of hospital admissions among people seeking emergency care in RCECs |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | v | Qualitative | |
| 9. Triage - implementation and functioning | | | |
| 1. Source: Ministry of Health, 2008 | | | |

As for:

1.

Number of emergencies: records indicate that actual emergencies accounted for about 75% of all calls in 2008.

3.

Number (proportion) of admissions following emergency or not: in 2007, approximately 14% of people who sought emergency care in RCECs were hospitalised.

8.

Type of patients' pathways: depending on the urgency, patients can contact their GP, call an ambulance or go directly to an emergency ward. Patients without an acute life threatening illness or injury have to contact their GP. According to the National Framework Contract (NFC), GPs are obligated to be available around the clock and to provide urgent care. This means that the GP must treat the patient and, if necessary, refer him/her to a hospital. In practice, however, most patients call an ambulance or go directly to emergency wards.

CASE STUDIES

A Collaborative Agreement between the Ministry of Health of Bulgaria and the World Health Organization (WHO) Regional Office for Europe was signed for 2008-2013 period.

Objectives: the medium-term priorities for collaboration, with reference to emergency care, were:

- to improve organisation, leadership and management of health system and service delivery, including crisis preparedness aspects;
- to reduce the health, social and economic burden of communicable diseases;
- to strengthen health promotion and prevention of non-communicable diseases;
- to improve surveillance and monitoring systems for environment and food safety;
- to reduce the health consequences of emergencies, disasters, crises and conflicts, and minimise their social and economic impact.

Planned changes in emergency care were connected with the establishment of GP posts for patients to contact during nights and weekends too.

Objectives: this change was intended to improve access to primary emergency care.

CROATIA

ANSWERS PROVIDED BY HOPE MEMBER

MRS DR KSENIJA KRAJNOVIĆ, MINISTRY OF HEALTH

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

Over the last decade, an increase in the number of admitted and treated patients in the emergency medicine centres (CHMs), in most acute hospitals, has been observed in Croatia. Although this issue has been a subject of interest in some professional meetings, this country has no national studies which analyse the reasons behind this trend. Thus, only assumptions are possible. The overload of CHMs may be due to negative consequences of the introduction of concessions in the general/family physician practices, of a decrease in the role of health centres and of GPs business reorganisation. Also, a growth in the demand and in the complexity of medical care can be cited among possible reasons.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

From a quantitative side, a complete system of collecting work indicators for CHMs is now being established. Some CHMs have been computerised, but hospitals use different computer programs. Therefore, for 21 acute hospitals the data is monitored at national level, without the use of IT support.

| Information on | Availability | Type | Definition |
|---|----------------|--------------|--|
| 1. Number of emergencies | v | Quantitative | Total number of patients admitted to CHMs |
| 2. Types of emergency | v | Quantitative | <ul style="list-style-type: none"> • Total number of patients with polytrauma • Number of patients with polytrauma who survived 48 hours in CHM • Total number of patients with cardiopulmonary arrest • Number of patients with cardiopulmonary arrest who survived 48 hours in CHM |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | <ul style="list-style-type: none"> • Total number of patients admitted after a traffic accident • Total number of patients driven to the CHM by out of hospital emergency medical service after a traffic accident • Total number of patients admitted with cardiac symptoms • Total number of patients with cardiac symptoms driven to the CHM by out of hospital emergency medical service |
| 4. Waiting time | v | Quantitative | <ul style="list-style-type: none"> • Average treatment time since arrival to the CHM to discharge • Average treatment time since arrival to the CHM to hospitalisation |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | v ¹ | Quantitative | |
| | v ¹ | Qualitative | <ul style="list-style-type: none"> • CHM professionals' occupation • CHM professionals' specialisation |
| 8. Type of patients' pathways | v | Qualitative | |
| 9. Triage - implementation and functioning | v | Qualitative | Mandatory structured triage and re-triage |
| <i>1. Source: Registry of emergency medicine professionals in hospitals, Croatian Institute of Emergency Medicine</i> | | | |

As for:

7.

Type of professionals in emergency departments and emergency specialists: the Croatian Institute of Emergency Medicine keeps the Registry of emergency medicine professionals in hospitals. It collects and updates specific CHM professionals' data: name and surname of the employee, date of birth, occupation,

specialisation, work address and contact information. A specialisation in emergency medicine for Croatian medical doctors has been introduced too.

9.

Triage - implementation and functioning: a standardised structured triage process was created in Croatia in 2012 under the Emergency Triage Education Kit for Australian-Asian scale screenings (ATS). In the same year, training of nurses was launched and triage procedure in hospital CHMs was introduced. Upon arrival to the hospital CHM, patients immediately undergo triage which determines urgency of the problem and estimates allowed/expected waiting time. The nurse allocates one of five triage categories to each patient according to clinical criteria (assessment of patient's condition, major problems and risk factors) within up to 5 minutes:

- category 1: immediately begin medical assessment and treatment;
- category 2: begin medical assessment and treatment within 10 minutes;
- category 3: begin medical assessment and treatment within 30 minutes;
- category 4: begin medical assessment and treatment within 60 minutes;
- category 5: begin medical assessment and treatment within 120 minutes.

Re-triage is mandatory if the clinical status changes in the way that affects the triage category, if additional information affecting the triage category becomes available or if allowed waiting time for a particular triage category expires. Details about triage in Croatia are available on the Croatian Institute of Emergency Medicine website (<http://www.hzhm.hr/wp-content/uploads/2013/07/trijaza-u-odjelu-hitne-medicine.pdf>).

CASE STUDY

The development of a national network of hospital IT programs is planned in the long term.

Objectives: the monitoring of parameters for all CHM acute hospitals is the main objective of the planned project.

CYPRUS

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

In Cyprus, emergency care faces some problems into accessing services, particularly during weekends. This is due to high utilisation of emergency treatment, especially by immigrants, who go to emergency departments because they are free of charge. Moreover, nearly all non-emergency cases visit the casualty departments directly using their own transportation or, sometimes, using Ministry of Health's ambulances, if they request transportation.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

The overall availability of information about quantitative aspects of emergency treatment can be represented as follows:

| Information on | Availability | Type | Definition |
|---|----------------|--------------|--|
| 1. Number of emergencies | v ¹ | Quantitative | Total number of emergency calls |
| 2. Types of emergency | v ¹ | Quantitative | % of calls for car accidents on total number of emergency calls |
| 3. Number (proportion) of admissions following emergency or not | | | |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | n.a. | | No data on availability and quality of emergency services provided |
| 9. Triage - implementation and functioning | | | |
| 1. Source: Ministry of Health, 2010 | | | |

As for:

1.

Number of emergencies: during 2009, there were 33,585 emergency calls. 50% of calls were for emergencies and 50% were for other reasons.

2.

Types of emergency: 20% of 33,585 emergency calls cited above were for car accidents.

8.

Type of patients' pathways: the emergency departments are in operation 24 hours a day and are easily accessible by anyone, as they do not require referrals or a payment by patients. Emergency care includes all necessary medical services to patients who are in life threatening conditions that require urgent treatment, but today there are no data on availability and quality of emergency services performed. These services are provided by the casualty departments of all public hospitals, but also by some large private hospitals.

DENMARK

ANSWERS PROVIDED BY HOPE VICE-PRESIDENT AND LIAISON OFFICER

MRS EVA M. WEINREICH-JENSEN, DANSKE REGIONER (DANISH REGIONS)

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

For Denmark, the feedback provided to HOPE survey relates to quantitative aspects, leaving out qualitative section. A Danish National Person Register, which contains data for every person in connection with the health system, produces administrative and clinical data in the field of emergency treatment. The register dates back to 1977. In 1994, contacts to emergency rooms and outpatient contacts were added. In 2015, some changes to the Diagnosis-related group (DRG) system will provide more detailed information.

| Information on | Availability | Type | Definition |
|---|---------------------------------|--------------|------------|
| 1. Number of emergencies | v | | |
| 2. Types of emergency | From 2015 | | |
| 3. Number (proportion) of admissions following emergency or not | v | | |
| 4. Waiting time | v | | |
| 5. Age of population concerned | v | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | v (especially from 2015 and on) | Quantitative | |
| | v (especially from 2015 and on) | Qualitative | |
| 8. Type of patients' pathways | Depending on hospitals | | |
| 9. Triage - implementation and functioning | v | | |

CASE STUDIES

In 2013, Denmark planned a new organisation of the emergency medical services in the Capital Region to be implemented by January 2014. The Capital Region of Denmark assumed the operation of all emergency medical services and made them part of the public regional health system. Thus, the regional authorities assumed the operation of the out of hours services from the GPs, who have been responsible for the service so far, and unified this services and the hospital based emergency medical ones.

Measures taken: the reorganisation of the Region's emergency medical services involved several initiatives:

- all medical services in relation to emergencies were grouped into one unified system;
- nurses, instead of doctors, as previously, are now the first point of contact;
- if the patient has to go to an emergency ward or to be attended by a doctor, the nurse can provide information on the waiting times corresponding to the different wards and units. This information can be used by the patient to choose an emergency ward with the shortest waiting time or to spend the waiting time at home.

Implementation barriers: the new organisation has been heavily debated and has raised substantial critique by GPs and the Danish Medical Association. GPs believe that it is a serious deterioration of the emergency medical services. For instance, they argue that foreign experiences show that nurses are slower at directing patients to the right services; that more patients end up being sent to an emergency ward or attending a doctor, and that serious cases might be overlooked. The Capital Region, on the other hand, believes that the new system is more patient friendly. As patients no longer have direct access to emergency wards, the Capital Region asserts that they can experience shorter waiting times.

Results obtained: partly due to the fierce debate, the Capital Region decided to evaluate the implementation of the new emergency medical services in August 2014. The objective was to investigate whether the new arrangement needed adjustments. Results are not available. While the remaining four regions have stated that they would follow this experiment closely, they have not yet decided to implement similar solutions.

In 2007, there was a centralisation of the hospital sector. The Regions stated to reduce the number of acute care hospitals, from around 40, in 2006, to between 20 and 25, in 2015.

Objectives: the aim was to secure quality and allow for sensible staffing, basing on the assumption that a catchment area of between 200,000 and 400,000 persons was needed in order to reach this goal.

Measures taken: so called joint acute wards, at acute care hospitals, and the placement of four trauma centres, across the country, were acted. In these joint acute wards, emergency and acute patient admissions are organised in one ward. This is a change from a more specialty oriented towards a more process oriented admission, transcending professional as well as specialty barriers.

ESTONIA

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

In Estonia, emergency care is affected by the lack of qualified workforce in rural areas. In recent years, the country has been facing an increase in the number of emergency visits too.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

| Information on | Availability | Type | Definition |
|---|----------------|--------------|--|
| 1. Number of emergencies | v ¹ | Quantitative | Average number of emergency medical care visits per year |
| 2. Types of emergency | | | |
| 3. Number (proportion) of admissions following emergency or not | | | |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | | | |
| 9. Triage - implementation and functioning | v | Qualitative | |
| 1. Source: Health Board, 2012 | | | |

As for:

1.

Number of emergencies: in 1999-2007, the average number of emergency medical care visits per year was approximately 250,000. In recent years, the number of visits has slightly increased, to approximately 273,000 in 2011 and 2012. Quality monitoring of emergency care services and providers is mainly left to professional association and the Health Board.

9.

Triage - implementation and functioning: in the emergency department, triage is managed by an emergency medical specialist.

CASE STUDIES

A nationwide e-Health system was launched in Estonia in 2008.

Objectives: e-Health solutions are seen as tools to improve efficiency in the use of health resources by reducing paperwork and duplication, and to improve medical statistics. Use of e-solutions is part of an overall national initiative to develop innovative electronic solutions to provide improved access to public services.

Measures taken: the Estonian e-Health system is a platform that incorporates a growing number of e-solutions, such as electronic health records, e-prescriptions, digital image archive, patient portal, e-laboratory, e-emergency care solutions and statistics modules enabling information exchange with other e-systems. Patients can access their medical records and digital prescriptions through a patient portal and be better informed.

Results obtained: first evaluations of the electronic health records show that providers increasingly supply information on patient contacts. More than 85% of people have medical documents in the central database. *Implementation barriers:* quality of data is problematic because information is provided to the system using conventional summaries of medical records, from which data are subsequently extracted through algorithms. This emphasises the need for further standardisation of data input. Directly linked to this issue, a technology for automatically generating statistics, from these records, should be developed. These statistics could be usable by patients, doctors, providers, the state and the general public, respecting people's privacy. These data should enable all kinds of in depth statistical analysis too.

In December 2012, a salary agreement among Estonian Hospital Association, Estonian Emergency Care Association, Estonian Family Doctors' Association, Estonian Medical Association and Estonian Union of Health Care Workers was reached.

Measures taken: the agreement stated that the minimum salaries of physicians, nurses and auxiliary support staff had to be increased by 11%, 17% and 23%, respectively.

Objectives: as there was no political will to enhance total public spending on healthcare, the measures taken were a way to increase efficiency. Indeed the salary increase needed to arise from efficiency gains of hospitals and other healthcare organisations, as well as a limited increase in out of pocket (OOP) payments.

FINLAND

ANSWERS PROVIDED BY HOPE LIAISON OFFICER

MRS HANNELE HÄKKINEN, SUOMEN KUNTALIITTO FINLANDS KOMMUNFÖRBUND

(THE ASSOCIATION OF FINNISH LOCAL AND REGIONAL AUTHORITIES)

In Finland, the healthcare system is regulated by Health Care Act No. 1326/2010. Primary healthcare is organised in 151 health centres provided by local authorities, and secondary healthcare is organised in 20 hospital districts. Primary healthcare includes health promotion, dental care, rehabilitation, occupational healthcare, environmental healthcare, as well as emergency medical care, outpatient care, home nursing, at-home hospital care and inpatient care, mental health services. Substance abuse services are included when these are not covered by social services or specialised medical care. Primary healthcare may also be referred to as public health services.

Specialised medical care means specialised medical and dental care services pertaining to preventing, diagnosing, and treating illnesses, emergency medical service, emergency medical care and medical rehabilitation.

Highly specialised medical care means medical care that has been deemed as highly specialised by Government Decree due to the rarity of the illness, the special competence required for providing any required treatments, or the special requirements for arranging the associated medical care.

Urgent cases include cases involving an injury, a sudden onset of an illness, an exacerbation of a long-term illness, or a deterioration of functional ability, where immediate intervention is required, and where treatment cannot be postponed without risking the worsening of the condition or further injury. It shall be provided for patients regardless of their place of residence.

A new Health Care Act was introduced in Finland in 2010.

Measures taken: with the introduction of Health Care Act, ambulance services were transferred from local authorities to hospital districts. The act also put requirements for personnel education and training, equipment and readiness of the units to improve quality and safety.

Objectives: the aim was to improve the cooperation between pre-hospital emergency medical services and emergency rooms. In this way, the operations could form a regionally coherent system.

Implementation tools: the emergency medical service can be produced in-house, in cooperation with the region's rescue services or joint municipal authorities for other hospital districts, or by outsourcing the services to other service (private) providers. Hospital districts must determine the standard of service required for emergency medical services. According to the decree subsequent to Health Care Act in 2010, the service standard decision must lay down the procedures to be followed in the provision of emergency medical services, the scope of the services, the qualifications required for personnel participating in emergency medical care, response time targets, and other issues related to the provision of emergency medical services in the area. The service standard decision must include a description of the scope of

emergency medical services, ensuring that the services can be provided efficiently and expediently, and taking into consideration situations where demand for emergency medical services exceeds normal supply.

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

The new legislation on emergency services (Decree on emergency care No. 782/2014) put qualitative requirements to hospitals. ERs must provide primary and secondary care services under the same roof, and social care must be offered. The goal is to improve quality of care, patient safety and cost effectiveness. Because of the requirements, the number of ER's has reduced. Especially in rural areas, the distance to services has increased. In very rural areas, an exception permit to offer only primary care service can be acquired.

Telemedicine is routinely used in sparsely populated areas with long distances, like Northern Ostrobothnia and Lapland. Telemedicine consultations between healthcare centres and hospitals and between hospitals and university hospitals (e.g. stroke) are very common. For example Oulu University, the city of Oulu and Oulu University Hospital are prominent in developing IT methods in healthcare.

Social and crisis emergency services are mainly integrated to healthcare emergency services. The need is prominent in child protection, and in dramatic situations, accidents, etc.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

Availability and kind of information about Finnish emergency treatment are emerging from the table below.

| Information on | Availability | Type | Definition |
|---|--|----------------------|--|
| 1. Number of emergencies | v | Quantitative | Number of visits in emergency care facilities |
| 2. Types of emergency | v | Quantitative | |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | |
| 4. Waiting time | Depending on hospital emergency rooms (ERs) measures and reports | Quantitative | |
| | | Qualitative | |
| 5. Age of population concerned | v | Quantitative | |
| 6. Season/specific time | v | Quantitative | <ul style="list-style-type: none"> • Exacerbation of bronchial asthma in spring • Epidemic of flu in winter • Epidemic of flu in falls when slippery conditions (extreme weather changes) |
| 7. Type of professionals in emergency departments and emergency specialists | v | Quantitative | |
| | v | Qualitative | |
| 8. Type of patients' pathways | v | Qualitative/Clinical | Some hospitals have clinical pathways: <ul style="list-style-type: none"> - AMI (acute myocardial infarction) - CVA (cerebrovascular accident) |
| 9. Triage - implementation and functioning | In most hospital ERs | | |

As for:

7.

Type of professionals in emergency departments and emergency specialists: Finland has recently introduced a new medical specialty, i.e. Acute Medicine. Training has started a couple of years ago. In addition, need for better geriatric knowledge in the emergencies has been recognised. Additional training in emergency care for nurses is offered in several universities of applied sciences.

9.

Triage - implementation and functioning: different triage systems are used in Finland. Modification of systems according to local needs is also common.

CASE STUDIES

As emergency department (ED) arrangements are being developed and centralised in Finland, more information is required for the designing of these changes. A study by Kantonen Jarmo: "Impact of the ABCDE triage and other development measures in primary care emergency department on the patient flows, Doctoral dissertation 2014 (<http://www.uta.fi/ajankohtaista/vaitokset/tiedote.html?id=99728>; <http://tampub.uta.fi/bitstream/handle/10024/96219/978-951-44-9609-7.pdf?sequence=1>) can be cited as a source of case studies.

Objectives: its aim was to investigate the impact of the ABCDE triage system and other development projects on the number of patient visits to doctors in primary and specialist healthcare EDs. In addition, the spill over of changes in visits to doctors in surrounding municipal and private health stations providing daytime healthcare services were examined. Finnish primary healthcare is based on daytime appointments in primary care health centres and on out-of-hours services in health centre EDs. This creates an internationally unique way to organise citizens' needs for urgent care. In addition, patients may seek treatment in the EDs also in non-acute cases. One cause for this is the difficulty in access to doctors' appointments during office hours in Finland. In most countries acute emergency treatment takes place mainly in hospitals and no separate primary care based health centre EDs exist. In the Scandinavian countries as well as in other parts of Europe, however, a variety of privately-based primary healthcare out-of-hours appointments have been arranged. A variety of triage systems are used to assess the urgency of treatment in Finnish EDs but, as of yet, no research data exist to determine which ED is superior and more reliable. The situation is the same at international level. In Finland, the most common form of patient grouping is the ABCDE triage system. It has been developed to support the assessment of urgency for patients arriving in relatively good condition to EDs. In this study the author compared the situation before and after the ABCDE triage and other development interventions were implemented in the EDs.

Measures taken: by using a strict reverse ABCDE triage system and an extensive information campaign, primary healthcare centre emergency visits could be reduced by up to 24%. The traditional use of the ABCDE triage decreased the number of emergency visits to doctors by 8–9% and also reduced the number of patients having waited for over two hours to see a doctor. This led to no increase in the number of daytime visits to health centres. At the same time there was no decrease in visits to secondary healthcare doctors. When using reverse triage, visits to private healthcare GPs increased in a situation where non-urgent patients (group E) could be referred to daytime services or home after health advice given by a triage nurse. Reducing the number of EDs, and increasing the distance to them, for those living less than 10–20 kilometres from the EDs, did not increase neither the visits to ED doctors nor the total number of visits to doctors in the primary healthcare of a large city with 200,000 inhabitants.

Results obtained: when the ABCDE triage system was first introduced, there was an increase in the number of visits to triage nurses, whereas visits to primary healthcare emergency doctors decreased. At the same time the symptom classification (ICPC-2) system and the grouping of non-urgent patients used by nurses was also changed. Based on symptom classifications recorded by the nurses, non-emergency patients were now allocated to Group E, as was originally intended. According to the findings of this study, the ABCDE triage system could be used by other EDs of similar size municipalities as the city of Vantaa in Finland, with the expectation that the number of visits to doctors in primary healthcare EDs would be reduced. Thus, in large urban areas, it might be possible to reduce and centralise the ED services. Emergency triage may be a useful method for reducing the number of urgent visits to primary healthcare doctors, but the safety of the method still requires further investigation. Because a significant part of the patients in primary healthcare

EDs could be treated on an outpatient basis during daytime, it might be better to direct more resources to daytime appointments than to more expensive and centralised emergency care.

Geriatric outpatient clinic in Turku City Hospital

As the population gets older, the elderly constitute an increasing proportion of the patients attending emergency care units. However, several studies have shown that regular emergency units are not very good for the frail elderly. The symptoms of a serious life-threatening condition in the elderly are often less obvious and easily missed. On the other hand, even a rather benign condition e.g. urinary tract infection can impair the functional capacity of a frail elderly person dramatically. The likelihood that a frail elderly person is admitted to a hospital ward from emergency care unit is high. The risks associated with hospital stay (infections, delirium, thromboembolic conditions) are high among patients over 75 years. Even if a doctor's house-call can be arranged in less acute cases, thorough examination of an elderly person at his or her own home is challenging. For the elderly it is often difficult to go to laboratory or x-ray examinations on his or her own, especially as the waiting times are often hours. Earlier the only way to get proper diagnostic procedures done was to send the patient to emergency care unit, which often led to suboptimal care.

Measures taken: a geriatric outpatient clinic in Turku City Hospital was established in May 2013.

Objectives: the aim was to better meet the special needs of the elderly patients by:

- reducing visits to the emergency department;
- supporting home healthcare to cope with the frail elderly;
- making possible earlier intervention when a fall in functional capacity is noticed.

Implementation tools and implementation barriers: elderly patients often have many underlying problems and they need a more comprehensive assessment. In this clinic the patient is evaluated by a multi professional team comprising of a geriatrician, a nurse, a physiotherapist, a care manager and a pharmacist. If needed, a geropsychiatric nurse or a priest can also be consulted. The patients go to the clinic after a consultation call from a healthcare professional, i.e. physician, nurse or ambulance personnel. This is mainly because the clinic is for urgent, not emergency, care and it does not wish to impair or cause unnecessary delays in the care of the elderly. During the consultation call, the clinic also tries to make sure that the patient can be expected to benefit from the visit. In addition, due to limited resources, the management has to be able to control the amount of patients at the clinic.

Results obtained: till the end of year 2014, the clinic had over 4,000 visits. It was able to let 42% of the patients go home, often with intensified home care, new walking aids etc. Care in Turku City Hospital ward was necessary for 50% of the patients, and 3% required care in University Hospital due to e.g. hip fracture, subdural or intracranial haemorrhage, acute cardiac event, acute stroke, or abdominal catastrophe. On average, the clinic treats eleven patients daily. The staff is devoted and some of them have started research projects in the clinic, regarding both medical effectiveness and economical aspects. Preliminary analysis shows that patients admitted to hospital wards seem to need 2 days shorter periods in hospital. It seems that after a multidisciplinary evaluation before admission, the treatment starts more effectively from day one. So far, the feedback from collaborators, patients and patients' relatives has been positive.

Lapland Hospital District - cross-border emergency services in sparsely populated areas

Measures taken: the Lapland Hospital District consists of Finland's 15 northernmost municipalities and comprises about 28 per cent of the land area of the whole country. More than 1,800,000 tourists visit Lapland every year. The Lapland Central Hospital is the only acute secondary care unit and provides all the acute specialised medical care services in the area.

Objectives: the Lapland Central Hospital aims to face challenges of the Lapland Hospital District. They are: long distances; areas of low population density; tourism and challenging weather conditions. In addition to the 118,000 inhabitants of the municipalities, secondary care services are used by tourists. Lapland Central Hospital is located in Rovaniemi. The distance from e.g. Utsjoki Health Centre is almost 500 kilometres and from Kilpisjärvi is around 425 kilometres. The emergency care unit in Lapland Central Hospital provides acute medical services for more than 11,000 patients annually. Most patients are inhabitants of the region, but around 1,400 patients came from somewhere else in 2013.

Implementation tools and implementation costs: because of the long distances, mass tourism and challenging weather conditions, Lapland Hospital District and Lappish municipalities have made agreements on emergency care and outpatient visits with Sweden and Norway. For example, Pello (Finland) and Övertorneå (Sweden) have agreed to divide emergency care services between these two municipalities: every other day people are getting their emergency care services from Pello and every other day from Övertorneå. In the northern Lapland, people can choose their secondary care service provider between Finnish and Norwegian service providers. That kind of freedom of choice is based on the agreement between Lapland Hospital District and Helse Finnmark, Norway. Lapland Hospital District provides all the services in Finnish, Swedish and Sami languages. Finland, Norway and Sweden have common European Guidelines on Resuscitation (ERC) and alarm instructions for cross border cooperation in Northern areas. ERC guidelines and instructions are based on an agreement regarding cross border cooperation on pre-hospital emergency care. The aim of the agreement is to improve the availability of pre-hospital emergency care resources (ambulances, ambulance helicopters and other pre-hospital resources) for population and visitors in border areas.

Joint emergency services in North Carelia Hospital District, at Central Hospital in Joensuu

Measures taken: since 2013 the North Carelia Hospital District has been having joint emergency services for the whole population of 170,000 inhabitants, in 14 municipalities, 24 hours a day, and 7 days a week. The longest distance for the patients to joint emergency services is 130 kilometres. The joint emergency services include primary healthcare and specialised healthcare during the night and weekends. The joint emergency services offer better specialist consultations for the citizens.

Objectives: the aims are better use of resources and fluent flows of patients in the emergency services. During the daytime, the citizens use the emergency services of their own health centre, except in the town of Joensuu where services are offered in the joint emergency clinic.

Implementation tools: the ambulance services are organised by the North Carelia Hospital District. The ambulances also offer palliative care, when necessary. They have straight communication with the hospital for consultations. The patient administration is based on joint Information Communication Technology (ICT) patient records called Mediatri.

FRANCE

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

France witnesses a difficulty for hospital emergency departments to deal with an increasing workload. The overload of these departments is commonly related to the lack of access to primary care ambulatory services, as well as to a lack of available hospital beds for emergency admissions. Moreover, this situation is currently exacerbated by the increasing geographical disparities in the healthcare workforce.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

The table below shows the availability and type of information about French emergency care.

| Information on | Availability | Type | Definition |
|--|--------------|--------------|--|
| 1. Number of emergencies | v | Quantitative | <ul style="list-style-type: none"> • % of visits received by emergency structures (structure des urgences¹) on all emergency visits • % of visits received by specialised emergency units (pôles spécialisés d'accueil et de traitement des urgences; POSU) on all emergency visits |
| 2. Types of emergency | v | Qualitative | |
| 3. Number (proportion) of admissions following emergency or not | | | |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | v | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | v | Qualitative | |
| 9. Triage - implementation and functioning | | | |
| 1. Until 2006, emergency structures were distinguished into general emergency care units (services d'accueil des urgences; SAU) and local emergency care units (unités de proximité, d'accueil, de traitement et d'orientation des urgences; UPATOU) | | | |

As for:

1.

Number of emergencies: until 2006, SAU received 55% of all emergency visits; UPATOU received 40% of emergency visits and POSU accounted for 5% of emergency visits.

2.

Types of emergency: in France, types of emergencies, in terms of gravity and specificity of the cases that are taken care of, are criteria for classification of the overall 630 hospital emergency care units. Therefore, the administrative status of a specific hospital emergency care unit indicates types of emergencies treated. Now France distinguishes between:

- emergency structures (structures des urgences) that deal with all kinds of emergency (formerly SAU) or that may receive all types of emergency but must organise the transfer of the most complex cases having more limited technical and human resources (formerly UPATOU).
- specialised emergency units (pôles spécialisés d'accueil et de traitement des urgences; POSU) that deal with specific pathologies or types of patients.

8.

Type of patients' pathways: in France, someone feeling an emergency can call the emergency regulation centre or the fire brigade or his/her GP or a health specialist. He/she can go directly to a general emergency unit too. Upon arrival in the hospital, the mobile unit will bring the patient directly to the designated unit and ensure continuity of care when replaced by members of the unit.

CASE STUDIES

In 2009, Hospital, Patients, Health, and Territories (HPST) Act was approved.

Objectives: to decrease geographical disparities in the healthcare workforce.

Measures taken: the responsibility for providing continuous access to healthcare services went under Regional Health Authorities (Agences Régionales de Santé, ARSs), which contracted with ambulatory care physicians in order to meet the goal cited above. In addition, call centres dedicated to primary care issues have been created in order to reduce the burden of calls received by the SAMU call centres.

In 2004, the 2004-2008 Emergency Care Reform was designed and implemented.

Objectives: to solve difficulties faced by hospital emergency departments because of an increasing workload.

Measures taken: the reform included half a billion euros of investments directed towards the recruitment of medical and paramedical staff in emergency wards, as well as the creation of hospital beds for acute geriatric care (an increase of 900 beds in 2004), intermediate care (an increase of 915 beds in 2004) and hospital at home care (an increase of 300 places in 2004). The reform included also a national campaign to decrease waiting times in ED. 120 Emergency Department Services were involved in improvement projects, including flow management and bed management. Lots of knowledge has been created and case-studies and best practices are published online (anap.fr).

Objectives: to guarantee continuity of access to care.

Measures taken: the plan also promoted the development of ambulatory care centres (les maisons médicales de garde, MMGs) that would be accessible during nights and weekends.

Results obtained and implementation barriers: this attempt has been only partly successful, mainly because of difficulties in hiring physicians for night shifts.

In 2003, to decrease overload for hospital emergency departments through prevention, the Ageing and Solidarity Plan (Plan Veillesse et Solidarité, November 2003), a first plan devoted to elderly population, was issued.

Objectives: these aimed at:

- improving living conditions and care of elderly and handicapped people;
- financing support services (such as residential care, home care, helpers);
- ensuring equal treatment for all people with loss of functional autonomy;
- providing information and analysis concerning the service needs of disabled people.

Measures taken: a specific emergency plan was set up in each department for taking care of frail elderly and disabled people in the event of exceptional risks (such as a heat-wave). The idea was to identify disabled people who may need assistance, at the local level, for prevention purposes, and to organise cooperation between health services and health and social care organisations, at the local level, in order to ensure a timely response to their needs.

GERMANY

Germany is characterised by substantial regional variations, among the 16 Länders, with respect to the regulation, organisation and financing of after-hours care, rescue care and emergency care.

Moreover, the integration of rescue services outside the hospital somehow limits the full integration of an emergency care chain, outside and inside the hospital. In the former case, mechanisms of regulation, provision and financing differ from emergency care in the hospital outpatient or inpatient departments. Always outside the hospital, emergency rescue care is usually regulated by ministries of the interior and is often integrated with fire and technical security services. On the other side, in hospitals, emergency care is regulated, planned and supervised by the ministries responsible for health at state level.

Finally, in rural areas individual ambulatory physicians also take part in emergency physician services, in close cooperation with rescue organisations, but their role in emergency services has been decreasing.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

| Information on | Availability | Type | Definition |
|---|--------------|--------------|--|
| 1. Number of emergencies | v | Quantitative | <ul style="list-style-type: none"> Inpatient emergency cases in 2013: 7.8 million (source: <i>Destatis</i>) Outpatient and inpatient emergency cases |
| 2. Types of emergency | | | |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | <ul style="list-style-type: none"> Percentage of patients receiving emergency care in all cases: 43% (source: <i>destatis</i>) Inpatients: 51% (source: <i>Notfallgutachten</i>) Outpatients: 60% (source: <i>Notfallgutachten</i>) |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | | | |
| 9. Triage - implementation and functioning | | | |

HUNGARY

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

In Hungary, the share of emergency cases admitted through Accident and Emergency (A&E) departments has recently increased. Nevertheless, the proportion of emergency cases using other entry points remains high, with the distribution of A&E capacities showing large regional disparities. Indeed, very few A&E units meet all the required professional standards, with staffing shortages being the most frequent problem.

Moreover, despite a general increase in the effectiveness and efficiency of emergency care is perceived as a result brought by health policy reforms of successive governments, for the past 20 years, a comprehensive performance measurement system to support this statement lacks.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

From a quantitative point of view, emergency care in Hungary relies on availability and type of information as provided by the table below.

| Information on | Availability | Type | Definition |
|---|------------------------------|--------------|---|
| 1. Number of emergencies | v ¹ | Quantitative | Proportion of actual emergencies out of 911 calls (emergency calls) and visits to A&E units |
| 2. Types of emergency | | | |
| 3. Number (proportion) of admissions following emergency or not | v ¹ | Quantitative | Share of emergency cases admitted through A&E departments |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | v ¹ | Quantitative | A&E units professional standards |
| 8. Type of patients' pathways | Depending on various factors | | |
| 9. Triage - implementation and functioning | | | |
| 1. Source: State Audit Office Report, 2009 | | | |

As for:

1.

Number of emergencies: in 2008, the proportion of actual emergencies out of 911 calls and visits to A&E units ranged between 3% and 100%.

3. Number (proportion) of admissions following emergency or not: share of emergency cases admitted through A&E departments increased from 61%, in 2006, to 78%, in 2008.

7.

Type of professionals in emergency departments and emergency specialists: in 2008, the audit of the National Public Health and Medical Officers' Service (NPHMOS) found that only 22 out of the 45 A&E units met all the required existing professional standards. Thus, information about how much A&E units follow required professional standards implies production of quantitative data about workforce in those units.

8.

Type of patients' pathways: as emergency care is under reorganisation and development in Hungary, patient pathways can vary to a large extent, depending on the socioeconomic status of the patient, the location where the incident took place and the A&E department receiving the patient.

CASE STUDIES

For the period from 2007 to 2013, developmental projects have targeted the infrastructure, organisation and coordination of services of Hungarian emergency care.

Objectives:

- centralisation of out of hours services;
- establishment of one stop A&E units in hospitals as a single entry point/interface for emergency care patients;
- development of a common dispatch service for all three local emergency care providers (emergency ambulance service, hospitals and family doctors' out of hours services).

Measures taken: various projects were implemented, such as the renewal of emergency medical dispatch and the establishment of new (and upgrade of existing) A&E departments.

Implementation tools and implementation costs: infrastructure development has been supported by conditional and matching grants, both from local sources and from EU structural funds. A total of HUF35 billion (about €1.3 million) has been allocated to various projects, including the cited ones. The development of emergency care services has been supported by payment reforms as well. Bonus payments for centralisation and the establishment of common emergency dispatch services have supported the reorganisation of out of hours services, while the government has introduced a fixed fee component in the payment of hospital A&E departments.

Results obtained: the development of a common dispatch service for all three local emergency care providers has progressed slowly: only 7% of the centralised out of hours services had been integrated into a common emergency dispatch service until 2009 (State Audit Office, 2009).

In 2009, the State Audit Office published a report on the efficiency, accessibility and, to a certain extent, the quality of emergency care.

Objectives: the will was to solve the absence of a comprehensive performance measurement system.

Measures taken and results obtained: the report focused mainly on the availability and distribution of capacities, some activity measures and the assessment of whether emergency care providers had met the professional minimum standards set by Minister of Health. Therefore, the lack of a comprehensive performance measurement system remains.

Another stated goal of the governments in power from 2002 to 2010 was to make healthcare provision more equitable, increase the quality of care and improve the efficiency of healthcare delivery by adjusting the capacity of providers more precisely to the needs of patients.

Objectives: the governments aimed to reshape the system so that treatments for emergencies and common diseases would become accessible in as many places as possible - preferably within the framework of outpatient care - while more serious and costly interventions would be limited to facilities where all

necessary conditions were available. Indeed, in 2006 the government argued that the structure of the healthcare delivery system (the ratio of acute, chronic and nursing care capacities) and its relationship with morbidity and mortality patterns were distorted, and the geographical distribution of the capacities was unequal, resulting in unfair disparities in access to care.

Measures taken, implementation tools and results obtained: a new law to this effect was approved by the National Assembly in the second half of 2006, and implemented in 2007. In the wake of this legislation, the total number of acute hospital beds was reduced by 26% (to 44,215), some of which were transformed into increase chronic, rehabilitative and nursing care capacity by 35% (to 27,169). Five hospitals were closed down along with the acute care departments of another twelve hospitals. Moreover, four hospitals were merged in a single state central hospital. The level of the acute care provided by the hospitals was split into categories, such as priority hospitals (39 in total) and territorial hospitals (77 in total). The priority hospitals consisted of a heterogeneous group including large university clinics, county hospitals and small municipal hospitals. At the time, they accounted for approximately 50% of all hospital beds in Hungary. They were intended to work with the most advanced technology and with the best trained physicians, and to function as emergency centres providing urgent care around the clock, every day of the year. In contrast, the territorial hospitals were intended to perform general acute care. In addition, 50 institutions were allowed to provide only rehabilitative and nursing care, and the new regulation reshaped the catchment areas of all providers as well. The capacities of outpatient care were frozen at the level of 31 December 2006.

In October 2010, the Ministry of National Resources published a discussion plan to assist the preparation of a government decree containing a detailed strategy for the healthcare system. This plan consisted of a list of actions and general objectives for the healthcare system, albeit without establishing direct links between the two. The plan included also policy interventions for refining emergency care (Ministry of National Resources, 2010).

ITALY

ANSWERS PROVIDED BY HOPE LIAISON OFFICER

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QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

In Italy, a pressure on demand for emergency care is perceived. The Italian Veneto Region faces this issue by means the reorganisation stated in the Regional Health and Social Plan (2012-2016) which improves primary and intermediate care, developing networks on specific diseases (e.g. oncological, dementia), connecting better hospitals to intermediate care and GPs.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

In Veneto Region, the overall availability of information about quantitative and qualitative aspects of emergency treatment can be represented as follows:

| Information on | Availability | Type | Definition |
|--|--------------|--------------|--|
| 1. Number of emergencies | v | Quantitative | Total number of visits at Emergency Department (ED) Number of visits x 1000 population |
| | | Qualitative | % of pts transported by ambulance % of pts with minor complaints % of pts referred by GP % of pts with unplanned return to ED |
| 2. Types of emergency | v | Qualitative | % of trauma vs non trauma % distribution of main complaints |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | % of admitted % of discharged % of referred to GP % of admitted to non-hospital facilities |
| 4. Waiting time | v | Quantitative | Time from arrival to take in charge Time from arrival to exit Time from decision to admission to ward |
| 5. Age of population concerned | v | Quantitative | Number of visits by age class |
| 6. Season/specific time | v | Quantitative | Number of pts affected by Flu Number of pts with heat related complaints Surveillance of Summer Fevers |
| 7. Type of professionals in emergency departments and emergency specialists | v | Quantitative | Available staff and shifts Visits from external specialists |
| 8. Type of patients' pathways | v | Qualitative | <ul style="list-style-type: none"> • Trauma • Stroke • STEAMI (ST Elevation Acute Myocardial Infarct) • Obstetrics – the Gynaecology • Fast Track |
| 9. Triage - implementation and functioning | v | Qualitative | % of accesses without triage Discharge evaluation vs access code |

CASE STUDY (VENETO REGION)

In 2014, the Veneto Region planned specific objectives regarding the organisation of the emergency medical services to get more appropriate arrivals in ED, more appropriate hospitalisations, faster tracks for patients in ED, more comfortable waiting rooms for patients/caregivers. Specific laws were provided (DGR n.74/2014 and DGR n. 1513/2014) stating specific actions on Emergency staff, hospital specialists, GPs.

A short description of the **main objectives** and their **implementation tools**:

- reducing un-appropriate arrivals in ED through the organisation of meetings with GPs;
- reducing the patients' waiting time from their arrival in the ED to take in charge as well as the overall time of treatment. Indeed, the 90% of patients is taken in charge by 1 hour from their arrival in the ED and the 90% of overall treatment is concluded by 4 hours from their arrival;
- reducing un-appropriate hospitalisation by training the emergency staff and specialists of hospital wards;
- making the patient's stay more comfortable with the introduction of some extra services such as Wi-Fi connections in waiting rooms and with the creation of some professional figures (specific room assistant).

CASE STUDY (NATIONAL LEVEL)

With regard to emergency care, the National Health Plan for 2006-2008 (Ministero della Salute, 2006) provided a specified strategy.

Objectives:

- integration of healthcare networks (for emergency care, transfusions, transplants);
- reduction of waiting lists.

Measures taken:

- promotion of innovation, research and development (e.g. through implementation of healthcare services and biomedical research, and through health technology assessment);
- citizen involvement in healthcare decision making and healthcare assessment;
- training policies directed to personnel in the National Health System (Servizio Sanitario Nazionale, SSN);
- improvement of clinical governance and medical technologies;
- agreement to reduce waiting lists by applying the criteria of appropriateness, emergency status and transparency. A dedicated 2006-2008 National plan to reduce waiting lists was signed by the Ministry of Health and the regions in 2006.

LATVIA

ANSWERS PROVIDED BY HOPE GOVERNOR AND LIAISON OFFICER

DR JEVGENIJS KALEJS, LATVIJAS SLIMNĪCU BIEDRĪBA (LATVIAN HOSPITAL ASSOCIATION)

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

Life threatening situations are now challenging emergency treatment in Latvia, with several reasons ranging from medical ones to non-medical ones.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

This qualitative perception stands along the below collection of available information about Latvian emergency care services.

| Information on | Availability | Type | Definition |
|---|-----------------------|--------------|---|
| 1. Number of emergencies | v | Quantitative | Total number of emergency calls |
| 2. Types of emergency | n.a. | | |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | Hospitalisations rate |
| 4. Waiting time | v | Quantitative | Average waiting time expressed in minutes |
| 5. Age of population concerned | v | Quantitative | % of frequency of emergency according to age classification of population |
| 6. Season/specific time | v | | |
| 7. Type of professionals in emergency departments and emergency specialists | v | Quantitative | <ul style="list-style-type: none"> • Shortage of specialists • Full-time equivalent (FTE) for all • Full-time equivalent (FTE) for each category |
| | v | Qualitative | |
| 8. Type of patients' pathways | Depending on patients | | |
| 9. Triage - implementation and functioning | v | | |

As for:

3.

Number (proportion) of admissions following emergency or not: hospitalisations rate is about 40%.

4.

Waiting time: there are differences among hospitals (1-60 minutes).

5.

Age of population concerned: the highest frequency in terms of emergency cases is in “more older” category (about 60%).

CASE STUDY

Latvia is working on keeping issues related to emergency treatment in healthcare business.

Implementation tools: they are mainly bonuses and other financial tools.

Implementation costs and implementation barriers: high implementation costs encounter state and budget resistance.

Results obtained: thanks to financial incentives, the amount of specialists in Latvian emergency care shows a growing trend.

ANSWERS PROVIDED BY HOPE NATIONAL COORDINATOR

MRS DR EVIJA PALČEJA, BĒRNU KLĪNISKĀ UNIVERSITĀTES SLIMNĪCA
(UNIVERSITY CHILDRENS HOSPITAL)

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

This table reports available information about emergency care services at University Children's Hospital in Latvia.

| Information on | Availability | Type | Definition |
|--|------------------------------------|--------------|---|
| 1. Number of emergencies | v | Quantitative | Number of emergency patients |
| 2. Types of emergency | n.a. | | |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | Hospitalisations rate |
| 4. Waiting time | v | Quantitative | Average waiting time expressed in minutes |
| 5. Age of population concerned | v | Quantitative | % of frequency of emergency according to age classification of population |
| 6. Season/specific time | v | | |
| 7. Type of professionals in emergency departments and emergency specialists | v | Quantitative | |
| | v | Qualitative | <ul style="list-style-type: none"> • 24 hour specialists • Specialists with home-duties |
| 8. Type of patients' pathways | Depending on patients ¹ | | |
| 9. Triage - implementation and functioning | v | | |
| 1. Registration has different pathways for planned patients that do not go through emergency | | | |

As for:

1.

Number of emergencies: the number of emergency patients in 2013 was 67,975.

3.

Number (proportion) of admissions following emergency or not: in 2013, patients hospitalised were 12,210 (18%).

4.

Waiting time: waiting time categories are 4 and they depend on colours (the longest one is 240 minutes).

7.

Type of professionals in emergency departments and emergency specialists: information on different specialists, i.e. 24 hour specialists (paediatric; surgeons; etc.) and specialists with home-duties (neurologist, cardiologist; etc.), is available.

CASE STUDIES

Neither studies nor researches on best practices at national level are available, but good practices emerge when observing the hospital one. This level often implements simple and not time wasting triage systems or electronic tools for emergency, or records improvement into performance indicators. The case of the University Children's Hospital can be quoted.

Objectives: there is an effort to reduce the hospitalisations rate.

Measures taken: a 24 hours observation has been developed.

Implementation tools: the hospital is now facing a redesigning process of triage. It has designed a link with ambulatory paediatricians that thus work close to emergency: the triage specialist can send non urgent patients during day-evening time to an ambulatory paediatrician.

Results obtained: hospitalisations rate has decreased twice since 2011 (34%).

In 2010, emergency safety net funds were made available to develop an advisory telephone service connecting patients to a doctor at their family doctor's surgery, after working hours and during weekends.

Objectives: the idea was to extend access to primary care services to 24 hours a day, across the country, and to deal with uncomplicated cases through this low cost alternative, which may contribute to avoiding unnecessary emergency ambulance calls or emergency hospital visits.

Measures taken: the service became operational in 2011.

Implementation tools, implementation costs and implementation barriers: this project was part of the Social Safety Net Strategy enacted in October 2009 in Latvia. Funding for the Social Safety Net Strategy was available from a World Bank loan until the end of 2011. In 2012, some elements were included in the state budget but others had to be discontinued. Since 2014, most of the Social Safety Net measures have been in the state budget, although the available funding is insufficient for the financing of all measures.

Between 2009 and 2012, a reform of the emergency medical services in Latvia was undertaken in the Regulation of State Emergency Medical Service.

Objectives: saving financial resources and increasing the efficiency of service provision were the main goals.

Measures taken: merger of emergency care services of different municipalities into the State Emergency Medical Service (SEMS) had to be implemented.

Results obtained: the emergency care services of 39 municipalities, with differentiated structures for the provision of emergency care, were merged into the SEMS, under the supervision of the Ministry of Health. Consequently, accessibility and quality of emergency care in most of the country have been harmonised and inefficiencies have been reduced.

Implementation barriers: municipalities were often in opposition to the reform but the Ministry of Health was able to carry it through.

MALTA

ANSWERS PROVIDED BY HOPE LIAISON OFFICER

MRS DR ANTONELLA SAMMUT, MINISTRY FOR ENERGY AND HEALTH

The following information on Emergency Care was gathered from the Clinical Chair of A&E department of Mater Dei Hospital in La Valletta, Malta.

What do you consider to be the top 3 main reason for this development?

- Patients' expectations of a 24/7 of high standard care
- Professionals wanting and working hard at establishing their specialty
- The continuously increasing trend in the demand and this leads to political pressures.

What are your Department's perceived reasons for such issues and emergency care becoming so much more important?

- Community and Primary Care alternatives for the patients are lacking.
- Private doctors and GPs want to work office hours only and do not really want to do emergencies.
- The public does not trust the Primary healthcare facility sufficiently
- The sick and elderly populations are increasing.

Why is emergency care and emergency department work becoming bigger and more important?

- Social factors: increased patients expectations, limited access to out of hours GPs.
- Demographic factors: such as an increase in the elderly population and in the patients with multiple co-morbidities.
- Resources reconfigurations: such as reduced inpatient beds, waiting times for outpatients clinics and operations.
- Technical advances such as rapid diagnosis and turnaround for patients with conditions that would have historically required hospital admissions like chest pain, head injury, trauma.

Does A&E collect information on a regular and consistent basis? For example, does A&E have figures and definitions on?

Yes, the Malta A&E department collects information consistently and reports regularly on various factors which inform trends at a number of levels both in terms of patients and employees, including the following:

- number of registrations;
- the types of emergency (urgent/non urgent, somatic/mental health, etc.);
- the number (proportion) of admissions following emergencies or not;
- waiting time;
- age of population using A&E;
- season/specific time.

Types of professionals working in A&E, like emergency specialists and the exact number of consultants, HSTs, BSTs, and specialist nurses who have done courses on A&E care or have long term experience there.

- 1 A&E Chairperson
- 7 A&E Consultants
- 1 Resident Specialist
- 6 Higher Specialist Trainees
- 17 Basic Specialist Trainees
- 100 Nurses; 59 with degree, 41 diploma/traditional. Amongst these, 6 have a master. Chief Nurse has a post graduate diploma

Doctors have a very strictly regulated and international 6 year training curriculum to become specialists including exams. Nurses undergo a 2 year A&E training program which includes triage, ambulance responses, and other advanced emergency nursing skills.

Do you have outlined the type of patients' pathways? Our pathways are linked to the category of triage.

Malta uses the American Emergency Severity Index (ESI) which is essentially divided into 5-tiers. ESI 1 cases are immediate / resuscitation cases, ESI 2 are very urgent Area 1 cases, ESI 3 are semi-urgent but may need admission cases and are seen in Area 2, ESI 4 are low urgency and seen in Area 3, ESI 5 are the non-urgent GP cases seen in the and both these categories are seen in the Minor Care Clinic which is manned by GPs and A&E trainees.

Finally, do you have a particular way of capturing good practice and specific solutions within the department? (e.g. case studies at national / local / hospital level).

Yes, an I.T. tool has been developed that can capture certain KPIs like time and type of first medical contact, throughput times, etc. This has been launched in April 2015.

Is this methodology outlined below being used in your department to capture good practice and solutions?

Yes.

Description of objectives (Issues that were tried to be solved)

In the third quarter 2014, a task force was created to tackle the waiting times issues in A&E. The main objective of this task force was to investigate and solve issues which were leading to long waiting times and to ensure a process that will achieve a 95% 4-hour target time from registration to 'A&E ready' for patients.

Description of measures taken

The A&E patients' pathways were scrutinised and the stumbling blocks in the process were identified. These were mainly:

- lack of emergency specialists and trainees to cope with the workload;
- lack of emergency nurses to cope with the workload;
- lack of treatment cubicles to cater for the turnover of patients;
- lack of monitoring equipment;
- lack of adequate space for paediatric emergencies;
- lack of adequate clinics for minor complaints;

- lack of an IT tool to track the patients' process and capture KPIs;
- long turn-around times for laboratory investigations results.

Implementation tools

- 13 new emergency physician trainees were recruited in 4th quarter 2014 and one post for a new consultant is planned in 2015
- 19 new emergency nurses were recruited in 4th quarter 2014
- A major physical re-structuring civil project started in 4th quarter 2014 and this will increase the adult treatment cubicles by 13 in early 3rd quarter 2015
- All new cubicles will be fully monitored
- The paediatric emergencies will all be seen in a designated new area cut off from the adult area. The treatment cubicles will increase from 3 to 5
- A baby feeding room is to be provided
- The GP cases have been relocated to a new area with 2 clinics and off-centre from the critical area of the department.
- An IT system has been developed to register the times and location and status of the patients whilst in A&E. This IT system is used by all doctors and nurses and is reflected on screens which help the staff monitor the shop floor management better.
- A new paramedic was employed to fast track all lab tests from A&E to the lab by bypassing certain stops in the pneumatic system that was identified as prolonging this process.

Implementation costs

Total estimated cost of the implementation tool is of €1,286,341

Results obtained (methods used to measure the results, indicators)

This is works in progress but preliminary data is showing that the 95% 4-hour A&E ready target can be achieved.

Implementation barriers

Initially civil engineering problems caused a 3 month delay in the initiation of the project. However the re-structuring process has been embraced by all staff and hospital administration. It seems that the expected finish time forecasted to be in early quarter 2015 can be achieved.

A few examples are A&E 'small' space, human resources, burn-out, lack of beds, lack of adequate primary healthcare, lack of senior doctors and nurses for 24/7 cover.

Quantitative aspects: available sources of information and most updated figures

In the Republic of Malta, emergency care is provided in the A&E department at Mater Dei Hospital and in health centres. Patients in Gozo can access emergency care at the A&E department housed within Gozo General Hospital. Although various initiatives have been taken to encourage more use of the health centres for emergency services, today the bulk of emergency care services are delivered at Mater Dei Hospital. The decision whether to opt for emergency care at Mater Dei Hospital or a health centre rests upon patient's discretion. The only exception is in minor emergencies, when an ambulance is dispatched and the patient is usually directed to a health centre in order to receive the necessary care.

According to investigations conducted in 2012 by the Health Commissioner, in his capacity as Ombudsman, various shortfalls in the provision of care were identified. Among them; there were overly prolonged waiting times wherein patients were being left for hours, or even days, on stretchers, devoid of privacy, dignity and general hygiene. The Health Commissioner identified lack of space and of senior medical doctors to discharge or admit patients as among the main problems. The Health Commissioner also observed that patients were using the A&E department in order to bypass the long waiting lists in the outpatients department, in the hope of having their inspecting treatment urgently done.

Quantitative aspects: available sources of information and most updated figures

The following table indicates availability and type of information about emergency care at Mater Dei Hospital in Malta.

| Information on | Availability | Type | Definition |
|---|--|--------------|--|
| 1. Number of emergencies | v ¹ | Quantitative | Number of patients attending the A&E department per day |
| 2. Types of emergency | v ¹ | Quantitative | % of patients categorised as - very urgent - urgent - not urgent on number of patients per day attending the A&E department per day |
| 3. Number (proportion) of admissions following emergency or not | v ¹ | Quantitative | % of patients categorised as: - hospitalised into A&E department - referred to other departments on number of patients attending the A&E department per day |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | No standard protocols exist delineating the provision of emergency care services | | |
| 9. Triage - implementation and functioning | v | Qualitative | A specialised nurse assesses the urgency of the case |
| 1. Source: Review conducted in the A&E Department at Mater Dei Hospital, 2012 | | | |

As for:

1.

Number of emergencies: almost 300 patients per day attended the A&E Department in 2012.

2.

Types of emergency: of the cited 300 patients per day who attended the A&E Department in 2012, 91 (31%) were categorised as very urgent, 64 (21%) as urgent and 51 (17%) as not urgent.

3.

Number (proportion) of admissions following emergency or not: of the same cited 300 patients, 209 (69%) were hospitalised into A&E department while the remaining 91 (31%) were referred to other departments.

8.

Type of patients' pathways: once arrived at the public A&E department, the patient is triaged by a nurse and assessed by an emergency physician. Then, he/she receives emergency care and, if further inpatient care is required, will be admitted to hospital. Patients requiring follow-up ambulatory care are provided with a follow-up appointment, or referred for follow-up by the family doctor. The patient can arrive at the emergency department by ambulance, by him/herself or, in the case of a minor emergency, he/she can be handled by GPs at the primary care health centres.

CASE STUDIES

In 2011, the Ministry for Health began outsourcing surgical services to the private sector: among them, weekend cover for triage level 3 emergencies was included.

Objectives: the goal was to further decentralise service provision and facilitate patient access, in a bid to reduce waiting times for elective interventions by boosting activity.

Results obtained: outsourcing for triage level 3 emergencies was considered as pilot project, proposing an organised commissioning and outsourcing process through which private and public providers can equally give public healthcare services, challenging the traditional link between public healthcare services and government operated healthcare facilities. This plan also sets the agenda for the development of activity and target based part funding, rather than full funding, through a global cash budget independent of throughput.

Implementation barriers: some initial problems with acceptance of such an innovative approach occurred.

In 2012, the Parliamentary Secretary announced a five point plan to reduce waiting times at hospital's emergency department.

Objectives: bringing emergency department waiting times down to a maximum of four hours during years was the objective.

Measures taken and implementation tools: the plan included a physical reengineering of the department; a new layout; a separate new sub department to cater exclusively for children; a differentiated area for GP patients who do not normally need to be given assistance at the emergency department's core areas; a quicker medical first contact point to assess an incoming patient and his/her introduction.

NETHERLANDS

ANSWERS PROVIDED BY HOPE GOVERNOR AND LIAISON OFFICER

MR ROBBERT SMET, NVZ - NEDERLANDSE VERENIGING VAN ZIEKENHUIZEN
(DUTCH HOSPITALS ASSOCIATION)

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

In the Netherlands, health insurers' objective is that of reducing the number of emergency care centres at hospitals in order to have decreasing costs. The Dutch Hospital Association has conducted a research about the financial impact of emergency care centres on hospitals and the relationship between volume and quality of emergency care. This research has concluded that 95% of emergency care is not of complex type and that it could be improved through concentration. Hospitals have claimed and obtained the market competition authority to withdraw the plans to reduce the number of emergency care centres as proposed by the combined health insurers. All parties are now discussing the development of quality indicators for emergency care to be used by health insurers for their contracting.

Cost reduction and quality improvement of complex emergency care can be cited among possible reasons for such issues.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

No information available about quantitative aspects of emergency treatment in The Netherlands.

However, as for triage (implementation and functioning), a growing number of Dutch hospitals integrate GPs posts with emergency care centres at hospitals. Thus a nurse can triage an incoming patient to either the GP or the emergency care centre at the hospital. It is expected that this measure enables a reduction in unnecessary use of expensive emergency care service in hospitals.

POLAND

The 2006 Law on the National Medical Emergency Services regulates the organisation and operation of emergency care services in Poland. Medical emergency services comprise both life-saving healthcare services performed in non-hospital settings, by medical emergency teams, and such services in hospital emergency wards. For the purpose of this survey, only information about the latter has been treated. According to the regional medical emergency care plans, in 2011 there were 224 emergency care wards and 14 trauma centres in hospital wards.

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

Quality of care in hospital emergency wards; integration among various elements of the medical emergency care system and shorter emergency response times centralise Polish political debate about emergency treatment.

CASE STUDIES

In 2010, the National Centre for Quality Assessment in Healthcare (CMJ/NCOA) was mandated by the Ministry of Health to assess quality of care in hospital emergency wards.

Results obtained: publication of the report is currently pending.

In 2006, the Law on National Medical Emergency Services was enacted and, in 2009, a network of 14 trauma centres was created.

Objectives: these measures aimed to integrate various elements of the medical emergency care system and to shorten emergency response times. Currently, further efforts are being made in this direction.

Measures taken: EU structural funds are being used to modernise and equip hospital emergency wards, to develop an emergency notification system and to fund capital and investment equipment for trauma centres.

Also in 2006, the Minister of Health presented an assessment of the Polish healthcare system and a plan of action to the parliament. The plan did not propose a systemic overhaul but rather specific changes to the existing structure and financing of the healthcare system. These included state funding for most medical emergency services.

PORTUGAL

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

The main issue now affecting the debate about emergency care in Portugal refers to efforts for designing and implementing a system able to ensure the rapid and appropriate delivery of emergency healthcare.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

| Information on | Availability | Type | Definition |
|---|----------------|--------------|--|
| 1. Number of emergencies | v ¹ | Quantitative | Total number of emergency calls |
| 2. Types of emergency | | | |
| 3. Number (proportion) of admissions following emergency or not | | | |
| 4. Waiting time | | | |
| 5. Age of population concerned | | | |
| 6. Season/specific time | | | |
| 7. Type of professionals in emergency departments and emergency specialists | | | |
| 8. Type of patients' pathways | v ² | | % of Health Family Units (USFs) enrolees going directly to the emergency departments |
| 9. Triage - implementation and functioning | | | |
| Source : 1. Data source INEM (Instituto Nacional de Emergência Médica) 2. Campos ACd. <i>Reformas da Saúde: o fio condutor</i> . Almedina ed., 2008 | | | |

As for:

1.

Number of emergencies: during the 2004-2008 period, the number of emergency calls increased by 41.3%.

8.

Type of patients' pathways: in 2006, about 33% of the USFs (not in hospital) enrolees did not go to the primary care centres, but they went directly to the emergency departments or hospital outpatient visits.

CASE STUDIES

Since 2005, ambulatory care has been subject to reform and reform proposals for the redefinition of the network of emergency services provided by both primary care centres and hospitals.

Objectives:

- launching, coordinating and monitoring the strategy of redesigning the healthcare centres;
- providing better access, quality and continuity of care;
- increasing satisfaction of both patients and professionals.

Measures taken: a task force for primary care was created in 2005 to lead the project of implementing local USFs.

Implementation tools, implementation costs and results obtained: the document defining the rules to implement USFs was approved in 2006, but the creation of these units was possible in 2007, when incentives, financing and objectives were defined. Physicians, nurses and health ancillary technicians, provided with organisational, functional and technical independence, composed the teams.

In 2008, Health Centre Groups (*Criação dos Agrupamentos de Centros de Saúde, ACES*) were created.

Objectives: the willingness was to pave the way for a better use of resources and management structures.

Implementation tools and results obtained: ACES were to serve the population of a specific geographic area. The implementation of ACES (maximum of 74), which cover between 50,000 and 200,000 patients, aimed to make use of economies of scale and allow the enforcement of regional health policies and strategies.

Another intervention related to the redefinition of the network of emergency services proposed the closure of some existing units, as well as the opening of new ones and the changing of the type of care provided in others.

Implementation costs and implementation barriers: this redefinition faced strong opposition from local populations and authorities, based on wide media coverage. The increase of co-payments has also faced a negative reception by the public, but, overall, it has been possible to increase them on a more or less regular basis.

SPAIN

ANSWERS PROVIDED BY HOPE GOVERNOR AND LIAISON OFFICER

MRS ASUNCIÓN RUIZ DE LA SIERRA, INGESA (INSTITUTO DE GESTIÓN SANITARIA)

Given the following definitions:

- urgency care is the fortuitous health problem (unforeseen or unexpected), in any place or activity, for different causes and with different levels of risk, which alerts of an imminent need of attention to the person who suffers or his family (WHO);
- emergency care is a urgent situation that immediately threatens the life of the patient or the functioning of any organ (WHO);

the answers provided by Spain are related to urgency care.

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

The urgency care service is among the ones which grew a lot in Spanish hospitals in the last years. The variability of misuse of emergency services is estimated in a range between 24% and 79%; with hospital emergency departments recorded more than 26 million of urgent cases in 2011. This figure, although being slightly lower than in 2009 (-1.7%), means that every ten people, six attended a hospital emergency department. This trend could be due by a growing trust of the population in emergency departments and the expectation of a quick attention; by an obligation for the emergency departments to treat patients with non-urgent pathologies (some hospitals exceed 70% of the emergency); by the mobility of the population and the accessibility to this service.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

| Information on | Availability | Type | Definition |
|---|----------------|--------------|---|
| 1. Number of emergencies | v | Quantitative | Total number of handled emergencies |
| 2. Types of emergency | n.a. | | Possible proxy: frequency of pathologies treated in emergency units |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | Number of hospital admissions every 100 emergencies |
| 4. Waiting time | v ¹ | Quantitative | <ul style="list-style-type: none"> • Average time since patient's arrival at the emergency unit to triage • Average time since patient's arrival to physician consult • Average time since the visit took place to discharge |
| 5. Age of population concerned | v ¹ | Quantitative | |
| 6. Season/specific time | v | Quantitative | <ul style="list-style-type: none"> • Epidemic of flu in winter • Exacerbation of bronchial asthma in spring |
| 7. Type of professionals in emergency departments and emergency specialists | n.a. | | |
| 8. Type of patients' pathways | | | Only estimation on % of the emergencies conducted on the initiative of the patient |
| 9. Triage - implementation and functioning | v | Qualitative | <ul style="list-style-type: none"> • Triage MST (Manchester triage Scale) • Triage Andorran (web_e-pat) • Paediatric version of the Canadian triage • KARPAX triage model is in experimental phase |
| 1. Source : <i>Estudi sobre L'Activitat i L' Organització dels Serveis D'Urgències Hospitalaris</i> by Departament de Salut, Generalitat de Catalunya | | | |

As for:

1.

Number of emergencies: the total number of handled emergency has grown from 16.775.180 in 2000, to 20.847.675 in 2008, in public hospitals. However, in 2011 data showed a decrease of about 1.7% relating to 2009. Spain is currently following the same trend.

2.

Types of emergency: Spanish healthcare system doesn't make such differences. Most of the patients go spontaneously to the emergency services. It is estimated that 80% of the emergencies are due to patient's initiative without referral from other services. However, information about what kinds of pathologies are more frequent is available.

3.

Number (proportion) of admissions following emergency or not: approximately 80% of patients are discharged home. In 2011, most of these visits (21 million emergencies) were treated in hospitals of the public network, and every 100 cases, 10 required hospital admission. Currently, this proportion is decreasing a little bit.

4.

Waiting time: it is recommended that the emergency units have a triage system, enabling a fast severity patient classification, assigning a maximum waiting time. According to the *Estudi sobre L'Activitat i L'Organització dels Serveis D'Urgències Hospitalaris* by Departament de Salut, Generalitat de Catalunya, 13,59' was the average time (± 16.4) since patient's arrival at the emergency unit to the triage; 66.7' (± 84.01) from arrival to the physician consult; and 173,4' ($\pm 316,1$) since the visit took place to the discharge.

5.

Age of population concerned: following the same data source, 20% of emergencies were generated by patients younger than 15 years, and 19% by patients older than 64 years.

6.

Season/specific time: there are seasonal peaks, such as the epidemic of flu in winter or the exacerbation of bronchial asthma in spring.

7.

Type of professionals in emergency departments and emergency specialists: although in Spain there is no medical specialisation in emergency services, in emergency units there are always nurses, midwives, gynaecologists, obstetricians, surgeons, trauma surgeons, paediatrics, radiologists and so on. This workforce is organised in multidisciplinary teams to guarantee the best level of patient safety, quality and efficiency. In terms of quantitative figures, approximately, 10% of the medical doctors working in hospitals work in an emergency area (including emergency call).

8.

Type of patients' pathways: most of the patients go spontaneously to the emergency services. It can be estimated that 80% of the emergencies are conducted on the initiative of the patient, without referral from other services. The patient can also be sent by any doctor if he/she believes the patient has urgent health problems.

9. Triage - implementation and functioning: Spain uses triage as it is considered an agile, easy to reproduce and reviewable system of classification, thus essential for quality management of the emergency units. Spain implemented the system of triage MST (Medical Strike Team); the Andorran (Web_e-pat); the paediatric version of the Canadian triage, all of them validated. Indeed the Sociedad Española de Medicina de Urgencias y Emergencias (SHEMESH) endorses the Spanish system of triage (SET), the Andorran-based one. KARPAX triage model is in experimental phase.

CASE STUDY

Different observatories and studies represent Spanish efforts for a better knowledge about emergency treatment, such as: *Estudi sobre L'Activitat i L' Organització dels Serveis D'Urgències Hospitalaris*, by Departament de Salut, Generalitat de Catalunya; *Observatorio de Resultados del Servicio Madrileño de Salud, Informe de hospitales*; *Observatorio del Sistema de Salud de Cataluña, Central de Resultados, Ámbito hospitalario*.

Objectives: the will is to measure if certain activities carried out (some admissions and stays) added value to people's health, and a great example of these are just hospital emergency departments, which ideally should cater only patients with high complexity health problems, by basing on available resources.

Measures taken: Spain has defined:

- activity indicators (percentage of emergency admissions; emergency pressure; ...);
- indicators of adequacy;
- indicators of health results and satisfaction surveys.

From a general point of view, emergency and urgent hospital readmission indicators are very valuable; since it is considered that there are many admissions of this kind, especially the ones originated by chronicity and fragility, which should have been prevented through community actions (coordination with primary care and community health programs).

Implementation tools:

- most of urgent services in Spanish hospitals have a triage system in order to keep proper attention to patients who most require it;
- improvements in medical technology, IT and changes in health transportation have made possible to bring to the emergency patient the necessary means for first aid care as defibrillation, fibrinolysis, blood tests of first line and others;
- telemedicine has proven to be a very useful tool. It allows communication and consultation between mobile emergency units or fixed emergency points and the hospital, on the clinical conditions of the patient (electrocardiogram, blood pressure, analytics, etc.).

Implementation costs: pilot projects must be developed to evaluate costs and benefits of these relatively new organisational and managerial aspects, like the implementation of emergency systems or quick way processes, especially for stroke, acute coronary syndrome and polytrauma.

SWEDEN

ANSWERS PROVIDED BY HOPE GOVERNOR AND LIAISON OFFICER

MR ERIK SVANFELDT, SWEDISH ASSOCIATION OF LOCAL AUTHORITIES AND REGIONS (SALAR)

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

Solutions for a better cooperation between different players along the entire patients' pathway, as well the existence or not of special emergency physicians represent the main issues of interest relating to Swedish emergency treatment.

Emergency rooms are not always seen as part of a larger flow, they really work around the clock to handle the influx of patients to the hospitals, without being able to influence the outflow. This easily leads to a large accumulation of patients in the emergency department, causing lack of patient safety, poor working environment, etc. Therefore, Swedish emergency care has to improve the collaboration with other players, both within and outside the hospital, such as primary healthcare and community care services.

More debate on what is the best level of care for different patient groups is necessary too. Many patients might prefer to get treatment at home, rather than in an emergency room. To a larger extent, some patients would be able to bypass the emergency room and get directly to the ward. Then a growing proportion of patients are seeking emergency healthcare not for life threatening conditions, but to have an immediate treatment: for them, the right level of care has to be discussed and created, as today there are often not so many other options to receive immediate care.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

From a quantitative point of view, available information about Swedish emergency care can be summarised as in the following table:

| <i>Information on</i> | <i>Availability</i> | <i>Type</i> | <i>Definition</i> |
|--|------------------------|--------------|---|
| 1. Number of emergencies | v | Quantitative | Total number of emergencies |
| 2. Types of emergency | v | Qualitative | <ul style="list-style-type: none"> • Somatic • Mental health • Paediatric |
| 3. Number (proportion) of admissions following emergency or not | v | Quantitative | <ul style="list-style-type: none"> • Average proportion of admissions on total number of emergencies • % variation in admissions |
| 4. Waiting time | v | Quantitative | <ul style="list-style-type: none"> • Average length of stay • Average time until medical assessment by a doctor |
| 5. Age of population concerned | v | Quantitative | <ul style="list-style-type: none"> • % distribution of emergencies for age category • amount of emergency visits per 1,000 inhabitants for age category |
| 6. Season/specific time | v | Quantitative | |
| 7. Type of professionals in emergency departments and emergency specialists | v | Qualitative | <ul style="list-style-type: none"> • Nurses • Nurses assistants • Physicians but only in few hospitals |
| 8. Type of patients' pathways | v | Qualitative | <ul style="list-style-type: none"> • Triage • Fast track • "Streaming" |
| 9. Triage - implementation and functioning | Depending on hospitals | | |

As for:

1.

Number of emergencies: the total number of emergencies was about 2,4 million in 2013.

3.

Number (proportion) of admissions following emergency or not: on average about one third of the patients aged 20 and older

4.

Waiting time: on average, the length of stay was 2 hours and 46 minutes in 2013, but there are big variations among hospitals. There are also large variations in time until medical assessment by a doctor.

5.

Age of population concerned: the distribution of emergencies for age category is: age 20-29: 15%, age 30-39: 11%, 40-49: 12%, 50-59: 13%, 60-69: 16%, 70-79: 15%, 80+: 18%. Children are not included in this comparison since some hospitals have special emergency services for them.

6.

Season/specific time: there are local variations linked to seasons, public holidays, etc. Swedish hospitals have information about these variations.

9.

Triage - implementation and functioning: different systems of triage are used in most emergency rooms. However, many hospitals are now trying to limit the use of triage to situations when there is a queue and patients may not see a doctor immediately.

CASE STUDY

In 2012-13, the Swedish Association of Local Authorities and Regions (SALAR) implemented a project called "Akut Förbättring" (acute improvement).

Objectives: this project was designed in order to:

- improve patient flows into emergency rooms;
- increase quality of emergency care and patients' safety;
- reduce waste of patients' time;
- rise satisfaction of healthcare workforce.

Results obtained: 27 hospitals participated and the results were presented in a report published in 2013, according to three parameters:

- reduced waste of patient's time;
- improved quality of emergency care and patients' safety;
- satisfaction among employees;
- satisfaction of the board.

UNITED KINGDOM

ANSWERS PROVIDED BY HOPE LIAISON OFFICER

MRS ELISABETTA ZANON, NHS EUROPEAN OFFICE

QUALITATIVE ASPECTS:

PERCEIVED PRESSURES AND DETERMINANTS OF THE DEMAND FOR EMERGENCY CARE

For the past decade, there has been a consistently growing strain on the urgent and emergency care system in the UK. The available evidence indicates such pressure is caused by a combination of several complex issues, rather than a single major determinant.

The UK urgent and emergency care pathway is somewhat fragmented and includes a number of different access points, which may vary across the different geographical areas. Northern Ireland is an exception, with joint provision of health and social care services. In England, emergency departments (EDs) - also called accident and emergencies (A&Es) - are located within hospitals and are officially referred to as type 1 (major) or type 2 (single specialty) A&Es, depending on the level of services available. A number of other facilities, usually smaller and doctor or nurse-led - minor injuries units (MIUs), walk-in centres, ambulatory medicine units (AMU), and others - are officially referred to as type 3 or type 4 A&Es and may be co-located with a major A&E or sited in the community. A substantial portion of urgent care is also managed by providers of primary care and community care services, while ambulance services provide both emergency response and mobile access to urgent care in the community.

A&E attendances in England doubled in the four decades to 2006-07, from 6.8 million to 13.6 million - equivalent to an increase from 138 to 267 first attendances per 1,000 people each year. The rate of demand growth in first attendances at major EDs (type 1) has slowed since then, reaching 14.3 million in 2012-13. However, there has been a rapid rise in the use of type 3 facilities, with attendances growing by 70% between 2004-2005 and 2014-2015, reaching 7.8 million.

Similar patterns can be observed in Scotland, Wales and Northern Ireland. However, the rate of inpatient admission per 1,000 population remained stable in Scotland (1998-99/2011-12), and slightly reduced in Wales (2000-2001/2011-12) and Northern Ireland (2005-2006/2011-12) (The four Health Systems of the United Kingdom: how do they compare?, Bevan, G. et al.-The Health Foundation and The Nuffield Trust source report, April 2014, London (UK)). It still remains difficult to make definitive inferences on the causal relation between urgent and emergency care service models and system performance.

A number of perceived determinants are associated with the increased use of urgent and emergency care services, mainly revolving around changing health needs of the population and decision making about where to access services. The available evidence is variable and does not point at any strong correlation between a single determinant and the overall change in the demand, but rather to a combination of factors and with different perceptions of importance, depending from local realities. Factors associated with an increased use of urgent and emergency care services are the following.

- An ageing population, including a growing number of frail elderly people. These include people who have suffered a fall and those who have more complex conditions and are less able to self-care. A significant proportion of more frequent users can be found in this population cohort.
- Deprivation and other socio economic factors, which include: loneliness and lack of social support, limited access to transport, belonging to an ethnic minority, and a limited understanding of preventative and primary care services and how to access them.
- Changes about care provision, and perceived limitation of primary healthcare in particular. For example, primary care access is perceived as available in hours (from 08.00 until 17.00 or 18.00) and a vast proportion of the population is not aware of, or does not know how to access, out of hours primary care services. Restriction on social care eligibility is also an issue.
- Convenience and confidence: patients and the public struggle to understand how the urgent and emergency system works. Therefore they ultimately access the system where such access is perceived to be easier and waiting times shorter. Patient will often go to “where the lights are on”, and in most cases EDs are the only facilities to offer access 24 hours a day, seven days a week. Patients experiencing an unscheduled health problem, and their carers, have also high levels of risk aversion. They are uncertain about the seriousness of their condition and more likely to contact emergency than urgent care, especially if the patient is a child or an older person.
- High levels of public expectations, both in terms of level of, and access to, health services.

QUANTITATIVE ASPECTS:

AVAILABLE SOURCES OF INFORMATION AND MOST UPDATED FIGURES

National Health Service (NHS) England, the Department of Health and the Health and Social Care Information Centres (HSCIC) publish a range of key urgent and emergency care indicators, some of them on weekly basis. More detailed statistics can be accessed upon payment of a fee, but reasonably up-to-date statistics are available in the public domain. They include:

| Information on | Availability | Type | Definition |
|---|----------------|----------------------------|---|
| 1. Number of emergencies | v ¹ | Quantitative | Total A&E attendances |
| 2. Types of emergency | v ¹ | Quantitative | A&E attendances by type of A&E unit |
| 3. Number (proportion) of admissions following emergency or not | v ¹ | Quantitative | Emergency admissions through Type 1 A&E |
| 4. Waiting time | v ¹ | Quantitative | <ul style="list-style-type: none"> • A&E waiting time target performance, type 1 • A&E waiting time target performance, overall • Long waits in A&E departments |
| 5. Age of population concerned | v ² | Quantitative | Emergency admissions by different age group |
| 6. Season/specific time | v | Quantitative | <ul style="list-style-type: none"> • A&E weekly sit reps³ • Emergency call statistics⁴: <ul style="list-style-type: none"> - category A calls (receiving response within 8 minutes) response times - call volume |
| 7. Type of professionals in emergency departments and emergency specialists | v ⁴ | Quantitative | Accident and emergency medical workforce numbers |
| | v ⁴ | Qualitative | Definition of medical roles: <ul style="list-style-type: none"> - consultants - associate specialists - specialty doctors - medical registrars - junior doctors |
| 8. Type of patients' pathways | v | Depending on access points | |
| 9. Triage - implementation and functioning | v | Depending on access points | Different triage models are available |
| Source: 1. Department of Health and NHS England (from November 2010) 2. Hansard 3. NHS England 4. Health and Social Care Information Centre (HSCIC) | | | |

Similar indicators are available for Wales and Northern Ireland, with variations related to differences in legislation and how it is applied locally - this makes comparison among the four UK nations difficult. In Wales, official data on health and social care are available at StatsWales (<https://statswales.wales.gov.uk/Catalogue/Health-and-Social-Care>), while information on the various NHS bodies, and their performance, is available at "My Local Health Service" (<http://mylocalhealthservice.wales.gov.uk/#/en>).

The Northern Ireland Statistic and Research Agency (NISRA) provides similar data (<http://www.nisra.gov.uk/publications/default.asp9.htm>).

The UK HOPE Member has provided a document, reporting:

- total A&E attendances - 1987 to 2014 figures;
- A&E attendances by type of A&E unit - 2003 to 2014 figures;
- emergency admissions through Type 1 A&E - 2003 to 2014 figures;
- emergency admissions by different age group - 2007 to 2012 figures;
- A&E waiting time target performance, type 1 and overall - 2003 to 2014 figures;
- long waits in A&E departments - 2011 to 2014 figures;
- A&E weekly sit reps - a selection of reports from 2010 to 2014;
- emergency call statistics, including category A response times and call volume - a selection.

As for:

7.

Type of professionals in emergency departments and emergency specialists: English A&Es include fairly typical medical roles - consultants, associate specialists, specialty doctors, medical registrars and junior doctors (Foundation Year 1 and 2) - hospital practitioners and other clinical roles. Emergency medicine workforce is currently under severe pressures and experiencing common issues across the UK. There are particular concerns around the supervision of Foundation Doctors overnight in A&E departments and this does not help - trainees are effectively providing a service as opposed to being trained.

A number of reviews are currently being undertaken in England, some of them with implications for the UK as a whole, seeking to transform urgent and emergency care service models and workforce. Some health economies across the country are already implementing some of the necessary changes, based on specific needs of their population and resources that are locally available. New models of workforce planning and deployment are therefore emerging, better equipped to respond to local needs. However, some structural barriers still need to be addressed and different incentives are necessary at system-wide level, in order to implement such models at pace and scale.

The main principle underpinning these different approaches is multi-professional working across health and social care, for example through rapid assessment and treatment teams, which offer multi-disciplinary senior assessment. They generally include one consultant and an advanced assessment practitioner, who will assess patients upon their attendance to A&Es and at other crucial points during their treatment. This model also facilitates the development of a new role for qualified healthcare practitioners, supporting, for example, medical nurse practitioners to cover lower acuity cases, so that more senior professionals can focus on more complex cases.

Specific changes to the scope and role of community services and primary healthcare workforce are also being considered, in order to better support traditional urgent and emergency care services. In parallel, this would also enable general practitioners (GPs, equivalent to family doctors), and other primary healthcare practitioners, to develop emergency care skills. Examples of new collaborations between GPs and emergency services include co-located GP facilities in EDs or GPs working in multi-disciplinary teams (MDTs). Some specific examples are offered in the case studies section.

Evidence showed benefits, in terms of patient outcomes, in managing urgent care needs in the community

and as close as possible to patients' homes (for example, Dr Foster Intelligence (2012), *Fit for the future? Dr Foster hospital guide 2012*, or The King's Fund (2012), *Older people and emergency bed use*, and recent research by the Nuffield Trust (April 2014), *NHS hospitals under pressure: trends in acute activity up to 2022*).

Community Health Services are NHS services delivered in a community setting or in the patient's home and serve the health and well-being needs of the local population. They cover an extensive and varied range of personalised services, supporting patients to recover from illness or lead efforts on preventive and wellness services. They already contribute to providing local access to urgent care, through MIUs and walk-in centres. They can continue to demonstrate their value in providing personalised, responsive and accessible urgent care in a number of different community settings - and this could include, for example, a different use of community hospitals. They are also well placed to lead efforts in prevention and avoid, rather than treating, urgent and emergency care needs of the local population.

In terms of quantitative figures, accident and emergency medical workforce numbers are available, and are compiled and regularly updated by the HSCIC. It goes beyond the scope of this document to examine the extent of other sectors' workforce contribution to urgent and emergency care, but sources of information on primary healthcare, community nursing and paramedic workforce are also available.

8. Type of patients' pathways and

9. Triage

As previously mentioned, the urgent and emergency care service pathway in England is still quite fragmented, with multiple access points and ultimately of difficult access for patients. The default option in case of urgent and emergency care needs is still A&Es, and therefore it is crucial that the appropriate triage models are in place, enabling a smooth patient flow throughout the hospital or swift referral to the most appropriate out of hospital service.

A number of triage models are available in emergency facilities, some of them involving GPs co-located at the front door of A&Es, and the majority of others using nurse practitioners to assess patients as they present.

CASE STUDIES

The following case studies offer some examples of triage and multi-professional early assessment and treatment. In general, they point at good practices and viable future service and workforce models. However, some of them have only been recently implemented, and therefore evidence of impact and financial efficiency is not available or still being measured.

Collaborative care teams and ambulatory care reduce unscheduled admissions in Airedale NHS Foundation Trust

Measures taken: Airedale's collaborative care team (CCT) initiative was launched in 2008 to establish an integrated care team tasked with preventing unnecessary admissions and facilitating efficient hospital discharge. At the heart of the CCT approach, there is the principle that patients should only be in hospital when this is of clear benefit to them. Board sign up was secured early on, with partner organisations, demonstrating integration, can be delivered without the need for a single organisation. The strong relationships between providers and commissioners in Airedale helped to address many of the common challenges inherently associated with developing a CCT model, such as organisational structures and line management.

Objectives and results obtained: one of the key drivers for local authority engagement was to minimise the number of people requiring long term care, particularly in the current financial climate. There has been a downward trend in long term care cases since 2008, as a result of the CCT. Feedback from patients, carers and relatives has been extremely positive, with 100% of patients for Airedale CCT and 98% for Craven CCT reporting that the quality of services is "excellent" or "good", in the most recent patient satisfaction surveys. Moreover, patients report that they prefer the services offered to hospital care.

Implementation barriers: it was clear from the start that the CCT programme needed to be scaled at pace and that it offered patients clear alternatives to previous forms of care. Stakeholder involvement from the beginning was essential, as well as establishing appropriate financial mechanisms to ensure resources could be effectively moved around the system. Supporting the teams most impacted by changes, in working through the transition, was also a key challenge.

Measures taken: a new ambulatory care model was introduced in February 2013 in response to a difficult winter, and built upon the foundations of the CCT. There was acknowledgement of the need for improved communication between GPs and acute clinicians. Existing ambulatory pathways were enhanced, fronted by doctors and with rapid diagnostics.

Objectives and results obtained: in the first half of 2013-14, the ambulatory care unit (ACU) played an integral role in helping almost a third of cases to avoid admission to hospital. A significant cultural shift has also been achieved; acute consultants no longer contend an increase in inpatient beds is the answer to anxieties about capacity, regarding ambulatory care to be more effective. Feedback from primary care teams has been extremely positive and hospital patients also benefit from increased ward resources.

Implementation barriers: ensuring the appropriate location of the ACU within the pathway and investing in sufficient numbers of advanced nurse practitioners and additional acute physicians are among the main challenges. Airedale is now aiming to co-locate the ACU with their ED and clinical decisions unit within the next two years to enable further progress.

South Warwickshire NHS Foundation Trust

Measures taken: after its acquisition of local community health services in 2011, South Warwickshire NHS Foundation Trust developed a community emergency response team, moving from a bed-based model of care to a mixed model of community care. This included investment in community capacity; in-reach to hospital wards from community and social care teams; community input to emergency departments; a pull through model for hospital discharge (discharge to assess); and implementing seven day services.

Objectives and results obtained: this mixed approach proved beneficial in reducing pressures on emergency departments, and contributed to the overall management of the demand for urgent and emergency care. In particular, the discharge to assess model involves joint health and social care commissioning to support three distinct discharge pathways, depending on patient needs at the time of discharge. This allows for a shared understanding of, and jointly addressing, the risk to be managed. Early evaluations of the model showed positive impact in terms of reduced costs, improved patient flow and quality outcomes.

Implementation tools: the trust has adopted workforce models that respond to specific local population needs, such as five day elderly care consultant cover for emergency admissions, given a population with large numbers of frail and elderly persons. The interface between primary and secondary care is addressed through new roles, such as using medical nurse practitioners. See and treat models are complemented by access to generalist doctors, for those patients that are triaged and do not need specialist care. The use of an electronic common assessment tool also supports frontline staff in different sites, to jointly manage demand and reduce duplication between teams and agencies.

Kent Community Health NHS Trust

Objectives and measures taken: Kent Community Health is working with the acute and other sectors, commissioners and local authorities to provide joined up community health and social care services. A common system of risk stratification has been adopted by the partner organisations to identify high risk patients who will be managed through MDTs. Integrated neighbourhood teams are mobile and flexible, and are supporting GPs on prevention, self-care, integrated support for long term conditions, rapid response, assistive technology, better use of health and social care beds. A single assessment process ensures coordination of care around patient pathway, with health and social care coordinators appointed in some localities.

Implementation tools: workforce models are proactive, with GP leadership for the MDTs and a single care plan and management. Enhanced rapid response enables interventions within two hours, with teams operational 24 hours a day, seven days a week. Geriatricians are also part of the team in west Kent, to enable appropriate management of frail elderly and multiple conditions in the community. The trust is providing more places on community nursing courses, developing a system wide skills passport and offering a postgraduate certificate in community healthcare. There is a wider role for lower bands or nursing staff including first line assessments and risk assessments. There is emphasis on recruitment with support to gain experience. Retention is also important.

Results obtained: this flexible and agile approach, focusing on frontline integration, improves outcomes and contributes to reducing A&E attendances and non-elective admissions. Kent Community Health and other organisations may move to further integration in the medium term, with joint roles and appointments, joint accountabilities, joint training and pooled resources.

Emergency Multidisciplinary Units in Oxfordshire

Objectives and measures taken: the Emergency Multidisciplinary Unit (EMU) based at Abingdon Community Hospital (Oxford Health NHS Foundation Trust) is an innovative service in interface healthcare. It has been designed to meet the urgent assessment and treatment needs of patients with multiple, often complex problems, many of whom are frail and elderly. The unit provides comprehensive medical, nursing, therapist and social care assessment, supported by advances in point of care diagnostic technology that provides test results within minutes of patients' arrival.

Implementation tools: multi-disciplinary teams based in the EMU deliver a comprehensive assessment, acute medical diagnosis and treatment plan with on-going care to support patients and carers during episodes of illness, without acute hospital admission. Located within a community hospital site, the emergency multidisciplinary unit will rapidly assess any patient, following contact with a healthcare provider (for instance, a GP, community nurse or ambulance paramedic) who feels that further assessment is needed. The EMU has five hospital beds available for patients who may need to be kept in, for maximum 72 hours. A "hospital at home" nursing team is also available to provide support to patients who are sent home to recover. According to an internal audit, 65% of patients who are assessed by the unit are able to stay in their own home - only 17% of patients need acute hospital care.

Results obtained: the original design and subsequent delivery of the service is the product of work by the Department of Primary Care Health Sciences at Oxford University, Oxford Health NHS Foundation Trust, Oxford University Hospitals NHS Trust and Oxfordshire County Council. Their success is the result of collaboration and integration between providers: academic and clinical, acute and community, health and social. GPs in South Oxfordshire have been involved in the development of the service from the beginning and Oxford Clinical Commissioning Group has supported the service throughout, and is now responsible for commissioning the EMU at Abingdon. The model is currently being replicated in other community hospitals across Oxfordshire.

ANNEX: HOPE SURVEY

WHY THIS SURVEY?

This survey is part of the comparative activities of HOPE. Members consider that we can learn from each other on such an issue, even if the diversity of healthcare systems makes it difficult to understand differences.

This topic was identified as the priority for 2014 by the Board of Governors, perceiving this as a growing issue, in particular in the context of the crisis.

This issue is linked to other issues: avoidable hospitalisation, chronicity, ageing, and integrated care.

WHAT IT IS NOT?

The intention is not to describe the ways emergencies or the response to emergency are organised. The intention is not to compare Countries in terms of access to emergency care or in terms of numbers of emergency cases. Numbers are only necessary to understand the context.

WHAT IT SHOULD BRING?

The end result to get from this work should go beyond the descriptions of the different issues identified by members and the possible worsening due to the crisis. It should bring several good practices to share at national, regional and local (individual healthcare organisation) level.

Questionnaire

1. WHAT IS THE SCOPE OF THE ISSUE

1.1. Qualitative aspects: perception

During the last Board, Governors expressed their feeling of emergency department representing a growing issue; the aim is now to go into more details about this perception:

- What are the perceived issues at stake?
- What are the perceived reasons for such issues?

1.2. Quantitative: what do we know and how far?

European healthcare systems are extremely heterogeneous. This is reflected in the way emergencies are dealt with. It would be too difficult and time consuming to get a presentation of all systems. The aim is then not to get figures but to know if information is available and what kind. This would help us first to see if members have tangible sources to justify their perception and then this could help complement the good practices identified

Do you have figures (and definitions) on:

- number of emergencies,
- types of emergency (urgent/non urgent, somatic/mental health, etc.),
- number (proportion) of admissions following emergency or not,
- waiting time,
- age of population concerned,
- season/specific time

Do you have information on:

- Type of professionals in emergency departments and in particular emergency specialists
 - ☐ Yes, we have information on what kind of professionals are in emergency department
 - ☐ We have quantitative figures (FTE for all or for each category)
 - ☐ We have qualitative figures on types of specialised professionals
 - ☐ No, we do not have information available on what kind of professionals are working in emergency department
- Type of patients' pathways
- If triage is used and if yes how does it work?

2. PROPOSED STRUCTURE FOR TO GATHER SOLUTIONS/GOOD PRACTICES

(Approach by study cases at national, regional and/or local/hospital level)

Description of objectives (issues that were tried to be solved)

Description of measures taken

Implementation tools

Implementation costs

Results obtained (methods used to measure the results, indicators...)

Implementation barriers

A survey carried out by HOPE Central Office
with the contribution of HOPE Members



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