



ELECTRONIC SUPPLEMENTARY MATERIAL

Silva A *et al.*: Donor audits in deceased organ donation: a scoping review

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eTable 1 Search strategy

Medline via Ovid – April Week 5 2022

1	public policy/ or health policy/	75680
2	Tissue and Organ Procurement/	16022
3	1 and 2	598
4	Tissue and Organ Procurement/	16022
5	tissue donors/	31274
6	Quality Improvement/	30785
7	4 and 5 and 6	18
8	Tissue Donors/	31274
9	Tissue and Organ Procurement/	16022
10	Donor Selection/	3711
11	8 and (9 or 10)	8053
12	11 and Medical Audit/	13
13	11 and (Time Factors/ and (Hospital Administration/ or Terminal Care/ or Intensive Care Units/))	22
14	11 and exp *organ transplantation/ and (*Health Services Accessibility/ or *Healthcare Disparities/)	95
15	11 and Registries/ and (cl or ec or es or hi or lj or og or mt or sd or td or sn or st).fs. [Classification, Economics, Ethics, History, Legislation / Jurisprudence, Organization / Administration, Methods, Supply / Distribution, Trends, Statistics / Numerical Data, Standards]	591
16	Tissue and Organ Procurement/ and (*Professional-Family Relations/ or Third-Party Consent/es) [ethics]	162
17	(donat* or transplant*).ti,jw. and ((donor? or death? or deceas* or retrospect*) adj2 audit*).tw,kf.	67
18	(potential* adj1 (donor* or donat*).tw,kf. and ((audit* or review*) adj2 (found* or find* or identif*).tw.	13
19	(solid organ? and (nonprocur* or ("not" adj1 procur*) or (fail* adj2 procur*))).tw.	2
20	deemed consent.tw.	17
21	(organ* and (donor* or donat*) and (deceased or miss* or predict* or expect* or suitab* or trauma* or (after adj2 death)) and (audit* or retrospect* or cohort* or database* or single-cent* or multicent* or multi-cent* or impact* or stud* or regist* or potential*).ti.	160
22	3 or 7 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21	1670
23	limit 22 to yr="1995 -Current"	1670
24	limit 23 to (english or french or spanish)	1635
25	limit 24 to "reviews (best balance of sensitivity and specificity)"	169
26	24 not 25	1466

	Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily <1946 to May 05, 2022>	
1	Waiting Lists/	13324
2	exp organ transplantation/	228464
3	tissue donors/	42482
4	exp "tissue and organ procurement"/	23322
5	Tissue and Organ Harvesting/	9694
6	2 or 3 or 4 or 5	261660
7	1 and 6	6306
8	cost*.tw,kf,hw.	809464
9	econom*.tw,kf,hw.	430993
10	ec.fs.	442102
11	8 or 9 or 10	1319119
12	7 and 11	448

CINAHL – Cumulative Index of Nursing and Allied Health Literature

	Thursday, May 05, 2022 6:22:54 PM	
#	Query	Results
S17	S15 OR S16	163
S16	TI ((organ* or potential*) and (donor* or donat*) and (deceased or miss* or predict* or expect* or suitab* or trauma* or (after N2 death)) and (audit* or retrospect* or cohort* or database* or single-cent* or multicent* or multi-cent* or impact* or stud* or regist* or potential*))	94
S15	(S9 OR S10 OR S11 OR S12 OR S13) AND (S8 AND S14)	72
S14	S9 OR S10 OR S11 OR S12 OR S13	187,365
S13	(MH "Quality Improvement+")	43,339
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S12	(MH "Retrospective Design")	66,053
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S11	(MH "Record Review")	30,915
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S10	(MH "Audit")	10,205
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S9	(MH "Public Policy+") OR (MH "Health Policy+") OR (MH "Policy Studies+")	61,554
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S8	S3 AND S4	875

	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records; Language: English, French, Spanish	
S7	S3 AND S4	927
	Limiters - Published Date: 19950101-20221231; Exclude MEDLINE records	
S6	S3 AND S4	969
	Limiters - Exclude MEDLINE records	
S5	S3 AND S4	3,026
S4	(MH "Transplant Donors+")	9,211
S3	S1 OR S2	10,718
S2	(MH "Organ Procurement+")	7,448
S1	(MH "Tissue and Organ Harvesting+")	3,453

Web of Science

TI((((organ* or potential*) and (donor* or donat*) and (deceased or miss* or predict* or expect* or suitab* or trauma* or (after near/2 death)) and (audit* or retrospect* or cohort* or database* or single-cent* or multicent* or multi-cent* or impact* or stud* or regist* or potential*))))
and 1996 or 1997 or 2000 or 2001 or 2002 or 2003 or 2005 or 2004 or 2006 or 2007 or 2008 or 2009 or 2010 or 2011 or 2022 or 2021 or 2020 or 2019 or 2018 or 2017 or 2016 or 2015 or 2014 or 2013 or 2012 (Publication Years)

eTable 2 Characteristics of included studies

Authors	Country of Origin	Aim and summary
Aubrey, P., et al. (2008) ¹⁹	United Kingdom	A retrospective audit of deaths from ten accident and emergency (A&E) departments in the North Thames region to determine the potential of heart-beating organ donors and controlled non-heart-beating donors.
Australian National Audit Office (2015) ⁵²	Australia	Assess the effectiveness of Australian National Audit Office administration of community awareness, professional education and donor family support activities intended to increase organ and tissue donation.
Awad, I., et al. (2004) ⁴⁴	Ireland	Identify the reasons why potential organ donors fail to become actual donors and the causes of under-utilization of organs offered for donation.
Barber, K., et al. (2005) ⁴⁵	United Kingdom	Identify the number of patients who could be solid organ donors and establish the obstacles to donation.
Barber, K., et al. (2006) ⁴⁷	United Kingdom	Determine the true potential for solid organ donation from deceased heart beating donors and the reasons for non-donation from potential donors.
Bennett, E., et al. (2015) ²⁹	United States	Estimate the total suitable and potential deceased organ donors among infants and children dying at a children's hospital, including both those donating after fulfilling NDD and DCD criteria for death.
Blackstock, M., et al. (2010) ¹²	United Kingdom	Assess whether patients who undergo tracheal intubation in the emergency department and who are assessed for, but not admitted to, critical care might have potential for controlled DCD.
Broomberg, C., et al. (2005) ³⁰	South Africa	Estimate the number of potential organ donors in the hospital and identify the reasons for non-referral of potential donors.
Cheung, C., et al. (2016) ³¹	China	Evaluate the deceased organ donation process at our centre using the critical pathway to identify to what extent and why potential brain-dead donors are missed.
de la Rosa, G., et al. (2012) ⁴²	Spain	Describe methodology of Spanish Quality Assurance Program and summarize main results with aim of promoting development of similar approaches.
Durall, A., et al. (2007) ¹³	United States	Determine the number of potential kidney donors that would be eligible for controlled DCDD at Children's Hospital Boston.
Evers, K. & Lewis, D. (1999) ²⁵	United States	Identify non-heart beating donor potential at large urban level 1 trauma centre.
Gatward, J., et al. (2015) ³²	Australia	Conduct audit of hospital deaths to examine whether potential organ donors outside of Donate Life audit areas (ICU, ED) are being missed.
Hegarty, M., et al. (2010) ³³	Ireland	Audit the potential for organ donation in Ireland and identify factors that impact on the realisation of the potential for such donation.

Hockerstedt, K., et al. (2005) ²⁰	Finland	Report the results of the Donor Action Program in Finland and its impact on the availability of cadaveric donors.
Jansen, N., et al. (2010) ²¹	Netherlands	In our first study of potential organ donors in 52 intensive care units (ICUs) in the Netherlands between 2001 and 2004, it was not possible to compare the annual donation performance because not all ICUs registered deceased patients during this period. In the present study, because of further implementation of medical record reviews in ICUs in the Netherlands, donation performance can be compared over several years.
Kehoe, M. et al. (2022) ⁵⁷	Ireland	Complete a review of national and international datasets on organ donation and, to identify processes of care prone to variation that are responsive to measurement and improvement.
Kramer, A., et al. (2019) ⁶²	Canada	Determine provincial donation potential, assess where healthcare system opportunities for improvement may exist, and evaluate the accuracy of administrative data in estimating donation potential.
Kutsogiannis, D., et al. (2013) ⁵⁵	Canada	Determine the number of potential liver, kidney, and lung organ donors dying in ICUs and emergency rooms over a 3-year period and that are not referred to the Human Organ Procurement and Exchange (HOPE) Program of Northern Alberta. Also determine the effect of implementing a provincial law mandating the documentation of organ and tissue donation discussions on the medical record on potential donor rates.
Labrecque, M., et al. (2011) ¹⁴	United States	Determine the percentage of deaths in level III neonatal intensive care unit (NICU) settings that theoretically would have been eligible for donation after cardiac death (DCD), as well as the percentage of these who would have been potential DCD candidates based on warm ischemic time.
Lacroix, J., et al. (2004) ⁵⁸	Canada	Determine whether renal transplantation rate would improve if a non-heart beating donor program was introduced at a Canadian centre.
Matesanz, R. & Miranda, B. (2002) ⁵⁹	Spain	Share a model to increase cadaveric organ donation which can be partially or totally translated to other countries if basic conditions are satisfied.
Matesanz, R., et al. (2004) ²²	Italy	Define theoretical capacity of organ procurement depending on the characteristics of the hospital; Define the obstacles in the process of organ donation and procurement. Analyse the causes of potential donor losses, as a tool to identify improvement areas; Describe hospital factors which can influence the donation and transplantation process.
Miranda, B., et al. (1999) ⁵³	Spain	Provide an overview on the current landscape of organ donation and transplantation in Spain.
New Zealand Government (2017) ⁵²	New Zealand	Provide detail and context for the national strategy for increasing deceased organ donation and transplantation.

NHS Blood and Transplant (2017) ⁵⁰	United Kingdom	Provide a summary from the National Potential Donor Audit and the previous three financial years for comparison purposes. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs) and emergency departments.
NHS Blood and Transplant (2021) ⁵¹	United Kingdom	Summarize the main findings of the potential donor audit over the 12-month period, in particular the reasons why patients were lost along the pathway.
Opdam, H. & Silvester, W. (2004) ⁴³	Australia	Quantify the potential for organ donation in Victoria and identify missed opportunities for organ donation.
Opdam, H. & Silvester, W. (2006) ⁴⁸	Australia	Determine the potential for organ donation in 12 Victorian hospitals.
Palsson, T., et al. (2020) ³⁴	Iceland	Explore potential for organ donation after brain death in Iceland. Additional aims were to determine the conversion rate of potential donors to actual donors and the rate of family decline.
Park, G., et al. (2003) ³⁵	United Kingdom	Identify potential heart beating and non-heart beating organ donors; including the actual organ donors and reasons MDO.
Pek, J., et al. (2019) ⁵⁶	Singapore	Identify missed opportunities for organ donation among those who presented to the emergency department and died following intracranial haemorrhage.
Pregernig, A. & Karam, O. (2016) ¹⁵	Switzerland	To gauge the potential increase in the pediatric organ pool that a pediatric DCD transplant program could offer.
Pugliese, M., et al. (2002) ⁴⁶	Italy	Detect critical areas in the organ donation process and assess whether careful monitoring of deaths in each intensive care unit could improve rates of identification of brain death.
Reed, M. & Lua, S. (2014) ¹⁶	United Kingdom	Explore the potential of uncontrolled DCD organ donation from patients presenting in cardiac arrest to the emergency department who are unsuccessfully resuscitate.
Roels, L., et al. (2003) ²⁶	Germany	Calculate cost-benefit thresholds of implementing Donor Action methodology in German health-economic point of view taking into account the treatment alternatives for end-stage renal disease (dialysis and transplantation) and comparing the Donor Action program with current organ donation practice.
Roels, L., et al. (2012) ³⁶	Switzerland, Poland, Israel, Finland, Belgium, France	Using Donor Action's Medical Record Review methodology to identify whether, to what extent and why potential heart-beating donors are still missed along the donation pathway in six "developed" countries.
Rudge, C. (2003) ⁶⁴	United Kingdom	Discuss how the UK Transplant was established by the UK Health Administrations in 2000 and given responsibility to increase organ donation and transplantation.

Serrano, M. & Sposari, V. (2019) ³⁷	Australia	Analyse the findings and determine how best to improve clinical practice and donation rates. Review of potential solid organ donors only.
Shore, P., et al. (2011) ¹⁷	United States	Determine the potential effect of DCD on the number of kidney and liver donors in a Pediatric Intensive Care Unit.
Summers, D., et al. (2010) ³⁸	United Kingdom	Clarify likely extent to which the gradual decline in NDD within the United Kingdom over the past decade may be attributed to the increase in DCD.
Summers, D., et al. (2014) ⁶⁵	United Kingdom	Determine whether, despite the national approach to donation, there is significant regional variation in deceased donor kidney donation rates.
Szemis, L., et al. (2016) ¹⁸	Poland	Assess and evaluate DCD potential based on retrospective analysis of hospital deaths at Hospital Infant Jesus in Warsaw.
Tenza, E., et al. (2017) ³⁹	Spain	Evaluate the number and characteristics of potential organ donors among cardiocirculatory death cases.
Thompson, J., et al. (1995) ⁴⁰	Australia	To discuss and analyze results with respect to identification of potential organ donors.
Thybo, K. & Eskesen, V. (2013) ²³	Denmark	To compare two periods in the 2000s at a large neuro-intensive care unit with respect to de facto organ donors, potential organ donors and reasons for non-donation.
Trotter, P., et al. (2018) ²⁴	United Kingdom	Identify hepatitis C in UK deceased potential organ donor population to determine extent to which hepatitis C impacted likelihood of proceeding to organ donation and impact of additional transplants performed.
Tuppin, P. & Pessione, F. (2003) ⁴⁹	United States	Study the size and composition of the national pool of brain-dead organ donors during a three-year period and, on the basis of these data, considered ways to increase the rate of donation.
Wesslau, C., et al. (2007) ²⁷	Germany	Record the number of potential organ donors in region of Germany promptly and continuously using a simple method, and to analyse reasons that present actual donations.
Wight, C. (1998) ⁵⁴	United Kingdom	Provide discussions that can help to maximize supply of cadaveric organs for transplantation.
Winters, D. (2011) ⁴¹	Australia	Determine the potential for cadaveric donation in regional Western Australia.
Zavalkoff, S., et al. (2019) ⁶³	Canada	Describe the proceedings and conclusions of a Canadian consensus conference focused on improving ID&R of potential organ donors (both NDD and DCD) and accountability of the healthcare system in this regard.

eTable 3 Potential donors vs actual donors

Authors	Country	Audit duration	Sample	DCD/NDD	Adult/Pediatric	Potential Donor(s)	Actual Donor(s)
Aubrey, P., et al. (2008) ¹⁹	United Kingdom	October 2004 - December 2005	770	Both	Both	20	N/A
Australian National Audit Office (2015) ⁵²	Australia	N/A	N/A	N/A	N/A	N/A	N/A
Awad, I., et al. (2004) ⁴⁴	Ireland	Retrospective: January - December 2020. Prospective: January - June 2021.	354	NDD	Both	155	37
Barber, K., et al. (2005) ⁴⁵	United Kingdom	April 2003 - March 2004	22,668	NDD	Both	1,380	622
Barber, K., et al. (2006) ⁴⁷	United Kingdom	April 2003 - March 2005	46,801	NDD	Both	2,740	1,244
Bennett, E., et al. (2015) ²⁹	United States	2011 - 2012	224	Both	Pediatric	23 (NDD) 45 (DCD)	18 (NDD) 12 (DCD)
Blackstock, M., et al. (2010) ¹²	United Kingdom	January 2004-December 2008	1,374	DCD (controlled)	Adult	14	N/A
Broomberg, C., et al. (2005) ³⁰	South Africa	March 2003 - June 2003	224	NDD	N/A	14	N/A
Cheung, C., et al. (2016) ³¹	China	January - December 2014	3,658	NDD	Both	121	N/A
de la Rosa, G., et al. (2012) ⁴²	Spain	Internal: 1999-2010 External: 2001-2010	Internal: 206,345 External: 20,080	NDD	N/A	Internal: 25,653 External: 2,529	Internal: 14,011 External: 0

Durall, A., et al. (2007) ¹³	United States	2002-2004	254	DCD	Pediatric	21 (NDD) 24 (DCD)	
Evers, K. & Lewis, D. (1999) ²⁵	United States	January 1997 - December 1998	did not mention total records assessed	DCD and NDD	N/A	77 (NDD) 23 (DCD)	34 (NDD) 7 (DCD)
Gatward, J., et al. (2015) ³²	Australia	July - December 2012	427	NDD and DCD	Both	12	N/A
Hegarty, M., et al. (2010) ³³	Ireland	September 2007 - August 2008	2,073	NDD	Both	138	90
Hockerstedt, K., et al. (2005) ²⁰	Finland	2000-2003	1,745	NDD	N/A	626	81
Jansen, N., et al. (2010) ²¹	Netherlands	2005-2008	23,508	Both	Both	1,818	549
Kehoe, M. et al. (2022) ⁵⁷	Ireland	2015	2,706	Both	Both	122 (NDD) 113 (DCD)	43 (NDD) 6 (DCD)
Kramer, A., et al. (2019) ⁶²	Canada	January 2008 – December 2010	2,931	NDD and DCD	Adult	64 (NDD) 130 (DCD)	N/A
Kutsogiannis, D., et al. (2013) ⁵⁵	Canada	2005-2007	192	DCD	Pediatric	31	N/A
Labrecque, M., et al. (2011) ¹⁴	United States	January 1999 - May 2001	1,547	DCD	Pediatric	83	N/A
Lacroix, J., et al. (2004) ⁵⁸	Canada	N/A	N/A	N/A	N/A	N/A	N/A
Matesanz, R. & Miranda, B. (2002) ⁵⁹	Spain	N/A	N/A (overall discussion of rates, not specific audit)	NDD	N/A	N/A	N/A
Matesanz, R., et al. (2004) ²²	Italy	October 2002 - April 2003	1,882	NDD	Both	111	43

Miranda, B., et al. (1999) ⁵³	Spain	N/A	N/A (overall discussion of rates, not specific audit)	Both	Both	N/A	N/A
New Zealand Government (2017) ⁵²	New Zealand	N/A	N/A	N/A	N/A	N/A	N/A
NHS Blood and Transplant (2017) ⁵⁰	United Kingdom	April 2016 - March 2017	34,369	Both	Both	3,277	1,384
NHS Blood and Transplant (2021) ⁵¹	United Kingdom	April 2020 - March 2021	40,334	Both	Both	7,837	1,180
Opdam, H. & Silvester, W. (2004) ⁴³	Australia	January 2004 – December 2004	5,551	NDD	Both	172	37
Opdam, H. & Silvester, W. (2006) ⁴⁸	Australia	January 2002 - October 2004	17,230	NDD	Both	280	106
Palsson, T., et al. (2020) ³⁴	Iceland	January 2003- December 2016	1,537	NDD	N/A	125	56
Park, G., et al. (2003) ³⁵	United Kingdom	November 1998 - November 1999	181	Both (primarily DCD)	Both	100	0
Pek, J., et al. (2019) ⁵⁶	Singapore	January 2013 – December 2017	615	NDD	Adult	30	3
Pregernig, A. & Karam, O. (2016) ¹⁵	Switzerland	January 2005 - December 2014	189	Both	Pediatric	36	5
Pugliese, M., et al. (2002) ⁴⁶	Italy	July 1998 - June 2000	2,469	NDD	N/A	857	N/A
Reed, M. & Lua, S. (2014) ¹⁶	United Kingdom	August 2008 – September 2009	564	DCD (uncontrolled)	Adult	4	N/A
Roels, L., et al. (2003) ²⁶	Germany	N/A	N/A	N/A	N/A	N/A	N/A
Roels, L., et al. (2012) ³⁶	Switzerland, Poland, Israel, Finland, Belgium, France	January 2007 - December 2009	17,903	NDD	Both	4,855	95

Rudge, C. (2003) ⁶⁴	United Kingdom	N/A	Comprehensive audit of all potential donors from ICUs	N/A	N/A	N/A	N/A
Serrano, M. & Sposari, V. (2019) ³⁷	Australia	July 2017 - June 2018	653	Both (primarily DCD)	Both	138 (NDD) 220 (DCD)	N/A
Shore, P., et al. (2011) ¹⁷	United States	May 1996 - April 2007	1,389	DCD	Pediatric	131	N/A
Summers, D., et al. (2010) ³⁸	United Kingdom	1999-2009	78,338	DCD and NDD	Both	6,121	667
Summers, D., et al. (2014) ⁶⁵	United Kingdom	April 2010 - December 201	27,482	Both	N/A	N/A	1,528 actual kidney donors
Szemis, L., et al. (2016) ¹⁸	Poland	August 2010 - July 2014	718	DCD	N/A	54	N/A
Tenza, E., et al. (2017) ³⁹	Spain	2006 – 2014	1,510	DCD	Adults (15 and older)	80	N/A
Thompson, J., et al. (1995) ⁴⁰	Australia	New South Wales Metropolitan hospitals (teaching hospitals): April 1991 - March 1992 in 5 hospitals; May 1991 - April 1992 in 4 hospitals New South Wales and Australian Capital Territory Country hospitals: 4 from August 1992 - July 1993	6,080	NDD	Both	515	49

Thybo, K. & Eskesen, V. (2013) ²³	Denmark	January 2000 – June 2003 and January 2007 – June 2010	620	NDD	Both	289	90
Trotter, P., et al. (2018) ²⁴	United Kingdom	October 2009 - January 2016 January 2000 - January 2016	274,600	Both	Adult	N/A (potential reported only related to hepatitis C /IVDU)	N/A
Tuppin, P. & Pessione, F. (2003) ⁴⁹	United States	1997 – 1999	Did not mention total records assessed	Both	Both	18,524	7,790
Wesslau, C., et al. (2007) ²⁷	Germany	2002-2005	2,019	NDD	N/A	1,285	606
Wight, C. (1998) ⁵⁴	United Kingdom	N/A	579	NDD	Both	398	124
Winters, D. (2011) ⁴¹	Australia	July 2008 - June 2009	106	NDD	Both	8	N/A
Zavalkoff, S., et al. (2019) ⁶³	Canada	N/A	N/A	Both	Both	N/A	N/A

*N/A refers to not apply since the study did not mention the information