SUPPLEMENTARY FILE 1

GENERAL DATA OF PARTICIPATING EMERGENCY DEPARTMENTS
In the NEED, several hospitals and the emergency department characteristics are registered once a year.

1. Which hospital. Coding: <Hospital Code>.
2. Type of hospital. Urban = 0. Urban (STZ = Foundation of top clinical hospitals) teaching hospital = 1. Academic Medical Centre = 2.
3. Number of patients in the region of the relevant hospital. This information can be obtained for each participating hospital by the NZa (was once used to calculate the hospital budgets).
4. Emergency physicians. a. Number of emergency physicians working at the emergency room in the hospital on the first of January of the year in question. b. Emergency physicians in fulltime equivalent. c. Number of residents in emergency medicine on the first of January of the year in question. d. Number of residents not in training on the first of January of that year.
5. Presence of emergency physicians. a. Non-24/7 presence by emergency physicians = 0. Minimum of 1 emergency physician 24 hours a day, 7 days a week = 1. b. How many emergency physicians, residents in emergency medicine and residents not in training are working average at the emergency department daily for patient care. Number per shift. The number of shifts for emergency physicians also must be defined.
6. Number of trauma surgeons employed by the hospital (so NO general surgeons). Trauma surgeons in FTE.
7. Number of internists in acute medicine employed by the hospital. (So NOT general internists).
8a. Trauma centre No = 0. Level 2 = 1. Level 1 = 2.
8b. Intensive care in hospital. Not present = 0. Present = 1.
9. Medium Care (or high care) present in hospital. Not present = 0. Present = 1.
10. Number of visits per year on the emergency department (so NOT the number of emergency patients per year). This only accounts for the number of patients at the emergency department. If a separate emergency cardiac care is present or GP clinic is integrated, these patient visits are counted separately.
11. Number of emergency department visits per year. N.
12. General Practitioner clinic integrated within the emergency department. No = 0. Yes = 1.
13. Emergency cardiac care present AT or NEXT to the emergency department. Not present = 0. Present = 1
14. Quality indicators by the Dutch Society of Emergency Physicians (DSEP (NVSHA). See also the NVSHA website.
www.nvsha.nl.

Quality indicators for Acute Coronary Syndrome (ACS).
1.Are patients with (suspected) ACS treated at your emergency department? Indicate whether any patients are suspected for acute coronary syndrome at your emergency department. Answer: No = 0. Yes = 1.
2. For patients with (suspected) ACS, do you have a protocol about administration of aspirin?
Indicate whether a protocol is used at the emergency department for the administration of aspirin in cases of suspected acute coronary syndrome. Mention which protocol. Answer: No = 0. Yes = 1.
3. Time for administration of aspirin to patients with (suspected) ACS registered at the emergency room?
Specify whether the exact time of administration of aspirin given to patients with suspicion of acute coronary syndrome is registered at the emergency department. This can be a written or electronic registration. Answer: No = 0. Yes = 1.

Quality indicator Complication registration.
A complication is an unintended and undesired event or condition during or following medical treatment which is harmful to the health of the patient needing change in medical treatment, or if irreversible health damage exists.
1. Complication registrations
Is a complication registration used at the emergency department? Only one answer is possible.
If this question is answered with "no", the other questions with indicator "Triage on Emergency Department" do not apply. You can continue to answer the questions with the next indicator. Answer: No = 0. Yes = 1.
2. Complication meeting
A complication meeting at least four times a year at the emergency room? Answer only yes or no. Answer: No = 0 Yes = 1.
3. Complication Registration
Here we would like you to briefly specify which CR you are using. If possible, you can attach a copy of the list of complications registered. Please note: This does not concern completed lists with numbers of complications.
Free text: …
Quality indicator child abuse / domestic violence.
1.Presence of child abuse protocols
A written child abuse protocol used at the emergency department which meets the following minimum competencies? A. A multidisciplinary child abuse team is active in the hospital. B. Employees at the emergency department are trained in identifying child abuse. Answer: Yes, to both: 3 A yes, B no: 2 A no, B yes: 1 No = 0.
2. Screening instrument
Does the ED use a screening instrument to signal child abuse, such as the SPUTOVAMO form or a derivative? Answer: No = 0. Yes = 1.
Which screening instrument is used at the emergency room?
(multiple answers possible): SPUTOVAMO form. No = 0. Yes = 1 Top - toe examination. No = 0. Yes = 1. Otherwise, describe: <Free text ...>
3. Number of completed screening documents.
What is the number of completed screening documents at the emergency department, in relation to the total number of children up to and including 18 years old at the emergency department? **n**   Number of completed screening documents at the ED in January 2011
N   Total number of children up to and including 18 years at the emergency room in January 2011
n / N * 100% Screening document percentage

4. Protocol "parent notifications" Is a protocol used at the emergency department for the reporting of children as victims of domestic violence / suicidal attempt / auto mutilation / excessive alcohol and / or drug use? Answer: No = 0. Yes = 1. Notifications:

Quality indicator pain relief.

1.Pain scoring systems Is a pain scoring system used at the emergency department? Answer: No = 0. Yes = 1. If yes, which scoring system: <Free text>

2. Time registration of pain relief. Is the exact time recorded when pain relief is given in the emergency room? Answer: No = 0. Yes = 1.

3. Pain protocols

Is a pain protocol used at the emergency room? Answer: No = 0. Yes = 1. Comments <Free text>

Quality indicator Sepsis.

1.Sepsis protocol Is a sepsis protocol used at the emergency department? Answer: No=0. Yes=1. If yes, which protocol <free text>

2. Screening document Is a screening document used for sepsis in the emergency room? Answer: No=0. Yes=1. If yes, which document: <free text>

3. Time registration for administering of antibiotics to patients with sepsis Is time of administering of antibiotics to patients with sepsis registered at the emergency department? Answer No=0. Yes=1. Comments <free text>

Quality indicator Procedural sedation and analgesia (PSA)

PATIENT RECORDS.

The following basic principles are used: 1) Facts are recorded, e.g. times. Derived variables are generated afterwards, such as duration of stay. 2) Continuous variables are not categorized because this will lead to data loss. 3) Only create categories for coding, considering a remaining category "other" and the possibility to indicate "unknown" The following data is collected from all patients:

Demographic information. In general, the social service number (BSN) and date of birth are registered for each patient. In addition, a unique code is registered for each emergency room visit.

1.Age Age in years at the time of registration at the emergency registration desk.

2. Sex. Male or female. Code: Female = 0. Male = 1

3. Date and time Registration of ED presentation. DD-MM-YEAR-HOUR-MIN.

Transport to the hospital.

4. Type of arrival at the hospital. Arrival at the emergency room by ambulance or by own transport (i.e. walking, bicycle / moped or public transport). Encoding: Own transport = 0. Arrival with ambulance = 1. 9 = Unknown

5. Referral status. Self-referrer or referred by GP or another specialist. Encoding: Self-referrer = 0. Referred by physician = 1. Referred by specialist = 2. 9 = Unknown. For variable 4 and 5, more variables are possible. This still has to be discussed and agreed with the participating hospitals. Example: Anyone who enters by ambulance after a 112-call, would that be a self-referrer?

General information in the ED.

6. Triage category. Triage category according to Manchester triage system upon arrival of patient. Coding: Blue = 1, green = 2, yellow = 3, orange = 4, red = 5. If the Boston triage system is used, the corresponding categories 1 to 5 will be used. If a Dutch triage system is used, it will be entered.

7. Main specialism or supervisor. In case this is not known, the specialty will be recorded which admits the patient. Coding: emergency physician = 0. Surgery = 1. Internal medicine (or super specialism of internal medicine for example gastroenterologist or vascular medicine) = 2. Cardiology = 3. Neurology = 4. Urology, ENT or ophthalmology = 5. Pediatrics = 6. Other = 7.

8. Presenting complaint according to MTS, NTS, etc triage system. So not the entry complaint according to the registration desk employee. Coding: Complaint 1 = 1, complaint 2 = 2, ... Complaint 52 = complaint 52.

9. Resuscitation in shock (trauma) room. Coding: Treatment in standard treatment room = 0. Shock room / trauma room = 1. The definition of a shock room still needs to be determined by the participating emergency departments. They need to agree whether, for example, thrombolysis is part of this or not. The exact conditions of this room must be specified?

10. Initial vital signs at the time of triage or in the ED treatment room. So NOT mentioned on arrival at the treatment room. This variable only needs to be registered if it has been measured. If not measured, the space is left empty.

Oxygen saturation as measured with a pulse oximeter used in the hospital (percentages without oxygen). If measured when oxygen is given, note the number of liters / min of oxygen. Systolic and diastolic blood pressure (mmHg).Heart rate measured with pulse oximeter (beats / min.).Temperature measured with an ear thermometer (degrees Celsius). Glascow coma scale (EMV score). A separate variable is made of each vital parameter, with limit values and units. The Early Warning Score can then be calculated.

11a. Additional blood tests on the emergency room. If blood has not been obtained and sent for analyses, a 0 will be entered. If blood has been sent for analyses, a 1 will be entered.

11b. If blood has been obtained, the following values are entered. Carefully check whether the units at all EDs are the same! Blood gas obtained. 0 = No. 1 = Yes. If yes: Venous = 0. Arterial = 1. pH …PO2 (KPa), PCO2 (KPa), Bicarbonate (mmol / L), B.E. ... *Biochemistry:* Sodium (mmol / L), K (mmol / L), Creatinine (μmol / L) Urea (mmol / L), ASAT (U / L), ALAT (U / L), yGT (U / L), AF (U / L), LDH (U / L), CK (U / L), High sensitive Troponin (ng / L), CRP (mg / L), Pro-BNP (mg / L), Procalcitonin (mg / L), Lactate (mmol / L) *Hematology:* Hb (mmol / L), Leucocytes (x10^9 / L), Platelets (x10^{12} / L), D-dimer (mg / L), INR *Toxicology:* Ethanol (mg / L), Paracetamol (mg / L) *Blood cultures collected at the emergency room and sent for cultures:* 0 = No. 1 = Yes. Blood cultures should be at least one set (i.e. an aerobic and an anaerobic). *Urine collected at the emergency room and send for cultures:* 0 = No. 1 = Yes. *Urinary sediment collected at the emergency room:* 0 = No. 1 = Yes. *Urine toxicological analysis performed at the emergency department:* 0 = No. 1 = Yes.

12a. Additional X-ray diagnostics at the emergency room.

If no X-ray diagnostics has been performed at the emergency room, a 0 is entered. If a type of X-ray diagnostics has been performed at the emergency room, a 1 is entered. Definition: 0 should also be entered, if the patient is sent for an X-ray by the GP, and afterwards sent to the Emergency Department.

12b. If X-ray diagnostics have been performed, the type of examination must be recorded. Conventional X-ray, extremity. 0 = No. 1 = Yes. Conventional X-ray, divers (including chest X-ray). 0 = No, 1 = Yes. Abdominal ultrasound (including FAST). 0

= No, 1 = Yes. Ultrasound for deep vein thrombosis (DVT). 0 = No, 1 = Yes. Ultrasound, divers. 0 = No, 1 = Yes. Head CT. 0 = No, 1 = Yes. CT-Cervical spine. 0 = No, 1 = Yes. CT pulmonary embolism. 0 = No, 1 = Yes. CT aorta. 0 = No, 1 = Yes. CT chest-abdomen (trauma). 0 = No, 1 = Yes. Patients can receive multiple examinations at the emergency room.

13. Number of consultations at the emergency room. Coding: No consultations = 0. A consultation = 1. Two consultations = 2. Three consultations = 3, etc.

Outcomes

14. Emergency department lengths of stay. Duration in minutes. Discharge time of the emergency room minus the registration time at the emergency room. (So NOT the announcement or triage time).

15. Discharge destination (disposition) Home, to general ward, medium care (MC) or Coronary Care Unit (CCU) or intensive care (ICU). Died in ED. Transfer to another hospital. Scheduled outpatient clinic after ED visit and related to ED visit.

16. Hospital length of stay. In days. Discharge date minus recording date. If a patient at the emergency room is discharged home, the hospital duration is 0 days. If people are registered before midnight and leave the ED after midnight, this should be accounted as 0 days!

17. Hospital mortality. Coding: Leaving the hospital alive = 0. Died in ED or brought in dead (for example during CPR) = 1. Died in hospital before discharge = 2.

18. Return to ED with medical problem / complaints. Coding: No return with medical problems within 7 days after registration time on ED = 0. Return to the ED within a week after discharge with a medical problem which may or may not be related to the previous ED visit = 1. Return to the ED within a week after discharge with a medical problem which is clearly related to the previous ED visit = 2.
Otherwise = 3

19. ICD-10 code and diagnosis after discharge from the emergency room and hospital.

20. Diagnosis Treatment Code (DBC or DOT).