

Potenciális szervdonorok felismerése

Szervdonációs minőségbiztosítási program

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Transzplantációs igazgatóság

Transzplantációs koordináció, mint az ápolás speciális területe

2024. Budapest, SE-ETK



Total Rate (pmp) Total Number of Actual deceased organ donors (Global.2018)

Source: GODT (<http://www.transplant-observatory.org>)

DONORSZERV HIANY



Donorszerv hiány

| Forrás | Egy éves új beteg incidencia | Szervátültetések éves esetszáma (elhunyt donorból) | Különbség |
|-------------------------|------------------------------|--|-----------|
| 86 országban, WHO, 2021 | ~200.000 | 144.302 | -27,85% |
| Eurotransplant 2022 | 9.524 | 6.454 | -32,23% |
| Magyarország 2023 | 536 | 365 | -31,90% |

| Eurotransplant várólista 2023 | Eurotransplant várólista mérete magyar lakosságszámra | Tényleges magyar várólista 2023 | Különbség |
|-------------------------------|---|---------------------------------|-----------|
| 13.946 | 969 | 852 | -12,07% |

A magyar várólisták feltöltöttsége megegyezik az Eurotransplant átlag adatokkal!

<http://www.transplant-observatory.org>

<http://eurotransplant.org>

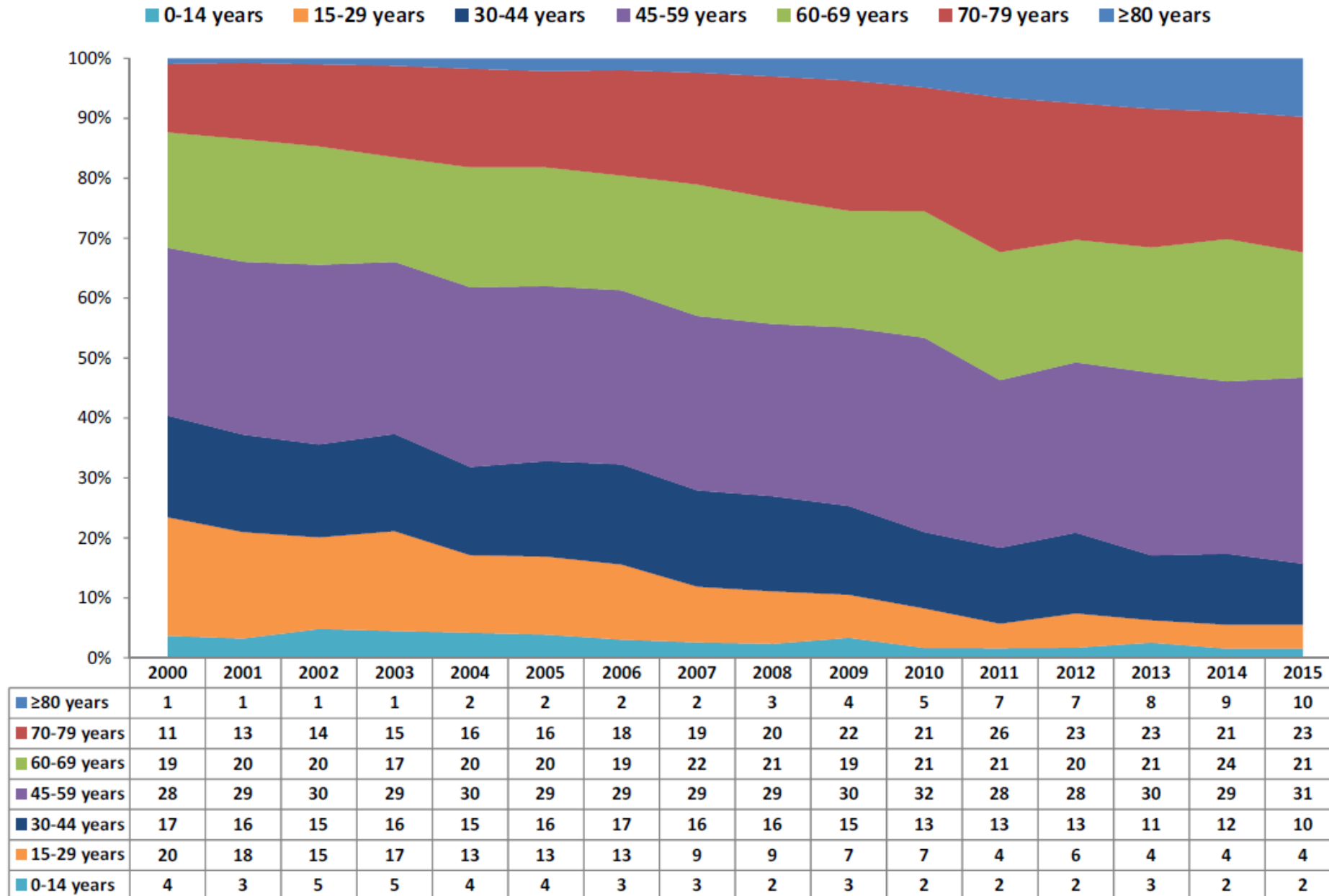
<https://nszr.ovsz.hu>

DECEASED DONATION IN SPAIN



Source: Organización Nacional de Trasplantes

Age group of deceased organ donors (percentages) in Spain. Year 2000-2015.



Szervdonációs aktivitás befolyásoló tényezők Magyarországon (DBD)

- **Társadalmi támogatottság:**
 - Ismeret, tájékozottság
 - Egészségügyi ellátórendszerrel szembeni bizalom
- **Jogi szabályozás = Feltételezett beleegyezés elve**
- **Szervdonációs potenciál mérése = QAP: adatgyűjtés, elemzés, beavatkozás**
- **Elkötelezettség**
 - Oktatás
 - Tapasztalat: utilizáció, visszajelzés, szervátültetettek
- **Finanszírozás = költségtérítés (reimbursement)**
- **Erőforrások**
 - Humán erőforrás
 - Egyéb erőforrások, pl. ITO ágy, eszközök, diagnosztika, műtő



A szervdonációs aktivitást befolyásoló tényezők

1. Mortalitás:

1. Gyakorisági adatok: balesetek, agyvérzések
2. Intervenció: idegsebészet, neuro-radiológia

2. ITO ágyszám

3. Potenciális donorok felismerése

4. Koordinátori rendszer

5. Beleegyezés, hozzájárulás

6. Jogszabályi környezet

7. Klinikai döntéshozatali folyamat

NHS

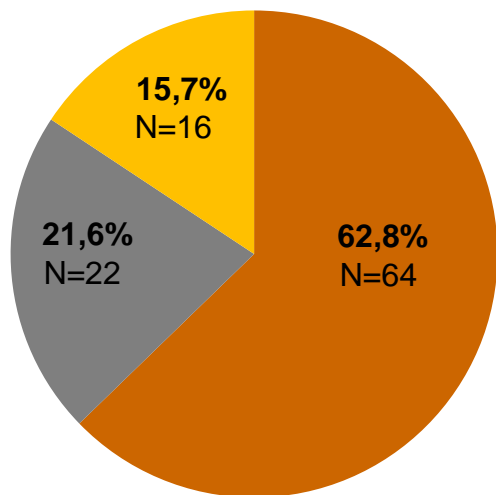
Blood and Transplant



Kutatási hipotézis

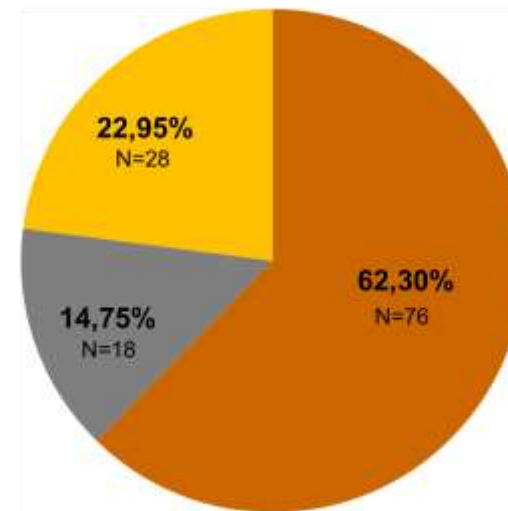
A súlyos agykárosodást szenvedett betegek életvégi ellátása során történő klinikai döntések variációi befolyásolják a szervdonációs (DBD/DCD) potenciált.

Donor diagnózisok megoszlása 2021-ben megvalósult donációk vonatkozásában

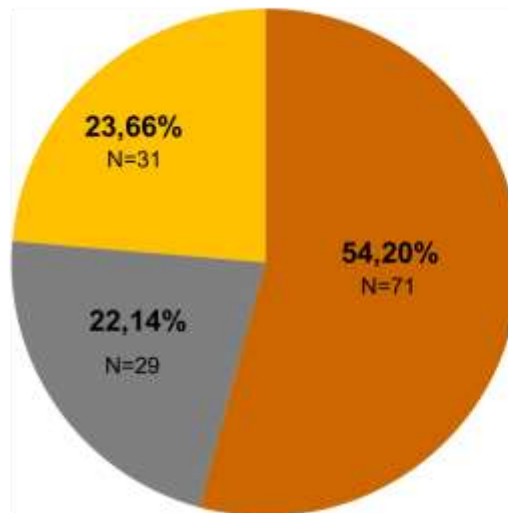


- Agyi vascularis katasztrófa
- Koponya trauma
- Egyéb

Donor diagnózisok megoszlása 2022-ben megvalósult donációk vonatkozásában



Donor diagnózisok megoszlása 2023-ban megvalósult donációk vonatkozásában



American Journal of Transplantation 2007; 7: 1439–1441
Blackwell Munksgaard

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Journal compilation © 2007 The American Society of
Transplantation and the American Society of Transplant Surgeons

Editorial

doi: 10.1111/j.1600-6143.2007.01831.x

Countries' Donation Performance in Perspective: Time for More Accurate Comparative Methodologies

L. Roels, B. Cohen* and C. Gachet

Módszertan

- Szervdonáció esetén leggyakrabban előforduló agyhalál okok:
 - Cerebro-vascularis katasztrófa
 - Közúti baleset
 - Esés
 - Egyéb baleset
 - Gyilkosság áldozata

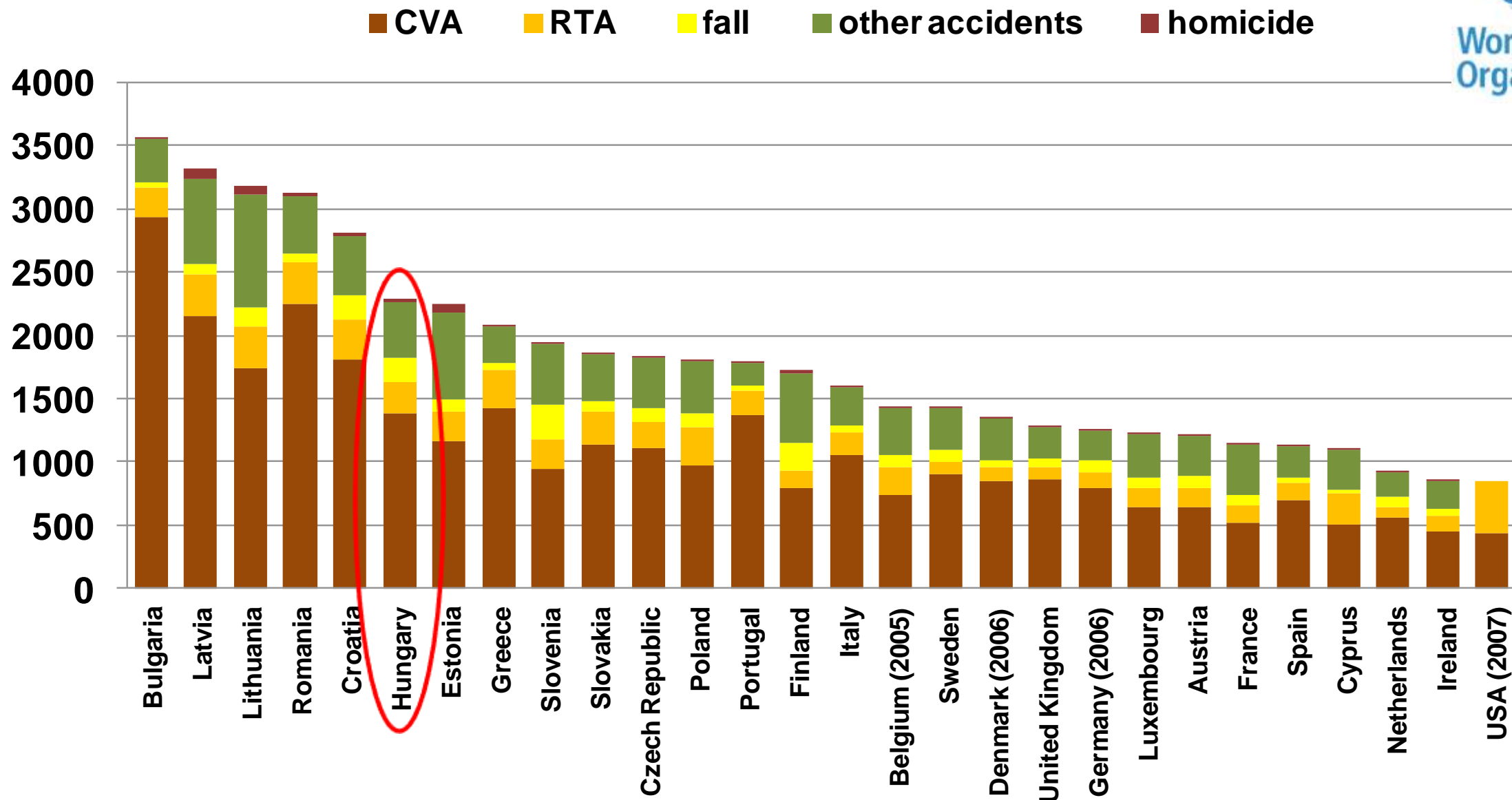
(86% -os UNOS gyakoriság 2000-ben)

(86,8% -os gyakoriság Magyarországon 2010-ben)

Death rates from selected causes*



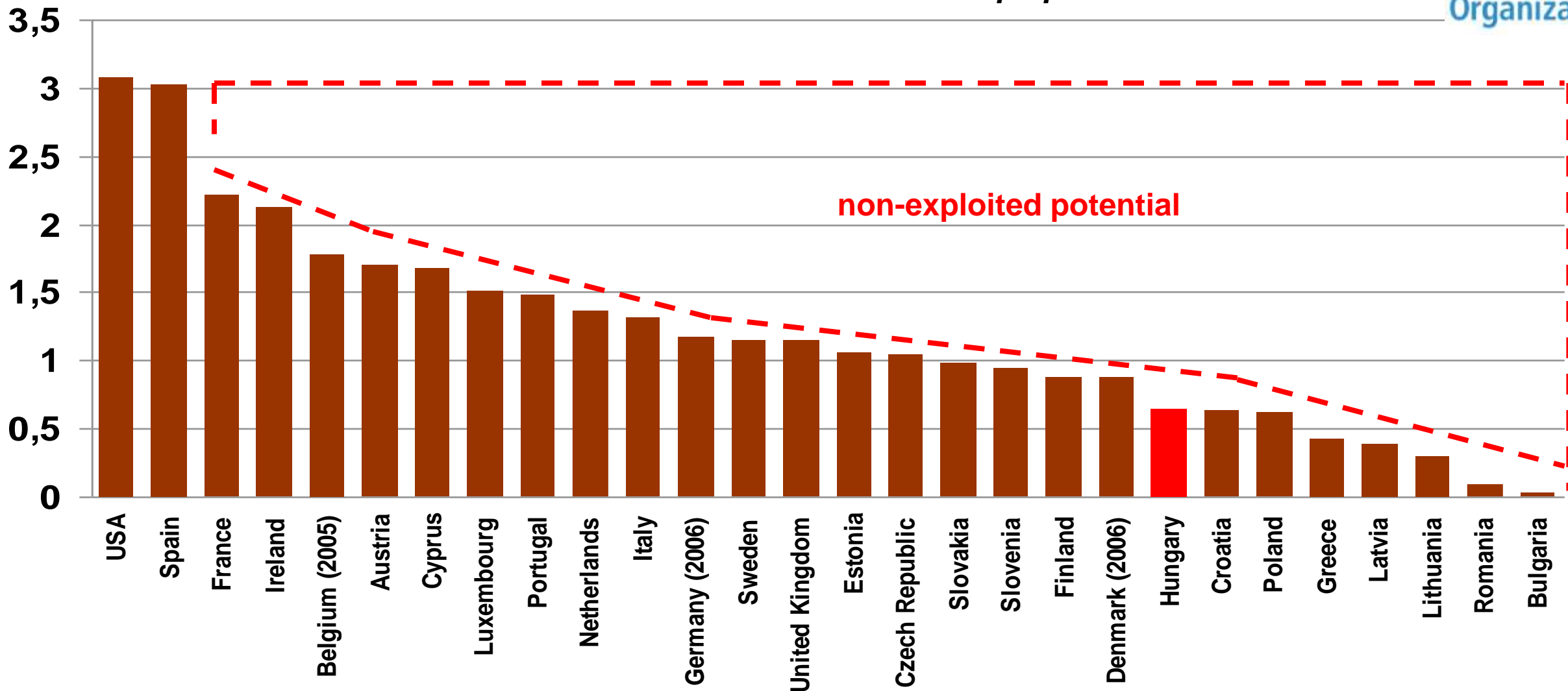
World Health Organization





'Donation Efficiency Index'

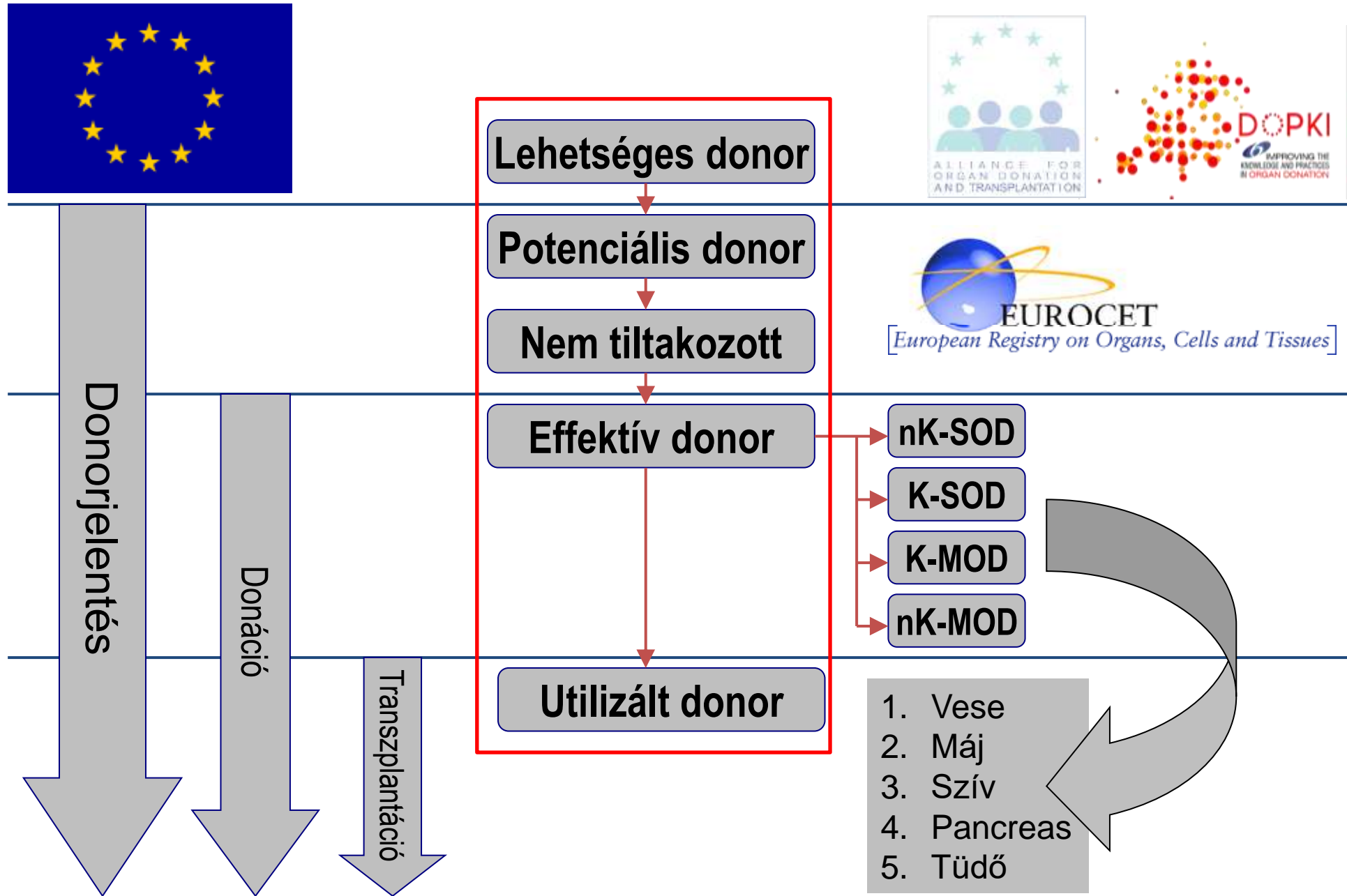
donors/deaths from selected causes pmp - 2008



Potenciális donor

Minden súlyos agykárosodást szenvedett beteg, ha a szerv- vagy szövetdonációnak jogi és/vagy orvosszakmai akadályja nincsen, és a neurológiai kritériumoknak megfelelő halálmegállapítás keretei között végzett első észlelés és annak dokumentálása megkezdődött.

Telefonos értesítések kimenete

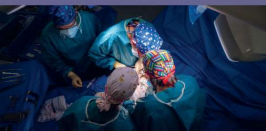




Chapter 2. **Identification and referral of possible deceased organ donors**

Through the **Madrid Resolution**, participants at the 3rd World Health Organization (WHO) Global Consultation on Organ Donation and Transplantation, held in Madrid (Spain) in 2010, called on governments and healthcare professionals to pursue **self-sufficiency in transplantation**, that is, to comprehensively satisfy the transplantation needs of their patients by using resources from within their own population [1]. Self-sufficiency entails a combination of strategies targeted at decreasing the burden of diseases treatable through transplantation and at **maximising the availability of organs for transplantation, with priority given to donation from deceased donors**. Deceased organ donation is an essential component of self-sufficiency. Countries that have achieved the highest transplantation rates – and best access of their patients to transplant therapy – are those with well-established deceased donation programmes.

World Health Organization (WHO), Transplantation Society (TTS) and Organización Nacional de Transplantes (ONT). Third WHO Global Consultation on Organ Donation and Transplantation: striving to achieve self-sufficiency, 23-25 March 2010, Madrid, Spain. *Transplantation* 2011; 91(Suppl 1): S27-8. <https://doi.org/10.1097/TP.0b013e3182190b29>.



Chapter 2. Identification and referral of possible deceased organ donors



Donation from deceased donors is a complex process, a sequence of procedural steps which must be properly realised to achieve successful organ transplantation.

The Madrid Resolution resulted in a list of practical recommendations for self-sufficiency in transplantation and the publication of the **WHO Critical Pathway for Deceased Donation**, classifying organ donors on the basis of the phases of the deceased donation process.

The Madrid Resolution also stated that, in pursuing self-sufficiency in transplantation, **donation should be included as a consideration in every end-of-life care pathway**. This recommendation is consistent with the generally accepted principle that the treating physician or team should respect the overall best interests of the dying patient in the decision-making process at the end of life.


This assessment of best interests is not based simply on the patient's medical or clinical interests, but should include a more holistic approach, where the patient's values, beliefs and preferences are also taken into account, including their wishes to donate (or not donate) their organs after death.

DONATION as a normal step in EOL

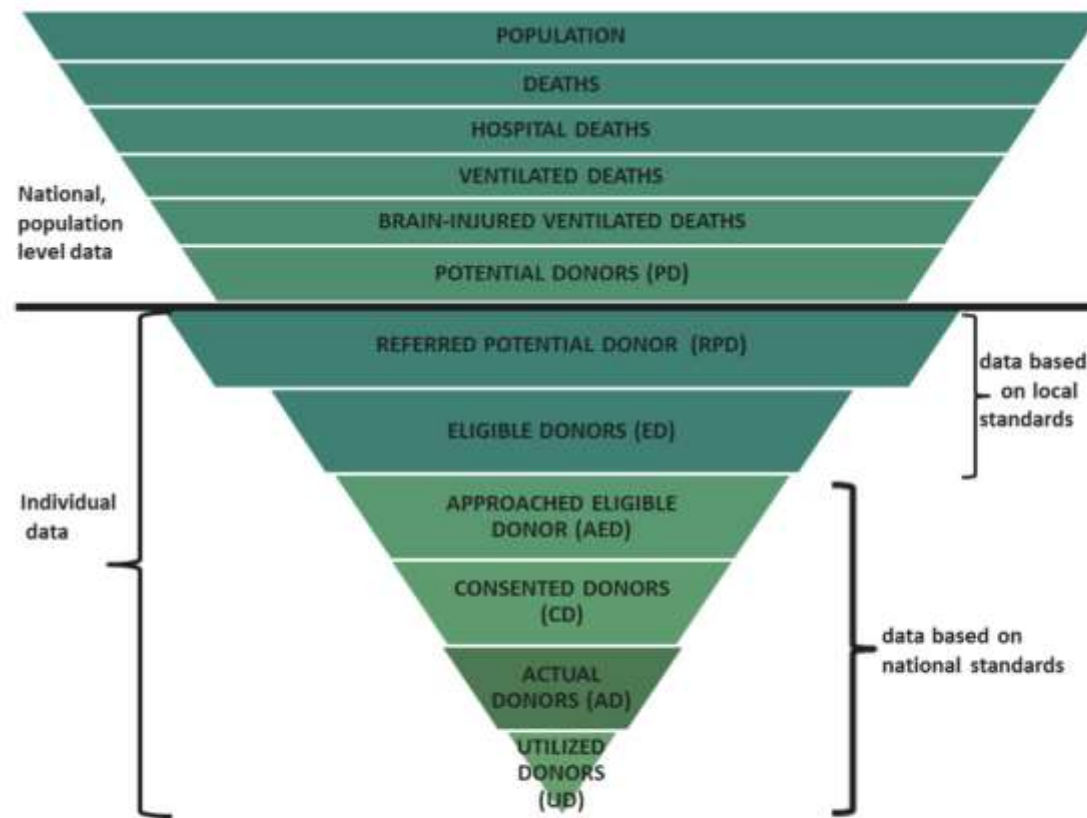


**Potential organ donor identification and system accountability:
expert guidance from a Canadian consensus conference**

**Identification des donneurs d'organes potentiels et responsabilités
du système : conseils experts d'une conférence de consensus
canadienne**

Samara Zavalkoff, MD  · Sam D. Shemie, MD · Jeremy M. Grimshaw, PhD · Michaël Chassé, MD, PhD · Janet E. Squires, PhD · Stefanie Linklater, MSc · Amber Appleby, MM · David Hartell, MA · Jehan Lalani, MHA · Ken Lotherington, BSc · Greg Knoll, MD, MSc on behalf of the Potential Organ Donation Identification and System Accountability (PODISA) Conference Participants (Appendix)

Can J Anesth/J Can Anesth (2019) 66:432–447
<https://doi.org/10.1007/s12630-018-1252-6>




| | |
|--|--|
| Ventilated Deaths | Persons that died while on positive pressure ventilation (invasive or non-invasive) at any time during the hospital episode during which the patient died. |
| Brain Injured Ventilated Deaths | Deaths of brain injured ventilated patients. |
| Potential Donors | Persons with a brain injury leading to death, who received mechanical ventilation at or near the time of death. |
| Referred Potential Donor | A potential donor who was referred to an ODO. |

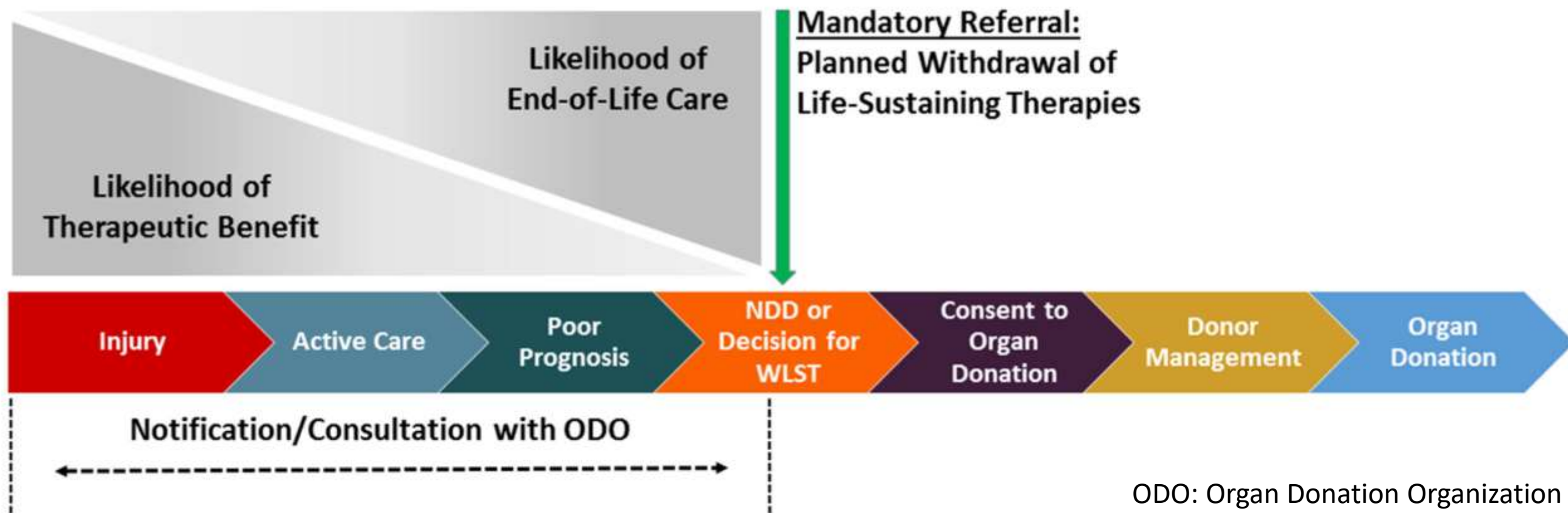
Fig. 1 Deceased donation information pyramid. Reproduced with permission from: *Canadian Blood Services*. Deceased Donation Data Working Group¹

**Potential organ donor identification and system accountability:
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ODO: Organ Donation Organization
NDD: neurologically determined death
WLST: Withdrawal of Life-Sustaining Therapies

Fig. 2 Sequence of care in deceased donation in relation to notification and referral

Australian emergency clinicians' perceptions and use of the GIVE Clinical Trigger for identification of potential organ and tissue donors

Sandra Neate,^{1,2,3} Claudia H Marck,⁴ Tracey J Weiland,^{3,4} Nicola Cunningham,^{1,3} Bernadette B Hickey,^{2,3,5} Bernadine M Dwyer⁶ and George A Jelinek^{3,4}

Departments of ¹Emergency Medicine and ²Organ and Tissue Donation, St Vincent's Hospital, ³Department of Medicine, The University of Melbourne, St Vincent's Hospital, ⁴Emergency Practice Innovation Centre (EPIcentre), St Vincent's Hospital, ⁵Intensive Care Unit, St Vincent's Hospital, and ⁶DonateLife, Melbourne, Victoria, Australia

The GIVE Clinical Trigger (**GIVE**Trigger/The Trigger) aims to identify patients less than 80 years who have a Glasgow Coma Scale (GCS) score equal to or less than 5 from an irrecoverable brain injury (**G**),

are intubated (**I**),

ventilated (**V**)

and in whom end-of-life discussions (**E**) have concluded that palliative care is planned.

There are no medical conditions that preclude activation of the Trigger.



doi: 10.1111/j.1742-6723.2012.01598.x

Emergency Medicine Australasia (2012) 24, 501–509

Minimum Notification Criteria for the identification and referral of patients with a devastating head injury



Glasgow kóma skála (GCS)

Az eszméletlenség mélységének mennyiségi megítélésére szolgáló neurológiai pontrendszer, melynek használatával objektív és megbízható módon mérhető föl a beteg tudatállapota

SZEMNYITÁS

- 4 pont:** spontán
- 3 pont:** megszólításra
- 2 pont:** fájdalomingerre
- 1 pont:** semmilyen stimulusra sem nyitja a szemét
- A pupillák tágassága:**
- 9 mm:** tág
- 6 mm:** közép
- 2 mm:** szűk

VERBÁLIS FELELET

- 5 pont:** orientált
 - 4 pont:** zavar
 - 3 pont:** nem megfelelő szavak használata
 - 2 pont:** hangok kiadása
 - 1 pont:** semmilyen verbális feleletre sem képes
- A beteget megszólítjuk, esetleg ébresztjük, szükség esetén fájdalomingerrel. Célzott kérdéseket teszünk fel (Hol van most?).

MOTOROS VÁLASZ

- 6 pont:** végrehajtja az utasításokat (karját, lábát megemeli, nyelvét mutatja stb...)
- 5 pont:** célzott fájdalomelhárítás
- 4 pont:** céltalan fájdalomelhárítás (ingerrel végtagok elhúzása, elhárító flexio)
- 3 pont:** abnormális flexio a fájdalom hatására (az ingerrel végtag egy vagy mindkét oldali patológiás flexiója, közepagy feletti területek károsodására utal)
- 2 pont:** abnormális extenzió fájdalom hatására
- 1 pont:** nincs válasz, még a legerősebb ingerre sem

15 pont

eszméletlenség mélysége

3 pont

GCS

A **Glasgow Coma Scale (GCS)** egy klinikai skála, amellyel megbízhatóan mérhető egy személy tudatszintje agysérülés után.

A GCS a szemmozgások, a beszéd és a testmozgás képessége alapján értékeli a személyt. Ez a három viselkedés alkotja a skála három elemét: szem, verbális és motoros. Egy személy GCS-pontszáma 3-tól (teljesen nem reagál) 15-ig (reszponzív) terjedhet. Ez a pontszám az agysérülés (például autóbaleset) utáni azonnali orvosi ellátás irányítására, valamint a kórházi betegek megfigyelésére és tudatszintjük nyomon követésére szolgál.

Az alacsonyabb GCS pontszám összefüggésben van a magasabb halálozási kockázattal. A GCS-pontszám önmagában azonban nem használható önmagában az agysérült személy kimenetelének előrejelzésére.

A Glasgow-i kómaskálát két éven felüliek esetében használják, és három tesztből áll: szem-, verbális- és motoros reakciókból. Az egyes tesztek pontszámait az alábbi táblázat tartalmazza.

A glasgow-i kóma skála a kombinált pontszám (3-tól 15-ig terjed) és az egyes tesztek pontszámaként (E a szem, V a verbális és M a motor). Az egyes teszteknek az értéknek a vizsgált személy által adott legjobb válaszon kell alapulnia.

GLASGOW COMA SCALE : Do it this way

GCS EYES VERBAL MOTOR

Institute of Neurological Sciences NHS Greater Glasgow and Clyde



CHECK

For factors interfering with communication, ability to respond and other injuries



OBSERVE

Eye opening, content of speech and movements of right and left sides



STIMULATE

Sound: spoken or shouted request
Physical: Pressure on finger tip, trapezius or supraorbital notch



RATE

Assign according to highest response observed

Eye opening

| Criterion | Observed | Rating | Score |
|---|----------|--------------|-------|
| Open before stimulus | ✓ | Spontaneous | 4 |
| After spoken or shouted request | ✓ | To sound | 3 |
| After finger tip stimulus | ✓ | To pressure | 2 |
| No opening at any time, no interfering factor | ✓ | None | 1 |
| Closed by local factor | ✓ | Not testable | NT |

Verbal response

| Criterion | Observed | Rating | Score |
|--|----------|--------------|-------|
| Correctly gives name, place and date | ✓ | Orientated | 5 |
| Not orientated but communication coherent | ✓ | Confused | 4 |
| Intelligible single words | ✓ | Words | 3 |
| Only moans / groans | ✓ | Sounds | 2 |
| No audible response, no interfering factor | ✓ | None | 1 |
| Factor interfering with communication | ✓ | Not testable | NT |

Best motor response

| Criterion | Observed | Rating | Score |
|--|----------|------------------|-------|
| Obeys 2-part request | ✓ | Obeys commands | 6 |
| Brings hand above clavicle to stimulus on head rock | ✓ | Localising | 5 |
| Bends arm at elbow rapidly but features not predominantly abnormal | ✓ | Normal flexion | 4 |
| Bends arm at elbow, features clearly predominantly abnormal | ✓ | Abnormal flexion | 3 |
| Extends arm at elbow | ✓ | Extension | 2 |
| No movement in arm / legs, no interfering factor | ✓ | None | 1 |
| Paralysed or other limiting factor | ✓ | Not testable | NT |

Sites For Physical Stimulation



Features of Flexion Responses

Modified with permission from Van Der Naalt 2004, Ned Tijdschr Geneesk



For further information and video demonstration visit www.glasgowcomascale.org

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Identification and Referral of Potential Organ Donors

Identify potential donors as early as possible if either of the following criteria are met.

Patients with severe brain injury if

- *One or more cranial nerve reflexes is absent and the Glasgow Coma Score is 4 or less and cannot be explained by sedation, or*
- *A decision has been made to perform brain stem death tests*

Patients for whom a decision has been made to withdraw life-sustaining treatment

Continue on-going and supportive critical care.

Step 1. Call Organ Donor Referral Line 03000 203040. Provide your hospital name, your name, direct dial number and reason for your call. You will receive a call back within 20 minutes.

Step 2. A member of the organ donation specialist nursing team will contact you and ask a series of structured questions to determine the suitability of the patient to become an organ donor.

Providing the information requested will enable the team to undertake a robust assessment, provide a decision about suitability and plan next steps.



Chapter 2. Identification and referral of possible deceased organ donors

The **identification** and subsequent referral of organ donors **by treating physicians**, usually from **intensive care units (ICUs) and emergency departments**, to the donor co-ordinator or staff of the corresponding organ procurement organisation (OPO) is the first and most crucial step of the deceased donation process.

Organ donation cannot take place unless possible donors are identified and referred in a timely fashion, marking the beginning of either the DBD or the DCD organ donation pathway.

Failure to identify and refer organ donors is in fact one of the main reasons for substantial differences in deceased donation rates between countries, regions and hospitals.

Potential for Deceased Donation Not Optimally Exploited: Donor Action Data From Six Countries

Leo Roels,^{1,3} Jacqueline Smits,² and Bernard Cohen¹

TABLE 1. Potential heart-beating donor losses along the donation pathway in six countries (total 2007–2009) (^aincluding registry checks in countries with presumed consent legislation)

| | Total no. records | Ventilated, medically suitable | Potential HB donors, as % of ventilated, medically suitable | <u>Not identified, as % of potential</u> | <u>Not referred, as % of identified</u> | No family approach ^a , as % of identified | Refusal, as % of approach | Organ retrieval, as % of potential (=conversion rate) |
|-------------|-------------------|--------------------------------|---|--|---|--|---------------------------|---|
| Belgium | 22,249 | 7,015 | 17.8 | 20.6 | 28.2 | 23.9 | 20.3 | 44.3 |
| Finland | 2,131 | 603 | 36.5 | 21.4 | 23.7 | 16.8 | 14.6 | 51.4 |
| France | 19,383 | 6,332 | 32.4 | 18.9 | 11.0 | 12.7 | 32.7 | 47.1 |
| Israel | 470 | 452 | 99.8 | 9.1 | 2.0 | 0 | 53.7 | 38.1 |
| Poland | 1,470 | 1,129 | 34.9 | 55.6 | 19.4 | 4.6 | 23.4 | 30.5 |
| Switzerland | 6,742 | 2,372 | 20.7 | 23.2 | 47.1 | 10.1 | 40.9 | 41.1 |
| Total | 52,382 | 17,903 | | | | | | |
| Mean | | | 40.3 | 24.8 | 21.9 | 11.3 | 30.9 | 42.1 |
| SD | | | 30.1 | 15.9 | 15.5 | 8.5 | 14.5 | 7.3 |

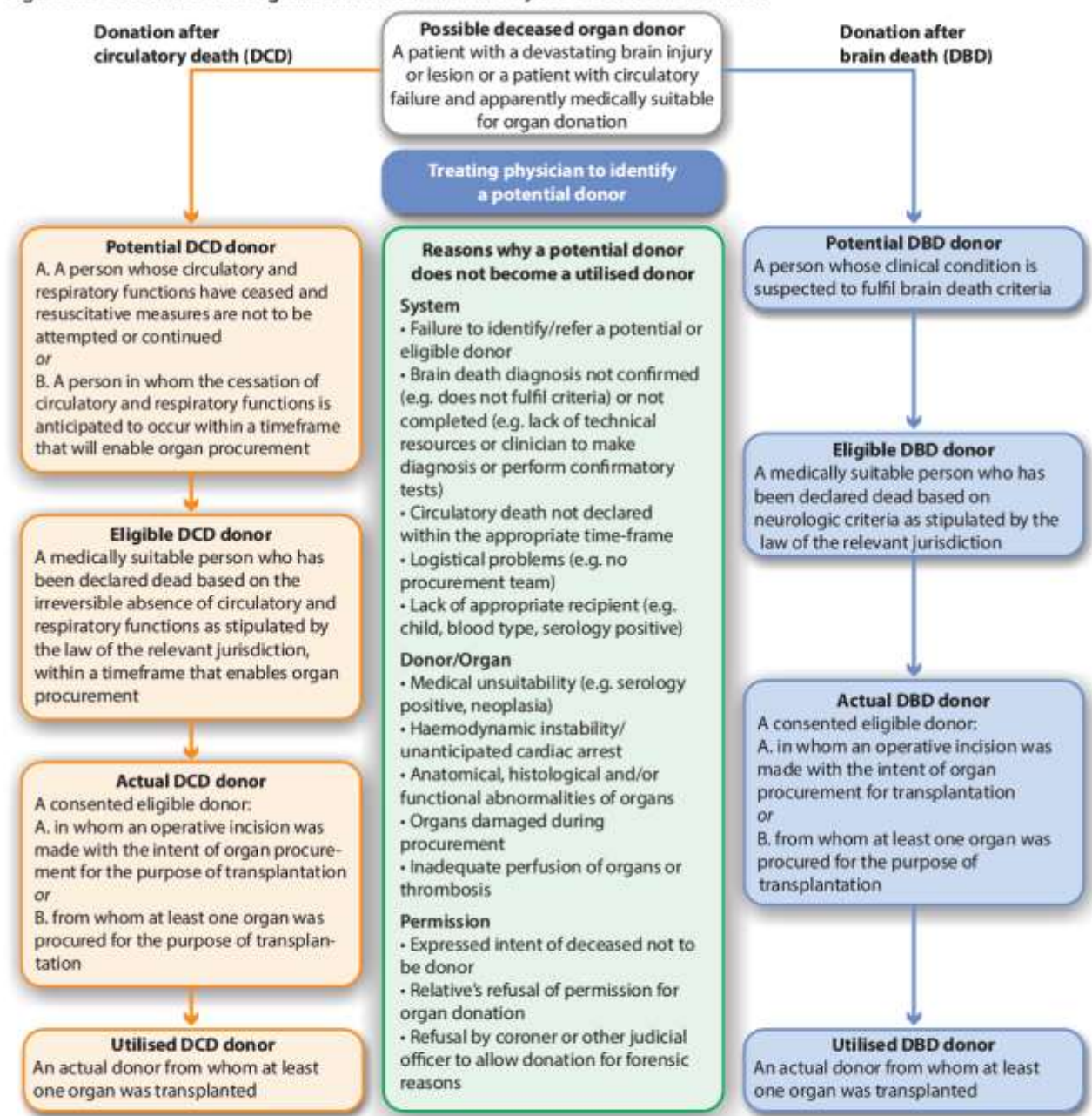
Chapter 2. **Identification and referral of possible deceased organ donors**

2.3. The process of deceased donation: the WHO Critical Pathway

The **WHO Critical Pathway for Deceased Donation** was conceived as a useful clinical tool **applicable in every country** (region or hospital) for assessing the potential of deceased organ donation, evaluating performance in the deceased donation process and identifying areas for improvement.

The particular value of this tool is that it **creates uniformity in the description and assessment of the deceased donation process**. The Critical Pathway for Deceased Donation addresses both DBD and DCD and defines types of donors based on the different phases of the donation process: **possible, potential, eligible, actual** and **utilised** organ donors

Figure 2.1. World Health Organization Critical Pathway for Deceased Donation



The 'dead donor rule' must be respected. That is, patients may become donors only after death, and the procurement of organs must not cause a donor's death.

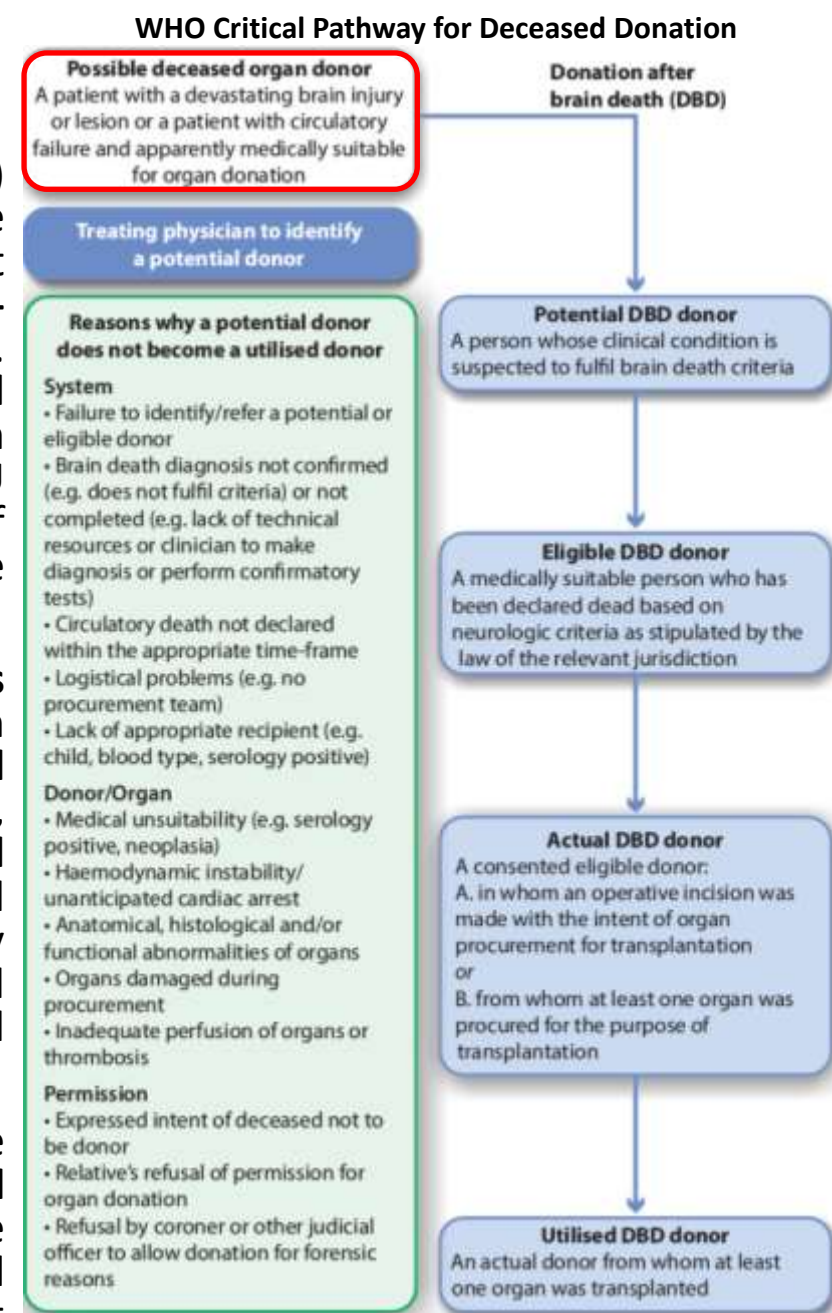
Adapted with permission from *Transpl Int* 2011;24(4):373-8 [4].

Chapter 2. Identification and referral of possible deceased organ donors

A **possible deceased organ donor** is a patient, either **with a devastating brain injury (DBI)** or **with a circulatory failure**, who is apparently **medically suitable** for organ donation. The patient with a DBI is a patient with an imminent risk of death from a neurological insult and where the multidisciplinary team is **considering not initiating or not continuing life-sustaining therapies on the grounds of futility in favour of palliative and end-of-life care**. This is frequently a patient **already admitted to an ICU and receiving mechanical ventilation**, but it can also be a patient outside the ICU in whom the decision has been made not to initiate or continue mechanical ventilation and/or not to admit to the ICU with a therapeutic purpose. Organ donation is possible in this particular scenario if intensive care is initiated or continued despite futility, that is, if intensive care to facilitate organ donation (ICOD) is applied.

The WHO Critical Pathway for Deceased Donation identifies the **possible organ donor as the ideal starting point for identification and referral** of donors by the treating physician or team to the donor co-ordinator or staff of the corresponding OPO in order **to avoid late referrals**. Early referral allows an **appropriate assessment of medical suitability, careful preparation of the family approach and timely organisation of other logistical aspects** of the deceased donation process. However, early referral is not considered appropriate or is not legally possible in all jurisdictions, which leads to the need for delay in referral, particularly in DBD, to the point where the person already exhibits clinical signs consistent with BD (brain death) or to the point where BD has already been declared as per national standards.

The **emergency department is an important unit** where possible organ donors can be identified and are, however, frequently missed. It is estimated that **up to 50 % of actual DBD donors are admitted from emergency departments**. Failed identification of possible donors in the emergency department may be due to lack of knowledge of referral pathways or incorrect assumptions regarding eligibility criteria. This is why it is of utmost importance to educate personnel from the emergency department in referral criteria regarding DBD, where applicable.



Chapter 2. Identification and referral of possible deceased organ donors

A **potential deceased organ** (DBD) donor is a person whose clinical condition is consistent with BD.

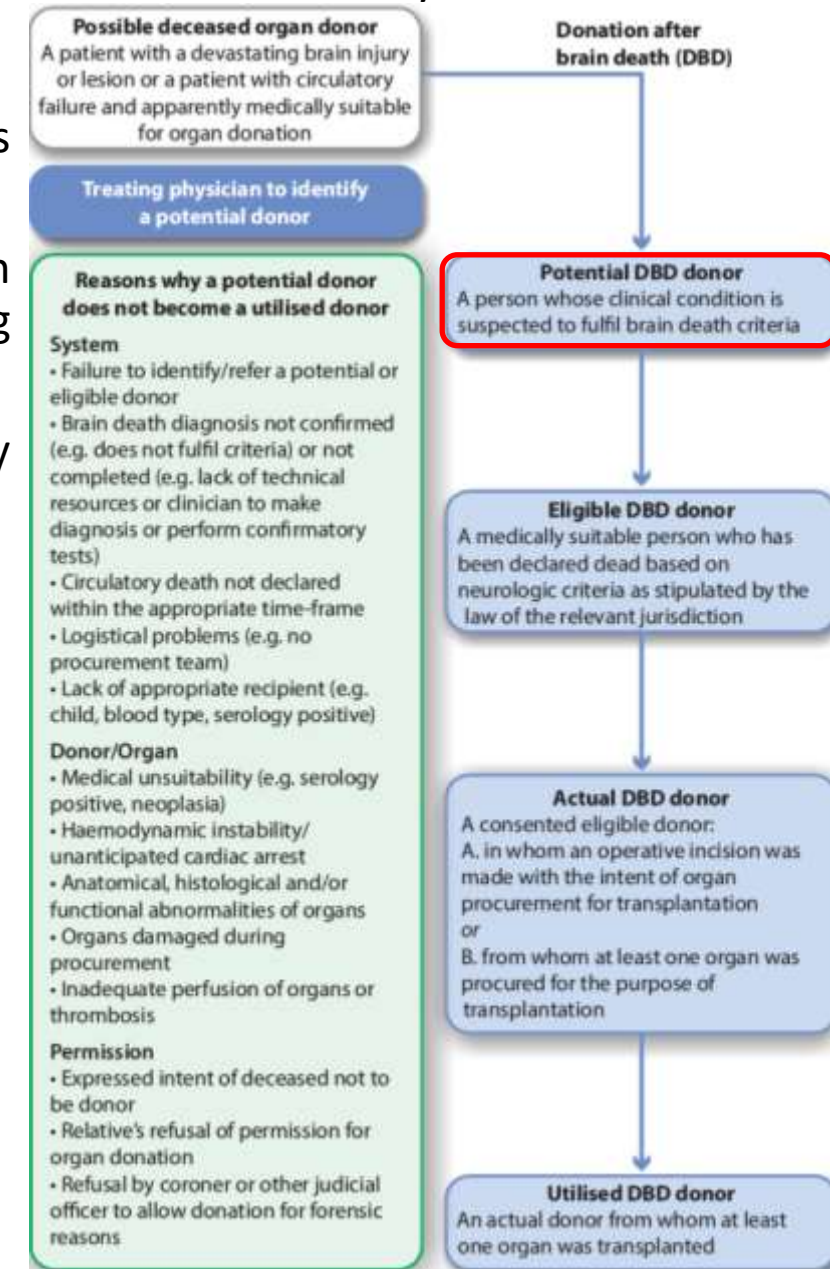
This last scenario refers to persons with a DBI in whom further treatment has been deemed futile and for whom a decision has been made to withdraw life-saving treatment.

The transition from possible to potential deceased organ donor depends on a variety of factors, particularly the end-of-life care practices in place.

| Ethicus Study | End of life Categories (% patients) | | | | |
|--|-------------------------------------|-------------|----------------------|----------------------|------------------------------------|
| | Unsuccessful CPR | Brain death | Treatment limitation | Treatment withdrawal | Active shortening of dying process |
| Northern Denmark, Finland, Ireland, Netherlands, Sweden, UK | 10.2 | 3.2 | 38.2 | 47.4 | 0.9 |
| Central Austria, Belgium, Czechia, Germany, Switzerland | 17.9 | 7.6 | 34.1 | 33.8 | 6.5 |
| Southern Greece, Israel, Italy, Portugal, Spain, Turkey | 30.1 | 12.4 | 39.6 | 17.9 | 0.1 |
| Range between countries | 5 - 48 | 0 - 15 | 16 - 70 | 5 - 69 | 0 - 19 |

Sprung CL, Cohen SL, Sjkovist P, Baras M, Bulow HH, Hovilehto S, Ledoux D, Lippert A, Maia P, Phelan D, Schobersberger W, Wennberg E, Woodcock T; Ethicus Study Group. End-of-life practices in European intensive care units: the Ethicus Study. JAMA. 2003 Aug 13;290(6):790-7. doi: 10.1001/jama.290.6.790. PMID: 12915432.

WHO Critical Pathway for Deceased Donation



Chapter 2. Identification and referral of possible deceased organ donors

The **eligible DBD donor** is a medically suitable patient who has been declared dead based on neurological criteria as stipulated by the law of the relevant jurisdiction.

A potential DBD donor **might not become eligible for organ donation because the diagnosis of death by neurological criteria has not been confirmed** – e.g. because of a **lack of the technical and human resources** needed for confirmation. It is worth noting that in some European countries and the USA up to **30 % of patients** who exhibit a clinical condition consistent with BD **are not tested to confirm the diagnosis, a practice that completely removes the possibility of DBD.**

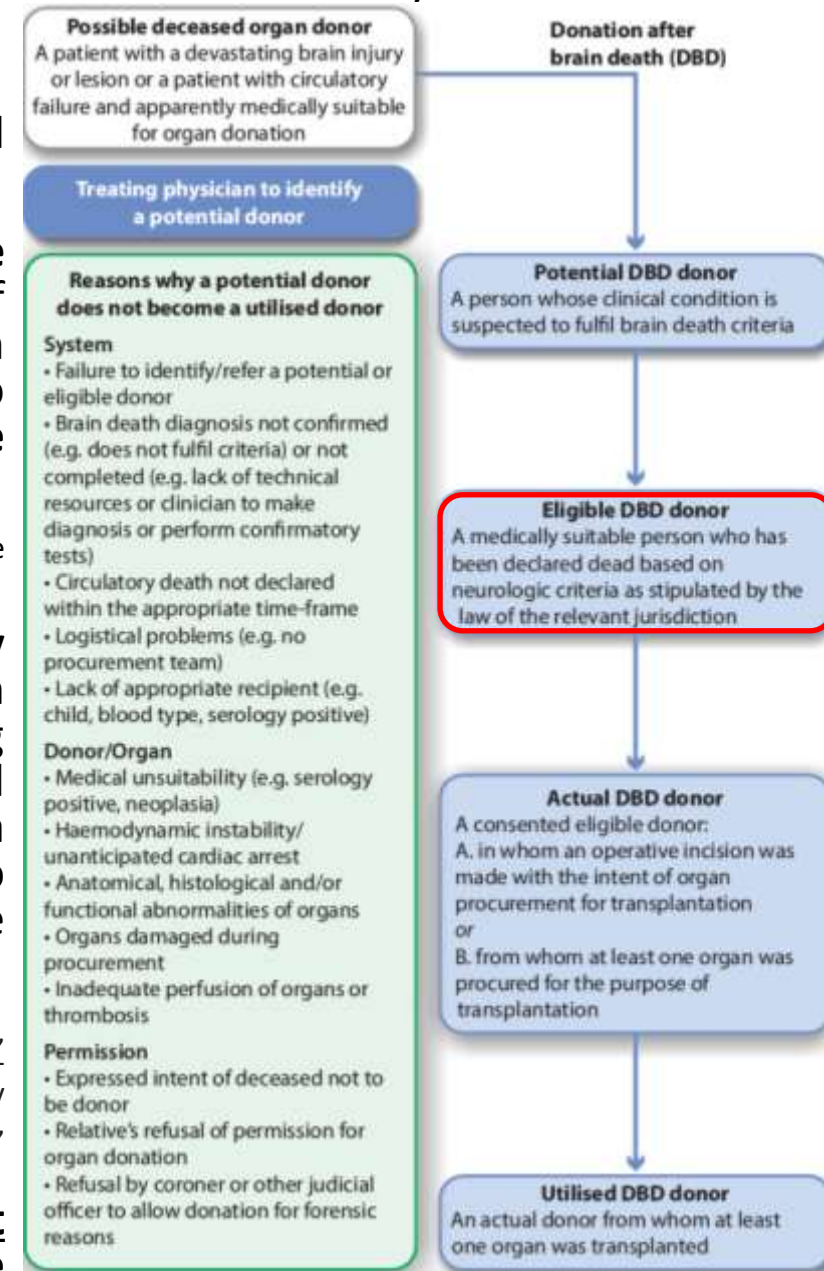
de Groot, Y.J., Wijdicks, E.F.M., van der Jagt, M. et al. Donor conversion rates depend on the assessment tools used in the evaluation of potential organ donors. *Intensive Care Med* 37, 665–670 (2011). <https://doi.org/10.1007/s00134-011-2131-6>

Potential donors might also be ineligible because **they are considered medically unsuitable**. Although there are **very few absolute contraindications** to organ donation, a perception of medical unsuitability is a frequent reason for not referring potential donors to the donor co-ordinator or staff of the OPO. Moreover, external audits in some countries have revealed that **11 % of the decisions not to refer a potential DBD donor on medical grounds were incorrect**. A patient's suitability to donate organs is dependent on recipient factors as well as donor factors, and some organs may be acceptable for certain patients, whereas others may not.

de la Rosa, G., Domínguez-Gil, B., Matesanz, R., Ramón, S., Alonso-Álvarez, J., Araiz, J., Choperena, G., Cortés, J.L., Daga, D., Elizalde, J., Escudero, D., Escudero, E., Fernández-Renedo, C., Frutos, M.A., Galán, J., Getino, M.A., Guerrero, F., Lara, M., López-Sánchez, L., Macías, S., Martínez-Guillén, J., Masnou, N., Pedraza, S., Pont, T. and Sánchez-Rodríguez, A. (2012), Continuously Evaluating Performance in Deceased Donation: The Spanish Quality Assurance Program. *American Journal of Transplantation*, 12: 2507-2513. <https://doi.org/10.1111/j.1600-6143.2012.04138.x>

The primary role of the treating team is to identify and refer potential donors, but decisions regarding medical suitability for donation should be always left to the donor co-ordinator and the relevant transplant teams.

WHO Critical Pathway for Deceased Donation



Chapter 2. Identification and referral of possible deceased organ donors

An **actual DBD and an actual DCD donor** are defined in the same manner – as a consenting, eligible organ donor in whom an operative incision has been made with the intention of organ procurement for the purpose of transplantation. An actual deceased organ donor is also defined as **a person from whom at least one organ has been retrieved for transplantation purposes.**

The main reason why organ procurement does not proceed in an eligible organ donor is that **consent/authorisation was declined**, either by the individual during their lifetime or by their relatives. Consent rates to organ donation are influenced by a variety of factors – both modifiable and non-modifiable. In the Accord Joint Action, in a dedicated study undertaken at 67 hospitals from 15 EU member states, **24% and 33% of families approached to discuss organ donation declined authorisation for organ procurement**, in the DBD and DCD processes respectively. The rate of declined consent for organ procurement in the DBD process was, however, underestimated since the rate referred only to those families approached to discuss organ donation from persons whose death was already confirmed by neurological criteria. **The moment when the family is first approached to discuss organ donation has indeed an impact on consent rates.**

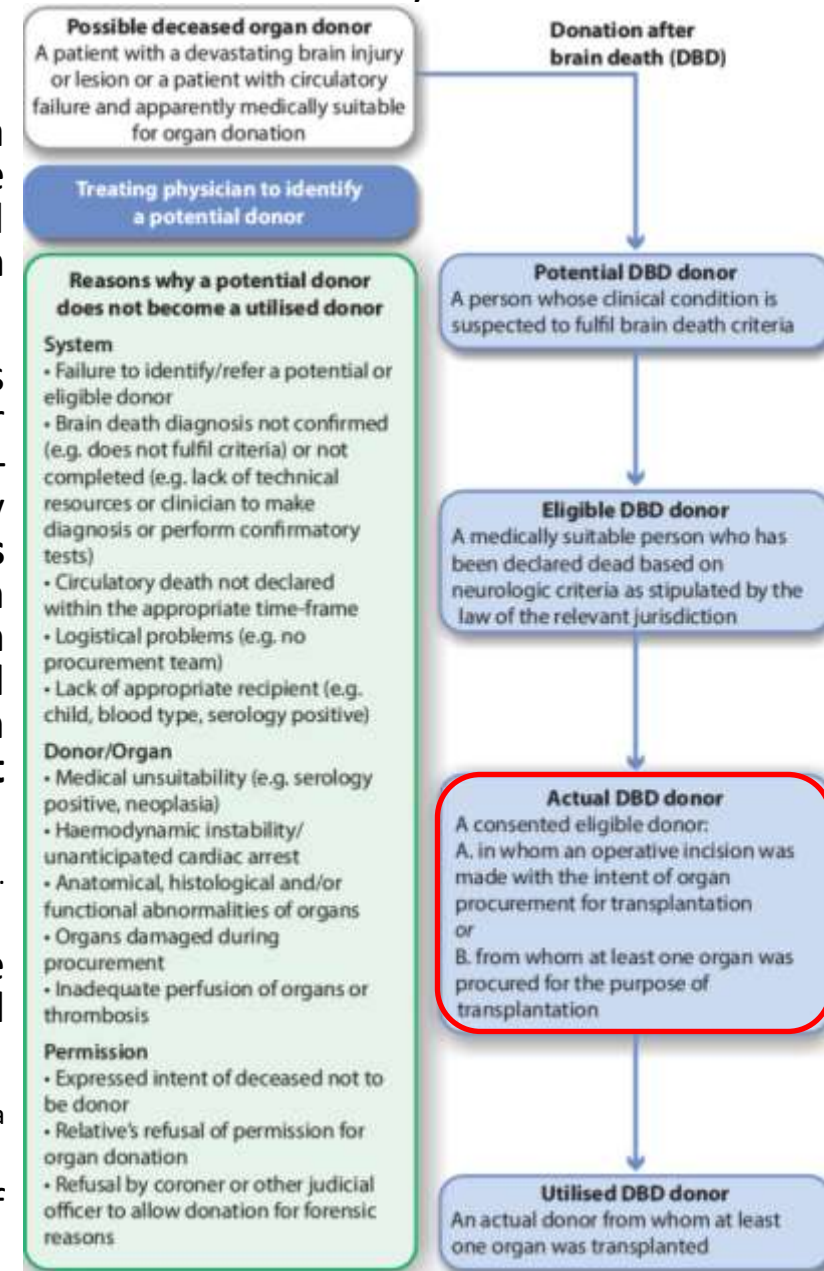
de Groot, Y.J., Jansen, N.E., Bakker, J. et al. Imminent brain death: point of departure for potential heart-beating organ donor recognition. *Intensive Care Med* 36, 1488–1494 (2010). <https://doi.org/10.1007/s00134-010-1848-y>

In a Spanish study, consent was more frequent if the family was approached once the patient already fulfilled BD criteria or if the BD diagnosis had been completed, compared with situations when BD was likely but had not occurred yet.

B. Domínguez-Gil, et al. End-of-life practices in patients with devastating brain injury in Spain: implications for organ donation. *Medicina Intensiva*. Volume 41, Issue 3, April 2017, Pages 162-173. <https://doi.org/10.1016/j.medin.2016.07.011>

These data reveal the more complex communication with the family in the context of ICOD.

WHO Critical Pathway for Deceased Donation

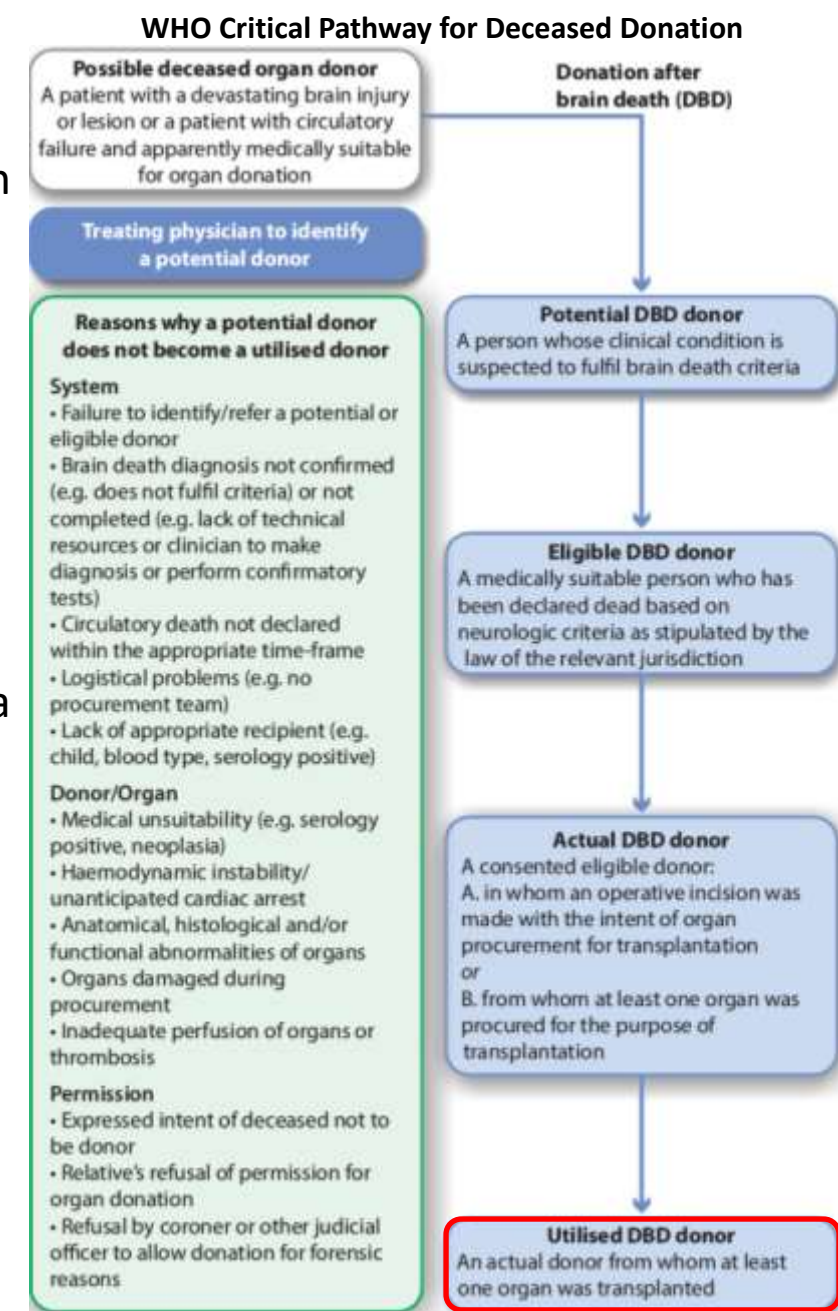


Chapter 2. Identification and referral of possible deceased organ donors

Utilised DBD and DCD donors are defined as those actual DBD or DCD donors from whom at least one solid organ has been transplanted.

Once retrieved, organs **might not be transplanted because of** anatomical or histological findings in the donor or in the organs themselves, poor perfusion, organ damage during procurement or lack of suitable recipients, among others.

Non- utilisation of actual donors is more frequent in the case of expanded- criteria donors and in DCD in comparison to the DBD process



Chapter 2. Identification and referral of possible deceased organ donors

Intensive care to enable organ donation (ICOD)

A possible organ donor may be a person with a **DBI** in whom further therapy is deemed **futile**, either in the **emergency department or in the hospital ward, and for whom admission to an ICU**, and even the initiation of mechanical ventilation, is not deemed therapeutically indicated because neither procedure is considered to be in the patient's best clinical interest. In this context, **intubation and initiation of mechanical ventilation – that is, elective non-therapeutic ventilation (ENTV) – and admission to an ICU could be considered with the purpose of incorporating the option of organ donation into the end-of-life care of the patient.**

Martin-Loeches I, Sandiumenge A, Charpentier J, Kellum JA, Gaffney AM, Procaccio F, Westphal GA. Management of donation after brain death (DBD) in the ICU: the potential donor is identified, what's next? Intensive Care Med. 2019 Mar;45(3):322-330. doi: <http://10.1007/s00134-019-05574-5>. Epub 2019 Feb 28. PMID: 30820584.

The potential for organ donation could be therefore considered in patients with a DBI, that is, **patients with acute, severe neurological damage** and an apparently **hopeless prognosis**, where the multidisciplinary team is considering a **shift from active treatment to palliative and end-of-life care**. In this situation, a patient with DBI and impending death could be **considered for ICOD**, which may include ENTV and continued organ support. **In practice, this means admission to the ICU.**

Escudero D, Otero J, Menéndez de León B et al. Organ donation and elective ventilation: a necessary strategy. Biomed Res Int 2017, 15 January 2017, 1-6, <https://doi.org/10.1155/2017/7518375>.

Candidates for **ICOD** are mainly **identified in the emergency department**, but also in hospital wards (neurology, neurosurgery and others). Close collaboration between OPO staff or donor co-ordinators, ICU personnel and professionals from the above-mentioned departments is necessary and thus represents a crucial starting point for the successful realisation of this particular donation practice.

Today, ICOD, inclusive of ENTV or not, is a **common clinical practice in many but not all countries** since it still raises some ethical, legal, community and professional concerns in some settings. What is clear is that ICOD and ENTV result in an **increase in the total number of organs available** for transplantation at a time when the pool of 'standard' DBD donors is decreasing because of reduced incidence of death from brain trauma and stroke. ICOD also offers more patients the opportunity to donate organs after death if this is consistent with their wishes and values.

Intensive care to enable organ donation (ICOD)

Since ICOD and ENTV are relatively new as successful organ-donation practices, a few details are discussed below.

In patients with a severe neurological injury, a consensus concerning the patient's prognosis and non-treatable condition should be established by an **expert multidisciplinary team before ICOD** is considered. The decision not to pursue active treatment should be **based on scientific evidence, expert opinion, clinical experience** and the patient's **age** and **co-morbidity**; moreover, it should be made on an individual, **case-by-case** basis.

Patients identified as potential candidates for ICOD and ENTV **should be immediately referred to the donor coordinator** or the staff of the corresponding OPO. Early referral allows enough time for the **assessment of suitability for donation, reduces the delay for ICU admission** and **enables a planned approach to the patient's family**. Clinical and radiological triggers facilitate the identification of possible donors and should be developed and recommended by a multidisciplinary expert team for adoption in every hospital with a potential for organ donation.

Once referred, **patients with a DBI should not be considered candidates for ICOD unless it is likely that BD will occur within a short period of time and the patient has no apparent medical contraindications to organ donation.**

Intensive care to enable organ donation (ICOD)

Although **informed consent for ICOD and ENTV cannot be obtained from a patient with a DBI**, these procedures can be considered to be in the patient's best interests if they are consistent with the patient's known moral values and beliefs, including any expressed wish to donate organs after death. **Family consent must be obtained before using interventions** that are intended to incorporate organ donation into end-of-life care. The patient's relatives must be given **clear and understandable information** that the **prognosis is hopeless** either for survival or an acceptable functional outcome, and that ICOD and ENTV are only to be introduced once they have accepted the decision that active treatment will not be pursued. The family should be informed that **interventions will be initiated or continued to allow organ donation when the patient deteriorates to BD** and that measures will be undertaken to avoid any potential distress, pain and discomfort. The family should be able to revoke their decision at any time.

Because the family is likely to experience initial shock and inability to make decisions, information should be provided in a gradual and progressive manner adapted to the emotional and other needs of the family. These complex **communications with a patient's relatives need to be conducted by highly skilled staff with knowledge and experience in organ donation and in this particular type of interview**. A large number of patients with DBI will have been intubated in a prehospital setting, facilitating a decision for ICOD while waiting until the patient's and their family's wishes regarding organ donation have been established.

Intensive care to enable organ donation (ICOD)

Once consent for **ICOD – and ENTV – has been obtained**, patients will be subject to **mechanical ventilation** and **somatic organ-protective measures** until BD is established and then until the procurement of transplantable organs. **Sedation** with or without analgesia should be provided to ensure the patient's comfort with drugs and doses that **do not interfere with the subsequent BD diagnosis**. The **majority** of possible deceased organ donors subject to ICOD develop BD and **fulfil the criteria of potential DBD donors during the first 72 hours** following the brain injury.

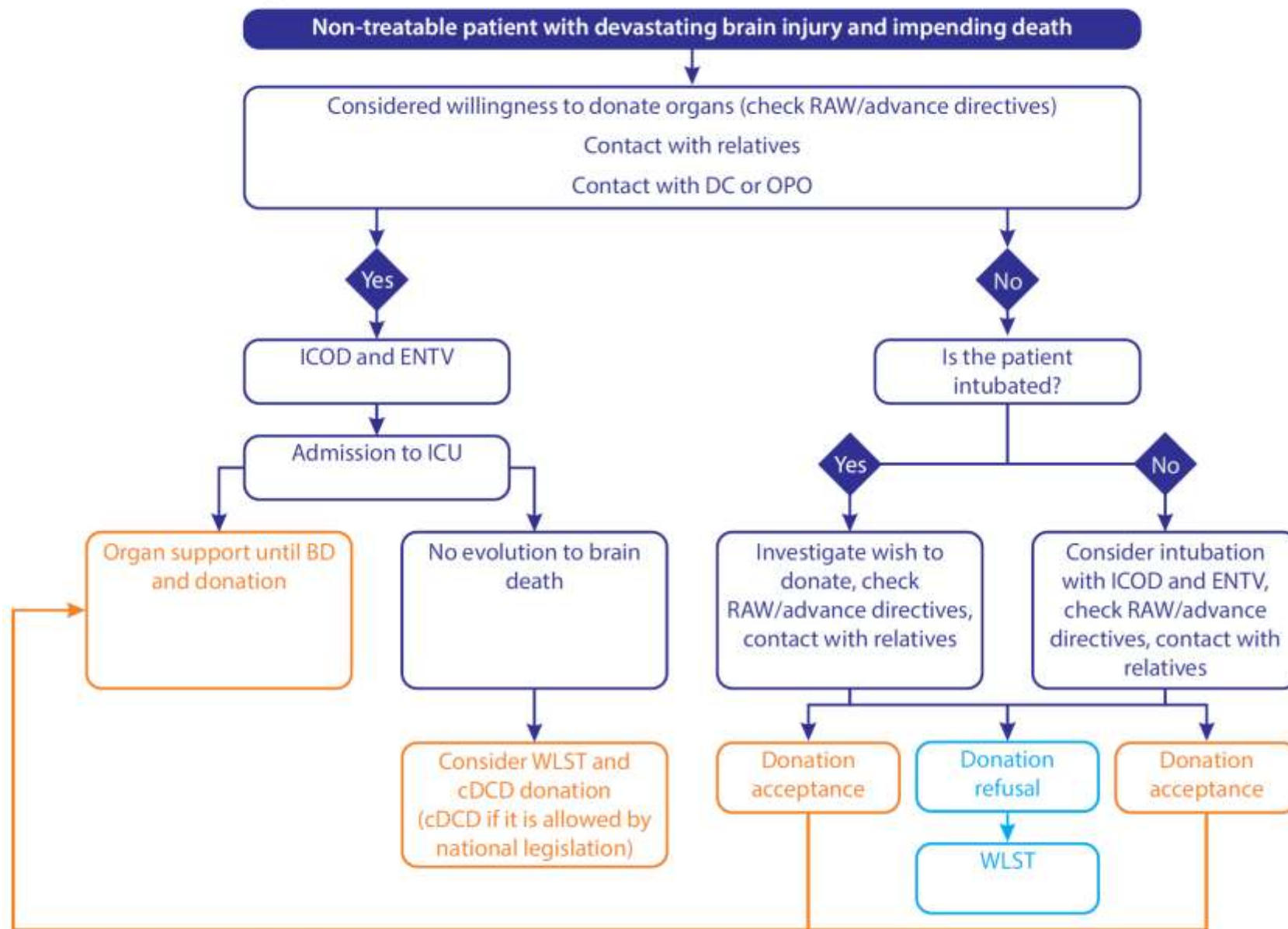
The use of ICOD in nearly dead patients solely to preserve their organs for transplantation and to optimise the chance for deceased donation may **raise some legal and ethical concerns**. In general, however, **specific legislation for this practice is absent**. The practice of ICOD is currently justified by the legal and ethical considerations of fulfilling the patient's overall best interests including the patient's living will and beliefs, not solely their clinical benefit. The main threat to decisions regarding the use of the medical treatment for organ donation in end-of-life situations must be respect for the patient's individual dignity and autonomy by carrying out as far as possible what would have been their wishes if they could express them. The decision-making process regarding medical treatment and the use of some invasive clinical procedures in these circumstances both have to meet the requirements of internationally acknowledged ethical principles, namely autonomy, beneficence, non-maleficence and justice. Moreover, **admission of a critically ill patient with DBI to the ICU provides the best opportunity for end-of-life and palliative care, it allows time to establish a safer prognosis and it gives the family the time to adapt to a tragic and unexpected event**.

Intensive care to enable organ donation (ICOD)

From the perspective of using ICU resources for non-curative purposes, the fast deterioration to BD in the majority of patients with DBI means that ICOD does not place unacceptable pressures on ICU capacity. The admission of a dying patient with DBI to the ICU, when end-of-life care and organ donation are being considered, is acceptable due to appreciable community benefit, yielding an average of over seven times in the quality-adjusted life-years (**7.3 QALYs**) per ICU bed-day compared with the average benefit for ICU patients expected to survive. The family distress caused by the high risk of impending death of their loved one and the application of invasive non-therapeutic interventions can be mitigated by the awareness that this procedure is necessary to meet the desire of their family member and that it might save other lives owing to the organ donation.

Another approach is to **avoid early decisions on WLST** in the emergency department and to **admit all intubated patients with a DBI to the ICU** with the primary intention of ensuring the **safety** of the prognostication, which is virtually always in a patient's best interest. These pathways aspire to improve end-of-life care for patients and their families, and also ensure that organ donation is always considered as part of the patient's end-of-life care. This approach is similar to, and broadly based upon, that developed for the management of patients with hypoxic brain injury who remain comatose after resuscitation from an out-of-hospital cardiac arrest.

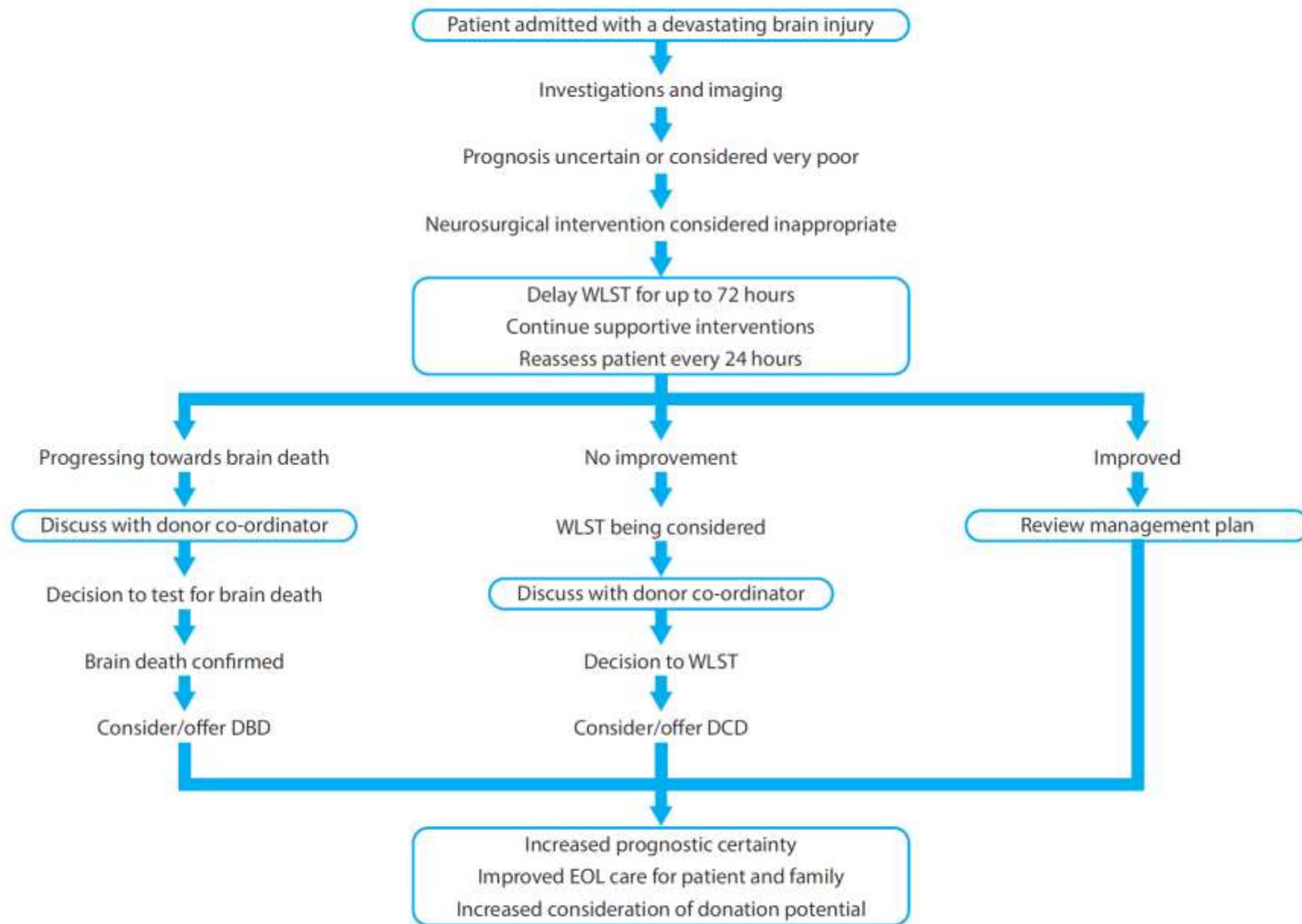
Figure 2.2. Proposed pathway for clinical decisions on initiation of intensive care to facilitate organ donation and elective non-therapeutic ventilation



* cDCD: controlled donation after circulatory death, only if it is allowed by national legislation.

BD: brain death; DC: donor co-ordinator; DCD: donation after circulatory death; ENTV: elective non-therapeutic ventilation; ICOD: intensive care to facilitate organ donation; ICU: intensive care unit; OPO: organ procurement organisation; RAW: registry of anticipated willingness; WLST: withdrawal of life-sustaining treatments.

Figure 2.3. Proposed pathway for clinical decisions on initiation of intensive care to facilitate organ donation and elective non-therapeutic ventilation



* cDCD: controlled donation after circulatory death, only if it is allowed by national legislation.

DBD: donation after brain death; DCD: donation after circulatory death; EOL: end-of-life; WLST: withdrawal of life-sustaining treatments.

Clinical triggers for the identification and referral of donors for donation after brain death

The Glasgow Coma Scale (GCS) is most commonly used to define clinical triggers for referring DBD donors (e.g. GCS < 8). In **Croatia**, certain scores of different neurological scales, depending on the aetiology of brain injury, are recommended to trigger notification to the donor co-ordinator:

- For patients with ischaemic brain injury, a National Institute for Health (UK) stroke severity scale ≥ 27 ;
- For patients with cerebral haemorrhage, an intracerebral haemorrhage scale or a Hunt-Hess scale ≥ 4 ;
- For patients with secondary cerebral anoxia, central nervous system tumours or infections, or severe cerebral trauma, a GCS ≤ 6 .

Clinical triggers for identification and referral of donors for donation after brain death in Croatia

| Clinical triggers | Ischaemic brain injury | Intracerebral haemorrhage | Secondary cerebral anoxia | CNS tumour | CNS infection | Cerebral trauma |
|----------------------|--|----------------------------|---------------------------|------------|---------------|-----------------|
| Recommended referral | NIHSS ≥ 27 | ICHS or Hunt-Hess ≥ 4 | | | GCS ≤ 6 | |
| Required referral | GCS 3 and progressive absence of at least three out of six brain stem reflexes or FOUR score of EoMoBoRo | | | | | |

Note: CNS: central nervous system; GCS: Glasgow coma scale; ICHS: intracerebral haemorrhage scale; NIHSS: National Institute for Health stroke severity scale.

Clinical triggers for the identification and referral of donors for donation after brain death

In the **United Kingdom**, the National Institute for Health and Care Excellence recommendations for the identification and referral of possible organ donors are based on the principle that organ donation should be a component of end-of-life care planning, and are incorporated into an NHS Blood and Transplant strategy for implementation of these recommendations.

In patients with a catastrophic brain injury, referral is recommended

in the absence of one or more brainstem reflexes

and a GCS \leq 4,

unless there is a clear reason why the above clinical triggers are not met (for example, because of sedation) and/or a decision has been made to perform BD testing, whichever is the earlier.

Clinical triggers for the identification and referral of donors for donation after brain death

In a retrospective analysis of patients with acute stroke and high probability of developing BD in five centres in Lorraine (**France**), the authors identified six clinical and radiological factors which could form a predictive score of BD in acute phase of severe stroke with high predictive values (score 1 v. score 2: 72 v. 77 %).

1. The GCS score ≤ 6 before sedation,
2. stroke volume > 65 mL,
3. presence of herniation
4. and/or hydrocephalus on brain imaging,
5. initial systolic blood pressure > 150 mmHg
6. and history of alcohol abuse

represent six different predictive factors of poor prognosis and high probability of progression to BD within 24 h following stroke onset.

Taken together, these factors can make a simple score system that can help clinicians at emergency departments, neurological wards or stroke units to more accurately assess patients with severe stroke as being possible organ donors and to facilitate discussions with family members about treatment futility and ICOD.

Hospital coordination



The choice is in your hand!



COUNCIL OF EUROPE
CONSEIL DE L'EUROPE
Committee of Ministers
Comité des Ministres

Az Európa Tanács ajánlásai

Recommendation Rec(2006)15 of the Committee of Ministers to member states on the background, functions and responsibilities of a National Transplant Organisation (NTO)

The essential functions of an NTO (with its advisory committees) are the following:

- taking responsibility for running a transplant quality assurance system consistent with internationally recognised standards;

Recommendation Rec(2006)16 of the Committee of Ministers to member states on quality improvement programmes for organ donation

a quality improvement programme for organ donation is put in place in every hospital where there is a potential for organ donation;

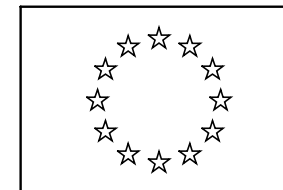
the quality improvement programme is primarily a self-evaluation of the whole process of organ donation, jointly performed by the specialists in intensive care and the transplant co-ordinator of every hospital.

GUIDE OF RECOMMENDATIONS FOR QUALITY ASSURANCE PROGRAMMES IN THE DECEASED DONATION PROCESS



| Country | Start | Participating hospitals | Staff | Focus on |
|---------|-------|-------------------------|-------------|-------------------|
| France | 2001 | 20,4% | MD & nurses | Donation after BD |
| Germany | 2002 | 100% (NE Region) | MD & nurses | Donation after BD |
| Italy | 2006 | 100% | Tx coord | Donation after BD |
| Spain | 1996 | 75,2% | Tx coord | Donation after BD |
| UK | 2003 | 100% | Tx coord | BD + NHBD |

Brüsszel, 2008.12.8
COM(2008) 819 végleges



A BIZOTTSÁG KÖZLEMÉNYE

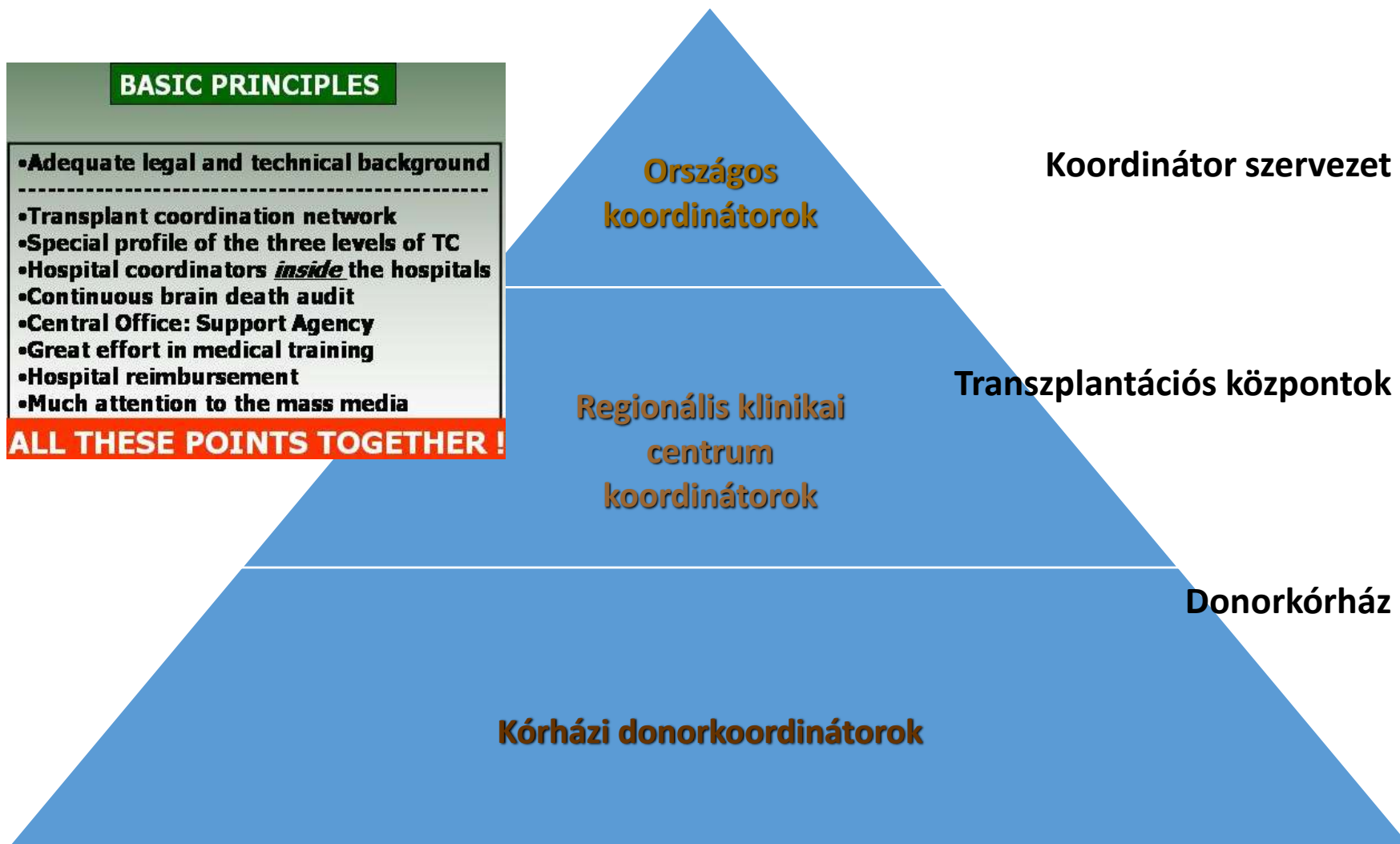
***A szervadományozásra és a szervátültetésre vonatkozó cselekvési terv
(2009-2015): Megerősített együttműködés a tagállamok között***

3.1. Kiemelt intézkedések a rendelkezésre álló szervek mennyiségének növelése érdekében

3.1.1. Az elhalálozott donortól származó szervadományozás nyújtotta lehetőségek teljes kiaknázása

2. kiemelt intézkedés: minden olyan kórházban, ahol lehetőség van szervadományozásra, ösztönözzék a szervadományozásra vonatkozó minőségfejlesztési programokat

Koordinátori struktúra a gyakorlatban és a „Spanyol Modell” értelmezésében



Continuously Evaluating Performance in Deceased Donation: The Spanish Quality Assurance Program

G. de la Rosa, B. Domínguez-Gil, R. Matesanz, S. Ramón, J. Alonso-Álvarez, J. Araiz, G. Choperena, J. L. Cortés, D. Daga, J. Elizalde, D. Escudero, E. Escudero, C. Fernández-Renedo ... See all authors

First published: 15 June 2012 | <https://doi.org/10.1111/j.1600-6143.2012.04138.x> | Citations: 66

Table 3: External evaluations. Global results from all the evaluated hospitals (111 centers). Years 2001–2010

| | Internal evaluation | | External evaluation | |
|----------------------------|---------------------|------|---------------------|------|
| | N | % | N | % |
| CCU deaths | 19 736 | | 20 080 | |
| Medical records not found | | | 198 | 1 |
| Potential donors | 2 480 | 12.6 | 2 529* | 12.6 |
| <i>Not referred</i> | 45 | 1.8 | 167 | 6.6 |
| Medical contraindications | 665 | 26.8 | 580 | 22.9 |
| <i>Inadequate</i> | - | - | 67 | 2.6 |
| Maintenance problems | 77 | 3.1 | 57 | 2.3 |
| <i>Correctable</i> | - | - | 24 | 0.9 |
| Family refusals | 356 | 14.4 | 350 | 13.8 |
| <i>Avoidable</i> | - | - | 5 | 0.2 |
| Organizational problems | 10 | 0.4 | 19 | 0.8 |
| <i>Avoidable</i> | - | - | 6 | 0.2 |
| Lack of adequate recipient | 17 | 0.7 | 22 | 0.9 |
| Coroner refusals | 7 | 0.3 | 9 | 0.4 |
| Impossible to evaluate | 6 | 0.2 | 17 | 0.7 |
| Actual donors | 1 297 | 52.3 | | |
| Possible donors | | | 1 577** | 62.4 |

CCU = critical care unit.

Table 4: External evaluations. Hospitals with neurosurgical facilities (66 centers). Years 2001–2010

| | Internal evaluation | | External evaluation | |
|----------------------------|---------------------|------|---------------------|------|
| | N | % | N | % |
| CCU deaths | 14 981 | | 15 231 | |
| Medical records not found | | | 176 | 1.2 |
| Potential donors | 2 035 | 13.6 | 2 088* | 13.7 |
| <i>Not referred</i> | 31 | 1.5 | 126 | 6 |
| Medical contraindications | 537 | 26.4 | 483 | 23.1 |
| <i>Inadequate</i> | - | - | 58 | 2.8 |
| Maintenance problems | 56 | 2.8 | 46 | 2.2 |
| <i>Correctable</i> | - | - | 20 | 1 |
| Family refusals | 296 | 14.5 | 284 | 13.6 |
| <i>Avoidable</i> | - | - | 3 | 0.1 |
| Organizational problems | 7 | 0.3 | 18 | 0.9 |
| <i>Avoidable</i> | - | - | 5 | 0.2 |
| Lack of adequate recipient | 14 | 0.7 | 18 | 0.9 |
| Coroner refusals | 6 | 0.2 | 6 | 0.3 |
| Impossible to evaluate | 5 | 0.2 | 9 | 0.4 |
| Actual donors | 1083 | 53.2 | | |
| Possible donors | | | 1 310** | 62.7 |

CCU = critical care unit.

*Confirmed and highly probable cases of potential donors. **The number of possible donors is calculated by subtracting from the identified cases of potential donors (2 088) the unavoidable losses: adequate medical contraindications (425), noncorrectable maintenance problems (26), not avoidable family refusals (281) and organizational problems (13) as well as coroner refusals (6) and lack of adequate recipients (18). Cases impossible to evaluate are also subtracted (9).

Table 5: External evaluations. Hospitals without neurosurgical facilities (45 centers). Years 2001–2010

| | Internal Evaluation | | External Evaluation | |
|----------------------------|---------------------|------|---------------------|------|
| | N | % | N | % |
| CCU DEATHS | 4 755 | | 4 849 | |
| Medical records not found | | | 22 | 0.5 |
| Potential donors | 445 | 9.4 | 441* | 9.1 |
| <i>Not referred</i> | 14 | 3.1 | 41 | 9.3 |
| Medical Contraindications | 128 | 28.8 | 97 | 22 |
| <i>Inadequate</i> | - | - | 9 | 2 |
| Maintenance problems | 21 | 4.7 | 11 | 2.5 |
| <i>Correctable</i> | - | - | 4 | 0.9 |
| Family refusals | 60 | 13.5 | 66 | 15 |
| <i>Avoidable</i> | - | - | 2 | 0.5 |
| Organizational problems | 3 | 0.7 | 1 | 0.2 |
| <i>Avoidable</i> | - | - | 1 | 0.2 |
| Lack of adequate recipient | 3 | 0.7 | 4 | 0.9 |
| Coroner refusals | 1 | 0.2 | 3 | 0.7 |
| Impossible to evaluate | 1 | 0.2 | 8 | 1.8 |
| Actual donors | 214 | 51.9 | | |
| Possible donors | | | 267** | 60.5 |

CCU = critical care unit.

*Confirmed and highly probable cases of potential donors. **The number of possible donors is calculated by subtracting from the identified cases of potential donors (441) the unavoidable losses: adequate medical contraindications (88), noncorrectable maintenance problems (7), not avoidable family refusals (64) as well as coroner refusals (3) and lack of adequate recipients (4). Cases impossible to evaluate are also subtracted (8).

Brief Communication

Continuously Evaluating Performance in Deceased Donation: The Spanish Quality Assurance Program

G. de la Rosa^a, B. Domínguez-Gil^a, R. Matesanz^a, S. Ramón^a, J. Alonso-Álvarez^b, J. Aralaz^c, G. Choperena^d, J. L. Cortés^e, D. Daga^f, J. Elizalde^g, D. Escudero^h, E. Escuderoⁱ, C. Fernández-Renedo^j, M. A. Frutos^k, J. Galán^l, M. A. Getino^m, F. Guerreroⁿ, M. Lara^o, L. López-Sánchez^p, S. Macías^q, J. Martínez-Guillén^r, N. Masnou^s, S. Pedraza^t, T. Pont^s and A. Sánchez-Rodríguez^t

The **Spanish Quality Assurance Program** applied to the process of **donation after brain death** entails an internal stage consisting of a continuous **clinical chart review of deaths in critical care units (CCUs)** performed **by transplant coordinators** and periodical **external audits** to selected centers.

This paper describes the methodology and provides the most relevant results of this program, with information analyzed from **206,345 CCU deaths**. According to the **internal audit**, **2.3% of hospital deaths** and **12.4% of CCU deaths** in Spain yield **potential donors** (clinical criteria consistent with brain death).

Out of the potential donors, **54.6% become actual donors**, **26% are lost** due to **medical unsuitability**, **13.3% due to refusals** to donation, **3.1% due to maintenance problems** and **3% due to other reasons**. Although the national pool of potential donors after brain death has progressively decreased from 65.2 per million population (pmp) in 2001 to 49 pmp in 2010, the number of actual donors after brain death has remained at about 30 pmp. **External audits** reveal that the **number of actual donors could be 21.6% higher if all potential donors were identified*** and preventable losses avoided. We encourage other countries to develop similar comprehensive approaches to deceased donation performance.

*The **external audit** is carried out by **2–3 physicians**, depending on complexity of the evaluated hospital. The profile of the auditor is that of a **critical care specialist, with at least 5 years' experience as hospital TC, who has worked previously in an audited hospital and with specific training** in the Spanish QAPDD methodology.

Párhuzamos lépések

együttműködésben az egészségpolitikával, jogalkotóval, finanszírozóval, szakmai szervezetekkel, és betegszervezettel

– 2011: Eurotransplant csatlakozási folyamat

– 2012.01.01: Eurotransplant előzetes együttműködési megállapodás

– 2013.07.01: Eurotransplant teljes jogú tagság

– 2010: **kórházi koordináció:**

– Minőségbiztosítási Program

– 2011: Szervdonációs célú szállítási feladatok centralizálása

– 2012: a 2010/53/EU Irányelv hazai implementációja

– Szervdonációs útmutató a donorkórházak részére

– 2013: Nemzeti Szervdonációs Regiszter

– 2014: Donorsebészeti képzés Magyarországon

– A transzplantációs donor-koordinátori hálózat fejlesztése





Accord

Achieving Comprehensive
Coordination in Organ Donation

WP 5: Collaboration ICU & DTC



NHSBT, UK

COLLABORATING PARTNERS (3)

European Hospital and Healthcare Federation (HOPE) – Pascal Garel & Sara Pupato

European Society of Intensive Care Medicine (ESICM) – Giuseppe Citerio & Paulo Maia

European Transplant Coordinators Organisation-European Donation Committee (ETCO-EDC), a section of ESOT – Teresa Pont

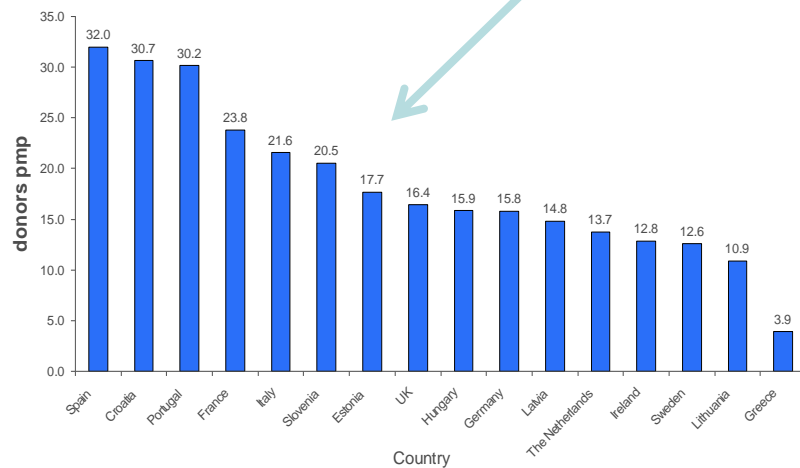


ASSOCIATED PARTNERS (16)

Hol vannak az agyhalott donorok?

| | Potential DBD pool | Actual DBD donors |
|-------|--------------------|-------------------|
| Spain | ≈ 50 | 32 |
| UK | 18 | 10 |

Per million population, 2010



Mi különbség oka?

Eltér az agyhalál megállapítási módszertan (aggasztó)

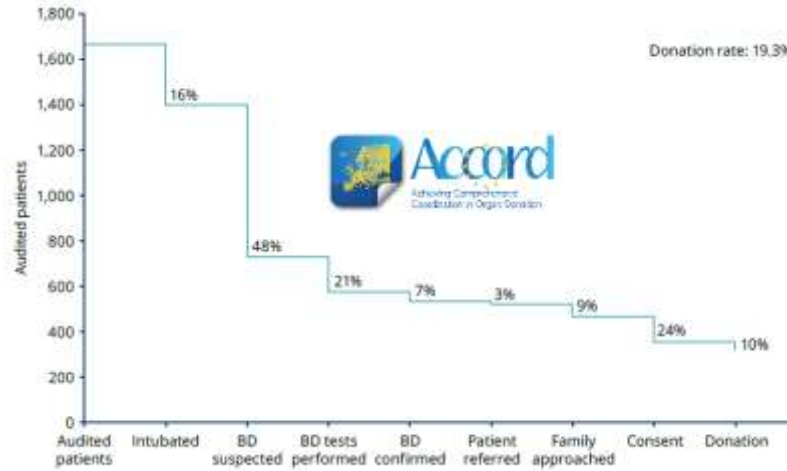
- Alacsonyabb agykárosodás incidencia (udvarias)

- Ellátás kimenetele jobb (öntelt)

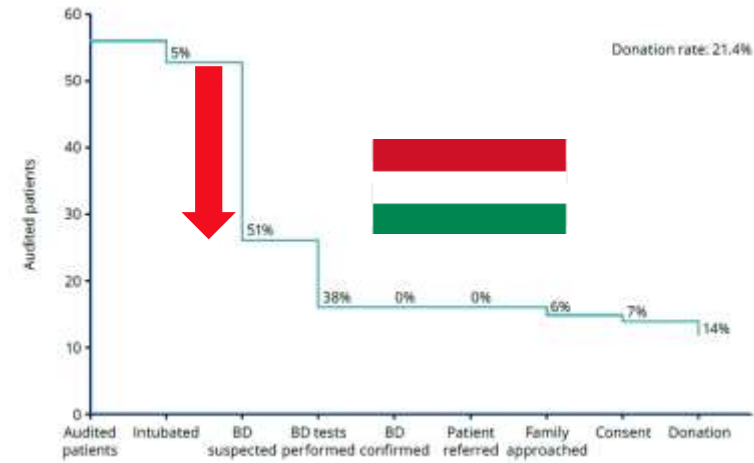
- Súlyos agykárosodott betegek ellátásának megközelítési különbségei (érdekes)

ACCORD DBD pathway 2013

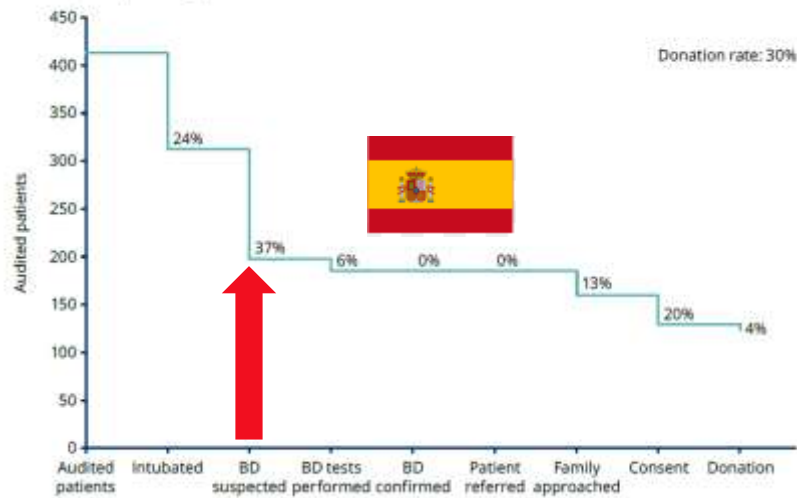
ACCORD Whole cohort



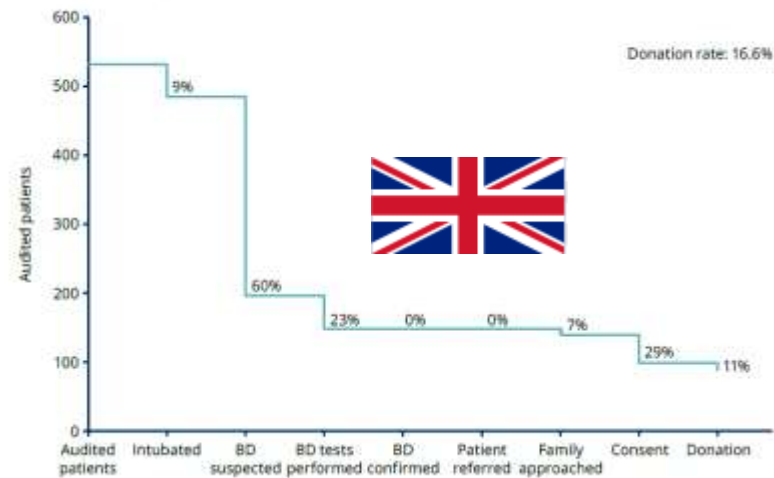
HUNGARY, DBD pathway



SPAIN, DBD pathway



UK, DBD pathway



67 hospitals participated (19 from the UK, 17 from Spain, and 31 from the remaining 13 MS) and data were collected from 1670 patients from March 1st to August 31st 2013

Table 3: Indicators of the potential of donation. Percentage and percentiles 25-75.

| | N Hosp | N BD | % (p25-p75) |
|---|-----------|-------------|------------------------|
| Referred to the number of beds | | | |
| Brain Deaths/ Hospital Beds | 30 | 1099 | 3.9 (2.4-5.3) |
| Brain Deaths/ ICU Beds | 30 | 1099 | 109.2 (68.0-190.3) |
| Referred to the number of admissions | | | |
| Brain Deaths/ Hospital Admissions | 29 | 1080 | 0.08 (0.03-0.13) |
| Brain Deaths/ ICU Admissions | 30 | 1099 | 1.77 (1.09-3.79) |
| Referred to the number of deaths | | | |
| Brain Deaths/ Hospital Deaths | 29 | 1040 | 2.9 (1.7-4.3) |
| Brain Deaths/ ICU Deaths | 30 | 1099 | 15.1 (8.3-20.7) |
| Referred to the number of admissions with selected codes | | | |
| Brain Deaths/ Hospital Admissions with Selected Codes | 17 | 510 | 2.7 (2.0-4.5) |
| Brain Deaths/ ICU Admissions with Selected Codes | 15 | 464 | 18.0 (9.7-25.7) |
| Referred to the number of deaths with selected codes | | | |
| Brain Deaths/ Hospital Deaths with Selected Codes | 22 | 802 | 20.3 (11.9-35.9) |
| Brain Deaths/ ICU Deaths with Selected Codes | 26 | 1059 | 67.5 (50.0-89.7) |

N Hosp: Number of hospitals providing data to construct the indicator. BD: Brain Deaths

Table 12: Indicators of Global Effectiveness of the process of donation. Percentage and percentiles 25-75.

| | N Hosp | N Effective Donors | % (p25-p75) |
|---|--------|--------------------|-------------------|
| Referred to the number of beds | | | |
| Effective Donors/ Hospital Beds | 30 | 466 | 1.6 (0.9-2.9) |
| Effective Donors/ ICU Beds | 30 | 466 | 46.3 (29.9-67.7) |
| Referred to the number of admissions | | | |
| Effective Donors/ Hospital Admissions | 29 | 452 | 0.03 (0.01-0.06) |
| Effective Donors/ ICU Admissions | 30 | 466 | 0.75 (0.46-1.35) |
| Referred to the number of deaths | | | |
| Effective Donors/ Hospital Deaths | 29 | 453 | 1.3 (0.8-2.3) |
| Effective Donors/ ICU Deaths | 30 | 466 | 6.4 (4.2-9.4) |
| Other | | | |
| Effective Donors/ Potential Donors | 29 | 463 | 51.1 (37.1-73.7) |
| Effective Donors/ Brain Deaths | 30 | 466 | 42.4 (33.3-60.0) |
| Multiorgan Donors/ Effective Donors | 23 | 328 | 78.7 (50.0-100.0) |
| Utilised Donors/ Effective Donors | 30 | 466 | 94.6 (90.3-100.0) |
| Organs Retrieved/ Effective Donors | 27 | 433 | 3.24 (2.93-3.77) |
| Organs Implanted/ Effective Donors | 30 | 466 | 2.91 (2.37-3.50) |
| Organs Implanted/ Utilised Donors | 30 | 441* | 3.08 (2.67-3.54) |

* N utilised donors



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Confidential



Súlyozott cadaver szervdonációs aktivitás

Idegsebészeti preferencia

| Indikátorok | 18 NS | 28 NS na | P |
|-------------------------------------|---------|----------|---------|
| Cadaver szervdonációs aktivitás (X) | 5,72 | 1,93 | < 0,01 |
| X / kórházi ágyszám | 0,0063 | 0,0034 | < 0,01 |
| X / ITO ágyszám | 0,1976 | 0,1299 | = 0,015 |
| X / kórházi felvétel | 0,00013 | 0,00008 | < 0,01 |
| X / ITO felvétel | 0,0054 | 0,0032 | < 0,01 |
| X / kórházi halálozás | 0,5639 | 0,2394 | < 0,01 |
| X / ITO halálozás | 2,7485 | 1,4190 | < 0,01 |

Idegsebészeten van több donor

Mann-Whitney Test

Ranks

| | Idegsebészeten van? | N | Mean Rank | Sum of Ranks |
|--|---------------------|-----|-----------|--------------|
| Tavaly kb. hány elhunyt lett volna alkalmas donációra a kórházukban? | Igen | 162 | 186,69 | 30244,50 |
| | Nem | 152 | 126,38 | 19210,50 |
| | Total | 314 | | |

Test Statistics^a

| | Tavaly kb. hány elhunyt lett volna alkalmas donációra a kórházukban? |
|------------------------|--|
| Mann-Whitney U | 7582,500 |
| Wilcoxon W | 19210,500 |
| Z | -6,144 |
| Asymp. Sig. (2-tailed) | ,000 |

Mann-Whitney Test

Ranks

| | Idegsebészeten van? | N | Mean Rank | Sum of Ranks |
|--|---------------------|-----|-----------|--------------|
| Tavaly kb. hány halott vált donorrá a kórházukban? | Igen | 162 | 191,49 | 31021,00 |
| | Nem | 150 | 118,71 | 17807,00 |
| | Total | 312 | | |

Test Statistics^a

| | Tavaly kb. hány halott vált donorrá a kórházukban? |
|------------------------|--|
| Mann-Whitney U | 6482,000 |
| Wilcoxon W | 17807,000 |
| Z | -7,458 |
| Asymp. Sig. (2-tailed) | ,000 |

Fejlesztési javaslat

Idegsebészeti preferencia

Table 4: Comparison of the indicator Brain Deaths/ Hospital Deaths between hospitals with and without Neurosurgery

| | With Neurosurgery (n=24) | Without Neurosurgery (N=5) |
|------------------|-----------------------------|-------------------------------|
| Mean (SD) | 4.1 (3.2) | 2.1 (1.2) |
| p | | 0.414 |
| Median (P25-P75) | 2.9 (1.6-7.1) | 2.5 (1.1-3.0) |
| p | | 0.330 |
| Proportion | 3.01 | 1.99 |
| p | | 0.007 |

Table 5: Comparison of the indicator Brain Deaths / ICU Deaths between hospitals with and without Neurosurgery

| | With Neurosurgery (n=25) | Without Neurosurgery (n=5) |
|------------------|-----------------------------|-------------------------------|
| Mean (SD) | 17.9 (10.2) | 9.4 (5.5) |
| p | | 0.037 |
| Median (P25-P75) | 16.8 (10.3-22.2) | 6.9 (4.9-15.3) |
| p | | 0.042 |
| Proportion | 15.6 | 10.1 |
| p | | 0.0002 |

Célok

- Az intézményi szintű szervdonációs potenciál meghatározása
- A szervdonációs folyamat adott pontjain mérhető hiányosságok azonosítása, valamint a donorvesztések okainak elemzése
- Azon kórházi és demográfiai jellemzők leírása, amelyek befolyásolják a szervdonációs aktivitást.

Megvalósítási terv

A kórházi koordinátori rendszer megvalósítási elemei:

Együttműködési megállapodás a fekvőbeteg ellátó intézmények és az OVSZ között a Szervkoordinációs Iroda által delegált személy kórházban is végzett feladatainak ellátása érdekében.

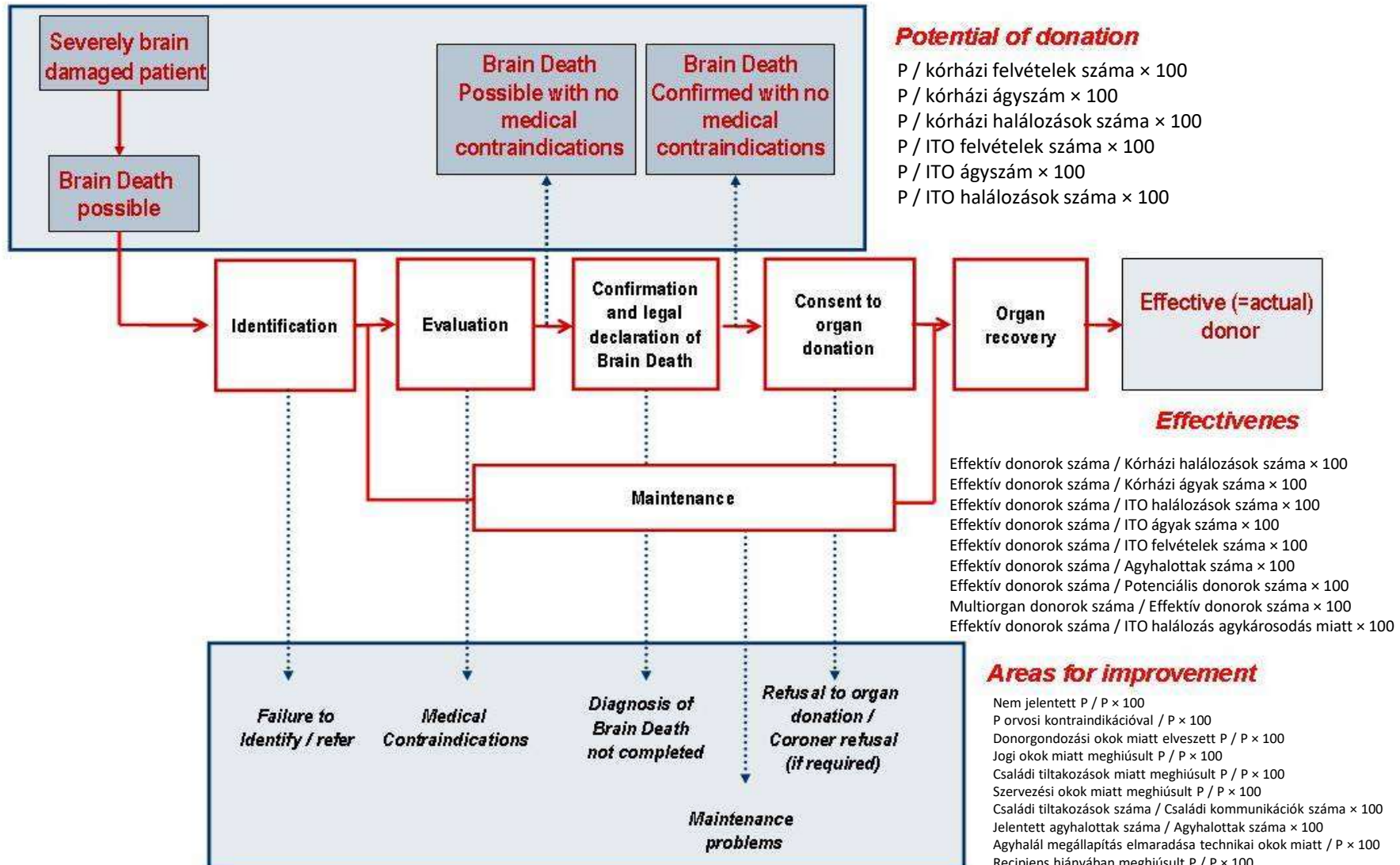
1 kórházi koordinátor legfontosabb feladatai:

- **Donorjelentés esetén:**
 - helyi szervezési feladatok ellátása,
 - részvétel a donorgondozásban
 - család tájékoztatása
- **Napi vizit** minden osztályon (pl. idegsebészet, neurológia, traumatológia, SBO, ITO), ahol súlyos agyi károsodott betegek ellátása történhet.
- Legalább havonta retrospektív kórházi halálozási felülvizsgálat (Quality Assurance Program: **Brain Death Audit**), illetve az adatok továbbítása a Szervkoordinációs Iroda részére.
- **Helyi oktatás:** 2 kórházi előadás/év szervezése, megtartása.



Kórházi koordináció

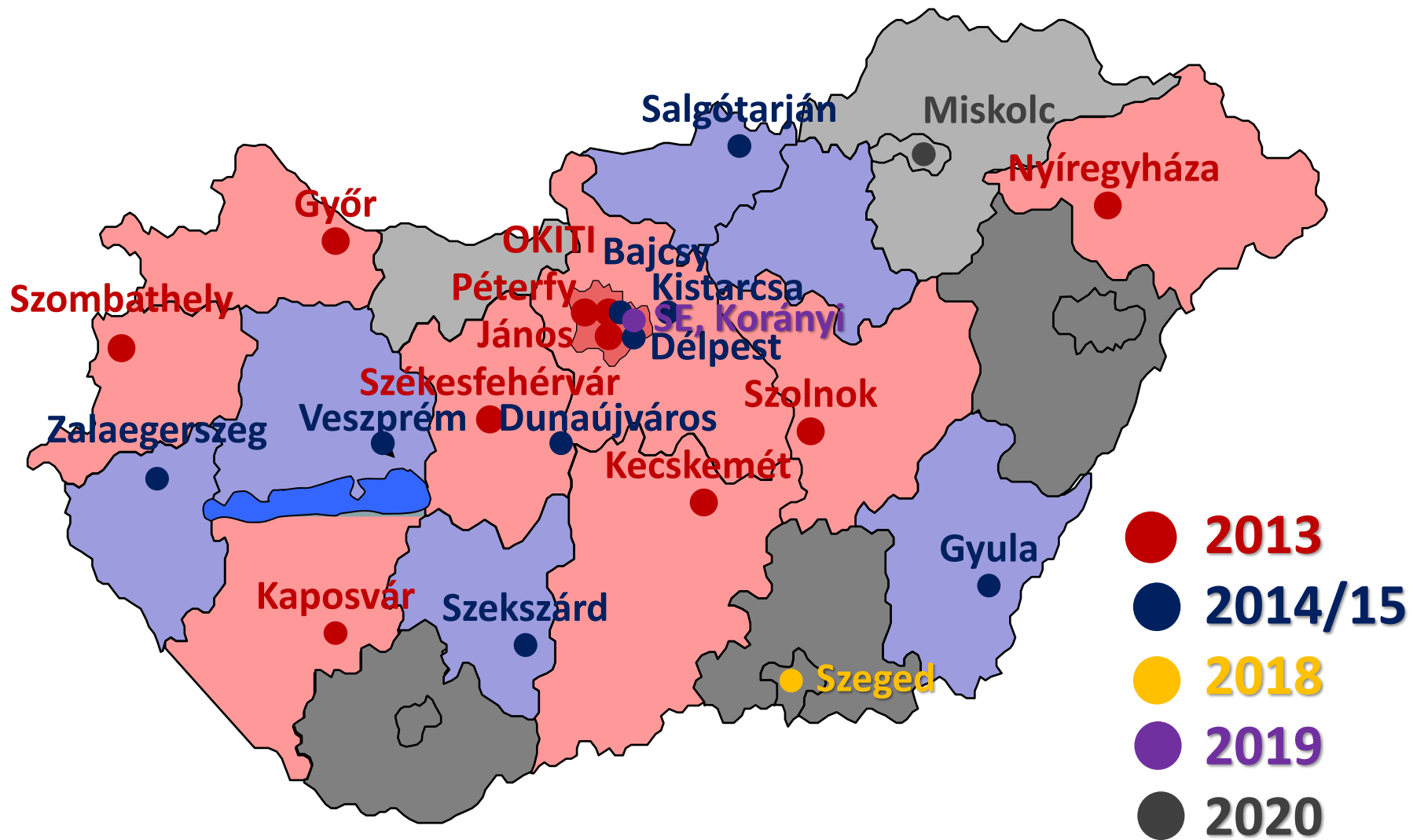
Szervdonációs minőségbiztosítási program 21 kórházban



A kórházi koordinációt meghatározó események

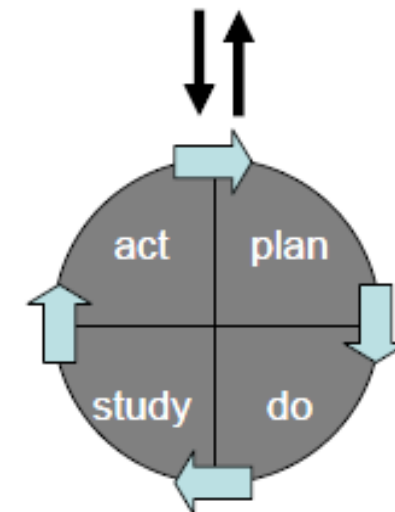
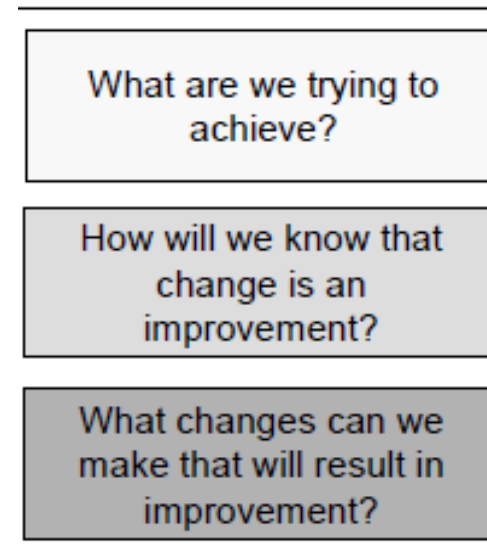
- 2006: Recommendation Rec(2006)15/16 of the Committee of Ministers to member states on the background, functions and responsibilities of a National Transplant Organisation (NTO)
- 2008: A Bizottság közleménye - A szervadományozásra és a szervátültetésre vonatkozó **cselekvési terv** (2009-20015)
- 2009: Transzplantációs céllal történő szervkivételek a fekvőbeteg-ellátásban, Indikátorrendszer 2009. Egészségbiztosítási Felügyelet, 2009. december
- 2010: **Kórházi koordinátori Pilot program**
- 2010: AZ EURÓPAI PARLAMENT ÉS A TANÁCS 2010/53/EU IRÁNYELVE (2010. július 7.) az átültetésre szánt emberi szervekre vonatkozó minőségi és biztonsági előírásokról
- 2012: Potential of Deceased Donation not optimally exploited: Donor Action Data from six countries (2007-2009)
- 2012: Félbehagyott kórházi koordinátori program
- 2012: ACCORD Work Package 5 Improved collaboration between Intensive Care and Donor Transplant Coordination
- 2013: A folyamatosan működtetett kórházi koordinátori program indulása

A kórházi koordinátori hálózat intézményei (22)



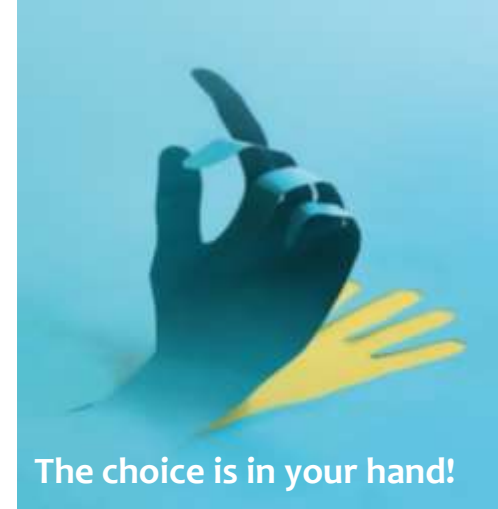
Mit csinál az eredményes kórházi koordinátor?

1. Retrospektív módon adatot gyűjt és **értelmez**
2. **Aktívan** részt vesz a szervezési folyamatban
3. **Felismer** és megfogalmaz problémákat
4. Megoldási **javaslatot** tesz
5. A javaslatnak megfelelően eljárva **bizonyítja** a hatékonyságát
6. **Megosztja** a folyamatban résztvevőkkel az észrevételeit



Mit lát a kórházi koordináció?

- 22 kórházban 11.070 aktív ágy , **358 ITO ágy**
- **3849 Agyhalál Audit**
- **114 AH felismerés, 89 AHM, 71 DBD**
- A donorjelentések **71,52%**-a a donorkórházak 57,14%-ból érkezik (20/35)
- A megvalósult donációk **69,61%**-a érkezett a programba bevont intézményekből
- Megvalósult donációk aránya: **65,74%** - 67,5%
- **Multiorgan donációk aránya: 67,61%** – 71,57%
- **Kivett szervek átlagos száma: 2,78** – 2,93
- **Elhunytból történő szervdonációs aktivitás a COVID-járvány alatt (2019-2021):**
 - 2019-ről 2020-ra országosan 5,88%-kal, majd összesen a járvány hatására 2019-ről 2021-re 7,22%-kal csökkent.
 - A minőségbiztosítási programba bevont intézményekben világjárvány első évében 3,94%-kal esett vissza a donációs potenciál, míg a második évben minimális emelkedés volt már tapasztalható (0,23%), de így is összesítve a két év alatt 3,68%-os volt a csökkenés mértéke.



Donoraudit

| | |
|--|--|
| Intézményi adatok | |
| Küldés dátuma: | |
| Ellenőrzést végző személy neve: | |
| Intézmény neve: | |
| Vizsgálat helye (osztály): ITO / SBO / GYITO / PIC / Neurológia / Neurológia SubITO / Traumatológia / Idegsebészet / Belgyógyászat / Gyermekosztály | |
| Melyik osztályról történt a jelentés?: ITO / SBO / GYITO / PIC / Neurológia / Neurológia SubITO / Traumatológia / Idegsebészet / Belgyógyászat / Gyermekosztály | |
| Melyik osztályon halt meg a beteg?: ITO / SBO / GYITO / PIC / Neurológia / Neurológia SubITO / Traumatológia / Idegsebészet / Belgyógyászat / Gyermekosztály | |
| Betegadatok | |
| Betegazonosító (TAJ): | |
| Nem: <input type="checkbox"/> Férfi <input type="checkbox"/> Nő | |
| Születési dátum: | |
| Kh. felvétel időpontja: | |
| Orvosi felvétel időpontja: | |
| Lélegzetés kezdete: | |
| Halál időpontja: | |
| Halálkori életkor: év | |
| Ellátásra/Állapotra vonatkozó adatok | |
| Lélegeztető/intubálva volt?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Nem szükséges Nem megfelelő Nem várható túlézés miatt |
| Mennyi volt a GCS "E" a lélegeztetésről való döntés időpontjában?: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 | |
| Mennyi volt a GCS "M" a lélegeztetésről való döntés időpontjában?: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 | |
| Mennyi volt a GCS "V" a lélegeztetésről való döntés időpontjában?: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 | |
| GCS a lélegeztetésről való döntés időpontjában: | |
| Lélegeztetés időtartama: | nap |
| Felvételi diagnózis: | |
| Esemélységhez vezető diagnózis: | |
| Halál oka: | |
| Diagnózist alátámasztó vizsgálat készült?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Alátámasztó vizsgálat: CT MR Egyéb |
| Agyhalál megállapítás körüli teendők | |
| Agyhalál első jeleinek észlelése megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Hemodinamikai instabilitás Mérgezés vagy központi idegrendszeren ható szer által kiváltott kóma Neuromuskuláris blokkád Metabolikus vagy endokrin eredetű kóma v. egyéb klinikai eltérés Maghőmérséklet 35°C alatt Heveny gyulladással idegrendszeri megbetegedés fennáll Az agyhalál észlelést követően megkezdődött neurológiai tünetek alapján nem indokolt Nem agyhalott - a megkezdett vizsgálat során valamely agytüzeési reflex kiváltható Családi tiltakozás donáció ellen Keringés összeomlása |

| | |
|--|--|
| Agyhalál megállapítás körüli teendők | |
| Agyhalál megállapítás megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Agytüzeési reflexek kiválthatók Keringés összeomlás Családi tiltakozás donáció ellen |
| Jelentés a Szervekordinációs Iroda felé megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Kapacitáshiány Nem merült fel a szervdonáció lehetősége Rendőrségi engedély megtagadva Életemben irántam tiltakoztam Család visszautasítja a donáció lehetőségét Tévesen alkalmatlannak lett minősítve Abszolút vagy relatív kontraindikáció |
| NSZTR lekérdezése megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Ügyeltesnek nincs lekérdezési jogosultsága Nincs/bem elérhető a fax Nem törték donáció Nincs kapacitás |
| Hozzártartozók tájékoztatása a szervdonációról | |
| Hozzártartozók tájékoztatása megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Elmaradás oka: Család nem elérhető A család már korábban visszautasította a donációt Nyomozó hatósági ok Nincs hely az ITO-n Orvosi kontraindikáció/transzplantáció centrummal egyetértésben Nem agyhalott Külföldi állampolgár |
| Hozzártartozók tájékoztatásának időtartama: | |
| Agyhalál észlelése előtt Agyhalál észlelése után Agyhalál megállapítás után | |
| Ki vezette a beszélgetést?: Osztályvezető főorvos Ügyeltes szakorvos Ügyeltes rezidens Kórházi koordinátor | |
| A hozzártartozók tájékoztatása után felmerült-e tiltakozás?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | Családi tiltakozás oka: Nem érezték az agyhalál tényét A test integritásának megsemmisülésétől való féltés Életemben soha nem tiltakoztam Vallási ok Egyéb Az ellátó rendszer felé való bizalmatlanság |
| Donáció | |
| Legalább egy szerv transzplantációs célú elhívoltása megtörtént?: | Elmaradás oka: |
| Szövetdonáció történt?: | |
| Elhívoltott szövetek típusa: | |
| Nyomozó hatóság bevonása | |
| Nyomozó hatóság megkeresése megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | |
| Nyomozó hatóság hozzájárulása megtörtént?: <input type="checkbox"/> Igen <input type="checkbox"/> Nem | |
| Megjegyzés | |
| | |

2023 SZAKMAI BESZÁMOLÓ

ORSZÁGOS VÉRELLÁTÓ SZOLGÁLAT | TRANSZPLANTÁCIÓS IGAZGATÓSÁG



2023-BAN VALÓSULT MEG
A 12 000. SZERVÁTÜLTETÉS MAGYARORSZÁGON

| Agyhalálhoz vezető kórok megvalósult donoroknál (2023-01-01 - 2023-12-31) | | | |
|---|--|---------|-------|
| BNO | Diagnózis | Elemzés | % |
| I6090 | Subarachnoideális vérzés, k.m.n. | 15 | 11,45 |
| S0650 | Traumás subdurális vérzés | 14 | 10,69 |
| G9310 | Anoxiás agyi károsodás m.n.o. | 10 | 7,63 |
| I6150 | Agyállományi vérzés agykamrában | 9 | 6,87 |
| I4600 | Szív megállás sikeres újraélesztéssel | 8 | 6,11 |
| I6120 | Agyállományi vérzés féltekében, k.m.n. | 7 | 5,34 |
| S0620 | Az agy diffúz sérülése | 6 | 4,58 |
| I6190 | Agyállományi vérzés, k.m.n. | 5 | 3,82 |
| I6020 | Subarachnoideális vérzés az arteria communicans anteriorból | 4 | 3,05 |
| I6510 | Az arteria basilaris elzáródása vagy szűkülete | 4 | 3,05 |
| S0660 | Traumás subarachnoideális vérzés | 4 | 3,05 |
| I6110 | Agyállományi vérzés féltekében, corticalis | 3 | 2,29 |
| I6160 | Agyállományi vérzés több lokalizációban | 3 | 2,29 |
| I6130 | Agyállományi vérzés agytörzsben | 3 | 2,29 |
| X70H0 | Szándékos önártalom akasztás, zsinegelés és megfojtás által | 3 | 2,29 |
| G4630 | Agytörzsi szélütés (stroke) syndroma (I60-I67+) | 2 | 1,53 |
| I6010 | Subarachnoideális vérzés az arteria cerebri mediából | 2 | 1,53 |
| I6180 | Agyállományi vérzés, egyéb | 2 | 1,53 |
| I6140 | Agyállományi vérzés kisagyban | 2 | 1,53 |
| G9360 | Agyvizenyő | 2 | 1,53 |
| S0610 | Traumás agyvizenyő | 2 | 1,53 |
| I4690 | Szív megállás, k.m.n. | 2 | 1,53 |
| I6060 | Subarachnoideális vérzés egyéb koponyaűri artériákból | 2 | 1,53 |
| I6600 | Az arteria cerebri media elzáródása és szűkülete | 1 | 0,76 |
| I6040 | Subarachnoideális vérzés az arteria basilarisból | 1 | 0,76 |
| I6070 | Subarachnoideális vérzés k.m.n. koponyaűri artériából | 1 | 0,76 |
| J9600 | Heveny légzési elégtelenség | 1 | 0,76 |
| S0640 | Epidurális vérzés | 1 | 0,76 |
| T07H0 | Többszörös sérülések, k.m.n. | 1 | 0,76 |
| Q2250 | Ebstein-anomalia | 1 | 0,76 |
| T71H0 | Megfulladás | 1 | 0,76 |
| T7820 | Anaphylaxiás shock, m.n.o. | 1 | 0,76 |
| G9110 | Elzáródásos hydrocephalus | 1 | 0,76 |
| G9350 | Agyi nyomásfokozódás | 1 | 0,76 |
| I6330 | Agyi infarctus a cerebriális ütőerek rögösödése miatt | 1 | 0,76 |
| I6900 | Pókhálókórtól alatti vérzés következményei | 1 | 0,76 |
| I6910 | Agyállományi vérzés következményei | 1 | 0,76 |
| I6940 | Stroke nem vérzésként vagy infarctusként jelölt következményei | 1 | 0,76 |
| Q2820 | Az agyi erek arterio-venosus rendellenessége | 1 | 0,76 |
| S0990 | A fej k.m.n. sérülése | 1 | 0,76 |

Gyűjtött betegségcsoportok köre BNO/ICD-10 kódok alapján

I60 – subarachnoidealis vérzés

I61 – agyállományi (intracerebralis vérzés)

I62 – más koponyaűri (intracranialis) vérzés

I63 – koponyaűri artériák elzáródása

I64 – stroke nem vérzésnek vagy infarctusnak minősítve

I65 – paracerebralis artériák infarctust nem okozó elzáródása és szűkülete

I66 – agyi artériák infarctust nem okozó elzáródása és szűkülete

I46 – szívmegállás

S06 – intracranialis sérülés

S02 – a koponya- és arccsontok törése

Gyűjtött betegségcsoportok köre BNO/ICD-10 kódok alapján

*V01-X59 – morbiditás és mortalitás külső okai (mérgezés,
baleset, trauma)*

G00-G05 – központi idegrendszer gyulladósos betegségei

G93.1 – anoxiás agyi károsodás m.n.o

G97 – beavatkozások utáni idegrendszeri rendellenességek m.n.o

G91 – vízfejűség

C70 – agyburkok daganata

C71 – nagyagy daganata

C72 – gerincvelői daganatok

D32 – agyburkok jóindulatú daganata

Agyhalálhoz vezető kórokban elhunytak számának változása országosan 2019/2023

| BNO kód | Megnevezés | 2019. | 2023. | % |
|---------|--|---|---|--|
| | | Elhalálozás összesen a szelektált betegcsoportban | Elhalálozás összesen a szelektált betegcsoportban | Esetszám változás a szelektált betegcsoportban |
| C70 | Az agyburkok rosszindulatú daganata | 9 | 5 | -44% |
| C71 | Az agy rosszindulatú daganata | 213 | 188 | -12% |
| C72 | A gerincvelő, az agyidegek és a központi idegrendszer egyéb részeinek rosszindulatú daganata | 12 | 8 | -33% |
| D32 | Az agy - és gerincburkok jóindulatú daganata | 23 | 9 | -61% |
| G00-G09 | Központi idegrendszer gyulladásos betegségei | 86 | 85 | -1% |
| G91 | Vízfejűség (hydrocephalus) | 25 | 11 | -56% |
| G931 | Anoxiás agyi károsodás m.n.o. | 253 | 281 | 11% |
| I46 | Szívmegállás | 6 719 | 9755 = 3036 | 45% |
| I60 | Pókhálóhártya alatti vérzés | 181 | 159 | -12% |
| I61 | Agyállományi vérzés | 1 146 | 946 | -18% |
| I62 | Egyéb nem traumás koponyaűri vérzés | 59 | 49 | -17% |
| I63 | Agyi infarktus | 2 395 | 1 715 | -29% |
| I64 | Szélütés (stroke) nem vérzésnek vagy infarktusnak minősítve | 89 | 116 | 30% |
| I65 | A praecerebralis artériák agyi infarktust nem okozó elzáródása és szűkülete | 132 | 115 | -13% |
| I66 | Az agyi artériák agyi infarktust nem okozó elzáródása és szűkülete | 113 | 139 | 24% |
| S02 | A koponya és arccsontok törése | 89 | 41 | -55% |
| S06 | Intracranialis sérülés | 487 | 446 | -9% |
| V01-X59 | Balesetek (közlekedési balesetek V01-V99 és A baleseti sérülés egyéb külső okai W00-X59) | 686 | 473 | -31% |
| | | 12 002 | 13 813 = 1811 | 15% |

(12 002 – 6 719) - (13 813 - 9 755) = - 1 241

10,32%-kal csökkent potenciál a szívmegállás csoportján nem figyelembe véve

13 813 – 12002 = 1811 => 14,81%-kal nőtt a potenciál

Intézeti halálozás 2019-ben: 64 164

=> donációs potenciál: DOPKI: potenciális agyhalottak száma 2,9%: 1 861

=> potenciális donorok száma 42,4%: 789

2019-ben az összes kórházi halálozás 18,7%-ában (12 002/64 164), 2023-ban 21,1%-ban (13 816/65 585) merült fel agykárosodás

A globális hatékonyság indikátorai a kórházi koordinátori intézményekben/Szekszárdon évente, átlagosan

| ÉV | ED/AH | AH/ITO mort. | ED/KH mort. | ED/ITO mort. |
|----------------------|--------------|--------------|-------------|--------------|
| KK 2018 | 79,05% | 3,45% | 0,35% | 2,73% |
| KK 2019 | 80,15% | 4,12% | 0,41% | 3,29% |
| Országos 2019 | 71,43% | 2,67% | 0,28% | 1,91% |
| Országos 2020 | 70,25% | 1,35% | 0,16% | 0,94% |
| EU 2009 | 42,4% | 15% | 1,3% | 6,4% |

**Magas arány:
Donációs trigger**

**Alacsony arány:
ITO veszteség**

**Alacsony arány:
Kórházi veszteség**

**Alacsony arány:
ITO veszteség**

N: résztvevő kórházak száma

ED: effektív donor

AH: agyhalott

ITO mort.: intenzív osztályos mortalitás

KH mort.: kórházi mortalitás





Kórházi koordináció = szervdonációs minősbiztosítási program

Chapter 15. Quality management in organ donation and transplantation



There are three main models for quality management used in the healthcare sector, which are discussed below: ISO, JCAHO and EFQM. It must be very clear that these are different options.

- Applying a systematic approach to quality management in this process involves separate reviews of:
- Government and health authority responsibilities;
 - Quality management in organ donation;
 - Quality management in organ transplant.

| Deceased donation | Applies to | Type | Standard |
|--|------------|-----------|----------|
| 1 Donor process procedures | ISO/ICD | structure | 100% |
| 2 Positive donor identification process | ISO/ICD | structure | 100% |
| 3 Donor team full-time availability | ISO/ICD | structure | 100% |
| 4 Donor team members with ICJ background | ISO/ICD | structure | 10% |
| 5 Dedicated time for Donor Action Plans | ISO/ICD | structure | 100% |
| 6 Documentation of key points of the donation process | ISO/ICD | structure | 100% |
| 8 Documentation of reason for non-donation | ISO/ICD | process | 100% |
| 7 Patient / family consent | ISO/ICD | outcome | 10% |
| 9 Identification of all possible donors | ISO | process | 75% |
| 10 Documented to Hospital/ICD donor identification | ICD | process | 100% |
| 16 Controlled ICD donor identification | ICD | process | 100% |
| 11 Existence of controlled ICD donor protocols | ICD | structure | 100% |
| 12 Referral of possible ICD donors | ISO | process | 100% |
| 13 Documented organ donation | ISO/ICD | process | 100% |
| 14 Evaluation of Brain-Dead donors | ISO | process | 100% |
| 15 Donor management | ISO | process | 10% |
| 16 Inexpedited cardiac arrest | ISO | outcome | 1% |
| 17 ICD organ donor preservation | ICD | process | 10% |
| 18 Seminars on organ donation | ISO/ICD | process | 1 |
| 19 Documentation of evaluation of potential donors | ISO/ICD | process | 100% |
| 20 Brain death identification | ISO | outcome | 10% |
| 21 Conversion rate to ICD donors | ISO | outcome | 75% |
| 22 Conversion rate in uncontrolled ICD donors | ICD | outcome | 10% |
| 23 Conversion rate in controlled ICD donors | ICD | outcome | 10% |
| 24 Retrieval transplanted from uncontrolled ICD donors | ICD | outcome | 10% |
| 25 Retrieval transplanted from controlled ICD donors | ICD | outcome | 10% |

| Indicators applied in Donor pilot experience | Key indicators highlighted in bold |
|---|------------------------------------|
| all indicators relating to the potential for deceased organ donation | |
| Of the number of deaths: | |
| - Brain deaths (possible and confirmed)/Hospital deaths = 100 | |
| - Brain deaths (possible and confirmed)/ICD deaths = 100 | |
| - Brain deaths (possible and confirmed)/Number of persons who died within the hospital containing among their primary and/or secondary diagnosis at least one of the ICD codes (I11) representing diseases potentially progressing towards a situation of brain death = 100 | |
| - Brain deaths (possible and confirmed)/Number of persons who died within the ICD containing among their primary and/or secondary diagnosis at least one of the ICD codes (I11) representing diseases potentially progressing towards a situation of brain death = 100 | |
| all indicators relating to areas for improvement in the deceased donation process | |
| Of the number of brain deaths: ICD (possible and confirmed) | |
| - ICD not referred/ICD = 100 | |
| - ICD not because of medical contraindications to organ donation/ICD = 100 | |
| - ICD not because of maintenance problems/ICD = 100 | |
| - ICD not due to refusal for organ donation/ICD = 100 | |
| - ICD not due to consent refusal for organ donation/ICD = 100 | |
| - ICD not due to organizational problems/ICD = 100 | |
| - ICD not for other reasons/ICD = 100 | |
| Of the total number of families approached and judicial requests to proceed with organ donation | |
| - Number of families who refused organ donation/Number of families approached to request organ donation = 100 | |
| - Number of consent refusals of organ donation/Number of judicial requests for organ donation = 100 | |
| all indicators relating to the global effectiveness in the deceased donation process | |
| Regarding the number of deaths | |
| - Actual donors/Hospital deaths = 100 | |
| - Actual donors/ICD deaths = 100 | |
| - Actual donors/Brain deaths (possible and confirmed) = 100 | |
| Other | |
| - Multiple organ donors/Actual donors = 100 | |
| - ICD not donors/Actual donors = 100 | |
| - Organs recovered/Actual donors = 100 | |
| - Organs utilized by final donors = 100 | |
| - Organs utilized/ICD donors = 100 | |

| Name | gb. Documentation of cause of non-donation |
|----------------------|---|
| Justification | Proper documentation of the cause of non-donation ensures that it will be possible later to review and analyse donor losses. This is the basis that will enable continuous improvement. Recommendation C. |
| Dimension | Appropriateness |
| Formula | $\frac{\text{Number of referred failed donors in which the cause of non-donation is properly documented}}{\text{Number of referred failed donors}} \times 100$ |
| Explanation of terms | Donor referral: see glossary Possible donor: see glossary Failed donor: Possible donor who did not become an actual donor. Cause of non-donation properly documented: if in the records of the patient there is a note stating the cause by which the patient did not become an actual donor |
| Population | All possible referred donors who did not become actual donors |
| Type | Process |
| Data source | Donation team records |
| Expected result | 100% |
| Comments | Note: in order to standardise the evaluation of causes of donor's loss the recommendation is to implement a closed list of possible causes. |
| Reference | Coll E, Czerwinski J, De la Rosa G, Dominguez-Gil B (coord.): Guide de recommandations for quality assurance programmes in the deceased donation process. Dono 2009. www.ont.es/publicaciones/Documentos/DOPR%20GUA.pdf . Last accessed March 2016. |

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Potential for Deceased Donation Not Optimally Exploited: Donor Action Data From Six Countries

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TABLE 1. Potential heart-beating donor losses along the donation pathway in six countries (total 2007–2008) (*including registry checks in countries with presumed consent legislation)

| | Total no. records | Ventilated, medically suitable | Potential HB donors, as % of ventilated, medically suitable | Not identified, as % of potential | Not referred, as % of identified | No family approach*, as % of identified | Refusal, as % of approach | Organ retrieval, as % of potential (=conversion rate) |
|-------------|-------------------|--------------------------------|---|-----------------------------------|----------------------------------|---|---------------------------|---|
| Belgium | 22,249 | 7,015 | 17.8 | 20.6 | 28.2 | 23.9 | 20.3 | 44.3 |
| Finland | 2,131 | 603 | 36.5 | 21.4 | 23.7 | 16.8 | 14.6 | 51.4 |
| France | 19,383 | 6,332 | 32.4 | 18.9 | 11.0 | 12.7 | 32.7 | 47.1 |
| Israel | 470 | 452 | 99.8 | 9.1 | 2.0 | 0 | 53.7 | 38.1 |
| Poland | 1,470 | 1,129 | 34.9 | 55.6 | 19.4 | 4.6 | 23.4 | 30.5 |
| Switzerland | 6,742 | 2,372 | 26.7 | 23.2 | 47.1 | 10.1 | 40.9 | 41.1 |
| Total | 52,582 | 17,903 | | | | | | |
| Mean | | | 40.3 | 24.8 | 21.9 | 11.3 | 30.9 | 42.1 |
| SD | | | 30.1 | 15.9 | 15.5 | 8.5 | 14.5 | 7.3 |



Köszönöm a figyelmet!