

NEWSLETTER TRANSPLANT

International figures
on donation and
transplantation
2017



EDQM
Volume 23
2018



GOBIERNO
DE ESPAÑA

MINISTERIO
DE SANIDAD, CONSUMO
Y BIENESTAR SOCIAL



European Directorate
for the Quality
of Medicines
& HealthCare

Direction européenne
de la qualité
du médicament
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COUNCIL OF EUROPE



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INTERNATIONAL FIGURES ON ORGAN, TISSUE & HEMATOPOIETIC STEM CELL DONATION & TRANSPLANTATION ACTIVITIES. DOCUMENTS PRODUCED BY THE COUNCIL OF EUROPE EUROPEAN COMMITTEE (PARTIAL AGREEMENT) ON ORGAN TRANSPLANTATION (CD-P-TO). YEAR 2017.

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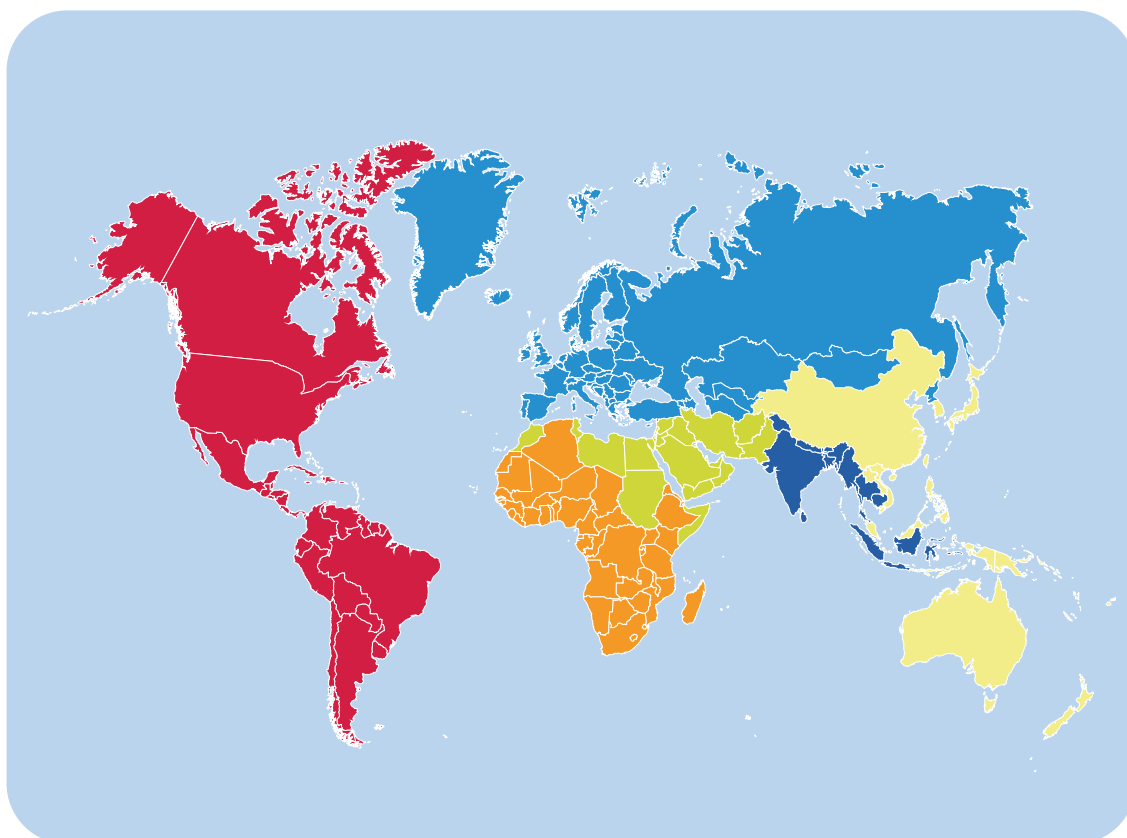
Beatriz Domínguez-Gil

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NEWSLETTER TRANSPLANT 2018



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FOR THE PURPOSES OF THIS NEWSLETTER THE FOLLOWING DEFINITIONS WERE USED:

Actual deceased organ donor

An actual deceased organ donor is a person from whom at least one organ has been recovered for the purpose of transplantation, in contrast to a utilised donor, who is an actual donor from whom at least one organ has been transplanted. The number of utilised donors is therefore lower than or equal to the number of actual donors.

Donor after brain death

A donor after brain death (DBD) is a deceased organ donor in whom death has been determined by neurologic criteria.

Donor after circulatory death

A donor after circulatory death (DCD) is a deceased organ donor in whom death has been determined by circulatory and respiratory criteria.

Multiorgan donor

A multiorgan donor is an actual donor from whom at least two different types of organs have been recovered for the purpose of transplantation.

Total Tx (all combinations included)

Includes the transplantation of the corresponding organ with or without the simultaneous transplant of a different type of organ (s).

Double-kidney Tx

One double-kidney Tx is counted as 1 Tx.

Tx from living donors

A living donor is a living human being from whom organs have been recovered for the purpose of transplantation. A living donor has one of the following three possible relationships with the recipient:

A/ Related:

A1/ Genetically Related:

1st Degree genetic relative: parent, sibling, offspring

2nd Degree genetic relative, e.g. grandparent, grandchild, aunt, uncle, niece, nephew,

Other than 1st or 2nd degree genetically related, e.g. cousin

A2/ Emotionally Related: spouse; in-laws; adopted; friend

B/ Unrelated = Non Related: not genetically or emotionally related

Heart-lung Tx

One heart-lung Tx is counted as 1 lung Tx, 1 heart Tx and 1 heart-lung Tx.

Double-lung Tx

One double-lung Tx is counted as 1 Tx.

Total number of patients transplanted

For more than one organ transplanted into the same recipient: kidney-liver-heart Tx = counted as one recipient.

Absolute number

Include all figures corresponding to all donors/patients adults and children.

Paediatric

Includes only paediatric activity (patients aged < 15 years).

Waiting List (WL)

Example: At 1/1/201X there were 200 patients active on the WL. In the course of the year, 100 patients are newly included on the WL (first row). A total of 300 patients have been ever active on the WL during the year (second row). In the course of the year, 200 patients were transplanted (number recorded in a different questionnaire), 50 patients remain active at the end of the year (third row), 25 patients died (fourth row) and 25 patients were excluded (number not reported, but derived from previous figures).

Patients included on the WL for the first time in the course of 2017	100
Total number of patients ever active on the WL during 2017	300
Patients awaiting a transplant (only active candidates) on 31/12/2017	50
Patients who died while on the WL during 2017	25

(*The United Nations Fund report (UNFPA: <http://www.unfpa.org/public/>) is used as the data source for estimates of population size)

Letter from the Editor



Letter from the Editor

Beatriz Domínguez-Gil, MD, PhD
Director Organización Nacional de Trasplantes, Spain
Editor of Newsletter Transplant

Dear friends

It is with pleasure that I introduce a new issue of the *Newsletter Transplant*, one of the most valuable tools produced by the Committee of Transplantation of the Council of Europe (CD-P-TO) in conjunction with the Spanish Organización Nacional de Trasplantes (ONT). Since 1996, this publication has allowed the CD-P-TO to share information on donation and transplantation activities in member states of the Council of Europe (CoE) – and beyond – and to present some of the projects developed by this committee and documents of relevance to the field. The *Newsletter Transplant* is in itself an opportunity to demonstrate the active contribution of the CD-P-TO to secure fundamental human rights, as well as to increase organ availability, improve the effectiveness of transplantation systems and enhance the quality and safety of organs, tissues and cells for clinical use.

Without doubt, monitoring of practices in donation and transplantation of substances of human origin in member states is essential for the sake of transparency and international benchmarking. This is the main aim of the *Newsletter Transplant* and the reason it has become an international reference. In this new issue, the *Newsletter Transplant* reports data from almost 70 countries throughout the world for the year 2017 (global data refer to 2016). The information presented relates to organ donation and transplantation activities, management of the waiting lists, rate of refusals to organ donation and transplant centres. For the very first time, data are displayed by gender for both organ donors and recipients. For obvious reasons, not all information that is collected from countries is displayed in the *Newsletter Transplant*, but additional data can be provided to end users on an *ad hoc* basis and upon request. Let me take this opportunity to remind you that the underlying data collection is also hosted by the Global Observatory on Organ Donation and Transplantation, developed and maintained by the ONT on behalf of the World Health Organization. The Observatory allows users to download data and create

figures online. Information presented in the *Newsletter Transplant* is not limited to the organ field, but also covers tissues and cells. Provided by the Centro Nazionale di Trapianti (CNT) in Italy, which conducts the corresponding annual data collection, the *Newsletter Transplant* also presents data on the donation, procurement, processing, distribution and clinical use of tissues and cells from a significant number of countries.

This issue of the *Newsletter Transplant* also presents documents produced by the CD-P-TO during the last year. First, guidance on the practical implementation of the fundamental principle that “*the human body and its parts shall not give rise, as such, to financial gain*” is presented. This document has been produced by the Committee of Bioethics of the Council of Europe (DH-BIO), with the cooperation of the CD-P-TO. The committee has also addressed a recent proposal to include donor-recipient pairs from developing countries in kidney paired exchange programmes (KEPs) in developed countries on the basis of financial incompatibility – the inability of recipients in developing countries to afford the costs of transplantation. The CD-P-TO has evaluated the proposal in detail and has raised serious ethical concerns about this initiative, recommending member states not to engage in such practices. The document summarising the position of the group is included in this new issue of the *Newsletter Transplant*. This global kidney exchange proposal must be differentiated from KEPs built on robust ethical frameworks. This issue includes a document elaborated by the CD-P-TO briefly describing European KEPs and addressing the challenges that existing programmes face to further increase their effectiveness and better serve the transplantation needs of patients.

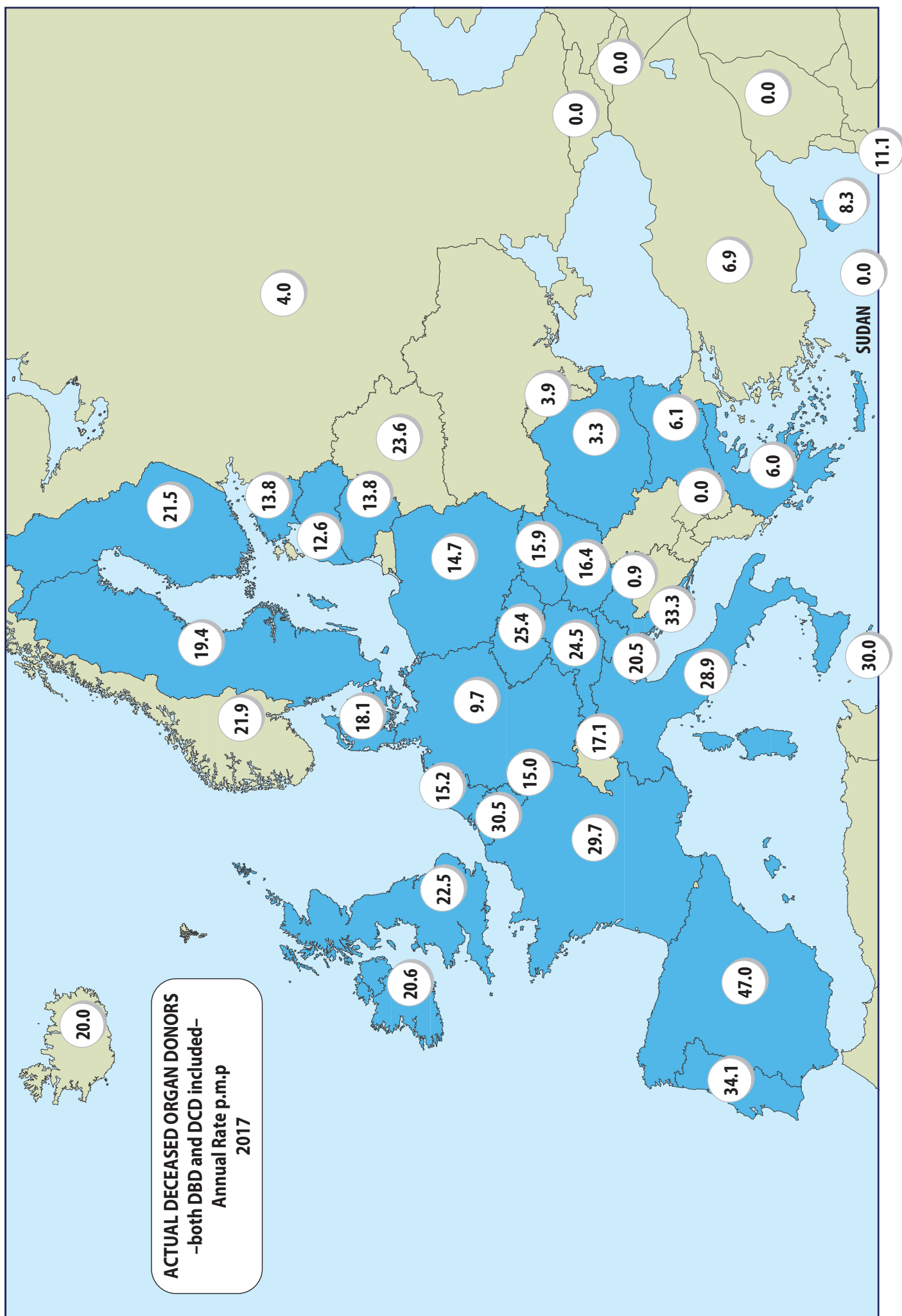
The CD-P-TO has also contributed to the elaboration and dissemination of the Council of Europe [Convention against Trafficking in Human Organs](#) which provides clarity on the practices that must be criminalised and mechanisms to be strengthened for cooperation and

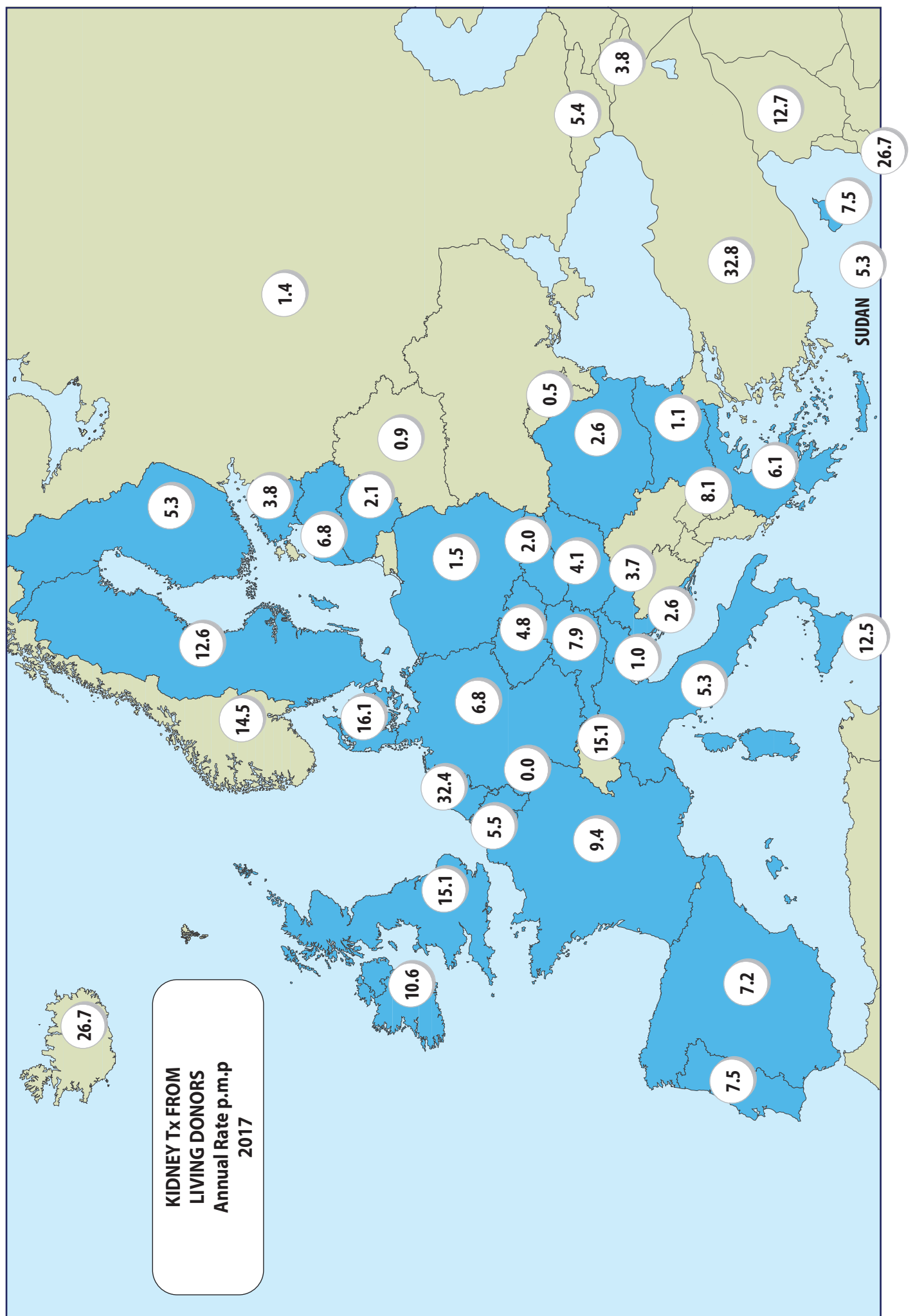
victim protection. The *Newsletter Transplant* includes the current status of signatures and ratifications, in what can be seen as an invitation for countries to consider the accession to this important legal instrument. Please also note the reference that this issue makes to the [technical guides](#) that the CD-P-TO produces in the fields of organs, tissues and cells, which serve as invaluable tools for regulators and health professionals throughout Europe and beyond.

Please allow me to finish this letter by thanking all those who make the *Newsletter Transplant* possible – members of the CD-P-TO, national focal points providing data on a regular basis and the EDQM secretariat. But, mostly, let me thank the members of the ONT whose continuous work, commitment and enthusiasm are essential for an exercise that every year showcases the European progress in the fascinating field of transplantation.

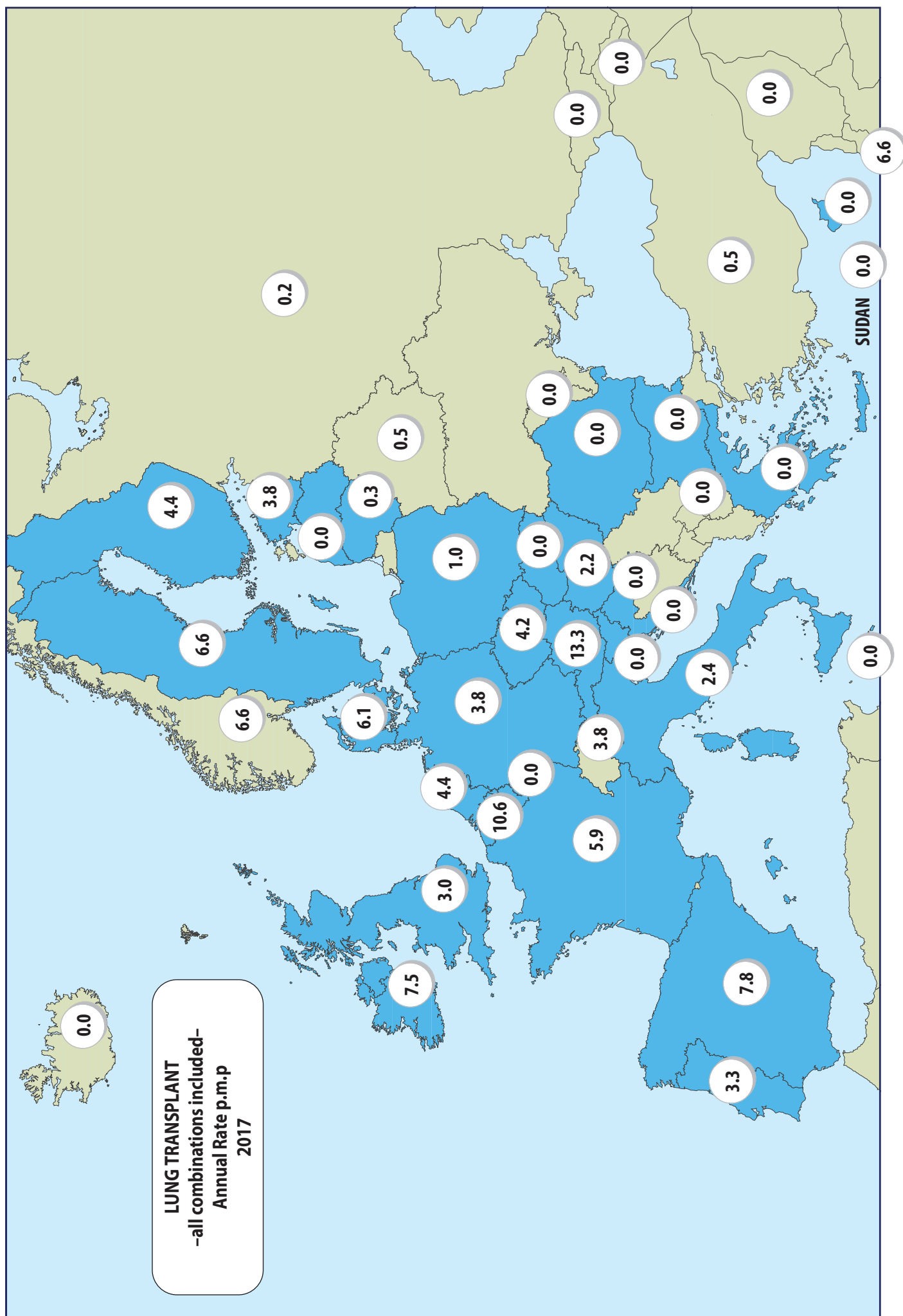
International Figures on Organ Donation and Transplantation Activity. Year 2017

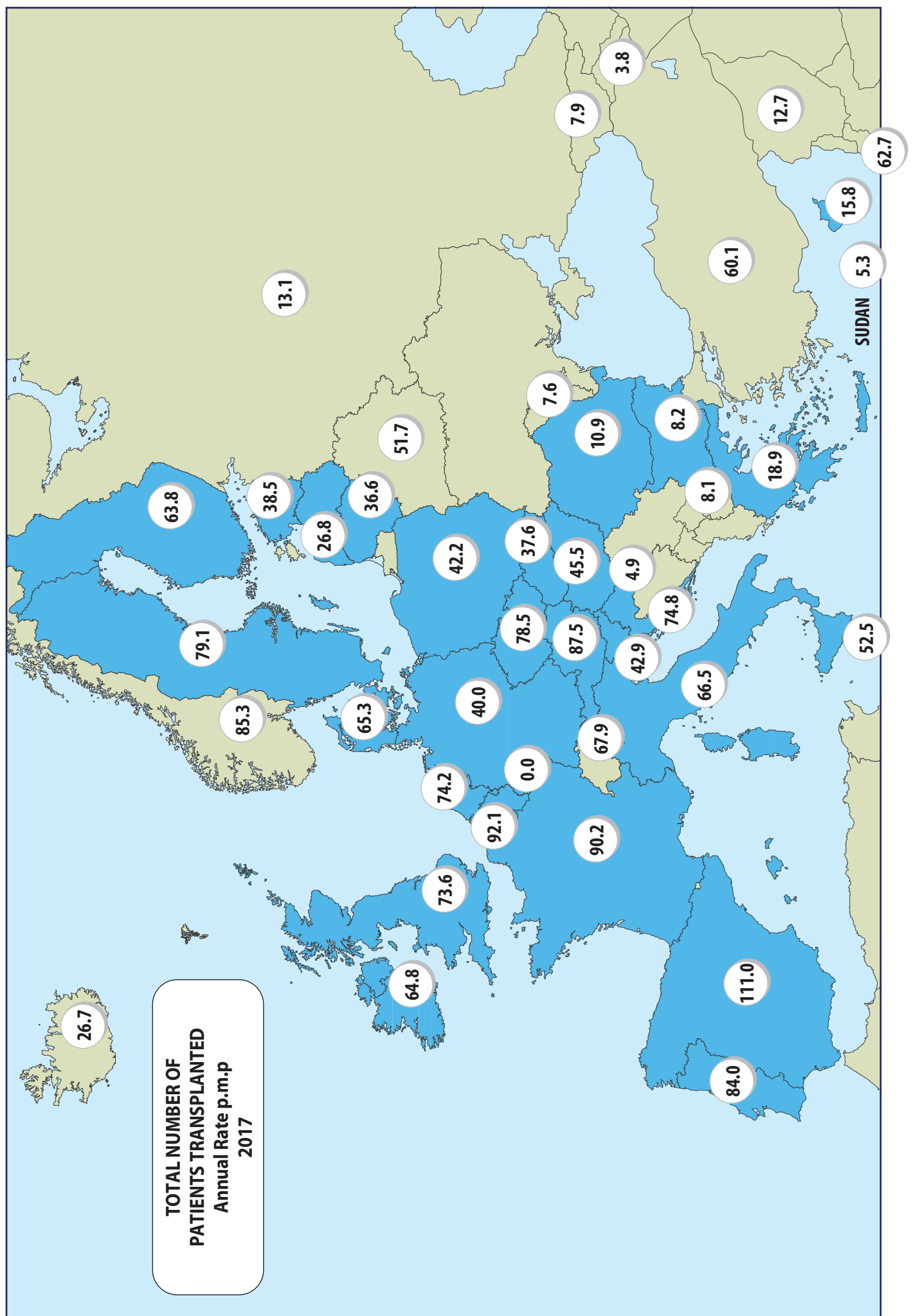




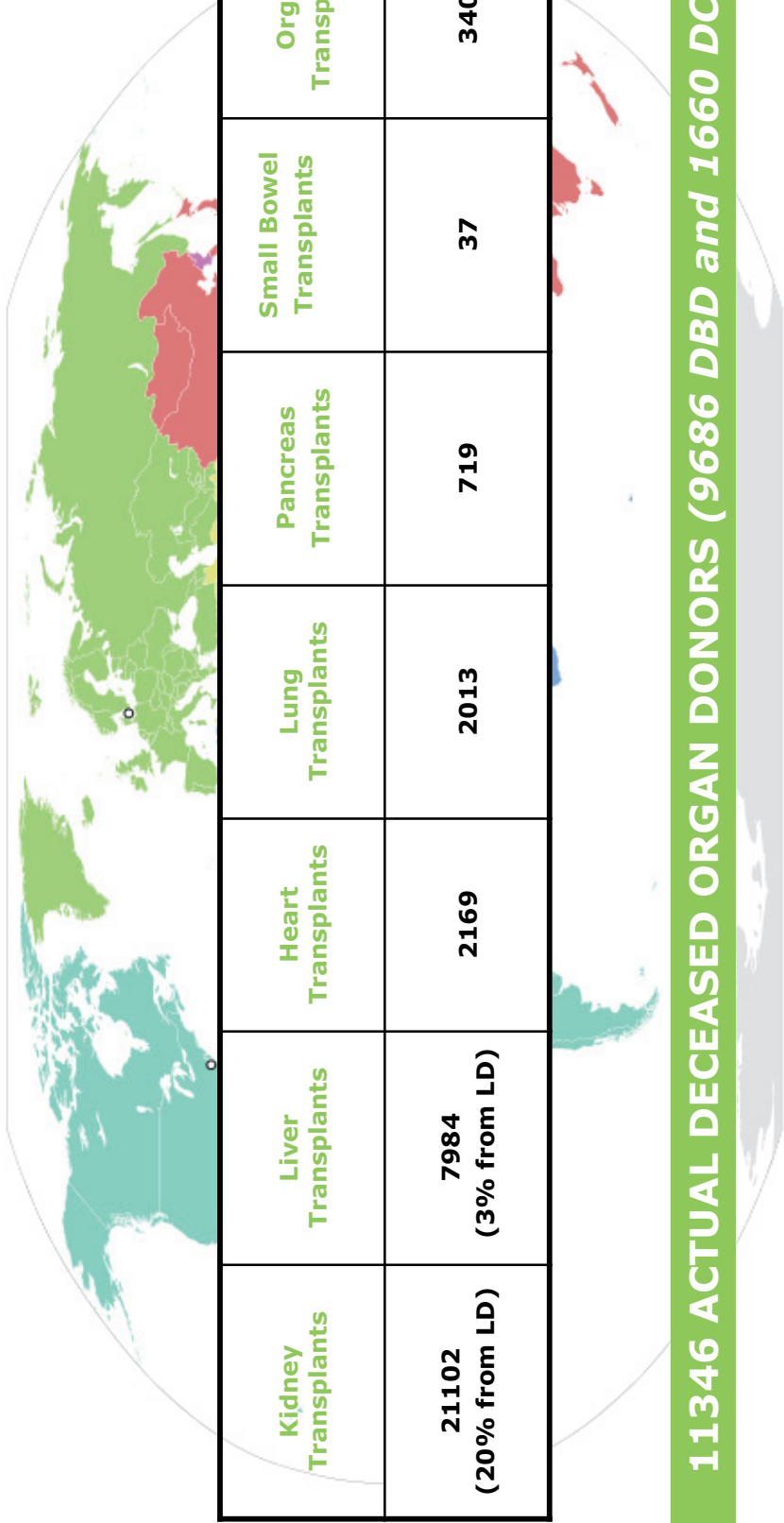








EUROPEAN UNION COUNTRIES (2017)



11346 ACTUAL DECEASED ORGAN DONORS (9686 DBD and 1660 DCD)

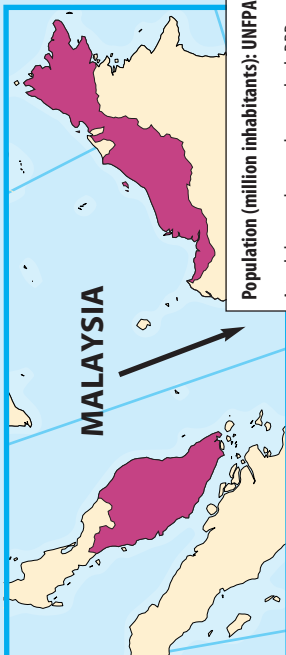
N= 28 COUNTRIES (508.9 million inhabitants)

Population (million inhabitants): UNFPA		
Number	36.6	PMP
Actual deceased organ donors – both DBD and DCD included –	802	21.9
KIDNEY	1771	48.4
TX. from living donors	472	12.9
Total Tx (all combinations included)	585	16.0
Total Tx (all combinations included)	215	5.9
Total Tx	5	0.1
Total Tx (all combinations included)	348	9.5
HEART–LUNG	76	2.1
Total Tx (all combinations included)	5	0.1
PANCREAS	2972	81.2
SMALL BOWEL		
RECIPIENTS		

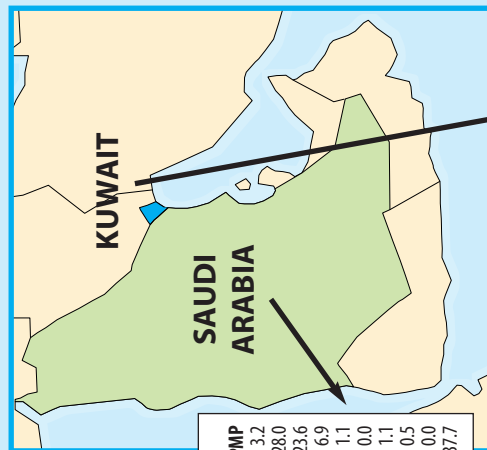
Population (million inhabitants): UNFPA		
Number	324.5	PMP
Actual deceased organ donors – both DBD and DCD included –	10286	31.7
KIDNEY	20638	63.6
TX. from living donors	5811	17.9
Total Tx (all combinations included)	8082	24.9
Total Tx (all combinations included)	3273	10.1
Total Tx	29	0.1
Total Tx (all combinations included)	2478	7.6
HEART–LUNG	1002	3.1
Total Tx (all combinations included)	109	0.3
PANCREAS	33506	103.3
SMALL BOWEL		
RECIPIENTS		

Population (million inhabitants): UNFPA		
Number	24.5	PMP
Actual deceased organ donors – both DBD and DCD included –	510	20.8
KIDNEY	1103	45.0
TX. from living donors	271	11.1
Total Tx (all combinations included)	282	11.5
Total Tx (all combinations included)	98	4.0
Total Tx	5	0.2
Total Tx (all combinations included)	210	8.6
HEART–LUNG	49	2.0
Total Tx (all combinations included)	1	0.0
PANCREAS	1676	68.4
SMALL BOWEL		
RECIPIENTS		

Population (million inhabitants): UNFPA		
Number	4.7	PMP
Actual deceased organ donors – both DBD and DCD included –	73	15.5
KIDNEY	187	39.8
TX. from living donors	69	14.7
Total Tx (all combinations included)	55	11.7
Total Tx (all combinations included)	24	5.1
Total Tx	0	0.0
Total Tx (all combinations included)	20	4.3
HEART–LUNG	4	0.9
Total Tx (all combinations included)	0	0.0
PANCREAS	285	60.6
SMALL BOWEL		
RECIPIENTS		

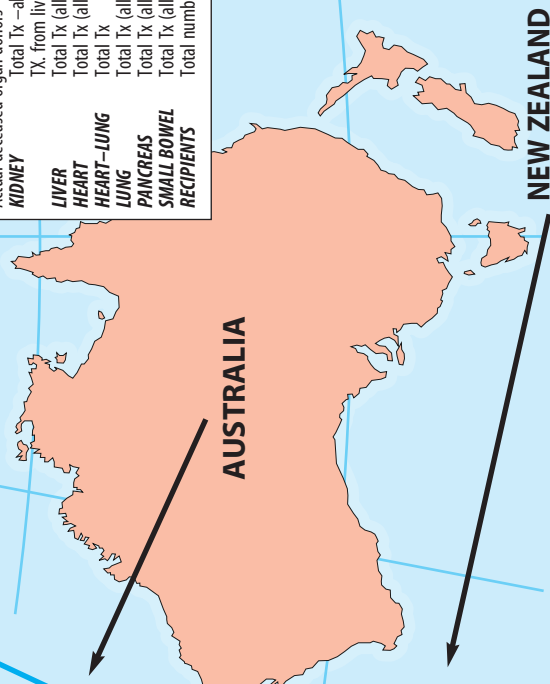


Population (million inhabitants): UNFPA		
Number	31.6	PMP
Actual deceased organ donors – both DBD and DCD included –	13	0.4
KIDNEY	79	2.5
TX. from living donors	53	1.7
Total Tx (all combinations included)	5	0.2
Total Tx (all combinations included)	1	0.0
Total Tx	1	0.0
Total Tx (all combinations included)	1	0.0
HEART–LUNG	0	0.0
Total Tx (all combinations included)	0	0.0
PANCREAS	0	0.0
SMALL BOWEL	86	2.7
RECIPIENTS		

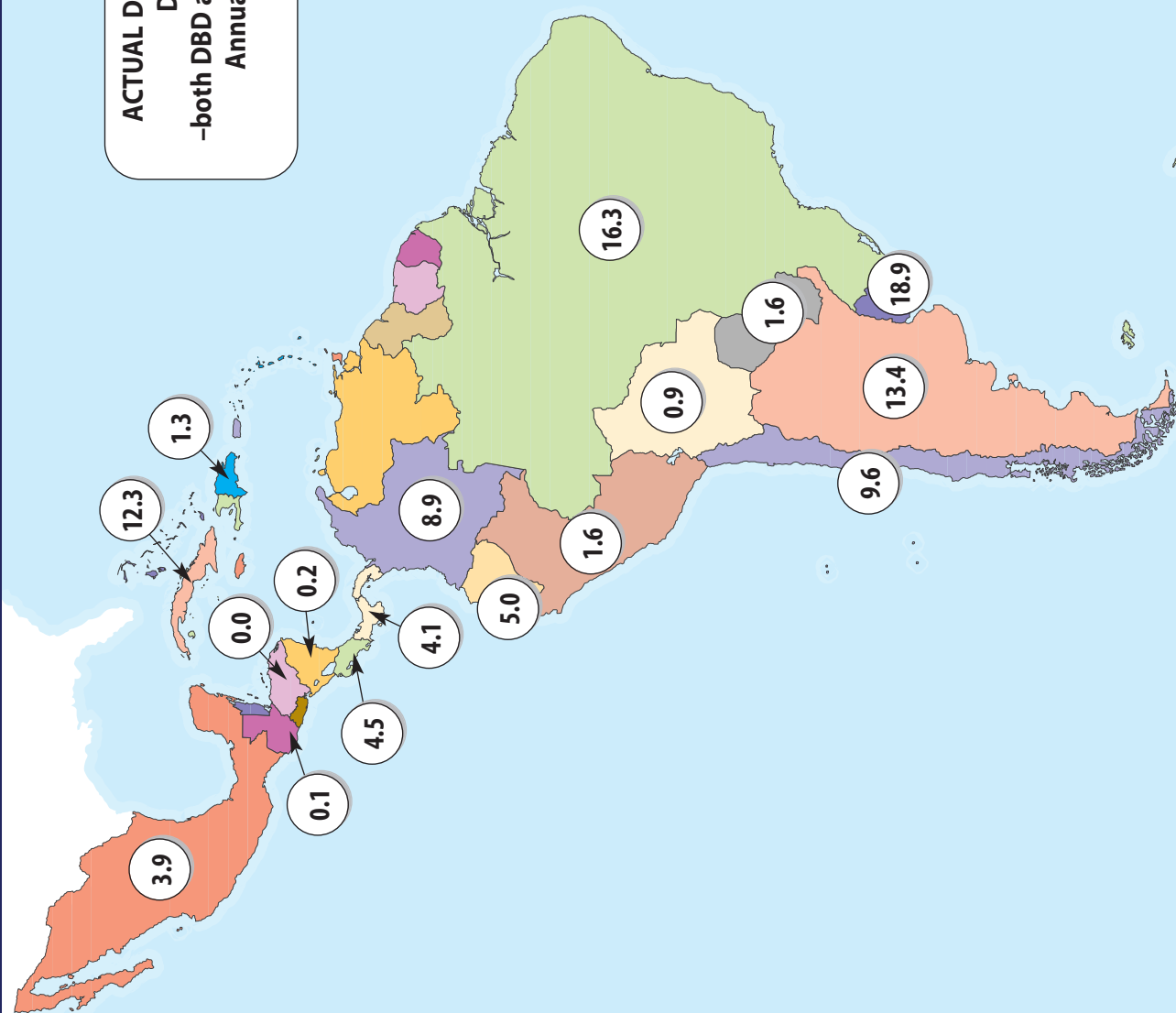


Population (million inhabitants): UNFPA		
Number	32.9	PMP
Actual deceased organ donors – both DBD and DCD included –	104	3.2
KIDNEY	921	28.0
TX. from living donors	776	23.6
Total Tx (all combinations included)	226	6.9
Total Tx (all combinations included)	37	1.1
Total Tx	0	0.0
Total Tx (all combinations included)	37	1.1
HEART–LUNG	18	0.5
Total Tx (all combinations included)	1	0.0
PANCREAS	1240	37.7
SMALL BOWEL		
RECIPIENTS		

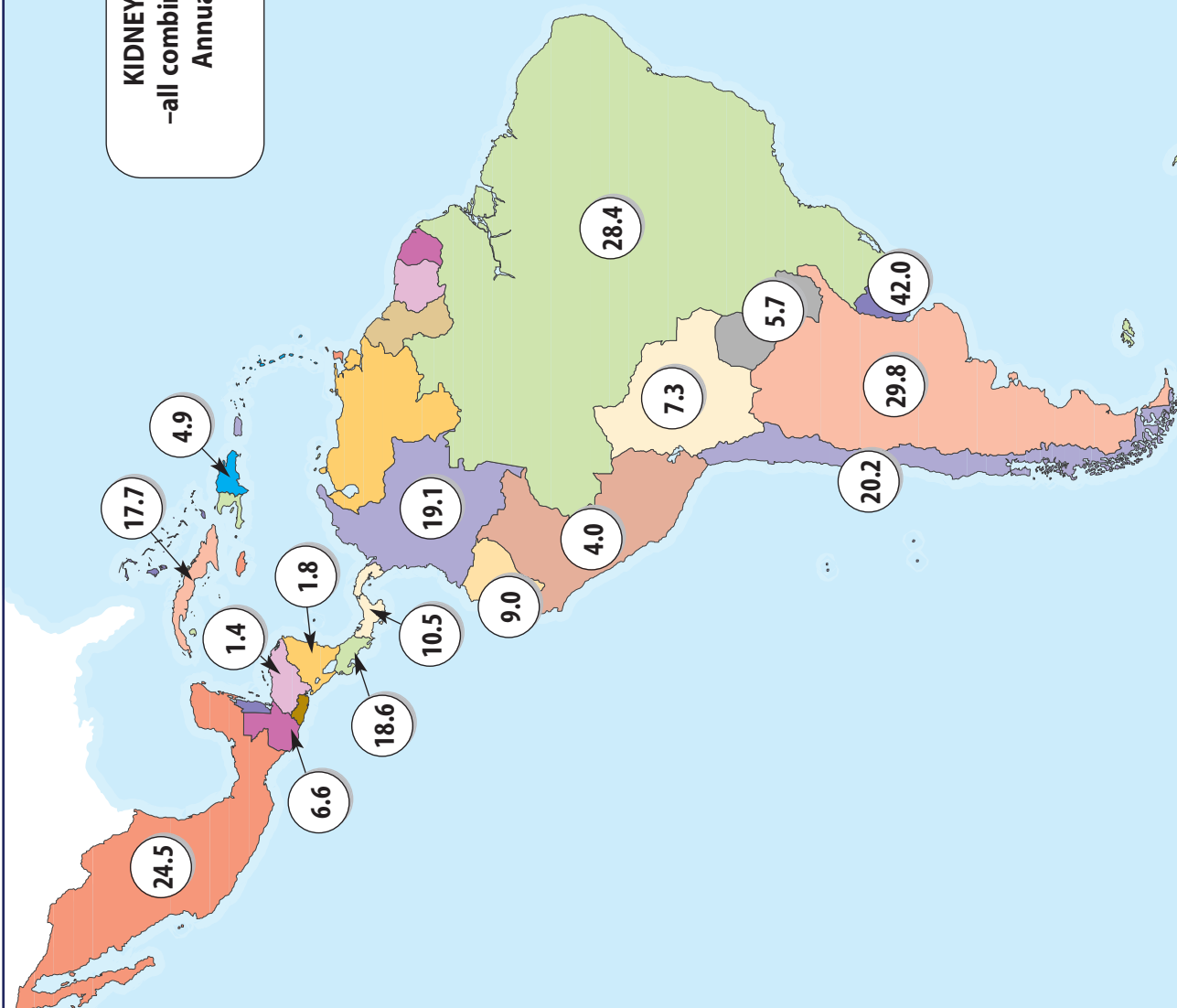
Population (million inhabitants): UNFPA		
Number	4.1	PMP
Actual deceased organ donors – both DBD and DCD included –	20	4.9
KIDNEY	89	21.7
TX. from living donors	60	14.6
Total Tx (all combinations included)	0	0.0
Total Tx (all combinations included)	0	0.0
Total Tx	0	0.0
Total Tx (all combinations included)	0	0.0
HEART–LUNG	3	0.7
Total Tx (all combinations included)	0	0.0
PANCREAS	89	21.7
SMALL BOWEL		
RECIPIENTS		



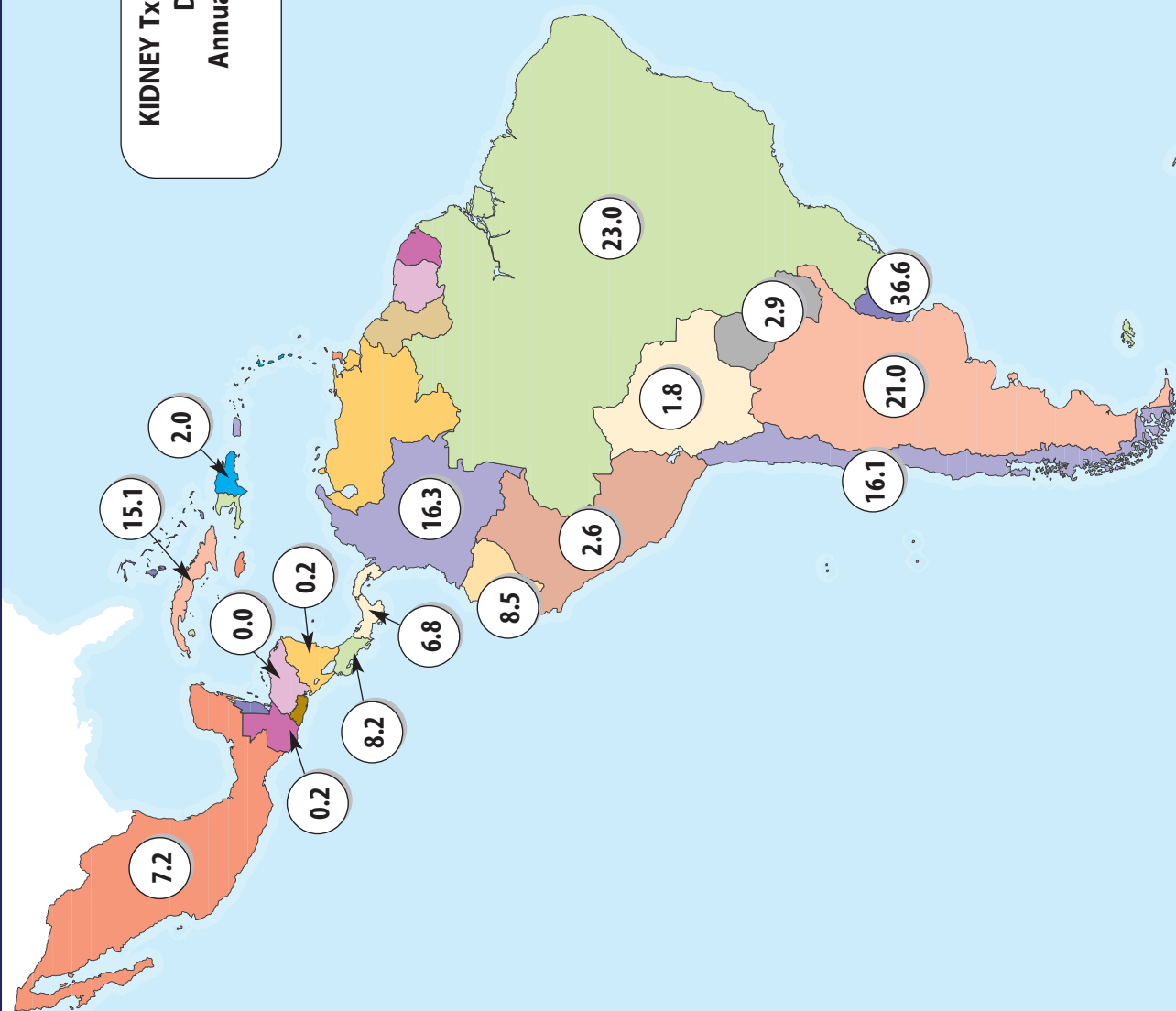
**ACTUAL DECEASED ORGAN
DONORS**
—both DBD and DCD included—
Annual Rate p.m.p
2017



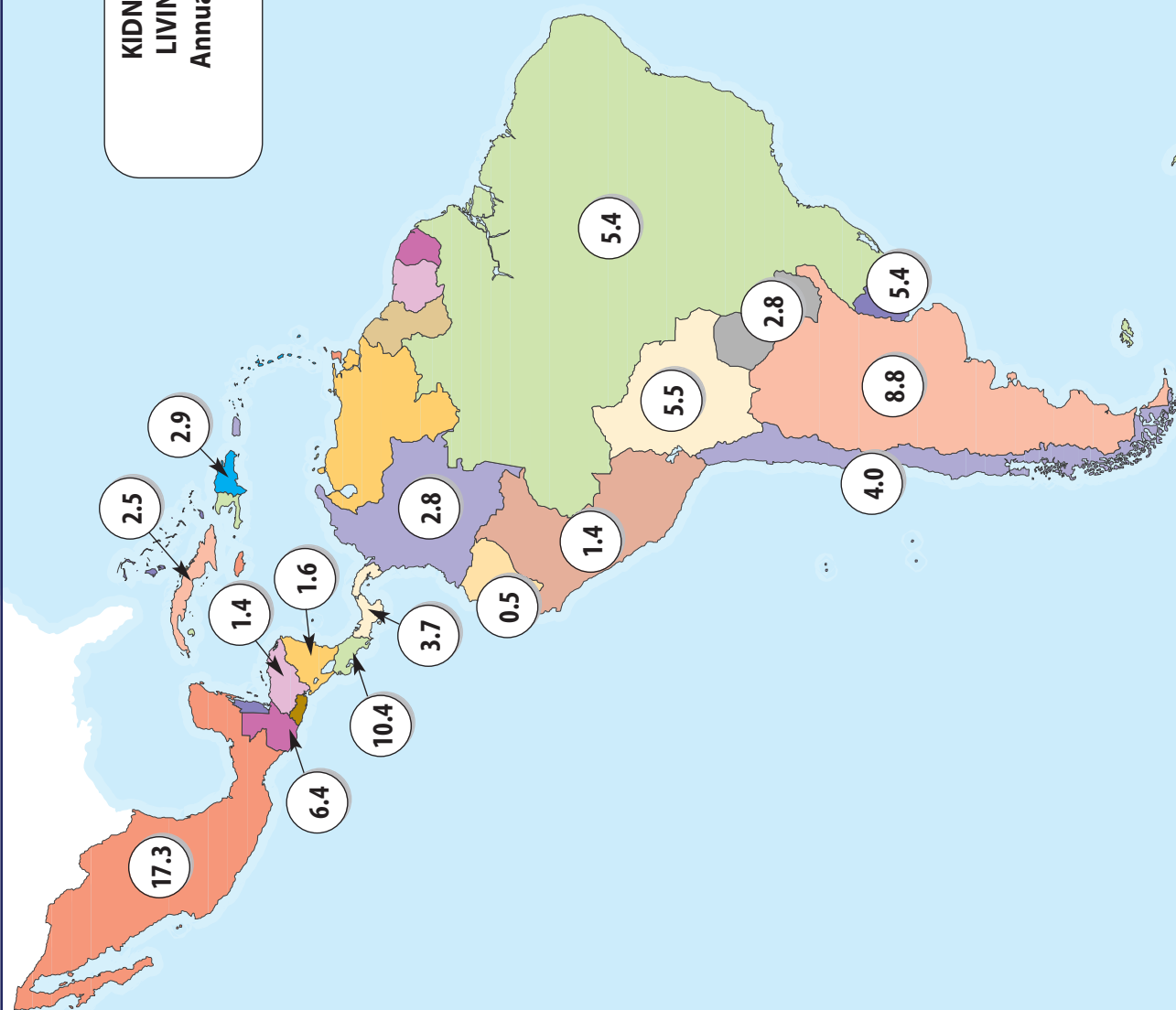
KIDNEY TRANSPLANT
-all combinations included-
Annual Rate p.m.p
2017



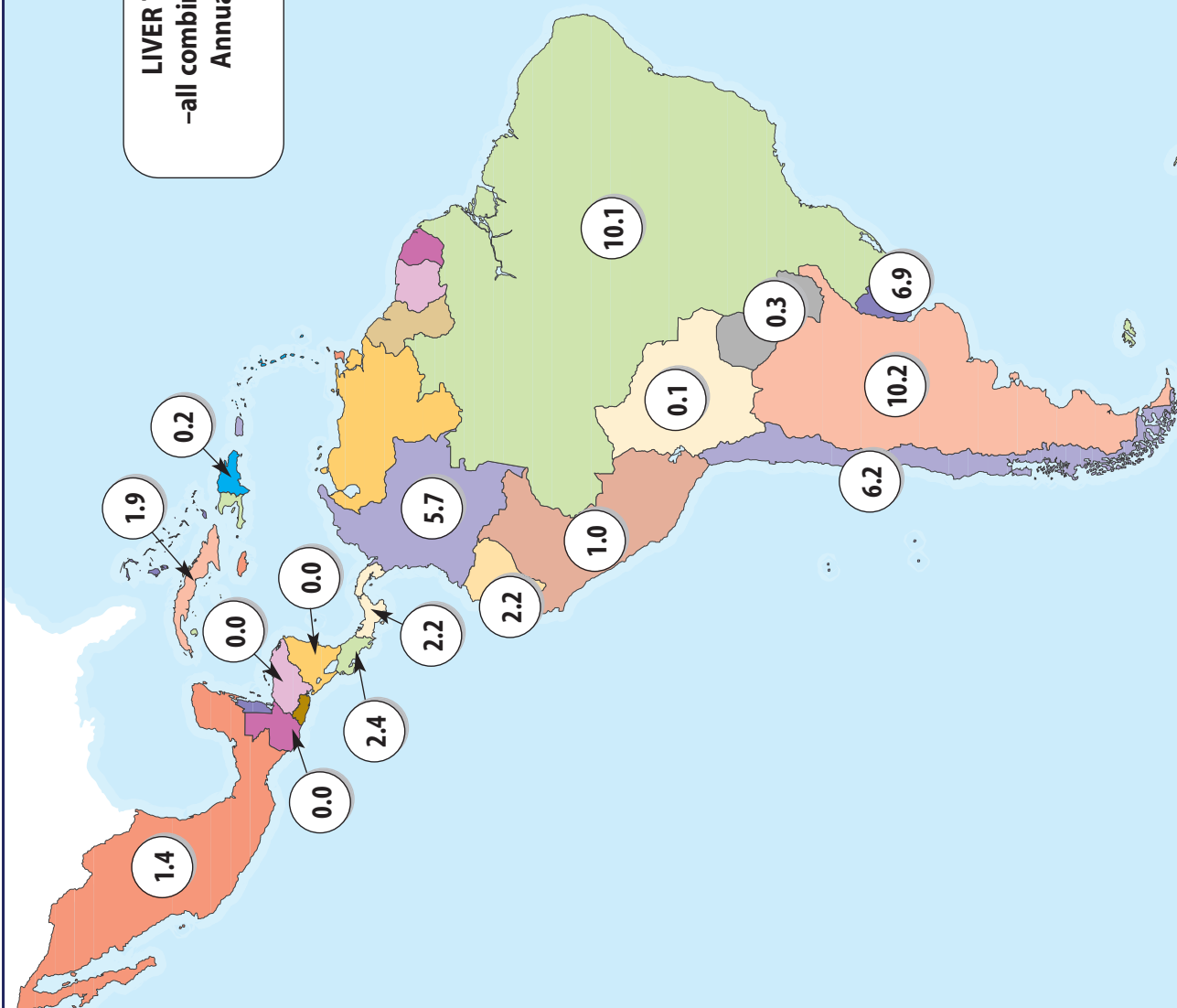
**KIDNEY Tx FROM DECEASED
DONORS
Annual Rate p.m.p
2017**



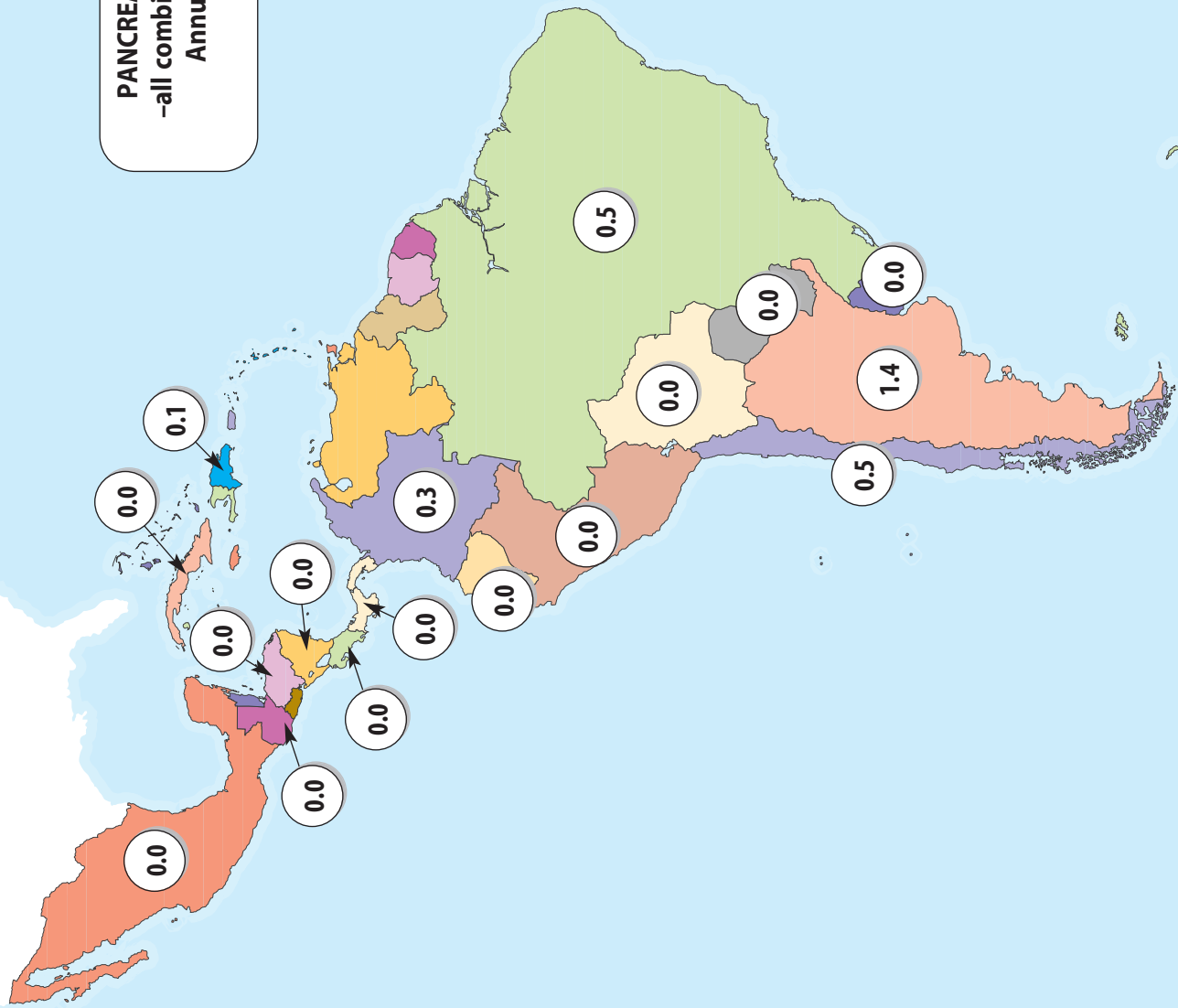
**KIDNEY Tx FROM
LIVING DONORS
Annual Rate p.m.p
2017**



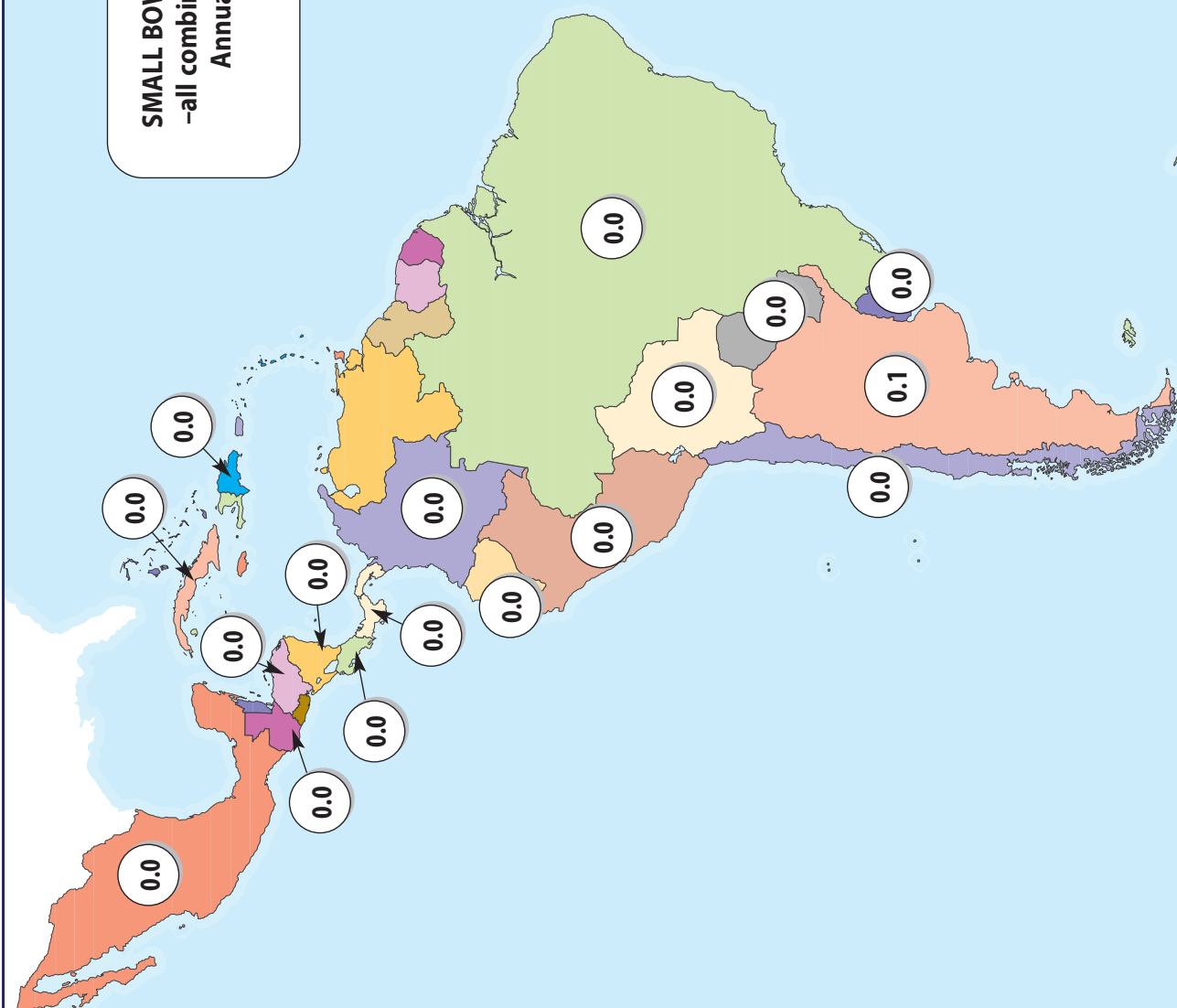
LIVER TRANSPLANT
 --all combinations included--
 Annual Rate p.m.p
 2016



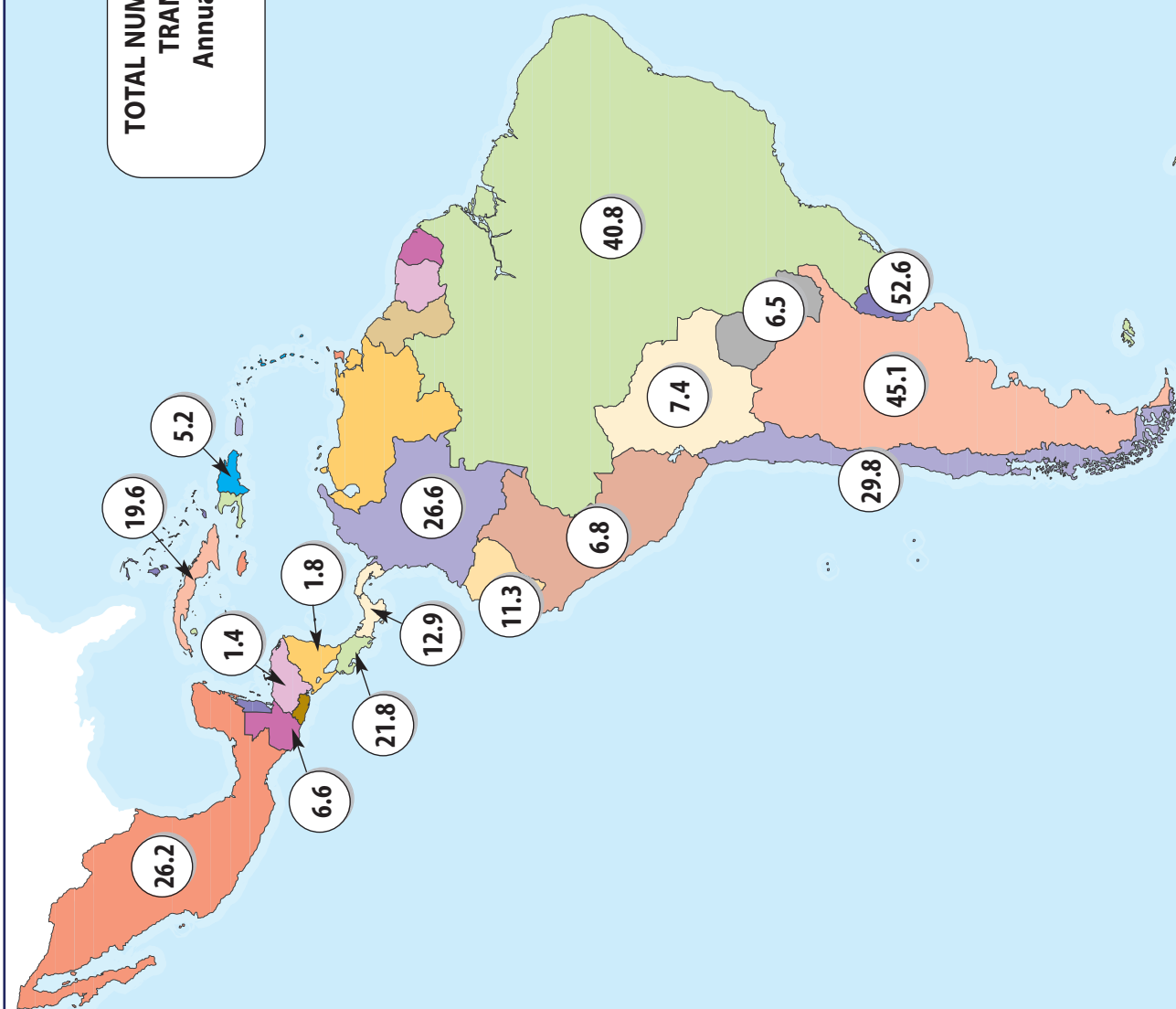
PANCREAS TRANSPLANT
 -all combinations included-
 Annual Rate p.m.p
 2017



SMALL BOWEL TRANSPLANT
--all combinations included--
Annual Rate p.m.p
2017



**TOTAL NUMBER OF PATIENTS
TRANSPLANTED
Annual Rate p.m.p
2017**



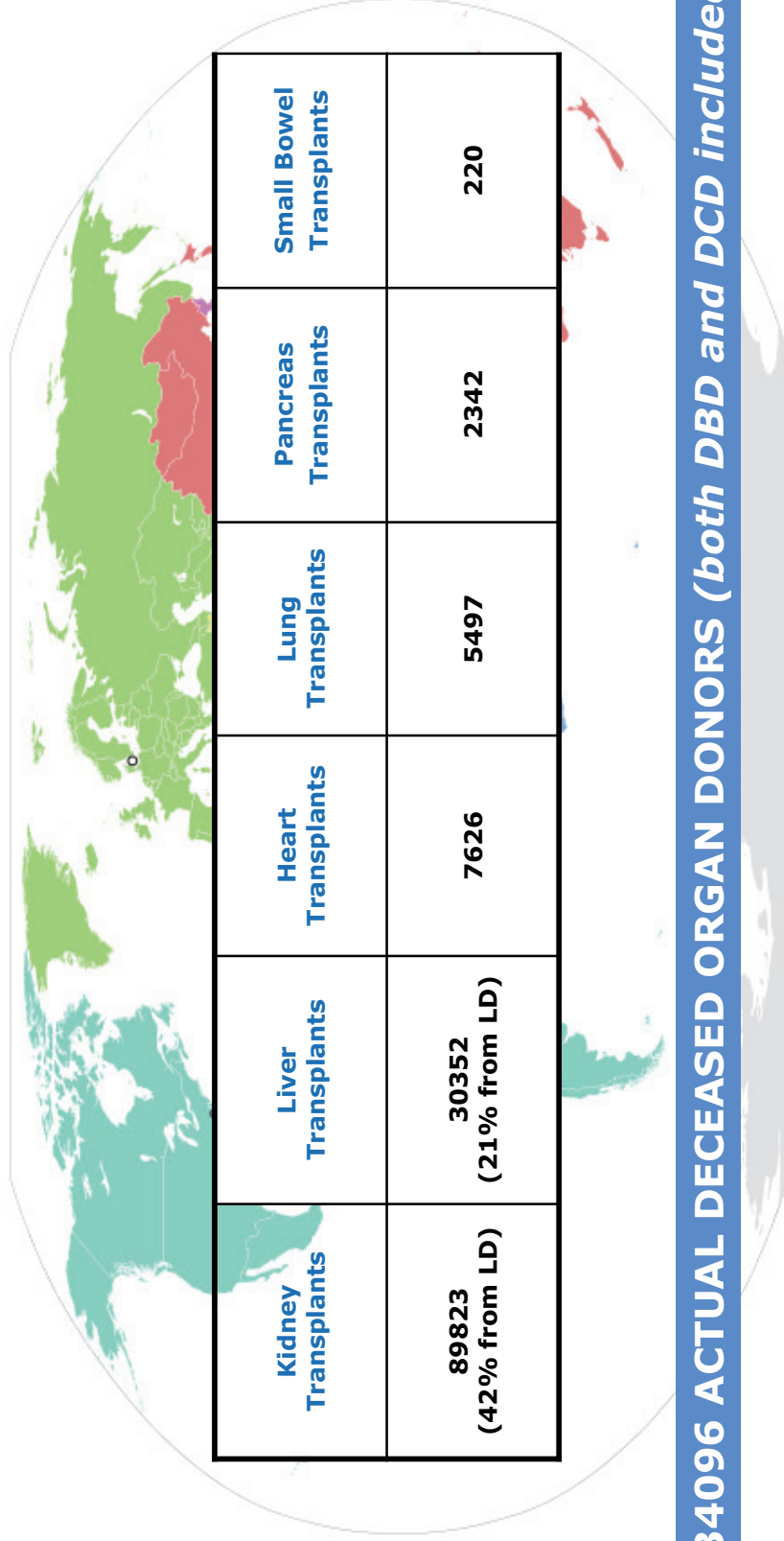
LATIN-AMERICAN COUNTRIES (2017)



5552 ACTUAL DECEASED ORGAN DONORS (5552 DBD and 0 DCD)

N= 17 COUNTRIES (583.9 million inhabitants)

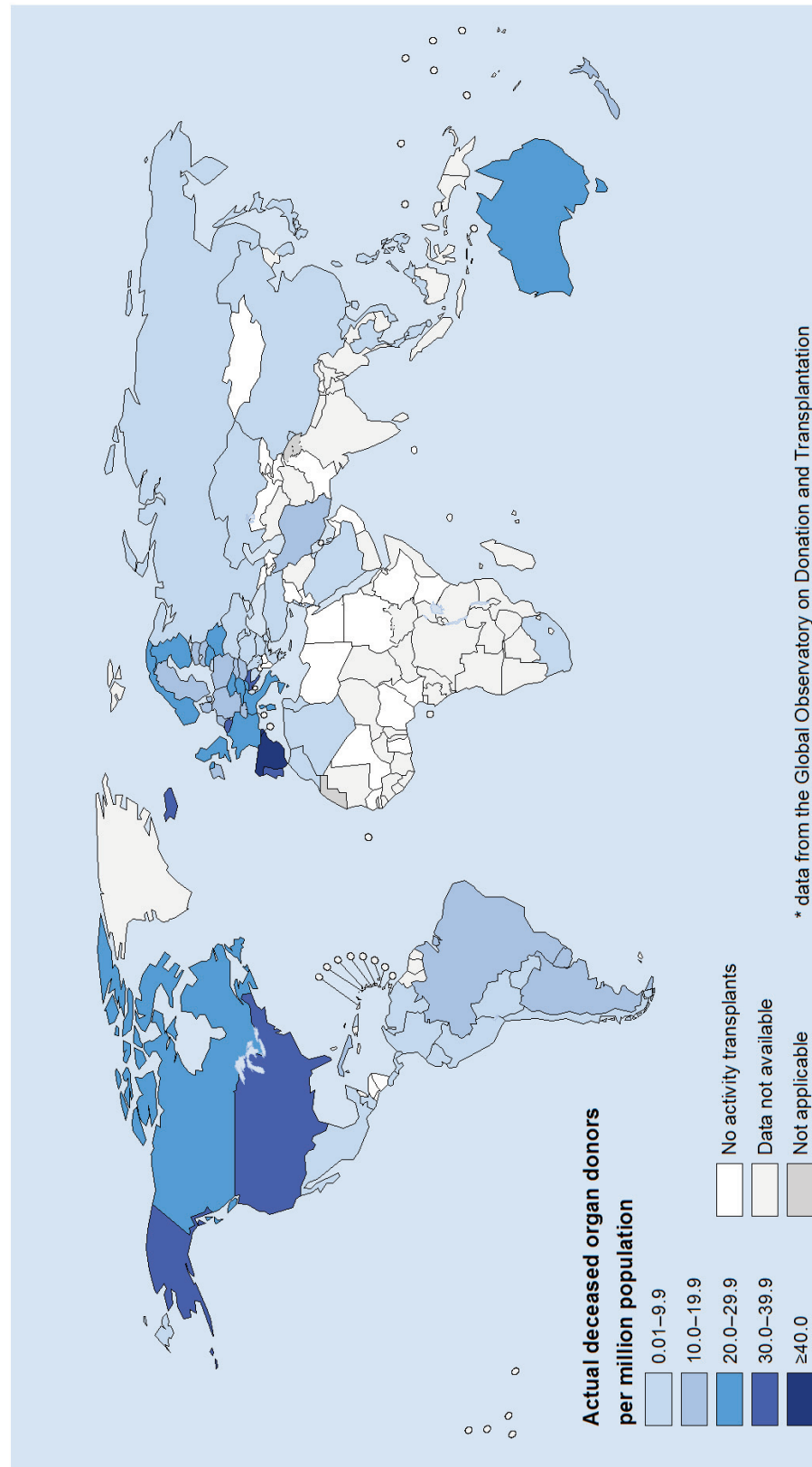
GLOBAL ACTIVITY IN ORGAN TRANSPLANTATION (2016 ESTIMATES)



34096 ACTUAL DECEASED ORGAN DONORS (both DBD and DCD included)

- Information of 110 Member States on organ transplantation activities is included in the GODT: 80 of 2016, 12 of 2015, 6 of 2014, 7 of 2013, 2 of 2012 and 3 of 2011.

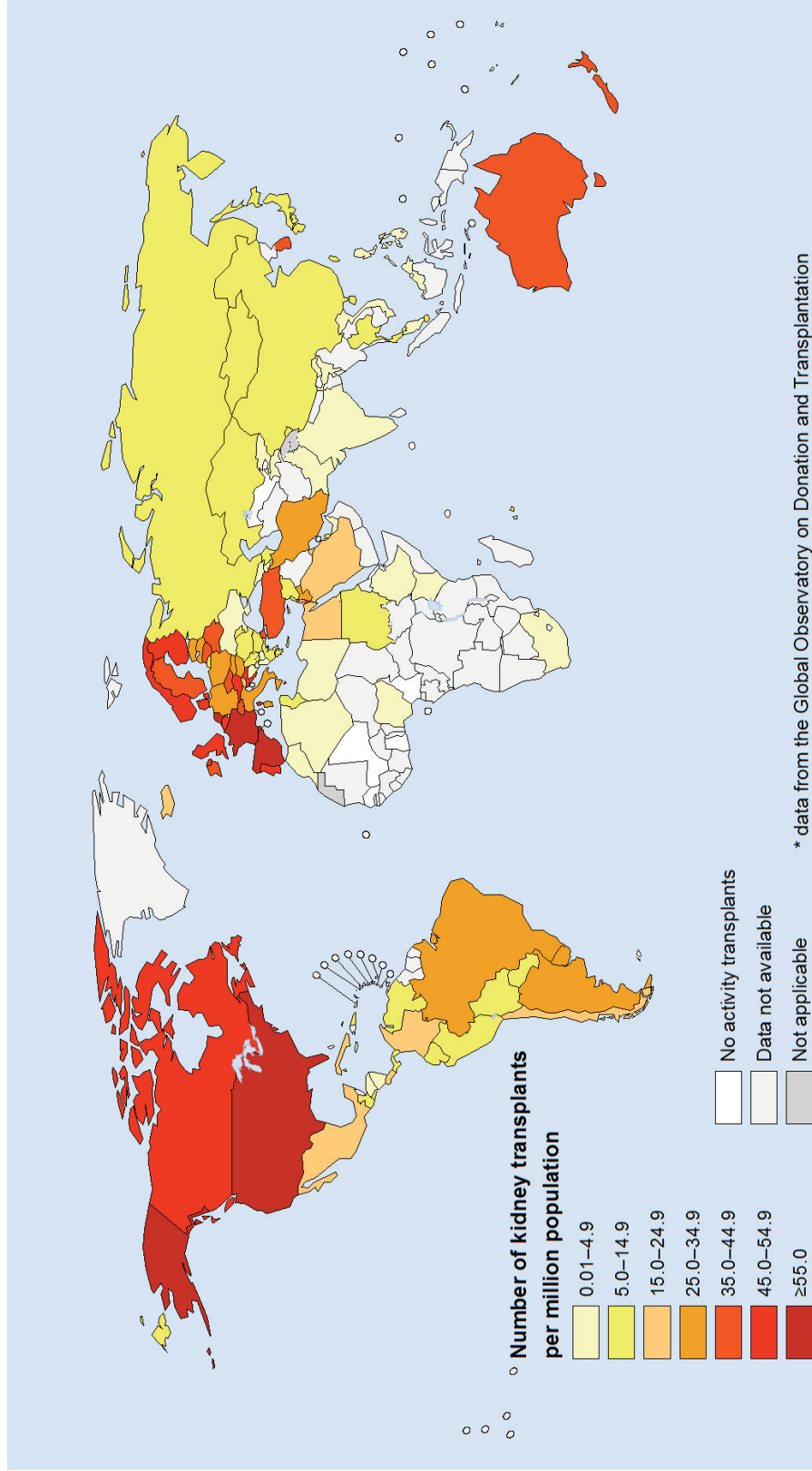
Actual donors from deceased persons, 2016*



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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization

Kidney transplantation activities, 2016*

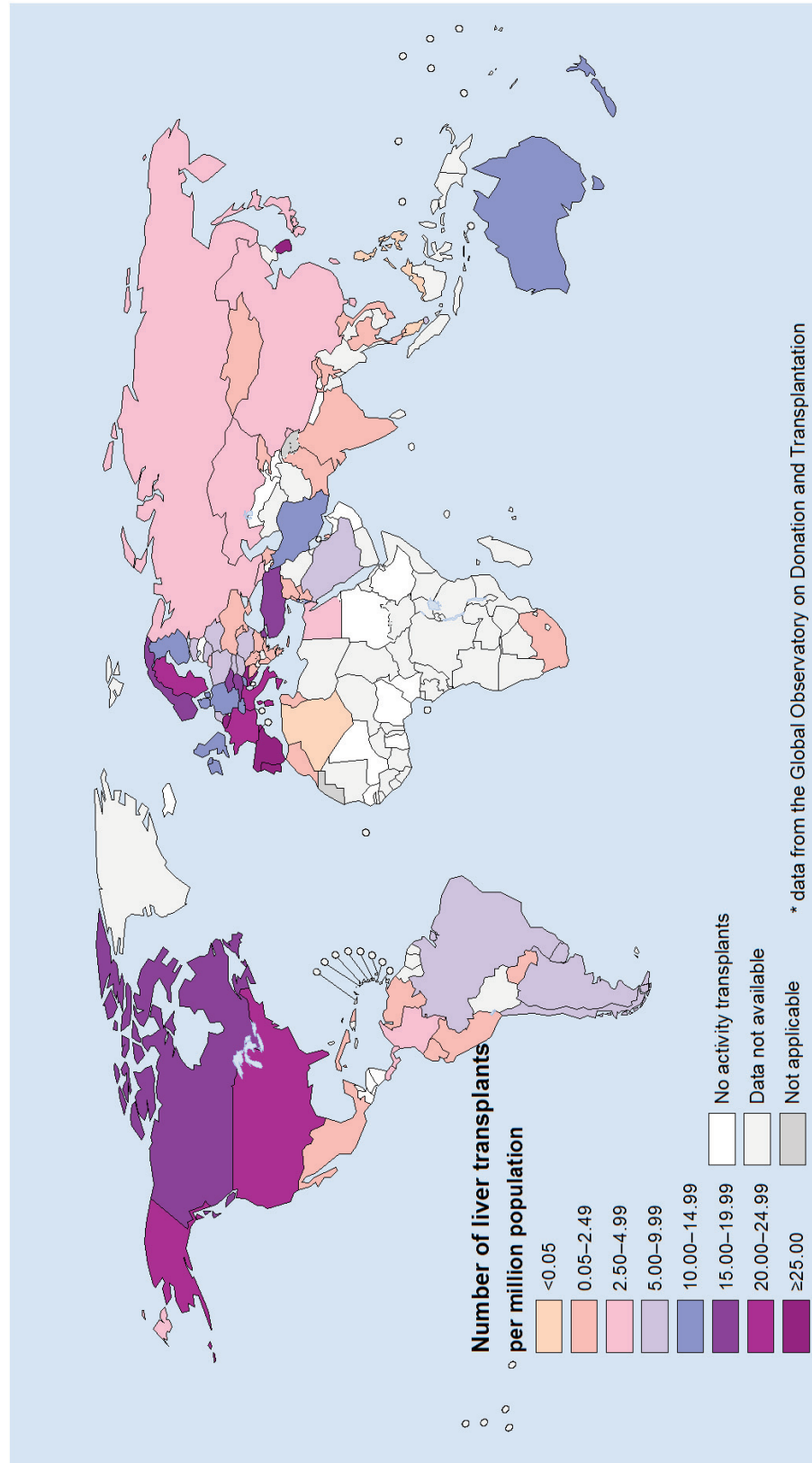


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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER) World Health Organization

World Health Organization
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Liver transplantation activities, 2016*

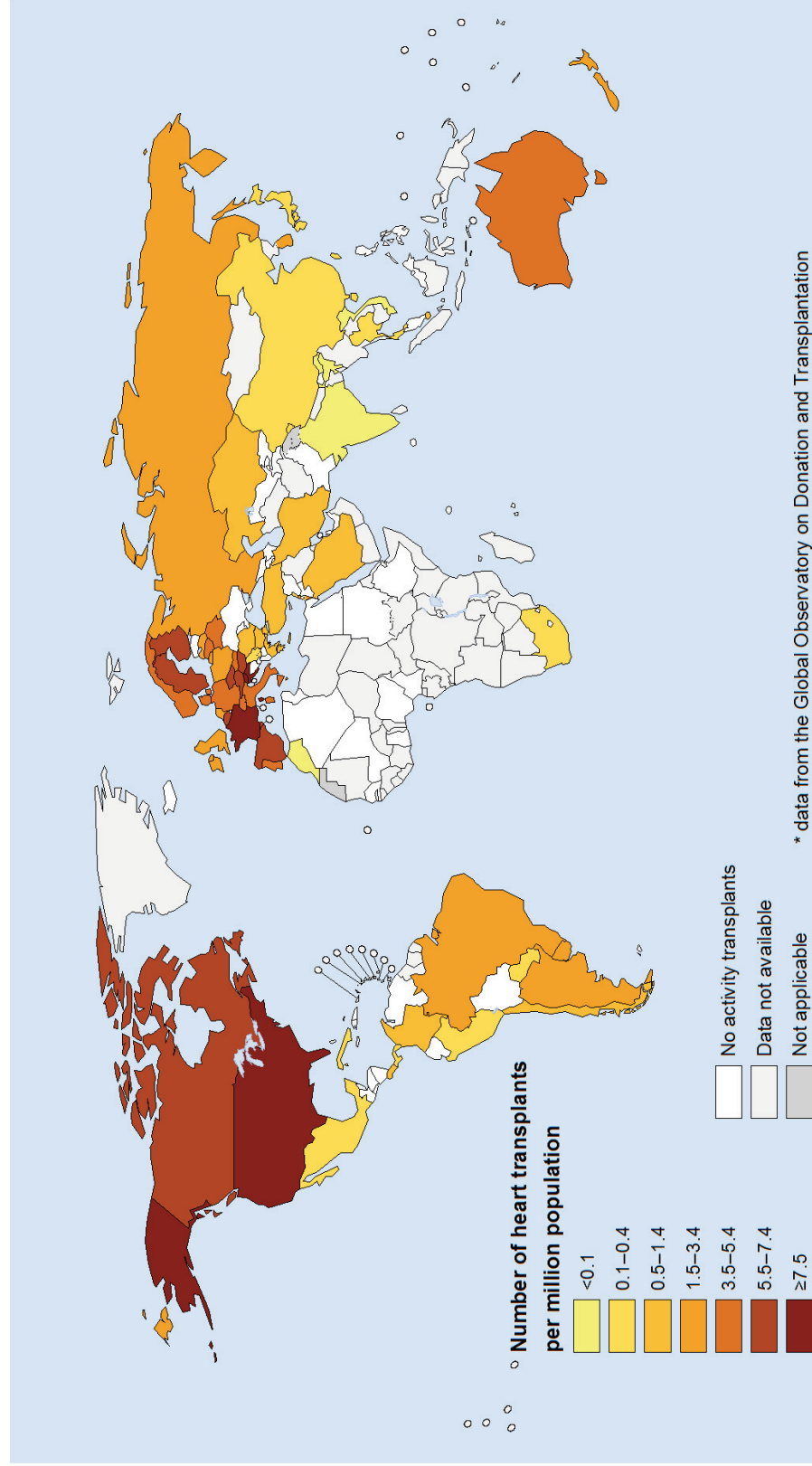


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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization

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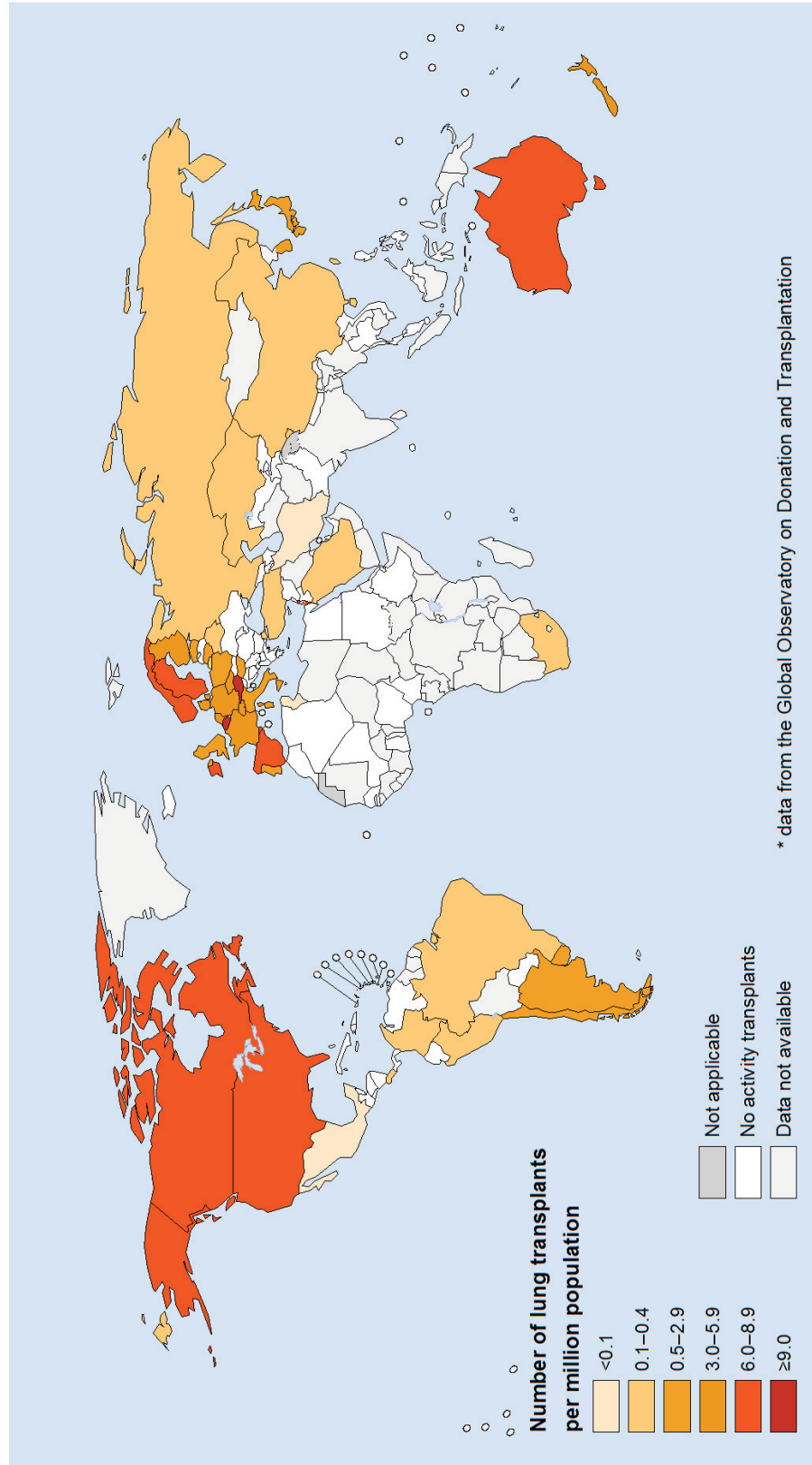
Heart transplantation activities, 2016*



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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization

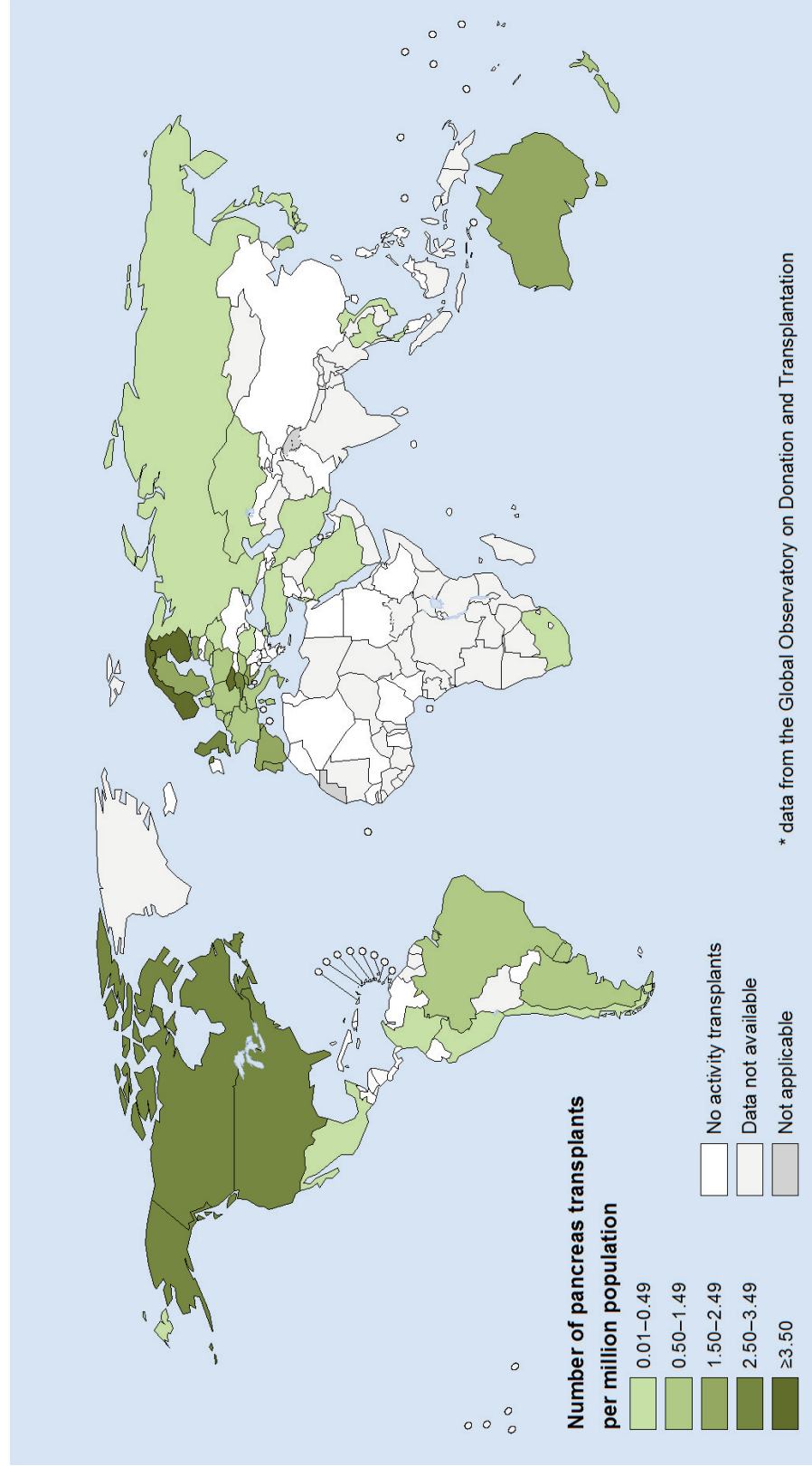
Lung transplantation activities, 2016*



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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization

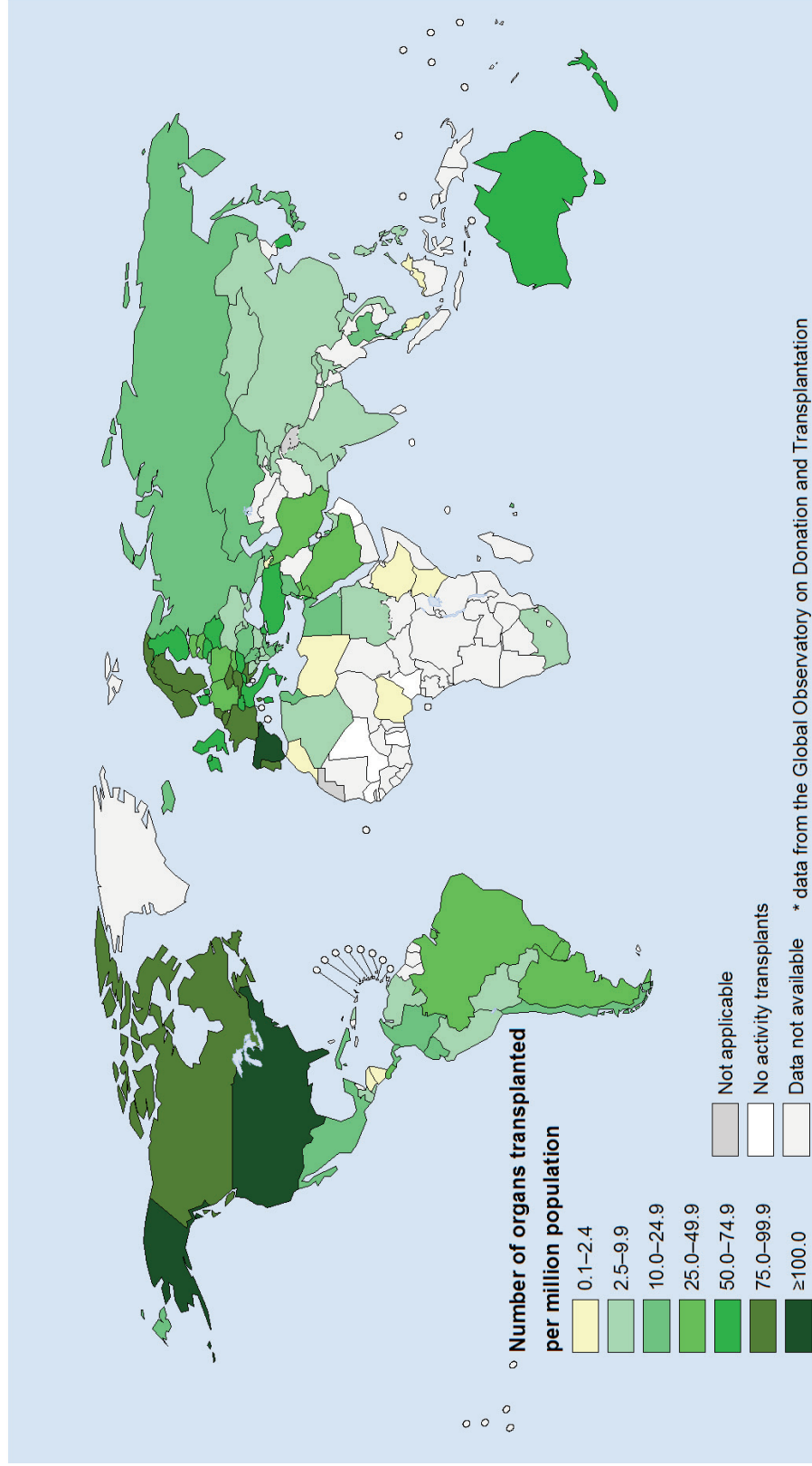
Pancreas transplantation activities, 2016*



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Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization

Global transplantation activities of solid organs, 2016*



Data Source: Global Observatory on Donation & Transplantation. Map Production: Information Evidence and Research (IER)
World Health Organization



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International Data on Organ Donation and Transplantation Activity, Waiting List and Family Refusals. Year 2017



DONATION AND TRANSPLANTATION ACTIVITY

EUROPEAN UNION COUNTRIES

COUNTRIES Population (million inhabitants): UNFPA	Austria 8.7	Belgium 11.4	Bulgaria 7.1	Croatia 4.2	Cyprus 1.2	Czech Republic 10.6	Denmark 5.7	Estonia 1.3	Finland 5.5	France 65.0
DONATION										
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP
Actual deceased organ donors (both DBD and DCD included)	213	24.5	348	30.5	43	6.1	140	33.3	19	15.8
Actual deceased donors: Number of men	123	14.1	26	3.7	26	3.7	79	18.8	10	8.3
Actual deceased donors: Number of DD > 60 years	75	8.6	11	1.5	11	1.5	80	19.0	8	6.7
Actual donors after circulatory death (DCD)	7	0.8	103	9.0	0	0.0	0	0.0	0	0.0
TRANSPLANTATION										
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP
KIDNEY										
Total Tx (all combinations included)	428	49.2	548	48.1	40	5.6	165	39.3	19	15.8
Paediatric <15 years	13	1.5	16	1.4	0	0.0	2	0.5	1	0.8
Tx from deceased donors	359	41.3	485	42.5	32	4.5	154	36.7	10	8.3
-Tx from DCD	31	3.6	124	10.9	0	0.0	0	0.0	0	0.0
-Single Tx	350	40.2	484	42.5	32	4.5	153	36.4	10	8.3
-Double Tx	9	1.0	1	0.1	0	0.0	1	0.2	0	0.0
Tx from living donors	69	7.9	63	5.5	8	1.1	11	2.6	9	7.5
-Tx from related living donors	65	7.5	60	5.3	8	1.1	11	2.6	9	7.5
-Tx from unrelated living donors	4	0.5	3	0.3	0	0.0	0	0.0	0	0.0
LIVER										
Total Tx (all combinations included)	161	18.5	305	26.8	13	1.8	119	28.3	0	0.0
Paediatric <15 years	5	0.6	39	3.4	0	0.0	3	0.7	0	0.0
Split Tx	4	0.5	9	0.8	0	0.0	2	0.5	0	0.0
Domino Tx	0	0.0	3	0.3	0	0.0	0	0.0	0	0.0
Tx from living donors	3	0.3	33	2.9	1	0.1	1	0.2	0	0.0
Tx from DCD	4	0.5	68	6.0	0	0.0	0	0.0	0	0.0
HEART										
Total Tx (all combinations included)	64	7.4	79	6.9	5	0.7	33	7.9	0	0.0
Paediatric <15 years	9	1.0	2	0.2	0	0.0	1	0.2	0	0.0
HEART – LUNG										
Total Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LUNG										
Total Tx (all combinations included)	116	13.3	121	10.6	0	0.0	0	0.0	0	0.0
Paediatric <15 years	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0
-Single Tx	4	0.5	3	0.3	0	0.0	0	0.0	0	0.0
-Double Tx (heart-lung Tx included)	112	12.9	118	10.4	0	0.0	0	0.0	0	0.0
Tx from DCD (double + single)	7	0.8	31	2.7	0	0.0	0	0.0	0	0.0
PANCREAS										
Total Tx (all combinations included)	20	2.3	14	1.2	0	0.0	5	1.2	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pancreas Tx alone	0	0.0	5	0.4	0	0.0	0	0.0	0	0.0
Kidney – Pancreas Tx	20	2.3	9	0.8	0	0.0	4	1.0	0	0.0
Tx from DCD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SMALL BOWEL										
Total Tx (all combinations included)			3	0.3	0	0.0	0	0.0	0	0.0
Paediatric <15 years			0	0.0	0	0.0	0	0.0	0	0.0
Small bowel Tx alone			3	0.3	0	0.0	0	0.0	0	0.0
RECIPIENTS										
Total number of patients transplanted	761	87.5	1050	92.1	58	8.2	314	74.8	19	15.8
Paediatric <15 years	28	3.2	58	5.1	0	0.0	6	1.4	1	0.8
Patients transplanted from living donors	72	8.3	96	8.4	37	5.2	12	2.9	9	7.5
Male recipients	495	56.9					230	54.8	9	7.5

3782	58.2	240	43.6	35	26.9	257	45.1	18	13.8	118	21.5	1933	29.7
75	1.2	11	2.0	1	0.8	8	1.4	1	0.8	11	2.0	75	1.2
3171	48.8	211	38.4	30	23.1	165	28.9	30	23.1	211	38.4	3171	48.8
235	3.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	235	3.6
3127	48.1	211	38.4	27	20.8	163	28.6	27	20.8	211	38.4	3127	48.1
44	0.7	0	0.0	3	2.3	2	0.4	3	2.3	0	0.0	44	0.7
611	9.4	29	5.3	5	3.8	51	4.8	5	3.8	29	5.3	611	9.4
611	9.4	29	5.3	5	3.8	92	16.1	5	3.8	29	5.3	611	9.4
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1374	21.1	63	11.5	10	7.7	57	10.0	10	7.7	63	11.5	1374	21.1
74	1.1	6	1.1	0	0.0	8	1.4	0	0.0	6	1.1	74	1.1
75	1.2	2	0.4	0	0.0	3	0.5	0	0.0	2	0.4	75	1.2
7	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	0.1
18	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	18	0.3
47	0.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	47	0.7
473	7.3	26	4.7	0	0.0	25	4.4	0	0.0	26	4.7	473	7.3
20	0.3	3	0.5	0	0.0	1	0.2	0	0.0	3	0.5	20	0.3
6	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	0.1
1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
384	5.9	24	4.4	5	3.8	35	6.1	5	3.8	24	4.4	384	5.9
5	0.1	0	0.0	1	0.8	2	0.2	0	0.0	0	0.0	5	0.1
38	0.6	1	0.2	0	0.0	3	0.3	0	0.0	1	0.2	38	0.6
346	5.3	23	4.2	5	3.8	33	5.8	5	3.8	23	4.2	346	5.3
9	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	0.1
96	1.5	21	3.8	3	2.3	9	1.6	3	2.3	21	3.8	96	1.5
12	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12	0.2
12	0.2	0	0.0	0	0.0	5	0.5	0	0.0	0	0.0	12	0.2
84	1.3	21	3.8	3	2.3	34	3.2	3	2.3	21	3.8	84	1.3
0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	2	0.0
1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
5860	90.2	351	63.8	50	38.5	372	65.3	50	38.5	351	63.8	5860	90.2
166	2.6	20	3.6	2	1.5	17	3.0	2	1.5	20	3.6	166	2.6
629	9.7	29	5.3	30	23.1	92	16.1	30	23.1	29	5.3	629	9.7

DONATION AND TRANSPLANTATION ACTIVITY

EUROPEAN UNION COUNTRIES

COUNTRIES Population (million inhabitants): UNFPA	Germany 82.1	Greece 11.2	Hungary 9.7	Ireland 4.8	Italy 59.4	Latvia 1.9	Lithuania 2.9	Luxembourg 0.6	Malta 0.4
DONATION									
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number
Actual deceased organ donors (both DBD and DCD included) Actual deceased donors: Number of men Actual deceased donors: Number of DD > 60 years Actual donors after circulatory death (DCD)	797	9.7	67	6.0	1714	28.9	24	12.6	40
	433	5.3	39	3.5	986	16.6	18	9.5	22
	329	4.0	21	1.9	1025	17.3	7	3.7	12
	0	0.0	0	0.0	53	0.9	2	1.1	0
TRANSPLANTATION									
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number
KIDNEY Total Tx (all combinations included) Paediatric <15 years Tx from deceased donors -Tx from DCD -Single Tx -Double Tx Tx from living donors -Tx from related living donors -Tx from unrelated living donors	1921	23.4	176	15.7	2246	37.8	50	26.3	76
	65	0.8	4	0.4	53	0.9	1	0.5	3
	1364	16.6	108	9.6	1933	32.5	37	19.5	70
	0	0.0	0	0.0	37	0.6	0	0.0	0
	1345	16.4	108	9.6	1791	30.2	35	18.4	0
	19	0.2	0	0.0	142	2.4	2	1.1	0
LIVER Total Tx (all combinations included) Paediatric <15 years Split Tx Domino Tx Tx from living donors Tx from DCD	823	10.0	28	2.5	1311	22.1	0	0.0	22
	104	1.3	0	0.0	82	1.4	0	0.0	0
	74	0.9	0	0.0	92	1.5	0	0.0	0
	2	0.0	0	0.0	1	0.0	0	0.0	0
	61	0.7	0	0.0	15	0.3	0	0.0	0
	0	0.0	0	0.0	20	0.3	0	0.0	0
HEART Total Tx (all combinations included) Paediatric <15 years	257	3.1	8	0.7	265	4.5	1	0.5	7
	25	0.3	0	0.0	17	0.3	0	0.0	2
HEART – LUNG Total Tx Paediatric <15 years	5	0.1	0	0.0	1	0.0	0	0.0	0
	0	0.0	0	0.0	0	0.0	0	0.0	0
LUNG Total Tx (all combinations included) Paediatric <15 years -Single Tx -Double Tx (heart–lung Tx included) Tx from DCD (double + single)	309	3.8	0	0.0	144	2.4	0	0.0	1
	7	0.1	0	0.0	3	0.1	0	0.0	0
	31	0.4	0	0.0	14	0.2	0	0.0	0
	278	3.4	0	0.0	130	2.2	0	0.0	1
	0	0.0	0	0.0	3	0.1	0	0.0	0
PANCREAS Total Tx (all combinations included) Paediatric <15 years Pancreas Tx alone Kidney – Pancreas Tx Tx from DCD	72	0.9	0	0.0	39	0.7	0	0.0	0
	0	0.0	0	0.0	0	0.0	0	0.0	0
	2	0.0	0	0.0	9	0.2	0	0.0	0
	69	0.8	0	0.0	28	0.5	0	0.0	0
	0	0.0	0	0.0	5	1.0	0	0.0	0
SMALL BOWEL Total Tx (all combinations included) Paediatric <15 years Small bowel Tx alone	3	0.0	0	0.0			0	0.0	0
	0	0.0	0	0.0			0	0.0	0
RECIPIENTS Total number of patients transplanted Paediatric <15 years Patients transplanted from living donors Male recipients	3285	40.0	212	18.9	3952	66.5	51	26.8	106
	198	2.4	4	0.4	152	2.6	1	0.5	5
	620	7.6	68	6.1	328	5.1	13	6.8	6
	2082	25.4	143	12.8	2702	45.5	27	14.2	78

DONATION AND TRANSPLANTATION ACTIVITY

EUROPEAN UNION COUNTRIES																			
COUNTRIES Population (million inhabitants): UNFPA	Netherlands 17.0	Poland 38.2	Portugal 10.3	Romania 19.7	Slovakia 5.4	Slovenia 2.1	Spain 46.4	Sweden 9.9	United Kingdom 66.2										
DONATION																			
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP			
Actual deceased organ donors (both DBD and DCD included)	258	15.2	560	14.7	351	34.1	65	3.3	86	15.9	43	20.5	2183	47.0	192	19.4	1492	22.5	
Actual deceased donors: Number of men	141	8.3	368	9.6	217	21.1	39	2.0	59	10.9	23	11.0	1307	28.2	105	10.6	857	12.9	
Actual deceased donors: Number of DD > 60 years	107	6.3	124	3.2	164	15.9	19	1.0	23	4.3	19	9.0	1191	25.7	96	9.7	528	8.0	
Actual donors after circulatory death (DCD)	146	8.6	2	0.1	21	2.0	0	0.0	0	0.0	0	0.0	573	12.3	1	0.1	594	9.0	
TRANSPLANTATION																			
KIDNEY Total Tx (all combinations included) Paediatric <15 years Tx from deceased donors -Tx from DCD -Single Tx -Double Tx Tx from living donors -Tx from related living donors -Tx from unrelated living donors	979	57.6	1091	28.6	529	51.4	149	7.6	153	28.3	48	22.9	3269	70.5	474	47.9	3448	52.1	
	20	1.2	18	0.5	10	1.0	4	0.2	0	0.0	0	0.0	49	1.1	17	1.7	78	1.2	
	428	25.2	1035	27.1	452	43.9	98	5.0	142	26.3	46	21.9	2937	63.3	349	35.3	2448	37.0	
	246	14.5	3	0.1	33	3.2	0	0.0	0	0.0	0	0.0	799	17.2	0	0.0	944	14.3	
	425	25.0	1034	27.1	422	41.0	98	5.0	138	25.6	46	21.9	2929	63.1	345	34.8	2408	36.4	
	3	0.2	1	0.0	30	2.9	0	0.0	4	0.7	0	0.0	8	0.2	4	0.4	40	0.6	
	551	32.4	56	1.5	77	7.5	51	2.6	11	2.0	2	1.0	332	7.2	125	12.6	1000	15.1	
	438	25.8	56	1.5	74	7.2	51	2.6	11	2.0	2	1.0	318	6.9	124	12.5	804	12.1	
	113	6.6	0	0.0	3	0.3	0	0.0	0	0.0	0	0.0	14	0.3	1	0.1	196	3.0	
	LIVER Total Tx (all combinations included) Paediatric <15 years Split Tx Domino Tx Tx from living donors Tx from DCD	169	9.9	373	9.8	259	25.1	63	3.2	32	5.9	23	11.0	1247	26.9	181	18.3	1010	15.3
17		1.0	31	0.8	11	1.1	2	0.1	0	0.0	0	0.0	41	0.9	17	1.7	97	1.5	
5		0.3	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	2	0.0	17	1.7	75	1.1	
0		0.0	0	0.0	10	1.0	1	0.1	0	0.0	0	0.0	4	0.1	2	0.2	2	0.0	
9		0.5	24	0.6	2	0.2	10	0.5	0	0.0	0	0.0	17	0.4	3	0.3	34	0.5	
66		3.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	166	3.6	0	0.0	195	2.9	
HEART Total Tx (all combinations included) Paediatric <15 years HEART – LUNG Total Tx Paediatric <15 years LUNG Total Tx (all combinations included) Paediatric <15 years -Single Tx -Double Tx (heart–lung Tx included) Tx from DCD (double + single)		38	2.2	98	2.6	46	4.5	3	0.2	18	3.3	24	11.4	304	6.6	62	6.3	191	2.9
		2	0.1	4	0.1	2	0.2	0	0.0	0	0.0	0	0.0	21	0.5	4	0.4	26	0.4
		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	0	0.0	9	0.1
		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	74	4.4	39	1.0	34	3.3	0	0.0	0	0.0	0	0.0	363	7.8	65	6.6	198	3.0	
	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	3	0.0	
	11	0.6	15	0.4	11	1.1	0	0.0	0	0.0	0	0.0	120	2.6	5	0.5	25	0.4	
	63	3.7	24	0.6	23	2.2	0	0.0	0	0.0	0	0.0	243	5.2	60	6.1	173	2.6	
	25	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	40	0.9	0	0.0	40	0.6	
	PANCREAS Total Tx (all combinations included) Paediatric <15 years Pancreas Tx alone Kidney – Pancreas Tx Tx from DCD	25	1.5	41	1.1	27	2.6	0	0.0	0	0.0	0	0.0	70	1.5	25	2.5	198	3.0
0		0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	0	0.0	4	0.1	
3		0.2	11	0.3	1	0.1	0	0.0	0	0.0	0	0.0	9	0.2	6	0.6	15	0.2	
22		1.3	30	0.8	26	2.5	0	0.0	0	0.0	0	0.0	55	1.2	17	1.7	172	2.6	
			0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.0	0	0.0	53	0.8	
SMALL BOWEL Total Tx (all combinations included) Paediatric <15 years Small bowel Tx alone RECIPIENTS Total number of patients transplanted Paediatric <15 years Patients transplanted from living donors Male recipients		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	0.2	2	0.2	18	0.3
		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0.1	0	0.0	6	0.1
		0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.0	0	0.0	2	0.0
		1262	74.2	1612	42.2	864	84.0	215	10.9	203	37.6	90	42.9	5152	111.0	783	79.1	4871	73.6
		39	2.3	53	1.4	23	2.2	6	0.3	0	0.0	0	0.0	111	2.4	37	3.7	205	3.1
	560	32.9	80	2.1	88	8.5	61	3.1	11	2.0	2	1.0	349	12.9	128	12.9	1034	15.6	
	748	44.0	987	25.8					122	22.6	65	31.0	3491	75.2	506	51.1	3004	45.4	

DONATION AND TRANSPLANTATION ACTIVITY

OTHER COUNTRIES

COUNTRIES	Armenia	Australia	Belarus	Bosnia and Herzegovina	Canada	Georgia	Iceland	Israel	Kuwait	Malaysia
Population (million inhabitants): UNFPA	2.9	24.5	9.5	3.5	36.6	3.9	0.3	8.3	4.1	31.6
DONATION										
Actual deceased organ donors (both DBD and DCD included)	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Actual deceased donors: Number of men	PMP	PMP	PMP	PMP	PMP	PMP	PMP	PMP	PMP	PMP
Actual deceased donors: Number of DD > 60 years										
Actual donors after circulatory death (DCD)										
	0	510	224	3	802	0	6	92	20	13
	0	275	150	3	158	0	5	57	16	12
	0	130	4	0	4	0	2	36	0	3
	0	151	0	0	201	0	0	4	0	0
	0	6.2	0.0	0.0	5.5	0.0	0.0	0.5	0.0	0.0
TRANSPLANTATION										
KIDNEY										
Total Tx (all combinations included)	11	1103	362	17	1771	21	8	367	89	79
Paediatric <15 years	3	36	19	4	1299	1	0	15	2	0
Tx from deceased donors	0	832	353	4	37.2	0	0	145	29	26
-Tx from DCD	0	237	0	0	9.2	0	0	4	0	0
-Single Tx	0	823	353	0	37.2	0	0	143	28	26
-Double Tx	0	9	0	13	0.5	0	0	2	1	0
Tx from living donors	11	271	9	13	472	21	8	222	60	53
-Tx from related living donors	11	222	9	13	12.9	5.4	8	26.7	14.6	1.7
-Tx from unrelated living donors	0	49	0	0	0.0	0.0	0	0.0	34	0
LIVER										
Total Tx (all combinations included)	0	282	79	0	585	10	0	88	0	5
Paediatric <15 years	0	40	6	0	16.0	0	0	14	0	1
Split Tx	0	49	0	0	0.2	0	0	2	0	0
Domino Tx	0	0	0	0	0.0	0	0	0	0	0
Tx from living donors	0	2	3	0	1.7	10	0	13	0	3
Tx from DCD	0	10	0	0	1.4	0	0	0	0	0
HEART										
Total Tx (all combinations included)	0	98	39	0	5.9	0	0	18	0	1
Paediatric <15 years	0	10	0	0	0.0	0	0	0	0	0
HEART – LUNG										
Total Tx	0	5	0	0	0.1	0	0	0	0	1
Paediatric <15 years	0	0	0	0	0.0	0	0	0	0	0
LUNG										
Total Tx (all combinations included)	0	210	5	0	9.5	0	0	55	0	1
Paediatric <15 years	0	5	0	0	0.0	0	0	0	0	0
-Single Tx	0	18	0	0	0.8	0	0	18	0	0
-Double Tx (heart–lung Tx included)	0	192	5	0	8.7	0	0	37	0	1
Tx from DCD (double + single)	0	60	0	0	1.6	0	0	0	0	0
PANCREAS										
Total Tx (all combinations included)	0	49	6	0	2.1	0	0	9	3	0
Paediatric <15 years	0	0	0	0	0.0	0	0	0	0	0
Pancreas Tx alone	0	1	0	0	0.8	0	0	0	0	0
Kidney – Pancreas Tx	0	47	6	0	1.2	0	0	9	3	0
Tx from DCD	0	2	0	0	0.2	0	0	0	0	0
SMALL BOWEL										
Total Tx (all combinations included)	0	1	0	0	0.1	0	0	0	0	0
Paediatric <15 years	0	0	0	0	0.0	0	0	0	0	0
Small bowel Tx alone	0	0	0	0	0.1	0	0	0	0	0
RECIPIENTS										
Total number of patients transplanted	11	1676	491	17	2972	31	8	520	89	86
Paediatric <15 years	3	86	25	13	533	1	0	29	2	1
Patients transplanted from living donors	11	274	12	13	14.6	31	8	235	60	56
Male recipients	9	3.1	294	309	3.7	26	5	345	50	58

DONATION AND TRANSPLANTATION ACTIVITY

OTHER COUNTRIES

COUNTRIES	New Zealand	Norway	Republic of Moldova	Russian Federation	Saudi Arabia	Sudan	Switzerland	Syrian Arab Republic	The former Yugoslav Rep. of Macedonia	Turkey	United States of America
Population (million inhabitants): UNFPA	4.7	5.3	4.1	144.0	32.9	40.5	8.5	18.3	2.1	80.7	324.5
DONATION											
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP	PMP
Actual deceased organ donors (both DBD and DCD included)	73	15.5	16	3.9	104	3.2	145	17.1	0	0.0	10286
Actual deceased donors: Number of men	36	7.7	7	1.7	84	2.6	89	10.5	0	0.0	6199
Actual deceased donors: Number of DD > 60 years	15	3.2	8	2.0	4	0.1	61	7.2	0	0.0	1288
Actual donors after circulatory death (DCD)	12	2.6	0	0.0	0	0.0	39	4.6	0	0.0	1883
TRANSPLANTATION											
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number
KIDNEY											
Total Tx (all combinations included)	187	39.8	19	4.6	921	28.0	214	5.3	233	12.7	20638
Paediatric <15 years	5	1.1	0	0.0	17	0.5	12	0.3	17	0.9	513
Tx from deceased donors	118	25.1	17	4.1	145	4.4	0	0.0	0	0.0	14827
-Tx from DCD	20	4.3	0	0.0	0	0.0	0	0.0	0	0.0	2851
-Single Tx	115	24.5	17	4.1	143	4.3	0	0.0	0	0.0	14524
-Double Tx	3	0.6	0	0.0	2	0.1	0	0.0	0	0.0	303
Tx from living donors	69	14.7	2	0.5	776	23.6	214	5.3	17	8.1	5811
-Tx from related living donors	61	13.0	2	0.5	671	20.4	210	5.2	17	8.1	4687
-Tx from unrelated living donors	8	1.7	0	0.0	105	3.2	4	0.1	0	0.0	1124
LIVER											
Total Tx (all combinations included)	55	11.7	12	2.9	226	6.9	0	0.0	0	0.0	8082
Paediatric <15 years	9	1.9	0	0.0	8	0.2	0	0.0	0	0.0	543
Split Tx	7	1.5	0	0.0	10	0.3	0	0.0	0	0.0	18
Domino Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Tx from living donors	3	0.6	1	0.2	147	4.5	0	0.0	0	0.0	1087
Tx from DCD	1	0.2	0	0.0	0	0.0	23	2.7	0	0.0	514
HEART											
Total Tx (all combinations included)	24	5.1	32	6.0	37	1.1	0	0.0	0	0.0	3273
Paediatric <15 years	5	1.1	3	0.6	8	0.2	0	0.0	0	0.0	347
HEART – LUNG											
Total Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	29
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
LUNG											
Total Tx (all combinations included)	20	4.3	35	6.6	25	0.2	0	0.0	0	0.0	2478
Paediatric <15 years	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	22
-Single Tx	2	0.4	0	0.0	2	0.1	0	0.0	0	0.0	618
-Double Tx (heart–lung Tx included)	18	3.8	35	6.6	21	0.1	0	0.0	0	0.0	1860
Tx from DCD (double + single)	1	0.2	0	0.0	0	0.0	5	0.6	0	0.0	89
PANCREAS											
Total Tx (all combinations included)	4	0.9	24	4.5	18	0.5	5	0.6	0	0.0	1002
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	27
Pancreas Tx alone	0	0.0	13	2.5	7	0.2	0	0.0	0	0.0	154
Kidney – Pancreas Tx	4	0.9	11	2.1	11	0.3	5	0.6	0	0.0	789
Tx from DCD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	27
SMALL BOWEL											
Total Tx (all combinations included)	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	109
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	43
Small bowel Tx alone	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	48
RECIPIENTS											
Total number of patients transplanted	285	60.6	452	85.3	1890	13.1	214	5.3	233	12.7	33506
Paediatric <15 years	14	3.0	16	3.0	188	1.3	12	0.3	17	0.9	1407
Patients transplanted from living donors	72	15.3	77	14.5	332	2.3	214	5.3	233	12.7	6173
Male recipients	167	35.5	268	50.6	1134	7.9	160	4.0	12	5.7	20879

DONATION AND TRANSPLANTATION ACTIVITY

LATIN-AMERICAN COUNTRIES

COUNTRIES Population (million inhabitants): UNFPA	Ecuador 16.6	Guatemala 16.9	Honduras 9.3	Mexico 129.2	Nicaragua 6.2	Panama 4.1	Paraguay 6.8	Peru 32.2	Uruguay 3.5	
Actual deceased organ donors (both DBD and DCD included) Actual deceased donors: Number of men Actual deceased donors: Number of DD > 60 years Actual donors after circulatory death (DCD)	DONATION									
	Number	PMP	Number	PMP	Number	PMP	Number	PMP	Number	PMP
	83	5.0	2	0.1	0	0.0	509	3.9	1	0.2
	60	3.6	2	0.1	0	0.0	330	2.6	0	0.0
	6	0.4	0	0.0	0	0.0	30	0.2	0	0.0
Actual donors after circulatory death (DCD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TRANSPLANTATION										
KIDNEY	150	9.0	112	6.6	13	1.4	3166	24.5	11	1.8
Total Tx (all combinations included)	19	1.1	14	0.8	3	0.3	146	1.1	1	0.2
Paediatric <15 years	141	8.5	4	0.2	0	0.0	932	7.2	1	0.2
Tx from deceased donors	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-Tx from DCD	141	8.5	4	0.2	0	0.0	922	7.1	0	0.0
-Single Tx	0	0.0	0	0.0	0	0.0	10	0.1	0	0.0
-Double Tx	9	0.5	108	6.4	13	1.4	2234	17.3	10	1.6
Tx from living donors	9	0.5	108	6.4	13	1.4	1876	14.5	10	1.6
-Tx from related living donors	0	0.0	0	0.0	0	0.0	358	2.8	0	0.0
-Tx from unrelated living donors										
LIVER	37	2.2	0	0.0	0	0.0	183	1.4	0	0.0
Total Tx (all combinations included)	3	0.2	0	0.0	0	0.0	26	0.2	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Split Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Domino Tx	1	0.1	0	0.0	0	0.0	15	0.1	0	0.0
Tx from living donors	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tx from DCD										
HEART	0	0.0	0	0.0	0	0.0	33	0.3	0	0.0
Total Tx (all combinations included)	0	0.0	0	0.0	0	0.0	2	0.0	0	0.0
Paediatric <15 years										
HEART – LUNG	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paediatric <15 years										
LUNG	0	0.0	0	0.0	0	0.0	4	0.0	0	0.0
Total Tx (all combinations included)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-Single Tx	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
-Double Tx (heart-lung Tx included)	0	0.0	0	0.0	0	0.0	4	0.0	0	0.0
Tx from DCD (double + single)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
PANCREAS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Tx (all combinations included)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pancreas Tx alone	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kidney – Pancreas Tx	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Tx from DCD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SMALL BOWEL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Tx (all combinations included)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paediatric <15 years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Small bowel Tx alone	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
RECIPIENTS	187	11.3	112	6.6	13	1.4	3386	26.2	11	1.8
Total number of patients transplanted	22	1.3	14	0.8	3	0.3	174	1.3	1	0.2
Paediatric <15 years	10	0.6	108	6.4	13	1.4	2249	17.4	10	1.6
Patients transplanted from living donors	103	6.2	58	3.4			2107	16.3	36	8.8
Male recipients										
	</									

WAITING LIST

EUROPEAN UNION COUNTRIES

COUNTRIES	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Republic	Denmark	Estonia	Finland	France
Population (million inhabitants): UNFPA	8.7	11.4	7.1	4.2	1.2	10.6	5.7	1.3	5.5	65.0
KIDNEY										
N TX CENTRES	7	7	3	4	1	7	3	1	1	44
Patients included on the WL for the first time in the course of 2017	453	559	148	242	15	496	325	44	332	5280
Total number of patients ever active on the WL during 2017	1040	648	1163	429	67	816	869	106	746	18793
Patients awaiting a transplant (only active candidates) on 31/12/2017	528	793	1004	206	50	558	386	53	353	7809
Patients who died while on the WL during 2017	44	31	115	12	1	37	22	3	8	352
Patients on dialysis on 31/12/2017			856					388		
LIVER										
N TX CENTRES	3	6	3	4	0	2	1	1	1	21
Patients included on the WL for the first time in the course of 2017	227	364	32	193	0	199	68	16	67	1899
Total number of patients ever active on the WL during 2017	276	408	84	257	0	79	90	18	73	3245
Patients awaiting a transplant (only active candidates) on 31/12/2017	68	171	46	107	0	62	28	4	7	697
Patients who died while on the WL during 2017	18	39	23	19	0	12	2	1	2	176
HEART										
N TX CENTRES	4	7	2	2	0	2	2	0	1	24
Patients included on the WL for the first time in the course of 2017	93	94	24	50	0	108	29	0	40	545
Total number of patients ever active on the WL during 2017	148	96	45	84	0	153	50	0	74	874
Patients awaiting a transplant (only active candidates) on 31/12/2017	69	94	29	35	0	103	11	0	34	183
Patients who died while on the WL during 2017	8	18	10	5	0	20	4	0	3	43
LUNG										
N TX CENTRES	2	5	2		1	1	1	1	1	12
Patients included on the WL for the first time in the course of 2017	167	140	3	0	0	76	36	4	25	425
Total number of patients ever active on the WL during 2017	257	149	15	0	0	64	65	11	56	535
Patients awaiting a transplant (only active candidates) on 31/12/2017	105	105	9	0	0	58	25	5	19	112
Patients who died while on the WL during 2017	7	8	5	0	0	18	4	0	4	16
PANCREAS										
N TX CENTRES	3	6	1	1	1	1	1	1	1	12
Patients included on the WL for the first time in the course of 2017	26	20	1	12	0	43	5	4	31	130
Total number of patients ever active on the WL during 2017	35	29	10	26	0	44	15	9	38	358
Patients awaiting a transplant (only active candidates) on 31/12/2017	10	32	11	11	0	31	6	2	11	115
Patients who died while on the WL during 2017	1	3	0	1	0	6	0	1	1	2
SMALL BOWEL										
N TX CENTRES		6	1		0	1	0	0	1	5
Patients included on the WL for the first time in the course of 2017			0	0	0	1	0	0	0	3
Total number of patients ever active on the WL during 2017			0	0	0	1	0	0	0	6
Patients awaiting a transplant (only active candidates) on 31/12/2017			0	0	0	0	0	0	0	2
Patients who died while on the WL during 2017			0	0	0	0	0	0	0	

WAITING LIST

EUROPEAN UNION COUNTRIES

COUNTRIES	Germany 82.1	Greece 11.2	Hungary 9.7	Ireland 4.8	Italy 59.4	Latvia 1.9	Lithuania 2.9	Luxembourg 0.6	Malta 0.4
Population (million inhabitants): UNFPA									
KIDNEY									
N TX CENTRES	38	5	4	1	42	1	2	0	1
Patients included on the WL for the first time in the course of 2017	2633	206	440	200	2164	70	97	0	25
Total number of patients ever active on the WL during 2017	10930	1405	1188	685	9005	99	192	0	123
Patients awaiting a transplant (only active candidates) on 31/12/2017	7924	1200	837	419	6650	46	100	0	90
Patients who died while on the WL during 2017	419	34	54	15	170	0	10	0	8
Patients on dialysis on 31/12/2017		11442		2074		600	1500	0	290
LIVER									
N TX CENTRES	22	1	1	1	21	0	2	0	0
Patients included on the WL for the first time in the course of 2017	1213	41	88	72	1456	0	59	0	0
Total number of patients ever active on the WL during 2017	2524	262	206	106	2430	0	89	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	1086	154	100	35	987	0	46	0	0
Patients who died while on the WL during 2017	310	28	21	9	89	0	16	0	0
HEART									
N TX CENTRES	23	1	2	1	17	1	2	0	1
Patients included on the WL for the first time in the course of 2017	429	18	82	16	407	6	28	0	0
Total number of patients ever active on the WL during 2017	1165	62	130	37	1130	6	59	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	724	43	60	14	742	4	43	0	0
Patients who died while on the WL during 2017	118	7	10	0	58	1	8	0	0
LUNG									
N TX CENTRES	15	0	1	1	11	0	1	0	0
Patients included on the WL for the first time in the course of 2017	403	0	29	48	212	0	6	0	0
Total number of patients ever active on the WL during 2017	812	0	36	90	558	0	17	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	391	0	12	42	354	0	14	0	0
Patients who died while on the WL during 2017	64	0	2	4	48	0	2	0	0
PANCREAS									
N TX CENTRES	28	0	2	1	17	0	1	0	0
Patients included on the WL for the first time in the course of 2017	167	0	16	5	69	1	5	0	0
Total number of patients ever active on the WL during 2017	456	0	39	18	319	1	8	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	296	0	31	14	262	1	5	0	0
Patients who died while on the WL during 2017	23	0	1	0	2	0	1	0	0
SMALL BOWEL									
N TX CENTRES	9	0	0	0	3	0	0	0	0
Patients included on the WL for the first time in the course of 2017	8	0		0		0	0	0	0
Total number of patients ever active on the WL during 2017		0		0		0	0	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	9	0		0		0	0	0	0
Patients who died while on the WL during 2017	2	0		0		0	0	0	0

WAITING LIST

EUROPEAN UNION COUNTRIES

COUNTRIES	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom
Population (million inhabitants): UNFPA	17.0	38.2	10.3	19.7	5.4	2.1	46.4	9.9	66.2
KIDNEY									
N TX CENTRES	11	21	8	5	4	1	40	4	24
Patients included on the WL for the first time in the course of 2017	1301	1202	399	516	173	38		519	2722
Total number of patients ever active on the WL during 2017	1930	2718	2410	5083	451	85	7211	1189	9069
Patients awaiting a transplant (only active candidates) on 31/12/2017	673	1065	2019	4901	278	51		431	5319
Patients who died while on the WL during 2017	83	67	22	33	26	0		22	247
Patients on dialysis on 31/12/2017		23500	12741	9900	3300	1400	27118		3171
LIVER									
N TX CENTRES	3	9	3	3	2	1	25	2	7
Patients included on the WL for the first time in the course of 2017	230	417	188	101	45	31	1340	173	336
Total number of patients ever active on the WL during 2017	355	626	298	565	72	48	1985	238	1730
Patients awaiting a transplant (only active candidates) on 31/12/2017	133	147	85	477	26	18	455	35	510
Patients who died while on the WL during 2017	14	30	15	25	6	4	60	6	65
HEART									
N TX CENTRES	3	6	4	3	1	1	16	2	7
Patients included on the WL for the first time in the course of 2017	67	260	58	40	30	31	326	73	204
Total number of patients ever active on the WL during 2017	168	691	70	214	56	81	493	106	632
Patients awaiting a transplant (only active candidates) on 31/12/2017	107	435	24	200	27	42	124	29	318
Patients who died while on the WL during 2017	15	79	6	11	8	6	13	4	31
LUNG									
N TX CENTRES	3	6	1	1	0	0	8	2	6
Patients included on the WL for the first time in the course of 2017	114	85	43	1	0	0	405	67	185
Total number of patients ever active on the WL during 2017	309	150	102	4	0	0	694	103	686
Patients awaiting a transplant (only active candidates) on 31/12/2017	178	83	58	4	0	0	260	22	384
Patients who died while on the WL during 2017	26	20	8	0	0	0	26	8	61
PANCREAS									
N TX CENTRES	6	5	2	2	1	1	13	3	10
Patients included on the WL for the first time in the course of 2017	37	44	32	20	0	0	110	17	158
Total number of patients ever active on the WL during 2017	95	90	66	138	0	3	190	37	482
Patients awaiting a transplant (only active candidates) on 31/12/2017	47	41	44	132	0	2	103	7	199
Patients who died while on the WL during 2017	2	0	0	6	0	0	2	1	28
SMALL BOWEL									
N TX CENTRES	6	1	0	0	0	0	3	1	4
Patients included on the WL for the first time in the course of 2017	0	2	0	0	0	0		2	3
Total number of patients ever active on the WL during 2017	0	3	0	0	0	0	6	4	35
Patients awaiting a transplant (only active candidates) on 31/12/2017	0	1	0	0	0	0	3	1	9
Patients who died while on the WL during 2017	0	1	0	0	0	0		0	4

WAITING LIST

OTHER COUNTRIES

COUNTRIES	Armenia	Australia	Belarus	Bosnia and Herzegovina	Canada	Georgia	Iceland	Israel	Kuwait	Malaysia
Population (million inhabitants): UNFPA	2.9	24.5	9.5	3.5	36.6	3.9	0.3	8.3	4.1	31.6
KIDNEY										
N TX CENTRES	1	21	6	2	25	3	1	6	1	3
Patients included on the WL for the first time in the course of 2017		851	341			0	0	324		957
Total number of patients ever active on the WL during 2017		1915	721				0			6898
Patients awaiting a transplant (only active candidates) on 31/12/2017		964	326	210	2043		0	846		6115
Patients who died while on the WL during 2017		10	33		84		0	38		166
Patients on dialysis on 31/12/2017		13002	3862				0	6676		43042
LIVER										
N TX CENTRES	0	8	1	1	9	3	0	3	0	2
Patients included on the WL for the first time in the course of 2017		344	96				0	167		7
Total number of patients ever active on the WL during 2017		482	191				0			12
Patients awaiting a transplant (only active candidates) on 31/12/2017		143	107	26	339		0	110		6
Patients who died while on the WL during 2017		11	5		74		0	26		1
HEART										
N TX CENTRES	0	5	1	0	11	0	0	3	0	1
Patients included on the WL for the first time in the course of 2017		20	46			0	0	45		3
Total number of patients ever active on the WL during 2017		34	113	11		0	0			8
Patients awaiting a transplant (only active candidates) on 31/12/2017		8	64		107	0	0	80		7
Patients who died while on the WL during 2017		0	10		22	0	0	10		0
LUNG										
N TX CENTRES	0	5	2	0	6	0	0	2	0	1
Patients included on the WL for the first time in the course of 2017		23	16			0	0	98		13
Total number of patients ever active on the WL during 2017		31	41			0	0			18
Patients awaiting a transplant (only active candidates) on 31/12/2017		8	36		202	0	0	102		9
Patients who died while on the WL during 2017		0	0		48	0	0	20		4
PANCREAS										
N TX CENTRES	0	2	1	0	8	0	0	2	1	0
Patients included on the WL for the first time in the course of 2017		53	15			0	0	3		
Total number of patients ever active on the WL during 2017		94	71			0	0			
Patients awaiting a transplant (only active candidates) on 31/12/2017		60	63		81	0	0	6		
Patients who died while on the WL during 2017		0	2		5	0	0			
SMALL BOWEL										
N TX CENTRES	0	1	1	0	3	0	0	1	0	0
Patients included on the WL for the first time in the course of 2017		1	0			0	0			
Total number of patients ever active on the WL during 2017		5	0			0	0			
Patients awaiting a transplant (only active candidates) on 31/12/2017		3	0		5	0	0	2		
Patients who died while on the WL during 2017		1	0		5	0	0			

WAITING LIST												
OTHER COUNTRIES												
COUNTRIES	New Zealand	Norway	Republic of Moldova	Russian Federation	Saudi Arabia	Sudan	Switzerland	Syrian Arab Republic	The former Yugoslav Republic of Macedonia	Turkey	United States of America	
Population (million inhabitants): UNFPA	4.7	5.3	4.1	144.0	32.9	40.5	8.5	18.3	2.1	80.7	324.5	
KIDNEY												
N TX CENTRES	4	1	1	41	11	7	6	8	2	72	240	
Patients included on the WL for the first time in the course of 2017		349	31	1925	2892		428		10	6064	28191	
Total number of patients ever active on the WL during 2017		795	68	5531	6502				125	27921	96766	
Patients awaiting a transplant (only active candidates) on 31/12/2017		346	38	4278	4650		491		43	21837	60596	
Patients who died while on the WL during 2017		8	0	78	161		26		27	1545	4021	
Patients on dialysis on 31/12/2017			610	40000	18270	10000	384		1435	61392	737182	
LIVER												
N TX CENTRES	2	1	1	24	4		3	1	0	37	144	
Patients included on the WL for the first time in the course of 2017		123	32	767	316		193		0	2016	11422	
Total number of patients ever active on the WL during 2017		240	106	1666	658				0	4222	24178	
Patients awaiting a transplant (only active candidates) on 31/12/2017		26	88	1087	432		116		0	2094	11087	
Patients who died while on the WL during 2017		3	6	141			30		0	444	1306	
HEART												
N TX CENTRES	1	1	0	16	2		3		0	13	138	
Patients included on the WL for the first time in the course of 2017		35	0	405	74		58		0	521	4118	
Total number of patients ever active on the WL during 2017		54	3	645	126				0	1282	7707	
Patients awaiting a transplant (only active candidates) on 31/12/2017		13	3	351	90		52		0	957	2994	
Patients who died while on the WL during 2017		4	0	42			16		0	214	359	
LUNG												
N TX CENTRES	1	1	0	4	1		2		0	4	71	
Patients included on the WL for the first time in the course of 2017		37	0	49	40		47		0	101	2772	
Total number of patients ever active on the WL during 2017		85	0	94	70				0	152	4169	
Patients awaiting a transplant (only active candidates) on 31/12/2017		38	0	56	30		30		0	67	1155	
Patients who died while on the WL during 2017		6	0	13			4		0	29	219	
PANCREAS												
N TX CENTRES	1	1	0	3	2		2		0	6	135	
Patients included on the WL for the first time in the course of 2017		21	0	23	25		18		0	22	1312	
Total number of patients ever active on the WL during 2017		41	0	160	43				0	296	2647	
Patients awaiting a transplant (only active candidates) on 31/12/2017		20	0	154	25		11		0	279	1084	
Patients who died while on the WL during 2017		0	0	0			0		0	17	102	
SMALL BOWEL												
N TX CENTRES	0	0	0	0	1		2		0	2	40	
Patients included on the WL for the first time in the course of 2017		0	0	0	1		0		0	8	126	
Total number of patients ever active on the WL during 2017		0	0	0	4		0		0	10	360	
Patients awaiting a transplant (only active candidates) on 31/12/2017		0	0	0	2		0		0	5	199	
Patients who died while on the WL during 2017		0	0	0			0		0	2	14	

WAITING LIST

LATIN-AMERICAN COUNTRIES

COUNTRIES	Argentina 44.3	Bolivia 11.1	Brazil 209.3	Chile 18.1	Colombia 49.1	Costa Rica 4.9	Cuba 11.5	Dominican Republic 10.8
Population (million inhabitants): UNFPA								
KIDNEY								
N TX CENTRES	53	10	140	22	22	7	9	8
Patients included on the WL for the first time in the course of 2017	1450	56	12768	553	1278	75	200	58
Total number of patients ever active on the WL during 2017	7695		32695	1824	3339	186	400	260
Patients awaiting a transplant (only active candidates) on 31/12/2017	6133	71	20570	1221	2315	192	325	215
Patients who died while on the WL during 2017	492		1423	19	88			3
Patients on dialysis on 31/12/2017	29300	3825	107682		32101	168	3200	4188
LIVER								
N TX CENTRES	29	1	67	9	9	4	3	1
Patients included on the WL for the first time in the course of 2017	357		3599	171	270	13	15	11
Total number of patients ever active on the WL during 2017	1625		4829	268	451	20	30	41
Patients awaiting a transplant (only active candidates) on 31/12/2017	1268		1265	97	145	20	25	32
Patients who died while on the WL during 2017	203		755	31	24	5		7
HEART								
N TX CENTRES	22	0	44	8	8	1	1	2
Patients included on the WL for the first time in the course of 2017	32		556	49	75	4	8	0
Total number of patients ever active on the WL during 2017	180		827	69	96	6	5	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	126		277	29	17	6	3	0
Patients who died while on the WL during 2017	50		95	1	4	1		0
LUNG								
N TX CENTRES	4	0	8	5	4	1	0	0
Patients included on the WL for the first time in the course of 2017	62		179	29	27	1	0	0
Total number of patients ever active on the WL during 2017	253		354	69	50	2	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	199		189	26	24		0	0
Patients who died while on the WL during 2017	27		32	7	2		0	0
PANCREAS								
N TX CENTRES	17	0	17	3	5	1	0	1
Patients included on the WL for the first time in the course of 2017	2		269	5	1	0	0	1
Total number of patients ever active on the WL during 2017	12		765	28	14	0	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	11		543	17	1	0	0	0
Patients who died while on the WL during 2017	0		60	0	0	0	0	0
SMALL BOWEL								
N TX CENTRES	2	0	2	2	4	1	0	0
Patients included on the WL for the first time in the course of 2017	5		2	0	4	0	0	0
Total number of patients ever active on the WL during 2017	15		2	1	5	0	0	0
Patients awaiting a transplant (only active candidates) on 31/12/2017	10		1	1	5	0	0	0
Patients who died while on the WL during 2017	0		0	0	0	0	0	0

WAITING LIST

LATIN-AMERICAN COUNTRIES

COUNTRIES	Ecuador	Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
Population (million inhabitants): UNFPA	16.6	16.9	9.3	129.2	6.2	4.1	6.8	32.2	3.5
KIDNEY									
N TX CENTRES	8	4	3	255	3	2	4	10	3
Patients included on the WL for the first time in the course of 2017	96			5467		40	57	35	114
Total number of patients ever active on the WL during 2017	334			17944		145	123	729	560
Patients awaiting a transplant (only active candidates) on 31/12/2017	430			13228			82	600	399
Patients who died while on the WL during 2017	32			134		7	1	0	19
Patients on dialysis on 31/12/2017	11500			187738	1850	2700	1400	12773	3038
LIVER									
N TX CENTRES	2	0	0	73	0	1	1	4	1
Patients included on the WL for the first time in the course of 2017	33		0	250	0	8	7	50	38
Total number of patients ever active on the WL during 2017	91		0	627	0	8	9	61	60
Patients awaiting a transplant (only active candidates) on 31/12/2017	12		0	323	0		6	32	28
Patients who died while on the WL during 2017	6		0	44	0	1	1	4	6
HEART									
N TX CENTRES	1	0	0	51	0	1	3	1	3
Patients included on the WL for the first time in the course of 2017			0	50	0	1	11	7	17
Total number of patients ever active on the WL during 2017			0	99	0	1	20	15	46
Patients awaiting a transplant (only active candidates) on 31/12/2017			0	38	0	0	8	5	30
Patients who died while on the WL during 2017			0	9	0	0	3	0	6
LUNG									
N TX CENTRES	1	0	0	10	0	0	0	1	1
Patients included on the WL for the first time in the course of 2017			0	5	0		0	0	6
Total number of patients ever active on the WL during 2017			0	5	0		0	2	24
Patients awaiting a transplant (only active candidates) on 31/12/2017			0	1	0		0	0	14
Patients who died while on the WL during 2017			0	0	0		0	1	2
PANCREAS									
N TX CENTRES	0	0	0	22	0	0	0	0	1
Patients included on the WL for the first time in the course of 2017			0	5	0		0	0	
Total number of patients ever active on the WL during 2017			0	16	0		0	2	
Patients awaiting a transplant (only active candidates) on 31/12/2017			0	13	0		0	0	
Patients who died while on the WL during 2017			0	0	0		0	1	
SMALL BOWEL									
N TX CENTRES	0	0	0	3	0	0	0	0	0
Patients included on the WL for the first time in the course of 2017			0	0	0		0	0	
Total number of patients ever active on the WL during 2017			0	0	0		0	0	
Patients awaiting a transplant (only active candidates) on 31/12/2017			0	0	0		0	0	
Patients who died while on the WL during 2017			0	0	0		0	0	

FAMILY REFUSALS

EUROPEAN UNION COUNTRIES

COUNTRIES	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Republic	Denmark	Estonia	Finland	France
Population (million inhabitants): UNFPA	8.7	11.4	7.1	4.2	1.2	10.6	5.7	1.3	5.5	65.0
Number of interviews asking for consent to donation	461	113 (24.5)	43		16			28		
Number of family refusals (%)			13 (30.2)		5 (31.3)			8 (28.6)		

COUNTRIES	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta
Population (million inhabitants): UNFPA	82.1	11.2	9.7	4.8	59.4	1.9	2.9	0.6	0.4
Number of interviews asking for consent to donation	124	31 (25.0)	218	184	2738	46	84	0	17
Number of family refusals (%)			20 (9.2)	35 (19.0)	787 (28.7)	21 (45.7)	28 (33.3)	0	1 (5.9)

COUNTRIES	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom
Population (million inhabitants): UNFPA	17.0	38.2	10.3	19.7	5.4	2.1	46.4	8.5	66.2
Number of interviews asking for consent to donation	720	95 (13.2)		193	131	57	2509		3265
Number of family refusals (%)				57 (29.5)	16 (12.2)	9 (15.8)	326 (13.0)		1148 (35.2)

OTHER COUNTRIES

COUNTRIES	Armenia	Australia	Belarus	Bosnia and Herzegovina	Canada	Georgia	Iceland	Israel	Kuwait	Malaysia
Population (million inhabitants): UNFPA	2.9	4.5	9.5	0.0	36.6	3.9	0.3	8.3	4.1	31.6
Number of interviews asking for consent to donation	1093	34	7					156		334
Number of family refusals (%)	451 (41.3)	22 (64.7)	4 (57.1)					60 (38.5)		283 (84.7)

COUNTRIES	New Zealand	Norway	Republic of Moldova	Russian Federation	Saudi Arabia	Sudan	Switzerland	Syrian Arab Republic	The former Yugoslav Republic of Macedonia	Turkey	United States of America
Population (million inhabitants): UNFPA	4.7	5.3	4.1	144.0	32.9	40.5	8.5	18.3	2.1	80.7	324.5
Number of interviews asking for consent to donation	271	24	7 (29.2)		329	48				2046	
Number of family refusals (%)					205 (62.3)					1492 (72.9)	

LATIN-AMERICAN COUNTRIES

COUNTRIES	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Cuba	Dominican Republic
Population (million inhabitants): UNFPA	44.3	11.1	209.3	18.1	49.1	4.9	11.5	10.8
Number of interviews asking for consent to donation	1264		6472	322	724	33	164	55
Number of family refusals (%)	433 (34.3)		2740 (42.3)	149 (46.3)	203 (28.0)	4 (12.1)	22 (13.4)	32 (58.2)

COUNTRIES	Ecuador	Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
Population (million inhabitants): UNFPA	16.6	16.9	9.3	129.2	6.2	4.1	6.8	32.2	3.5
Number of interviews asking for consent to donation	11	12	0	946	30	34	20	219	
Number of family refusals (%)		8 (66.7)	0	259 (27.4)	28 (93.3)	17 (50.0)	9 (45.0)	167 (76.3)	3

International Data on Tissues and Haematopoietic Stem Cell Donation and Transplantation Activity. Year 2017



Data provided by National Competent Authorities:

EUROPE

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Belgium

Bulgaria

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Cyprus

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Patricia Galea

Netherlands

Frank van Linden

Norway

Poland

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Paulo Severino

Romania

Sweden

Mona Hansson

Slovenia

Slovakia

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Switzerland

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LATIN AMERICA

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PRELIMINARY DATA ON TISSUES - YEAR 2017

EUROPEAN UNION COUNTRIES

Country	Austria	Belgium	Bulgaria	Croatia	Cyprus Republic	Czech	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy
Population (Source: Eurostat)	8.8	11.4	7.1	4.2	0.9	10.6	5.7	1.3	5.5	67.0	82.5	10.8	9.8	4.8	60.6
TYPE OF TISSUE	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
CORNEAS															
N. of tissue donations	88			282	0	697		14	232	5,738	NA		NA		8,926
Tissue donation PMP	12.4			67.9	0.0	65.9		10.6	42.2	85.7	NA		NA		147.3
N. of tissues retrieved	158			558	0	917		28	461	11,422	4,911		493		17,599
N. of tissues processed (units)	0			577	0	917		36	461	11,422	5,855		493		NA
N. of tissues distributed nationally (units)	141			336	0	176		36	338	5,481	4,566		449		7,231
N. of tissues imported (units)	6			36	46	0		0	41	0	984		0		0
N. of tissues exported (units)	0			0	0	102		0	NE	256	80		62		652
N. of tissues transplanted	137			344	46	419		NA	NA	4,928	NA		431		NA
N. of patients transplanted	124			341	46	418		45	NA	4,582	NA		416		NA
N. of transplant procedures	137			345	46	709		NA	NA	UK	NA		431		5,898
SKIN															
N. of tissue donations	75			7	NA	38		6	23	262	NA		NA		412
Tissue donation PMP	10.6			1.7	NA	3.6		4.6	4.2	3.9	NA		NA		6.8
N. of tissues retrieved (cm²)	107,044			100.25	NA	93,540		NA	138,030.3	522,312	87,485		250		1,126,446
N. of tissues processed (units)	37			121	NA	865		24	1,173	522,312	87,485		443		NA
N. of tissues distributed nationally (units)	0			196	NA	0		12	861	490,593	289,012		443		3,856
N. of tissues imported (units)	0			79	NA	0		0	NE	0	175,761		0		0
N. of tissues exported (units)	70			0	NA	802		0	NE	10,345	246,880		0		0
N. of tissues transplanted	3			196	NA	UK		NA	861	490,593	NA		104		NA
N. of patients transplanted	1			10	NA	UK		4	24	232	NA		104		NA
N. of transplant procedures	1			28	NA	802		NA	NA	UK	NA		104		5,898
HEART VALVES															
N. of tissue donations	0			5	NA	168		NE	52	319	NA		NA		251
Tissue donation PMP	0.0			1.2	NA	15.9		NE	9.4	4.8	NA		NA		4.1
N. of tissues retrieved	0			6	NA	168		NE	135	719	237		50		466
N. of tissues processed (units)	0			6	NA	168		NE	135	719	434		46		NA
N. of tissues distributed nationally (units)	0			9	NA	114		NE	88	240	141		32		149
N. of tissues imported (units)	0			0	NA	0		NE	NE	55	140		0		2
N. of tissues exported (units)	0			0	NA	0		NE	NE	62	73		0		7
N. of tissues transplanted	0			7	NA	110		NE	88	240	NA		13		NA
N. of patients transplanted	0			8	NA	111		NE	NA	236	NA		11		NA
N. of transplant procedures	0			8	NA	114		NE	NA	UK	NA		11		144
BLOOD VESSELS															
N. of tissue donations	0			4	NA	10		21	7	9,395	NA		NA		570
Tissue donation PMP	0.0			1.0	NA	0.9		16.0	1.3	140.2	NA		NA		9.4
N. of tissues retrieved	0			8	NA	10		42	23	10,033	171		45		884
N. of tissues processed (units)	0			8	NA	6		48	23	10,033	303		161		NA
N. of tissues distributed nationally (units)	0			3	NA	6		30	13	2,933	101		160		453
N. of tissues imported (units)	0			0	NA	0		0	NE	33	1		0		2
N. of tissues exported (units)	0			0	NA	0		0	NE	28	4		0		0
N. of tissues transplanted	0			4	NA	6		NA	13	2,933	NA		150		NA
N. of patients transplanted	0			2	NA	6		28	NA	1,711	NA		135		NA
N. of transplant procedures	0			3	NA	6		NA	NA	UK	NA		142		257
MUSCULOSKELETAL															
N. of tissue donations	2,631			168	NA	1,641		106	748	26,582	NA		NA		4,263
Tissue donation PMP	370.5			40.4	NA	155.1		80.6	135.9	396.8	NA		NA		70.4
N. of tissues retrieved	5,990			244	NA	3,877		130	1,195	26,991	13,810		1,747		9,347
N. of tissues processed (units)	269			244	NA	3,125		248	1,195	26,991	29,459		7,277		NA
N. of tissues distributed nationally (units)	369			160	NA	1,459		200	NA	56,678	69,478		7,304		0
N. of tissues imported (units)	0			32	NA	0		18	NE	649	10,875		0		0
N. of tissues exported (units)	0			0	NA	1,488		0	NE	7,036	46,564		0		49
N. of tissues transplanted	144			160	NA	725		NA	NA	56,678	NA		461		NA
N. of patients transplanted	120			118	NA	643		170	NA	42,515	NA		369		NA
N. of transplant procedures	125			118	NA	3,279		NA	NA	UK	NA		461		7,786

PRELIMINARY DATA ON TISSUES - YEAR 2017

EUROPEAN UNION COUNTRIES

Country	Austria	Belgium	Bulgaria	Croatia	Cyprus Republic	Czech	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy
Population (Source: Eurostat)	8.8	11.4	7.1	4.2	0.9	10.6	5.7	1.3	5.5	67.0	82.5	10.8	9.8	4.8	60.6
TYPE OF TISSUE	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
PLACENTA/AMNIOTIC MEMBRANES	N. of tissue donations	8	1	NA	NA	269	19	10	224	NA	NA	NA	NA	273	NA
	Tissue donation PMP	1.1	0.2	NA	NA	25.4	14.4	1.8	3.3	NA	NA	NA	NA	4.5	NA
	N. of tissues retrieved	7	1	NA	NA	270	19	10	224	0	205	0	276	276	NA
	N. of tissues processed (units)	700	64	NA	NA	2,064	110	255	3,887	1,893	113	113	113	NA	NA
	N. of tissues distributed nationally (units)	400	133	NA	NA	293	88	NA	3,088	1,951	101	101	101	1,651	NA
PANCREAS/PANCREATIC ISLETS	N. of tissues imported (units)	0	0	NA	NA	0	0	NE	0	0	0	0	0	0	0
	N. of tissues exported (units)	0	0	NA	NA	139	0	17	19	74	0	0	0	0	0
	N. of tissues transplanted	254	133	NA	NA	509	NA	NA	3,088	NA	110	110	110	NA	NA
	N. of patients transplanted	162	114	NA	NA	76	74	NA	2,612	NA	77	77	77	NA	NA
	N. of transplant procedures	246	133	NA	NA	77	NA	NA	UK	NA	84	84	84	851	NA
ADIPOSE	N. of tissue donations	0	0	NA	NA	34	NE	NE	64	NA	NA	NA	NA	93	NA
	Tissue donation PMP	0.0	0.0	NA	NA	3.2	NE	NE	1.0	NA	NA	NA	NA	1.5	NA
	N. of tissues retrieved	0	0	NA	NA	5	NE	NE	0	0	0	0	0	93	NA
	N. of tissues processed (units)	0	0	NA	NA	5	NE	NE	UK	0	0	0	0	92	NA
	N. of tissues distributed nationally (units)	0	0	NA	NA	0	NE	NE	UK	0	0	0	0	33	NA
PARATHYROID	N. of tissues imported (units)	0	0	NA	NA	0	NE	NE	UK	0	0	0	0	0	0
	N. of tissues exported (units)	0	0	NA	NA	0	NE	NE	UK	0	0	0	0	0	0
	N. of tissues transplanted	0	0	NA	NA	0	NE	NE	UK	NA	NA	NA	NA	NA	NA
	N. of patients transplanted	0	0	NA	NA	0	NE	NE	UK	NA	NA	NA	NA	NA	NA
	N. of transplant procedures	0	0	NA	NA	0	NE	NE	UK	NA	NA	NA	NA	NA	NA
AUTOLOGOUS CRANIOTOMY PIECES	N. of tissue donations	0	0	NA	NA	UK	NE	NE	0	NA	NA	NA	NA	11	NA
	Tissue donation PMP	0.0	0.0	NA	NA	UK	NE	NE	0.0	NA	NA	NA	NA	0.2	NA
	N. of tissues retrieved	0	0	NA	NA	0	NE	NE	0	0	0	0	0	11	NA
	N. of tissues processed (units)	0	0	NA	NA	0	NE	NE	0	0	0	0	0	NA	NA
	N. of tissues distributed nationally (units)	0	0	NA	NA	0	NE	NE	0	0	0	0	0	1	NA
OTHER TISSUES	N. of tissues imported (units)	0	0	NA	NA	0	NE	NE	0	0	0	0	0	0	0
	N. of tissues exported (units)	0	0	NA	NA	0	NE	NE	0	0	0	0	0	0	0
	N. of tissues transplanted	0	0	NA	NA	UK	NE	NE	0	NA	NA	NA	NA	NA	NA
	N. of patients transplanted	0	0	NA	NA	UK	NE	NE	UK	NA	NA	NA	NA	NA	NA
	N. of transplant procedures	0	0	NA	NA	UK	NE	NE	UK	NA	NA	NA	NA	1	NA
OTHER TISSUES	N. of tissues retrieved	0	0	NA	NA	4	NE	NE	407	0	0	0	0	0	0
	N. of tissue donations	191	1	NA	NA	107	NE	NE	0	NA	NA	NA	NA	NA	NA
	Tissue donation PMP	269	0.2	NA	NA	10.1	NE	NE	0.0	NA	NA	NA	NA	NA	NA
	N. of tissues processed (units)	191	1	NA	NA	107	NE	NE	0	132	38	23	23	NA	NA
	N. of tissues distributed nationally (units)	0	1	NA	NA	53	NE	NE	UK	341	0	0	0	NA	NA
OTHER TISSUES	N. of tissues imported (units)	0	1	NA	NA	24	NE	NE	UK	632	17	17	17	NA	NA
	N. of tissues exported (units)	0	0	NA	NA	0	NE	NE	UK	72	0	0	0	NA	NA
	N. of tissues transplanted	0	0	NA	NA	1	NE	NE	UK	98	0	0	0	NA	NA
	N. of patients transplanted	0	1	NA	NA	24	NE	NE	UK	NA	17	17	17	NA	NA
	N. of transplant procedures	0	1	NA	NA	24	NE	NE	UK	NA	12	12	12	NA	NA

PRELIMINARY DATA ON TISSUES - YEAR 2017

Country		EUROPEAN UNION COUNTRIES											OTHER COUNTRIES				
		Latvia	Lithuania	Luxembourg	Malta	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom	Republic of Moldova	Norway	Switzerland
Population (Source: Eurostat)		2.0	2.8	0.6	0.5	17.1	38.0	10.3	19.6	5.4	2.1	46.5	10.0	65.8	3.6	5.3	8.1
TYPE OF TISSUE	TYPE OF DATA	NO DATA											NO DATA				
CORNEAS	N. of tissue donations	7	18	NA	22	1,358		517		116		3,687	612	5,854	18		817
	Tissue donation PMP	3.6	6.3	NA	47.8	79.5		50.1		21.3		79.2	61.2	89.0	5.1		100.3
	N. of tissues retrieved	14	34	NA	22	2,720		1,011		217		7,268	1,265	5,854	35		817
	N. of tissue processed (units)	14	34	NA	22	2,717		996		217		6,880	1,530	6,203	35		NA
	N. of tissue distributed nationally (units)	20	34	NA	21	1,453		922		156		3,847	1,075	5,355	36		NA
	N. of tissue imported (units)	6	0	NA	0	16		263		47		41	0	748	NE		446
	N. of tissue exported (units)	0	0	NA	0	217		0		0		176	1	119	NE		0
	N. of tissues transplanted	NA	34	NA	21	1,466		941		203		3,454	1,075	3,878	36		917
	N. of patients transplanted	NA	32	NA	21	1,448		933		186		NA	717	NA	34		NA
	N. of transplant procedures	NA	34	NA	21	1,466		944		202		3,456	739	NA	36		NA
SKIN	N. of tissue donations	NE	NE	NA	0	362		0		2		338	69	22	9		NE
	Tissue donation PMP	NE	NE	NA	0	21.2		0.0		0.4		7.3	6.9	0.3	2.5		NE
	N. of tissues retrieved (cm²)	NE	NE	NA	0	1,527,400		0		8,850		709,477	87	22	26,017		NE
	N. of tissue processed (units)	NE	NA	NA	0	15,274		0		21		401,387	76	343	183		NE
	N. of tissue distributed nationally (units)	NE	NA	NA	0	1,732		44		47		421,871	72	3,885	143		NE
	N. of tissue imported (units)	NE	NA	93	0	11		44		0		50,774	14	3,636	NE		NE
	N. of tissue exported (units)	NE	NA	93	0	13,542		44		0		95,288	0	6,453	NE		NE
	N. of tissues transplanted	NE	NA	NA	0	1,192		44		47		343,616	87	9,374	143		NE
	N. of patients transplanted	NE	NA	NA	0	64		10		40		NA	37	NA	18		NE
	N. of transplant procedures	NE	NA	NA	0	NA		15		40		46	63	NA	20		NE
HEART VALVES	N. of tissue donations	NE	NE	NA	0	161		33		2		250	53	227	0		16
	Tissue donation PMP	NE	NE	NA	0	94		3.2		0.4		5.4	5.3	3.4	0.0		2.0
	N. of tissues retrieved	NE	NE	NA	0	159		79		2		474	278	227	0		16
	N. of tissue processed (units)	NE	NE	NA	0	120		62		2		472	278	169	0		NA
	N. of tissue distributed nationally (units)	NE	NE	NA	0	107		10		4		168	87	375	0		NA
	N. of tissue imported (units)	NE	NE	NA	0	26		0		0		0	0	110	NE		18
	N. of tissue exported (units)	NE	NE	NA	0	13		0		0		100	67	271	NE		16
	N. of tissues transplanted	NE	NE	NA	0	133		10		4		60	129	424	0		16
	N. of patients transplanted	NE	NE	NA	0	133		10		4		NA	48	NA	0		NA
	N. of transplant procedures	NE	NE	NA	0	133		10		4		60	49	NA	0		NA
BLOOD VESSELS	N. of tissue donations	NE	NE	NA	0	18		0		0		153	116	389	8		4
	Tissue donation PMP	NE	NE	NA	0	1.1		0.0		0.0		3.3	11.6	5.9	2.3		0.5
	N. of tissues retrieved	NE	NE	NA	0	83		0		0		329	336	389	31		4
	N. of tissue processed (units)	NE	NE	NA	0	83		0		0		367	336	429	0		NA
	N. of tissue distributed nationally (units)	NE	NE	NA	0	29		0		0		263	42	815	0		NA
	N. of tissue imported (units)	NE	NE	NA	0	25		0		0		0	0	0	NE		32
	N. of tissue exported (units)	NE	NE	NA	0	13		0		0		38	20	0	NE		4
	N. of tissues transplanted	NE	NE	NA	0	54		0		0		164	27	167	0		32
	N. of patients transplanted	NE	NE	NA	0	54		0		0		NA	12	NA	0		NA
	N. of transplant procedures	NE	NE	NA	0	54		0		0		124	12	NA	0		NA
MUSCULOSKELETAL	N. of tissue donations	25	28	NA	0	3,324		44		398		2,222	1,432	3,289	39		234
	Tissue donation PMP	1.28	9.8	NA	0	194.6		4.3		73.2		47.8	143.3	50.0	11.0		28.7
	N. of tissues retrieved	25	58	NA	0	10,064		214		1,924		20,212	1,675	3,262	92		234
	N. of tissue processed (units)	97	58	NA	0	10,247		449		2,029		19,774	1,688	2,272	313		NA
	N. of tissue distributed nationally (units)	65	11	627	0	3,241		367		628		13,341	1,291	26,413	335		NA
	N. of tissue imported (units)	0	NE	4,329	0	747		42		0		311	215	23,383	NE		24
	N. of tissue exported (units)	0	NE	3,702	0	41,090		0		1,154		13	0	10,813	NE		0
	N. of tissues transplanted	NA	11	NA	0	6,170		407		566		16,977	1,260	16,616	303		334
	N. of patients transplanted	NA	11	NA	0	5,341		293		339		NA	1,066	NA	131		NA
	N. of transplant procedures	NA	11	NA	0	NA		388		345		11,856	1,101	NA	131		NA

PRELIMINARY DATA ON TISSUES - YEAR 2017

Country	EUROPEAN UNION COUNTRIES													OTHER COUNTRIES		
Latvia	Lithuania	Luxembourg	Malta	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom	Republic of Moldova	Norway	Switzerland	
Population (Source: Eurostat)	2.0	2.8	0.6	0.5	17.1	38.0	10.3	19.6	5.4	2.1	46.5	10.0	65.8	3.6	5.3	8.1
TYPE OF TISSUE	TYPE OF DATA															
PLACENTA/AMNIOTIC MEMBRANES	N. of tissue donations	0	4	0	1		3		25		80	9	NA	NE		256
	Tissue donation PMP	0.0	1.4	0	0.1		0.3		4.6		1.7	0.9	0.0	0.0		31.4
	N. of tissues retrieved	0	4	0	5		3		25		2,066	9	NA	NE		256
	N. of tissue processed (units)	NE	70	NA	0	500	203		284		2,260	359	819	150		NA
	N. of tissue distributed nationally (units)	NE	28	NA	0	149	239		250		1,563	271	2,097	69		NA
	N. of tissue imported (units)	NE	0	NA	0	0	0		0		8	0	52	NE		32
	N. of tissue exported (units)	NE	0	NA	0	260	0		0		62	0	17,970	NE		0
	N. of tissues transplanted	NE	54	NA	0	85	237		251		1,714	271	19,092	69		158
PANCREAS/PANCREATIC ISLETS	N. of patients transplanted	NE	48	NA	0	78	169		211		NA	143	NA	57		NA
	N. of transplant procedures	NE	54	NA	0	78	198		237		1,612	164	NA	62		NA
	N. of tissue donations	NE	NE	0	60		NA		NE		138	NA	NA	NE		126
	Tissue donation PMP	NE	NE	0	3.5		NA		NE		3.0	0.0	0.0	0.0		15.5
	N. of tissues retrieved	NE	NE	0	90		NA		NE		70	NA	NA	NE		28
	N. of tissue processed (units)	NE	NE	0	62		NA		NE		NA	61	106	NE		NA
	N. of tissue distributed nationally (units)	NE	NE	0	8		NA		NE		NA	12	140	NE		NA
	N. of tissue imported (units)	NE	NE	0	0		NA		0		NA	0	0	NE		0
ADIPOSE	N. of tissue exported (units)	NE	NE	0	0		NA		NE		NA	5	0	NE		0
	N. of tissues transplanted	NE	45	NA	0	8	NA		NE		NA	17	24	NE		14
	N. of patients transplanted	NE	41	NA	0	0	NA		NE		NA	3	NA	NE		NA
	N. of transplant procedures	NE	162	NA	0	8	NA		NE		NA	17	NA	NE		NA
	N. of tissue donations	0	41	NA	0	0	NA		3		NA	NE	635	0		NE
	Tissue donation PMP	0.0	14.4	NA	0	0.0	NA		0.6		0.0	0.0	9.6	0.0		NE
	N. of tissues retrieved	0	162	NA	0	0	NA		3		NA	NE	635	0		NE
	N. of tissue processed (units)	NE	162	NA	0	0	NA		3		NA	NE	59	0		NE
PARATHYROID	N. of tissue distributed nationally (units)	NE	45	NA	0	0	NA		0		NA	NE	252	0		NE
	N. of tissue imported (units)	NE	0	NA	0	0	NA		0		NA	NE	3	NE		NE
	N. of tissue exported (units)	NE	0	NA	0	0	NA		0		NA	NE	0	NE		NE
	N. of tissues transplanted	NA	45	NA	0	0	NA		2		NA	NE	675	0		NE
	N. of patients transplanted	NA	41	NA	0	0	NA		2		NA	NE	NA	0		NE
	N. of transplant procedures	NA	162	NA	0	0	NA		2		NA	NE	NA	0		NE
	N. of tissue donations	NE	NE	0	0	0	NA		NE		NA	0	NA	NE		NE
	Tissue donation PMP	NE	NE	0	0.0	0.0	NA		0.0		0.0	0.0	0.0	0.0		NE
AUTOLOGOUS CRANIOCTOMY PIECES	N. of tissues retrieved	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
	N. of tissue processed (units)	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
	N. of tissue distributed nationally (units)	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
	N. of tissue imported (units)	NE	NE	0	0		NA		0		NA	NE	NA	NE		NE
	N. of tissue exported (units)	NE	NE	0	0		NA		0		NA	NE	NA	NE		NE
	N. of tissues transplanted	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
	N. of patients transplanted	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
	N. of transplant procedures	NE	NE	0	0		NA		NE		NA	NE	NA	NE		NE
OTHER TISSUES	N. of tissues retrieved	NE	5	NA	0	135	NA		145		NA	79	27	3		NE
	N. of tissue donations	123	0	NA	0	22	0		138		NA	0	22,638	0		NE
	Tissue donation PMP	63.1	0.0	NA	0	1.3	0.0		25.4		0.0	0.0	344.0	0.0		NE
	N. of tissues retrieved	123	0	NA	0	48	0		138		NA	0	22,638	0		NE
	N. of tissue processed (units)	0	NE	NA	0	1,352	0		62		NA	0	18,497	0		NE
	N. of tissue distributed nationally (units)	0	NE	NA	0	88	0		35		NA	0	4,231	0		NE
	N. of tissue imported (units)	0	NE	5	0	8	0		0		NA	0	9,240	NE		NE
	N. of tissue exported (units)	0	NE	5	0	0	0		24		NA	0	18,822	NE		NE

PRELIMINARY DATA ON TISSUES - YEAR 2017

LATIN-AMERICAN COUNTRIES

Country	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
Population (Source: UNFPA, State of World Population, 2017 - Million)																	
	44.3	11.1	209.3	18.1	49.1	4.9	11.5	10.8	16.6	16.9	9.3	129.2	6.2	4.1	6.8	32.2	3.5
TYPE OF TISSUE	TYPE OF DATA																
	NO DATA				NO DATA				NO DATA				NO DATA				
CORNEAS	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	821 18.5 1,722 1,104 1,104 1,104	0 0.0 0 43 43 43	34,787 166.2 30,735 15,242 NA 15,242	86 4.8 172 NA 79 75	1,160 23.6 1,705 2,214 NA NA	297 60.6 297 NA 297 297		128 7.7 128 NA NA 229			3,710 28.7 3,646 3,798 3,798 3,798	0 0.0 0 0 0 0	5 1.2 9 0 0 0	80 11.8 72 72 72 72		96 27.4 223 NA 190 201
BLOOD VESSELS	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	0 0.0 0 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0	37 0.8 0 55 NA NA	10 2.0 10 NA NA 10		0 0.0 0 0 0 0			0 0.0 0 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0		14 4.0 26 NA 13 14	
HEART VALVES	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	215 4.9 772 140 140 140	0 0.0 0 0 0 0	247 1.2 480 114 NA 114	5 0.3 5 NA NA NA	1 0.0 2 23 NA NA	10 2.0 10 NA NA 10		0 0.0 0 0 0 0			7 0.1 7 4 4 4	0 0.0 0 0 0 0	0 0.0 0 0 0 0		0 0.0 0 0 1 1	
MUSCULOSKELETAL	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	141 3.2 4,217 6,473 4,721 6,473	0 0.0 0 0 0 0	1,522 7.3 13,153 14,670 14,670 14,670	1 0.1 1 NA NA NA	826 16.8 594 8,574 NA NA	32 6.5 32 NA NA 32		0 0.0 0 0 0 0			322 2.5 317 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0		18 5.1 25 NA 451 111	
PLACENTA/AMNIOTIC MEMBRANE	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	56 1.3 56 591 515 NA	0 0.0 0 0 0 0	0 0.0 0 0 0 0	0 0.0 0 NA NA NA	54 1.1 54 381 NA NA	11 2.2 11 NA NA 11		0 0.0 0 0 0 0			0 0.0 0 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0		0 0.0 0 NA 55 230	
SKIN	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted N. of transplant procedures	62 1.4 44,016 452 61 61	0 0.0 0 0 0 0	202 1.0 121,467 87,738 NA 87,738	1 0.1 3,031 NA NA NA	85 1.7 85 52 NA NA	2 0.4 2 NA NA 2		0 0.0 0 0 0 0			106 0.8 82 0 0 0	0 0.0 0 0 0 0	0 0.0 0 0 0 0		22 6.3 44,500 NA 18 574	
OTHERS TISSUES	N. of tissue donations Tissue donation PMP N. of tissues retrieved N. of tissues transplanted N. of patients transplanted	0 0.0 0 0 0	0 0.0 0 0 0	0 0.0 0 0 0	0 0.0 0 NA NA	0 0.0 0 UK NA	0 0.0 0 0 0		64 3.9 427 NA NA			0 0.0 0 0 0	0 0.0 11 0 0	0 0.0 0 0 0		6 1.7 11 NA NA	

PRELIMINARY DATA ON HAEMATOPOIETIC STEM CELLS - YEAR 2017

EUROPEAN UNION COUNTRIES

Country	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy
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Population (Source: Eurostat)

8.8	11.4	7.1	4.2	0.9	10.6	5.7	1.3	5.5	67.0	82.5	10.8	9.8	4.8	60.6
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CATEGORY OF DATA	TYPE OF DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
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POTENTIAL DONATION
AND SEARCHING
IN NATIONAL
REGISTRIES

N. of potential donors at 31.12.17	NA	49,836	152,794	105,791	NA	278,125	NA	NA	392,873
N. of cord blood units at 31.12.17	NA	3,305	4,055	4,198	NE	36,191	NA	NA	35,247
N. of searches requested	0	635	83	64,888	NA	26,740	NA	NA	3,304
N. of unrelated donations	0	52	55	105	NA	1,217	NA	NA	888

DONATION

N. of donations - Autologous	68	529	1,335	788	47	3,617	4,300	179	2,981
N. of donations - Allogenic	15	1,206	1,837	114	4	1,250	8,135	7	1,361
N. of donations - Allogenic, related	15	50	11	62	4	903	970	7	1,104
N. of donations - Allogenic, unrelated	0	1,156	1,826	52	0	347	7,165	0	257

BANKING OF CORD BLOOD

N. of unrelated cord blood units collected	62	1,141	1,777	358	NE	1,254	657	0	11,735
N. of unrelated cord blood units distributed	0	1	0	0	NE	152	15	0	30
N. of related cord blood units collected	0	10	8	26	NE	NA	13	4,173	161
N. of related cord blood units distributed	0	0	8	0	NE	NA	0	1	8

TRANSPLANT

N. of transplants - Autologous	51	164	26	489	48	3,321	4,201	171	2,981
N. of patients transplanted - Autologous	43	134	26	382	NA	3,197	3,542	170	2,458
N. of transplants - Allogenic	33	80	0	243	17	1,908	3,180	12	1,957
N. of patients transplanted - Allogenic	32	77	0	227	NA	NA	3,005	12	1,825
N. of transplants - Allogenic, related	13	35	0	82	4	904	913	7	1,104
N. of patients transplanted - Allogenic, related	13	34	0	79	NA	NA	853	7	1,015
N. of transplants - Allogenic, unrelated	20	45	0	161	13	998	2,267	5	853
N. of patients transplanted - Allogenic, unrelated	19	43	0	148	NA	NA	2,152	5	810

PRELIMINARY DATA ON HAEMATOPOIETIC STEM CELLS - YEAR 2017

Country	EUROPEAN UNION COUNTRIES													OTHER COUNTRIES	
	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom	Republic of Moldova	Norway
Population (Font: Eurostat)	2.0	2.8	0.6	0.5	17.1	38.0	10.3	19.6	5.4	2.1	46.5	10.0	65.8	3.6	5.3
CATEGORY OF DATA	TYPE OF DATA													NO DATA	
POTENTIAL DONATION AND SEARCHING IN NATIONAL REGISTRIES															
	UK	11,847		0	190,657		397,521		15,417		322,530	NA	NA	NE	
		N. of potential donors at 31.12.17													
	UK	1,567		0	4,636		9,334		1,742		65,155	NA	NA	NE	
	UK	NA		0	609		2,616		23,833		926	NA	NA	NE	
DONATION	UK	NA		0	413		131		46		689	NA	NA	NE	
	UK	409		0	3,173		419		3,294		2,090	735	8,483	19	
	UK	188		0	580		173		78		871	622	10,230	NE	
	UK	188		0	243		76		65		767	99	NA	NE	
	UK	24		0	337		97		13		104	523	NA	NE	
BANKING OF CORD BLOOD															
	UK	NE		0	251		1,578		6		1,606	371	NA	NE	
	UK	NE		0	80		1		3		201	9	NA	NE	
	UK	113		0	3		10		20		NA	1	NA	NE	
	UK	0		0	1		0		0		1	0	NA	NE	
TRANSPLANT	UK	165		0	3,723		379		149		2,090	482	NA	18	
	UK	109		0	1,055		361		118		NA	447	NA	18	
	UK	64		0	776		148		82		1,231	267	NA	NE	
	UK	58		0	704		146		69		NA	257	NA	NE	
	UK	16		0	259		63		35		767	80	NA	NE	
	UK	15		0	216		62		27		NA	79	NA	NE	
	UK	48		0	517		85		47		464	187	NA	NE	
	UK	43		0	488		84		42		NA	178	NA	NE	
	UK	165		0	3,723		379		149		2,090	482	NA	18	
	UK	109		0	1,055		361		118		NA	447	NA	18	
	UK	64		0	776		148		82		1,231	267	NA	NE	

PRELIMINARY DATA ON HAEMATOPOIETIC STEM CELLS - YEAR 2017

LATIN-AMERICAN COUNTRIES

Country	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Cuba	Dominican Republic	Ecuador	Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay
Population (Source: UNFPA, State of World Population, 2017 - Million)	44.3	11.1	209.3	18.1	49.1	4.9	11.5	10.8	16.6	16.9	9.3	129.2	6.2	4.1	6.8	32.2	3.5
CATEGORY OF DATA	TYPE OF DATA																
POTENTIAL DONATION AND SEARCHING IN NATIONAL REGISTRIES	NO DATA																
	NO DATA																
	NO DATA																
BANKING OF CORD BLOOD	NO DATA																
	NO DATA																
	NO DATA																
TRANSPLANT	N. of potential donors at 31.12.17	0	4,384,407	NA	0	64	0	0	0	0	0	0	0	0	0	0	1,135
	N. of cord blood units at 31.12.17	0	15,030	NA	0	0	0	0	0	0	0	0	0	0	0	0	25
	N. of searches requested	767	0	14,781	NA	0	0	0	0	0	0	0	0	0	0	0	36
	N. of unrelated cord blood units at 31.12.17	3,364	0	14,620	0	0	0	0	0	0	0	0	0	0	0	0	0
	N. of related cord blood units at 31.12.17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
	N. of transplants - Autologous	635	0	1,454	0	0	75	34	0	0	0	0	0	20	23	0	101
	N. of patients transplanted - Autologous	625	0	0	0	0	0	34	0	0	0	0	0	20	23	0	0
	N. of transplants - Allogenic	359	0	934	0	84	3	34	0	0	0	0	0	30	1	37	0
	N. of patients transplanted - Allogenic	348	0	377	0	0	0	34	0	0	0	0	0	30	1	0	0
	N. of transplants - Allogenic, related	254	0	542	0	77	0	27	0	0	0	0	0	5	1	32	0
TRANSPLANT	N. of patients transplanted - Allogenic, related	250	0	0	0	0	0	27	0	0	0	0	0	5	1	0	0
	N. of transplants - Allogenic, unrelated	105	0	392	0	7	3	7	0	0	0	0	0	25	0	5	0
	N. of patients transplanted - Allogenic, unrelated	98	0	377	0	0	0	7	0	0	0	0	0	25	0	0	0
	N. of patients transplanted - Allogenic, unrelated	98	0	377	0	0	0	7	0	0	0	0	0	25	0	0	0

Council of Europe Reference Documents. Year 2017



Guide for the Implementation of the Principle of Prohibition of Financial Gain with Respect to the Human Body and its Parts from Living or Deceased Donors

Foreword

The drafting of this guide was initiated by the Committee on Bioethics (DH-BIO), with a view to clarifying the terms and facilitating the implementation of the principle of prohibition of financial gain laid down in Article 21 of the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: the Convention on Human Rights and Biomedicine (ETS No. 164; the Oviedo Convention), as well as in its Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin (CETS No. 186). According to this principle, “the human body and its parts shall not, as such, give rise to financial gain”.

In February 2016, the DH-BIO set up an ad hoc working group on the prohibition of financial gain as a follow-up to the Statement on the prohibition of any form of commercialisation of human organs adopted by the DH-BIO and the European Committee on Organ Transplantation (CD-P-TO) in May 2014, and then taken up in parallel statements by the Parliamentary Assembly of the Council of Europe (PACE) Committee on Social Affairs, Health and Sustainable Development (June 2014) and by the Committee of Ministers (July 2014).

The ad hoc working group was composed of representatives of DH-BIO and experts of other relevant Council of Europe committees, namely the CD-P-TO and the European Committee on Blood Transfusion (CD-P-TS). The World Health Organization (WHO) and the European Commission also participated in the meetings of the ad hoc group. The group was initially chaired by Ms Doris Wolfslehner (Austria), from the DH-BIO Bureau, but following a change in her position at national level and departure from the DH-BIO, Ms Ritva Halila (Finland), also a DH-BIO Bureau member, took over as chair of the ad hoc group.

The preliminary draft of this guide was prepared by the ad hoc group in the course of three meetings held in 2016. The text was then forwarded to the DH-BIO, which conducted an editorial revision on it in 2017, and

subsequently adopted it on 4 December 2017. The guide was then sent to the CD-P-TO and the CD-P-TS. The CD-P-TO adopted the guide on 11 January 2018.

Introduction

1. This document gives guidance on how to interpret the principle of the prohibition of financial gain with respect to the human body and its parts from living or deceased donors, as laid down in Article 21 of the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (ETS No. 164; the Oviedo Convention), in order to facilitate its implementation.

2. The principle of the prohibition of financial gain with respect to donation has the purpose of ensuring respect for:

- the dignity of living donors and recipients and for their human rights;
- the inalienability of the body of the deceased donor.

It also contributes to:

- promoting altruistic donation; and
- the safety and quality of donated human body parts, contributing thereby to maintaining a donation system in which people can trust.

3. Financial gain with respect to the human body and its parts, as such, includes payments or inducements in kind either directly to living donors, to the families of deceased donors or to another third party. It may have the effect of influencing the most vulnerable people in society, and expose them to exploitative actions.

4. The prohibition of financial gain does not prevent:

- compensation of living donors for loss of earnings and reimbursement of any other justifiable expenses

caused by the removal of organs, tissues or cells, or by the related medical examinations;

- compensation in case of undue damage resulting from the removal of organs, tissues or cells.

The donation should therefore be financially neutral for the donor.

5. Furthermore, the prohibition of financial gain does not hinder payment of a justifiable fee for medical or related technical services rendered in connection with the donation.

6. The principle applies to any donation of the human body or its parts regardless of the purpose of donation.

Legal instruments and professional standards referring to the principle of the prohibition of financial gain

7. The prohibition of financial gain from the human body or its parts, as such, is set out in Article 21 of:

- the Convention on Human Rights and Biomedicine, which states that, “The human body and its parts shall not, as such, give rise to financial gain”;
- the Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin (ETS No. 186), which states that, “The human body and its parts shall not, as such, give rise to financial gain or comparable advantage”.

8. The Additional Protocol to the Convention on Human Rights and Biomedicine concerning Biomedical Research (CETS No. 195) furthermore contains a reference to undue influence, including that of a financial nature, which shall not be exerted on persons to participate in research.

9. The Council of Europe Convention against Trafficking in Human Organs (CETS No. 216) refers to the notion of financial gain or comparable advantage as grounds for qualifying the illicit removal of human organs from living or deceased donors as a criminal offence.

10. The principle of the prohibition of financial gain is intrinsically linked to the prohibition of organ and tissue trafficking, laid down in Article 22 of the Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin.

11. The Explanatory Report to the Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin, with regard to Article 22, gives examples of why trade in organs and tissues, as such, for direct or indirect financial gain must be prohibited, namely the risk of coercion being exercised by traffickers, either in addition to, or as an alternative to, offering inducements.

These exploitative practices then lead to the undermining of people’s trust in the donation system.

12. The principle of the prohibition of financial gain has been reiterated by the Committee on Bioethics (DH-BIO) and the European Committee on Organ Transplantation (CD-P-TO) in their joint statement on the prohibition of any form of commercialisation of human organs, which was also adopted by the Committee of Ministers of the Council of Europe. The principle likewise is referred to in Recommendation No. R (95) 14 of the Committee of Ministers to member states on the protection of the health of donors and recipients in the area of blood transfusion, as well as in the CD-P-TO *Guide to the quality and safety of tissues and cells for human application* and the *Guide to the quality and safety of organs for transplantation*.

13. Furthermore, the principle of the prohibition of financial gain is also set out in Article 3(2), sub-paragraph 3, of the Charter of Fundamental Rights of the European Union (EU).

14. In addition, several EU directives refer to the notion of “voluntary unpaid donations”, in particular those concerning human blood and blood components (Directive 2002/98/EC), human tissues and cells (Directive 2004/23/EC), and human organs intended for transplantation (Directive 2010/53/EU).

15. The prohibition of financial gain is likewise reflected in the World Health Organization (WHO) Guiding Principles on Human Cell, Tissue and Organ Transplantation (Guiding Principle 5).

16. Finally, there are international professional standards which likewise reiterate the principle of the prohibition of financial gain, in particular the Declaration of Istanbul on organ trafficking and transplant tourism.

Reimbursement of justifiable expenses and compensation for loss of earnings for living donors

17. The Convention on Human Rights and Biomedicine states that the reimbursement of expenses incurred and compensation for loss of earnings are acceptable. This is reiterated in the Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin, which authorises compensation for loss of earnings and reimbursement of justifiable expenses.

18. The WHO Guiding Principles on Human Cell, Tissue and Organ Transplantation, endorsed by the 63rd World Health Assembly in May 2010 (Resolution WHA63.22), stipulate that “the prohibition on sale or purchase of cells, tissues and organs does not preclude reimbursing

reasonable and verifiable expenses incurred by the donor”, and thus likewise permit the reimbursement of justifiable expenses.

19. Recommendation No. R (95) 14 of the Committee of Ministers to member states on the protection of the health of donors and recipients in the area of blood transfusion contains the following definition of voluntary non-remunerated donation:

“Donation is considered voluntary and non-remunerated if the person gives blood, plasma or cellular components of his or her own free will and receives no payment for it, either in the form of cash or in kind which could be considered a substitute for money. This would include time off work other than that reasonably needed for the donation and travel. Small tokens, refreshments and reimbursements of direct travel costs are compatible with voluntary, non-remunerated donation”.

20. The above legal instruments therefore call for financial neutrality for the living donor, and thus permit the direct reimbursement and compensation of costs related to a donation. Following the common practice in this field, the term “reimbursement” is used in this guide in relation to expenses (such as travel and other expenses incurred as a result of donation), whereas the term “compensation” is used in relation to the loss of earnings related to the donation.

21. The condition that reimbursement should be justifiable, and therefore acceptable, can easily be met in cases in which only those costs are reimbursed for which the donor can produce receipts, leading to the reimbursement of real costs. This is usually straightforward when reimbursing the cost of travel tickets, or other receipted incidental expenses.

22. Other costs incurred as a result of donation, such as lost earnings, the cost of care for dependents, or the cost of follow-up may be less straightforward to calculate. The overarching principle should be that donors should neither lose nor gain financially as a result of donating. In order to ensure that they are correctly compensated or reimbursed, donors should provide evidence of the losses or expenses actually incurred.

23. Where compensation is provided in the form of a fixed-rate scheme, the conditions of its implementation must be provided for under national law, including the setting of an upper limit for compensation. If the upper limit is not specified by law, it should be established by an independent body set up in accordance with national law.

24. The fixed-rate compensation scheme must be transparent and must not act as an inducement to donate.

25. Measures should be in place to minimise the risk of harm to donors which may result from the donation

scheme, such as national registers or traceability systems to limit how frequently a person can donate.

26. Reimbursement and compensation of living donors are directly connected to real expenses incurred and the real loss of earnings to the donor related to the donation procedure, including at the stage of donor screening and follow-up measures, even if the potential donor is not suitable for donation.

27. Reimbursement and compensation must never be connected to the donation as such, as the latter does not have a financial value attributed to it. In practice this means that reimbursement and compensation must not vary according to their final objective, be it for therapeutic or research purposes, nor according to the quality of what has been donated, or the outcome for the recipient.

28. Reimbursement and compensation should not lead to inappropriate competition (e.g. financially-driven competition) between establishments over donor recruitment, in particular in the context of fixed-rate compensation schemes.

Payment for the provision of medical or related technical services

29. The Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin explicitly allows for the “payment of a justifiable fee for legitimate medical or related technical services rendered in connection with transplantation”. The explanatory report specifies that this could include “the cost of retrieval, transport, preparation, preservation and storage..., which may legitimately give rise to reasonable remuneration”.

30. The explanatory report to the Convention on Human Rights and Biomedicine, with regard to Article 21, also gives examples of technical acts which can legitimately give rise to reasonable remuneration to cover costs, such as the “sampling, testing, pasteurisation, fractionation, purification, storage, culture, transport, etc.” of related items.

31. Article 21 of the Convention on Human Rights and Biomedicine does not prohibit the trade, within the existing legal framework, in medicinal products and medical devices incorporating human tissue which have been subjected to a manufacturing process, as long as the tissue which is used as the starting material is not sold as such.

32. The remuneration and bonus systems within a hospital or donation centre for medical services related to the donation of parts of the human body from living or deceased donors should be comparable to payment for other services provided by the medical team within

that hospital or centre or comparable institutions within the member state. Thus, bonus payments linked to obtaining consent or authorisation for donation from the persons concerned are not permissible.

33. The fees related to technical services linked to the donation of the human body and its parts, as such, should not exceed operational costs, and should be comparable to those of similar technical services independent of their legal status within the member state. Fees may include, among other things, the cost of procurement, testing, processing, storage, distribution, personnel and transportation, infrastructure and administration, and the need to invest in state-of-the-art processes and equipment to ensure the long-term sustainability of the services offered.

34. Providers of technical services should be obliged to be transparent in the calculation of their fees for services and in the financial management of their services in order to comply with the prohibition of financial gain, and thus support a donation system which donors and recipients can trust. This obligation of transparency applies also to parts of the human body, as such, used as starting materials for the development and/or preparation of cell-based therapies and medical devices.

Compensation in case of undue damage resulting from the donation

35. The Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin allows donors to receive compensation for undue damage resulting from the removal, the occurrence of which is not a normal consequence of the related procedures. The Additional Protocol refers to “fair compensation according to the conditions and procedures prescribed by law”.

36. The assessment of undue damage resulting from the donation relies on appropriate clinical follow-up of living donors and the monitoring of adverse reactions. Article 7 of the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin provides for medical follow-up measures for living donors, and the explanatory report states that “the nature and duration of such follow-up should depend on the nature of the intervention and its potential impact on the individual’s health.”

37. If the donation requires clinical follow-up measures (for example in case of organ donation or, where allowed, oocyte donation) donors for whom those measures cannot be guaranteed should be excluded from donation.

Acceptable measures for the promotion of donation in the light of the principle of prohibition of financial gain

38. Article 21 of the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin and Article 21 of the Convention against Trafficking in Human Organs, set out restrictions on promotion activities which make it clear that any attempt to advertise the need for, or availability of, organs or tissues with a view to offering or seeking financial or comparable advantage for any party, is prohibited.

39. However, promotion activities may be acceptable if the measures involved are “altruist-focused” measures, which are compatible with the prohibition of financial gain.

40. Altruist-focused measures include:

- information about the need for the donation of human body parts for others’ treatment or for medical research, which can include all forms of promotion campaigns, such as the European Day for Organ Donation and Transplantation or the World Blood Donor Day, or information on either governmental websites or websites of donation centres;
- recognition of, and gratitude for, altruistic donation, through whatever methods are appropriate both for the form of donation and the donor concerned, such as letters of thanks to the donor’s family where permissible and with due regard to privacy, inclusion in public memorials, and certificates for donors;
- interventions to remove barriers and disincentives to donation experienced by those disposed to donate, such as reimbursement and compensation of real expenses and real loss of income or earnings related to the donation.

41 Non-altruist-focused measures which are not compatible with the prohibition of financial gain include:

- interventions offering associated benefits in kind to encourage those who would not otherwise have contemplated to consider donating;
- financial incentives that leave the donor in a better financial position as a result of donating.

Reference texts

Council of Europe

Convention on Human Rights and Biomedicine (CETS No. 164), Article 21
www.coe.int/en/web/conventions/full-list/-/conventions/treaty/164

Additional Protocol concerning Transplantation of Organs and Tissues of Human Origin (CETS No. 186), Article 21 www.coe.int/en/web/conventions/full-list/-/conventions/treaty/186

Council of Europe Convention against Trafficking in Human Organs (CETS No. 216) www.coe.int/en/web/conventions/full-list/-/conventions/treaty/216

Statement on the prohibition of any form of commercialisation of human organs, adopted by the DH-BIO and the CD-P-TO [www.coe.int/t/dg3/healthbioethic/Activities/05_Organ_transplantation_en/INF\(2014\)10%20e%20declaration.pdf](http://www.coe.int/t/dg3/healthbioethic/Activities/05_Organ_transplantation_en/INF(2014)10%20e%20declaration.pdf)

Statement by the Committee of Ministers on the prohibition of any form of commercialisation of human organs <https://wcd.coe.int/ViewDoc.jsp?id=2215115&Site=COE&BackColorInternet=C3C3C3&BackColorIntranet=EDB021&BackColorLogged=F5D383>

Recommendation No. R (95) 14 of the Committee of Ministers to member states on the protection of the health of donors and recipients in the area of blood transfusion <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016804da051>

Guide of the European Committee on Transplantation of Organs (CD-P-TO) to the quality and safety of tissues and cells for human application www.edqm.eu/en/publications-transfusion-and-transplantation

Guide to the quality and safety of organs for transplantation, of the European Committee on Transplantation of Organs (CD-P-TO) www.edqm.eu/en/publications-transfusion-and-transplantation

Guide to the preparation, use and quality assurance of blood components, of the European Committee on Blood Transfusion (CD-P-TS) www.edqm.eu/en/publications-transfusion-and-transplantation

European Union

Charter of Fundamental Rights, Article 3 www.europarl.europa.eu/charter/pdf/text_en.pdf

Directive 2002/98/EC setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002L0098&from=EN>

Directive 2004/23/EC on setting standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:102:0048:0058:en:PDF>

Directive 2010/53/UE on standards of quality and safety of human organs intended for transplantation <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Aasp0008>

European Parliament resolution of 19 May 2010 on the Commission Communication: Action plan on Organ Donation and Transplantation (2009-2015): Strengthened Cooperation between member States www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2010-0183+0+DOC+XML+V0//EN

World Health Organization

WHO Guiding Principles on Human Cell, Tissue and Organ Transplantation www.who.int/transplantation/Guiding_PrinciplesTransplantation_WHA63.22en.pdf

Principles on the donation and management of blood, blood components and other medical products of human origin, Principle 5 (report by the Secretariat presented to the World Health Assembly on 3 April 2017) http://apps.who.int/gb/ebwha/pdf_files/WHA70/A70_19-en.pdf

"Human Organ and Tissue Transplantation", statement of the 63rd World Health Assembly http://apps.who.int/gb/ebwha/pdf_files/WHA63/A63_R22-en.pdf

Others

Nuffield Council report on "Human Bodies: Donation for Medicine and Research" <http://nuffieldbioethics.org/project/donation/>

The Declaration of Istanbul on Organ Trafficking and Transplant Tourism www.declarationofistanbul.org/about-the-declaration/structure-and-content

Statement on the Global Kidney Exchange Concept

as adopted at the 21st meeting of the Council of Europe European Committee on Organ Transplantation (CD-P-T0) on 10 April 2018 (document PA/PH/TO (18) 3 DEF)

With the support of the Council of Europe Committee on Bioethics (DH-BIO)

In view of the large deficit of kidneys for transplantation compared with demand, many countries are also facilitating transplants from living donors to complement the supply of organs made available from deceased donor programmes.¹ Living kidney donation, based on universally accepted ethical and professional standards, is therefore assuming increasing importance.^{2,3,4,5} Donation between a living donor and their intended recipient was originally only possible in approximately 40% of potential pairings who presented for living donor transplantation since, after initial investigation, pairings could not proceed because of blood group differences or tissue typing antibody barriers, making the pair biologically incompatible. Kidney exchange programmes have emerged as a strategy to overcome these biological incompatibilities between patients in need of a kidney transplant and their genetically or emotionally related living donors.⁶ Kidney exchange programmes allow incompatible pairs to swap donors (kidneys) and thus form new compatible donor-recipient pairs. In such schemes each pairing has a symmetrical benefit with no imbalance, either financial or otherwise.

The concept of Global Kidney Exchange (GKE) has been recently proposed as a means to increase the number of pairs that can benefit from kidney exchange programmes in high-income countries (HIC).⁷ First, a

potential living donor pairing must be identified in a low/middle-income country (LMIC). They may be biologically compatible, but the transplant cannot take place because the pair cannot afford the procedure under their healthcare system. GKE proponents have coined a new term for this – “financial incompatibility”. Through the GKE programmes, this pair would travel to the HIC and the recipient would be given access to a transplant, but only provided that their donor was able to facilitate a chain of transplants in patients from that HIC country. The proponents of these GKE programmes suggest the associated costs (pre-donation and pre-transplantation screening, travel, lodging, a lump sum of money for post-transplantation care costs in the LMIC, etc.) could be covered by the cost savings of transplantation as compared with dialysis in the HIC. A fixed lump sum would be made available for the care of the recipient and possibly for any problems the donor could experience once they returned to their country. However, this sum would only last for a limited time and there is no surety that it would be increased should there be any complications or recurrent problems in the pairing.

A pilot GKE programme has started in the United States, using donor-recipient pairs coming from Mexico and the Philippines.⁷

¹ Global Observatory on Organ Donation and Transplantation. Available at: <http://www.transplant-observatory.org/>. Accessed: February 2018.

² WHO Guiding Principles On Human Cell, Tissue And Organ Transplantation. Available at: http://www.who.int/transplantation/Guiding_PrinciplesTransplantation_WHA63.22en.pdf . Accessed: February 2018.

³ Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine. Available at: <http://conventions.coe.int/Treaty/en/Treaties/Html/164.htm> . Accessed: February 2018.

⁴ Additional Protocol to the Convention on Human Rights and Biomedicine concerning Transplantation of Organs and Tissues of Human Origin. Available at: <http://conventions.coe.int/Treaty/en/Treaties/Html/186.htm>. Accessed: February 2018.

⁵ Directive 2010/53/EU of the European Parliament and of the Council of 7 July 2010 on standards of quality and safety of human organs intended for transplantation. Available at: http://europa.eu/legislation_summaries/public_health/threats_to_health/sp0008_en.htm . Accessed: February 2018.

⁶ European Network for Collaboration on Kidney Exchange Programmes. Available at: http://www.enckep-cost.eu/http://www.cost.eu/COST_Actions/ca/CA15210 Accessed: February 2018.

⁷ Rees MA, Dunn TB, Kuhr CS, Marsh CL, Rogers J, Rees SE, et al. Kidney Exchange to Overcome Financial Barriers to Kidney Transplantation. *Am J Transplant* 2017; 17(3): 782-790.

The Council of Europe Committee on Organ Transplantation (CD-P-TO) has carefully studied the GKE proposal and, with the support of the Council of Europe Committee on Bioethics (DH-BIO), concluded that:

1. Access to kidney exchange programmes on the basis of “financial incompatibilities” is inconsistent with the fundamental principle that “the human body and its parts shall not give rise, as such, to financial gain or comparable advantage”, a principle enshrined in a number of international standards.^{2,3,4,5,8} In this scenario, highly vulnerable patients in LMIC are given access to transplantation services only if they are able to provide a suitable donor kidney to the pool in the HIC, i.e., in exchange for making a kidney available, they receive substantial payment in kind, in the form of the cost of a procedure and medical therapy.^{9,10} This would seem consistent with the definition of trafficking in human organs.¹¹

2. GKE involves the commodification or alienation of donor-recipient pairs from LMIC.^{1*} The selection and acceptance criteria into the programme is not based on humanitarian criteria, but on the usefulness of the donor from the LMIC for a recipient in the HIC, involving the minimum expense for the programme (e.g. financially incompatible pairs from HIC are not accepted in the programme as their post-transplantation costs would be higher than those of pairs in LMIC).¹²

3. GKE programmes entail severe risks of exploitation of individuals in LMIC. Patients in need of a transplant

and not able to access it due to financial and other reasons are highly vulnerable.¹³ This position may be abused (pressuring them to accept unfavourable offers) or prompt them to exploit their potential donors (who, for many reasons, may be vulnerable themselves). Although it is accepted that the supporters of GKE wish to put in place good governance to prevent abuse of the system, in reality, that guarantee would be difficult if not impossible to deliver, especially as the number of cases increased. In addition, for several reasons, the detection of possible cases of human trafficking for the purpose of organ removal and/or trafficking in human organs may be particularly difficult when evaluating and accepting non-resident living donors.^{14,15}

4. GKE does not guarantee appropriate long-term care of living donors and transplant recipients in LMIC. There is significant disparity in the long-term care provisions for the LMIC pairing and any of the HIC couples. While multiple international legal instruments and scientific recommendations emphasise the need to provide appropriate long-term follow-up of donors after the donation procedure,^{4,5,8,15,16} GKE programmes foresee a lump sum of money to address the medical needs of the recipient from the LMIC once back in their country of origin. It is unclear whether these funds would also be made available to donors in the case of unexpected medical or psychosocial complications. Whatever the case, follow-up care is only guaranteed until this money runs out. This carries severe risks for both the recipient (who

* The Committee of Ministers of the Council of Europe held on 9 July 2014 reiterated in the Statement by the Committee of Ministers the prohibition of any form of commercialisation of human organs. The Committee emphasised: “the fundamental importance of that established principle for the protection of human dignity, which must be strictly respected in any regulation and procedures concerning the transplantation of human organs”.

⁸ The Declaration of Istanbul on Organ Trafficking and Transplant Tourism. Available at: <http://www.declarationofistanbul.org/>. Accessed: February 2018.

⁹ Statement Of The Declaration Of Istanbul Custodian Group concerning ethical objections to the proposed Global Kidney Exchange program. Available at: <http://declarationofistanbul.org/resources/policy-documents/795-statement-of-the-declaration-of-istanbul-custodian-group-concerning-ethical-objections-to-the-proposed-global-kidney-exchange-program>. Accessed: February 2018.

¹⁰ Posicionamiento de la Red Consejo Iberoamericano de Donación y Trasplante sobre el proyecto Global Kidney Exchange. Available at: <http://www.ont.es/publicaciones/Documents/NEWSLETTER%202014.pdf>. Accessed: February 2018.

¹¹ Council of Europe Convention against Trafficking in Human Organs. Available at: <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/216>. Accessed: February 2018.

¹² Krawiec KD and Rees MA. Reverse transplant tourism. Law and Contemp Probl 2014; 77: 145-173.

¹³ Wiseman AC and Gill JS. Financial Incompatibility and Paired Kidney Exchange: Walking a Tightrope or Blazing a Trail? Am J Transplant 2017; 17(3): 597-598.

¹⁴ Delmonico FL and Ascher NL. Opposition to irresponsible global kidney exchange. Am J Transplant 2017; 17(10): 2745-2746.

¹⁵ Resolution CM/Res(2017)1 on principles for the selection, evaluation, donation and follow-up of the non-resident living organ donors. Available at: https://www.edqm.eu/sites/default/files/cmres_2017_1-on_principles_for_selection_eval_donation_and_follow_up_of_nrlid.pdf. Accessed: February 2018.

¹⁶ Delmonico F, Council of the Transplantation Society. A report of the Amsterdam Forum on the Care of the Live Kidney Donor: Data and Medical Guidelines. Transplantation 2005; 79 (6 Suppl): S53-S66.

will lose the graft in the absence of immunosuppression and appropriate follow-up) and the donor (who may end up suffering from serious medical complications and even losing their remaining kidney). GKE proponents also do not address who will be responsible or finance the treatment if either the donor or the recipient in the LMIC need a (re)transplantation. On the contrary, couples from HIC are guaranteed their long-term follow-up according to the standards of the health system of their HIC.

5. The GKE programmes may undermine local efforts to develop ethically sound transplant programmes in both the LMIC and the HIC, jeopardising their ability to strive for self-sufficiency in transplantation.¹⁷

Taking all these arguments into consideration, the CD-P-TO, with the support of the DH-BIO and in agreement with many others,^{9,10,14} recommends member States of the Council of Europe, Health Authorities, hospitals and professionals not to engage in GKE as currently described, and hence not to consider the inclusion of “financially incompatible” donor-recipient pairs in any kidney exchange programme. To assist in addressing barriers to transplantation that arise from the difficulties in finding biologically compatible donors for certain recipients, member States should support the development of equitable kidney paired exchange programmes that do not exploit financial inequalities between pairs (or countries).

¹⁷ The Madrid Resolution on organ donation and transplantation: national responsibility in meeting the needs of patients, guided by the WHO principles. Transplantation 2011; 91 Suppl 11: S29-31.

Kidney Exchange Programmes in Europe

Position Paper of the Council of Europe European Committee on Organ Transplantation (CD-P-T0)

1. Introduction

Approximately one in a thousand European citizens suffers from end-stage renal disease¹. For suitable transplant candidates, living donor kidney transplantation (LDKT) offers better outcomes in terms of patient and graft survival, compared with deceased donor kidney transplantation. On average, around 40% of all kidney transplants worldwide are now performed using an organ from a living donor². Living donor programmes therefore contribute substantially to the expansion of the supply of donor organs. For this reason, many countries are encouraging the development of living donor programmes to compensate the limited availability of organs from deceased donors; in some countries, living donation is the only available source of organs for kidney transplantation. This, together with the ability to plan a transplant before dialysis is necessary, means that LDKT has become increasingly accepted as the treatment of choice for patients with end-stage renal disease.

However, in many European countries the percentage of living donor transplants is still considerably low. In 2016, the annual rate of LDKT in the EU varied from 0 to 33.2 pmp¹. These data suggest that by optimising the use of living kidney donors, overall kidney transplantation rates could be substantially increased in many European countries, yielding improved access to transplantation and better transplant outcomes. Another benefit is the reduction in dialysis costs.

Historically, LDKT was only an option between genetically related donor-recipient pairs (blood relatives). In the mid-1990s, evidence showed that kidneys from non-genetically related donors achieved comparable outcomes³. As a consequence, transplant programme providers started to consider a wider set of donors, with the aim of helping patients who lacked a compatible genetically related donor.

Donation between living donors and their intended recipient was originally only possible if the pairs were compatible; this occurs in approximately 60% of cases. Compatibility is defined on the basis of blood group (ABO) and human leukocyte antigen (HLA) type. Certain donor-recipient combinations of blood and HLA types will cause rejection of the transplanted organ by the recipient. In such cases, the donor-recipient pair is 'incompatible'. Hence, even when a patient finds a (genetically) related donor, incompatibility may still prevent LDKT. The introduction of kidney exchange programmes (KEPs) was an important next step to increase LDKT rates. ABO-incompatible and/or HLA-incompatible donor-recipient pairs, for whom direct donation to the intended recipient is not possible, benefit from such programmes by forming new donor-recipient combinations through a special matching programme. KEPs match donors to recipients in optimal combinations for kidney exchange within the pool of available incompatible pairs.

This paper covers three key areas: first, an overview of the development and features of KEPs – including ethical and legal conditions – is given; this is followed by a discussion of general organisational aspects and the final sections detail challenges and conclusions. Some of the information described in this paper was collected from a survey to members of the Committee of Transplantation of the Council of Europe (CD-P-T0), a further survey carried out by the European Cooperation in Science & Technology (COST) European Network for Collaboration on Kidney Exchange Programmes (ENCKEP) and from the outcomes summarised in the first ENCKEP Handbook⁴.

2. Kidney Exchange Programmes

In 2004, the first national KEP in Europe was established in the Netherlands⁵. Several European countries have since independently developed KEPs to address

¹ International figures on donation and transplantation 2016. Newsletter Transplant 2017; 22.

² WHO Global Observatory on Donation and Transplantation [Available at: <http://www.transplant-observatory.org>]

³ Terasaki PI, Cecka JM, Gjertson DW, Takemoto S. High survival rates of kidney transplants from spousal and living unrelated donors. *New Engl J Med* 1995; 333(6): 333-336.

⁴ Biro P, Burnapp L, Haase-Kromwijk BJ, Hemke A, Johnson R, van de Klundert, J, Manlove D. Kidney Exchange Practices in Europe, First Handbook of the COST Action CA15210: European Network for Collaboration on Kidney Exchange Programmes (ENCKEP) 2017 [More information available at: <http://www.enckep-cost.eu/>]

⁵ de Klerk M, Witvliet MD, Haase-Kromwijk BJ, Claas FH, Weimar W. A highly efficient living donor kidney exchange program for both blood type and crossmatch incompatible donor-recipient combinations. *Transplantation* 2006; 82(12): 1616-1620

incompatibility issues (see **Figure 1**)⁶. The survey among CD-P-TO members showed that 10 European countries are currently operating KEPs (Austria, Belgium, Czech Republic, France, Italy, Poland, Portugal, Spain, The Netherlands and United Kingdom) and a further 4 countries [Greece, Slovakia, Sweden, (along with Denmark and Norway under the ScandiTRANSPLANT Kidney Exchange Program, or STEP) and Switzerland] were interested in launching programmes. This information was corroborated by a second, more extensive survey by the ENCKEP⁴.

Established KEPs aim to increase the possibilities for LDKT between incompatible pairs and offer an alternative to antibody removal for immunologically complex patients (i.e., HLA and/or ABO incompatible patients)^{5,7}. While KEPs have contributed significantly to LDKT rates, they often struggle to become and stay effective in countries where the pool sizes are small and hence exchange options are limited. Small population size, legal constraints, ethical concerns and fragmentation of KEP pools within a country are the main barriers to be overcome. As a result, potential recipients may be disadvantaged.

In practice, this means that programmes differ in their organisation⁶. Some countries have scaled up to a national programme, while others retain a regional or single-centre approach. In most countries, the organs travel from the donor's to the recipient's centre, but in others the donor travels. Moreover, there is variation in

the organisation of matching with regard to selection and inclusion of donor-recipient pairs, the frequency of the matching runs and the optimisation criteria. The proportion of transplants achieved as a result of KEPs accounts for between 0 and more than 20% of overall LDKT activity *per country*.

Legal and Ethical Considerations

As with the practice of living donation in general, safeguarding the interests of the individual who wishes to donate is a fundamental aspect of KEPs⁸. The risk-benefit analysis for the healthy donor and the patient in need of a transplant should take into account the direct benefit (or lack of it) to the donor compared with the potential benefit for the transplanted recipient. This includes the likely benefit for donors concerned for the wellbeing of their intended recipients derived from the close relationship between the two of them.

KEPs facilitate a form of *indirect* donation in which the relationship between donor and recipient is reciprocal, i.e. all donors donate a kidney and all of their intended recipients receive a transplant. However, the transaction is not *directly* between the donor and their intended recipient, which may be an additional barrier to success.

This process requires even more stringent donor (and recipient) assessment than direct living donation. A KEP is only possible if the national legislation allows living

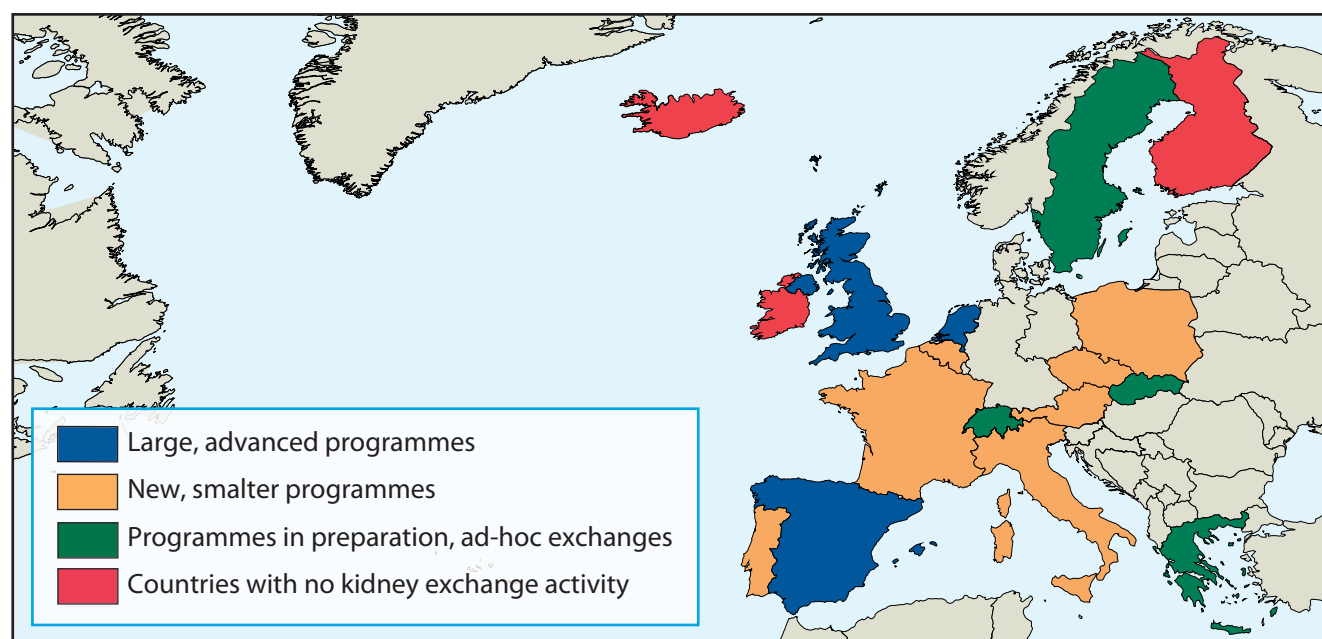


Figure 1. Development of European Kidney Exchange Programmes by Country (source: *First Handbook of the COST Action*⁴).

⁶ Biró P, Haase-Kromwijk BJ, Andersson T, Ásgeirsson EI, Baltessová T, Boletis I, et al. Building kidney exchange programmes in Europe – An overview of exchange practice and activities. *Transplantation* 2018 (in press).

⁷ de Klerk M, Haase-Kromwijk BJ, Claas FH, Witvliet M, Weimar W. Living donor kidney exchange for both ABO-incompatible and crossmatch positive donor-recipient combinations. *Transplant Proc* 2006; 38(9): 2793-2795.

⁸ Guide for the implementation of the principles of prohibition of financial gain with respect to the human body and its parts from living or deceased donors, DH-BIO, Council of Europe, 2018 [Available at: <https://rm.coe.int/guide-financial-gain/16807bfc9a>]

organ donation between non-blood- or emotionally related donor-recipient pairs, or if the legislation explicitly allows for cross-donation through a KEP.

LDKT offers the recipient the best chance of a successful transplant outcome. However, there is always a risk that a donor withdraws his/her consent or is unable to proceed to donation for a medical reason at a late stage – or, rarely, even on the day of surgery itself – leaving the recipient without the anticipated transplant. To reduce this risk, the majority of KEPs conduct simultaneous procedures to avoid the possibility that a recipient does not receive a kidney once his/her intended donor has already donated to the other pair.

Anonymity between recipients and their new donors is also considered essential in most European KEPs before the transplant procedure and is recommended afterwards. Anonymity between the members of the new pairs diminishes the risk of potential coercion (or the seeking of payback/profit). Furthermore, it reduces the possibility of donation refusal in cases where the donor does not like the potential exchange recipient.

In the context of KEPs, this risk is increased by involving multiple donors and recipients in any one exchange. Donor-recipient pairs may be reluctant to participate in a KEP because of emotional anxieties about the donation not being made *directly* to the intended recipient and logistical concerns (e.g. the donor travelling to another centre for surgery; impact of cold ischaemia if the kidney travels between centres; lack of confidence in the system). Policies to minimise distress (e.g. when an exchange collapses) and to give priority for transplantation to recipients who miss out during the course of an exchange (i.e. once donor and recipient surgery is underway), as well as specific informed consent for kidney paired exchange could help to motivate pairs to participate in the programme.

There is ethical consensus that donations of organs by living donors are to be voluntary and unpaid. However, the principle of non-payment does not prevent living donors from receiving reimbursement for legitimate expenses and loss of income related to the donation⁸.

Conditions for a Successful Kidney Exchange Programme

Taking into account the legal and ethical principles, current practice and experience shows that there are certain prerequisites for establishing a successful KEP⁹.

The first condition is that there is a legal framework in place that permits non-direct donation. Subsequently, a transparent structure should be created that includes standard operational procedures. This can be achieved if KEPs are organised based on protocols, clinical standards

and operating procedures agreed by the stakeholders involved. Among these stakeholders are participating transplant centres, histocompatibility and immunogenetics laboratories, a central/regional/local coordination team and donor-recipient pairs. Central coordination to oversee identified pairs, perform matching runs, collect follow-up data and ensure mechanisms are in place to minimise the risk of identified transplants not proceeding due to the collapse of an exchange are essential. Hence, much attention has been focused on evidence-based, complete and up-to-date screening of both donors and recipients to establish their clinical, immunological and psychosocial status. Since confidence in the system is fundamental, it helps when all professional partners in the system know each other and are familiar with each other's working methods.

In contrast to direct living kidney donation, the behaviour of participating donors and recipients affects not only their individual interests but also those of other donor-recipient pairs in the KEP, especially if they decide not to proceed after an exchange has been identified. Whilst it is impossible to predict every eventuality (e.g. change of donor circumstances or unforeseen recipient illness), KEPs should aim to be able to address reasons for non-proceeding transplants that could have been foreseen by anticipating possible solutions. The impact of a high non-procedure rate may be significant: distress to donors and recipients, loss of confidence in the KEP and reduced participation.

3. Organisational Aspects

A KEP requires a multidisciplinary and, in most cases, a multi-centre approach. Therefore, KEPs must define a structure to coordinate and monitor all activities which can be national, regional or centre-based. The key components of effective KEPs are⁴:

a) MEDICAL, PSYCHOLOGICAL, SOCIAL, LEGAL AND ETHICAL FRAMEWORKS FOR DONOR AND RECIPIENT CARE – to ensure consistent, high quality, safe clinical practice in line with international standards and best practice guidelines. Special considerations include anonymity requirements, indirect donation and reciprocity, management of identified transplant procedures that cannot proceed, and management/listing of recipients for transplantation who may miss out within the KEP. Organisation of donor and recipient follow-up should also be carefully considered.

b) INFORMATION FOR PATIENTS – the options for LDKT, individual donor and recipient risks and benefits should be presented clearly and at an early stage to maximise opportunities for timely, successful transplantation/re-transplantation.

⁹ de Klerk M, Weimar W. Ingredients for a successful living donor kidney exchange program. *Transplantation* 2008; 86(4): 511-512.

c) *TECHNICAL STANDARDS FOR LIVING KIDNEY TRANSPLANTATION* – equitable clinical and surgical expertise to ensure consistent quality of care for all donor and recipient pairs must be guaranteed.

d) *CAPACITY AND CAPABILITY* – a sufficient and appropriately trained multidisciplinary workforce should be established. In particular, clinical and scientific expertise, and central coordination are needed. Immunological testing is central to successful KEPs and must be performed by accredited histocompatibility and immunogenetics laboratories using standardised testing and reference criteria in every laboratory for every donor and recipient pair. Central coordination by dedicated living donor coordinators in nephrology and transplant centres is effective in supporting donors, recipients and family members throughout the process of donation and transplantation.

e) *FINANCIAL INFRASTRUCTURE* – LDKT is a cost-effective treatment for ESRD compared with dialysis, offering significant financial savings to the health economy. Sustainable funding through state or privately funded insurance arrangements is necessary to support national LDKT and KEPs. Clinical and personnel costs associated with the coordination and management of national programmes, together with the reimbursement of out-of-pocket expenses and loss of earnings of the living donor, are the responsibility of the respective governments in participating countries.

f) *TRUST* – Trust is fundamental to a successful KEP; trust between the partners who have to work within the framework and between the donor-recipient pairs in the system.

4. Challenges for Kidney Exchange Programmes

KEPs are acknowledged as an effective solution to overcome immunological incompatibility and, in some countries, they offer opportunities to improve HLA- or age-matching between compatible donor-recipient pairs. However, the main challenges to maintaining and extending programmes are the limited pool of donor-recipient pairs at the start of a scheme, a decreasing pool in terms of quantity or diversity of pairs (e.g. increased numbers of blood group O and/or highly HLA-sensitised recipients) and the availability of other (competitive) options for incompatible pairs, such as antibody removal for both ABO and HLA incompatibility, despite poorer outcomes.

Effective KEPs increase the opportunities for patients, particularly those with immunological complexity, to receive a compatible transplant, which is almost always the preferred option. In countries with permissive legal frameworks, supportive policies and established KEPs, the patient benefits – especially for those who are very difficult to match – of the KEP can be further enhanced by the inclusion of donor-recipient compatible pairs (e.g. for improved HLA- or age-matching, or for the greater good) and unspecified (non-directed altruistic) living kidney donors to augment the pool. Experience suggests that such a strategy maximises the benefit for all donors and recipients involved, including recipients on the national transplant list with no living donor of their own. As well as utilising unspecified living donors to initiate a chain of transplants within their KEPs, a few countries are considering using deceased donor kidneys to achieve a similar outcome (as reported by national representatives in response to the COST survey). Extending the KEP pool by allowing international exchange is another very practical and obvious solution. However, this would require fine-tuning of protocols and extra attention to donor-recipient pair screening to avoid any possibility of enhancing medical tourism or even organ trafficking.

5. Conclusions

Due to organ shortages, many countries are investing in living donor programmes, which are often the best option for patients in need of a kidney transplant. Since around 40% of living donors are incompatible with their intended recipient, KEPs offer an alternative to help overcome HLA- and ABO-incompatibilities. To achieve this goal, pools of donor-recipient pairs are created to generate alternative pairs of possible matches. KEPs provide an excellent opportunity to extend existing living donor programmes. However, since KEPs are a form of indirect donation, conditions to develop and maintain effective and safe programmes must be implemented. A KEP should include a sound and transparent (nation/regional) organisation which takes care of the needs of the recipient and donor, taking into account all ethical and legal considerations. The organisation of a KEP requires transparent protocols and efficient and trust-based cooperation between the multidisciplinary teams of professionals. Within Europe, the further development of KEPs should take place within the framework of the Council of Europe resolutions on living donation^{10,11} and the EU legal framework¹².

¹⁰ Council of Europe Resolution CM/Res(2013)56 on the development and optimisation of live kidney donation programmes [Available at: http://www.edqm.eu/sites/default/files/medias/fichiers/resolution_cmres201356_on_the_development_and_optimisation_of_live_kidney_donation_programmes.pdf]

¹¹ Council of Europe Resolution CM/Res (2017)1 on principles for the selection, evaluation, donation and follow-up of the non-resident living organ donors [Available at: http://edqm.eu/sites/default/files/cmres_2017_1-on_principles_for_selection_eval_donation_and_follow_up_of_nrld.pdf]

¹² EU directive 2010/53/EU (art 13-14,15,20) [Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32010L0053>]

Signatures and Ratifications of the Council of Europe Convention against Trafficking in Human Organs (September, 2018)

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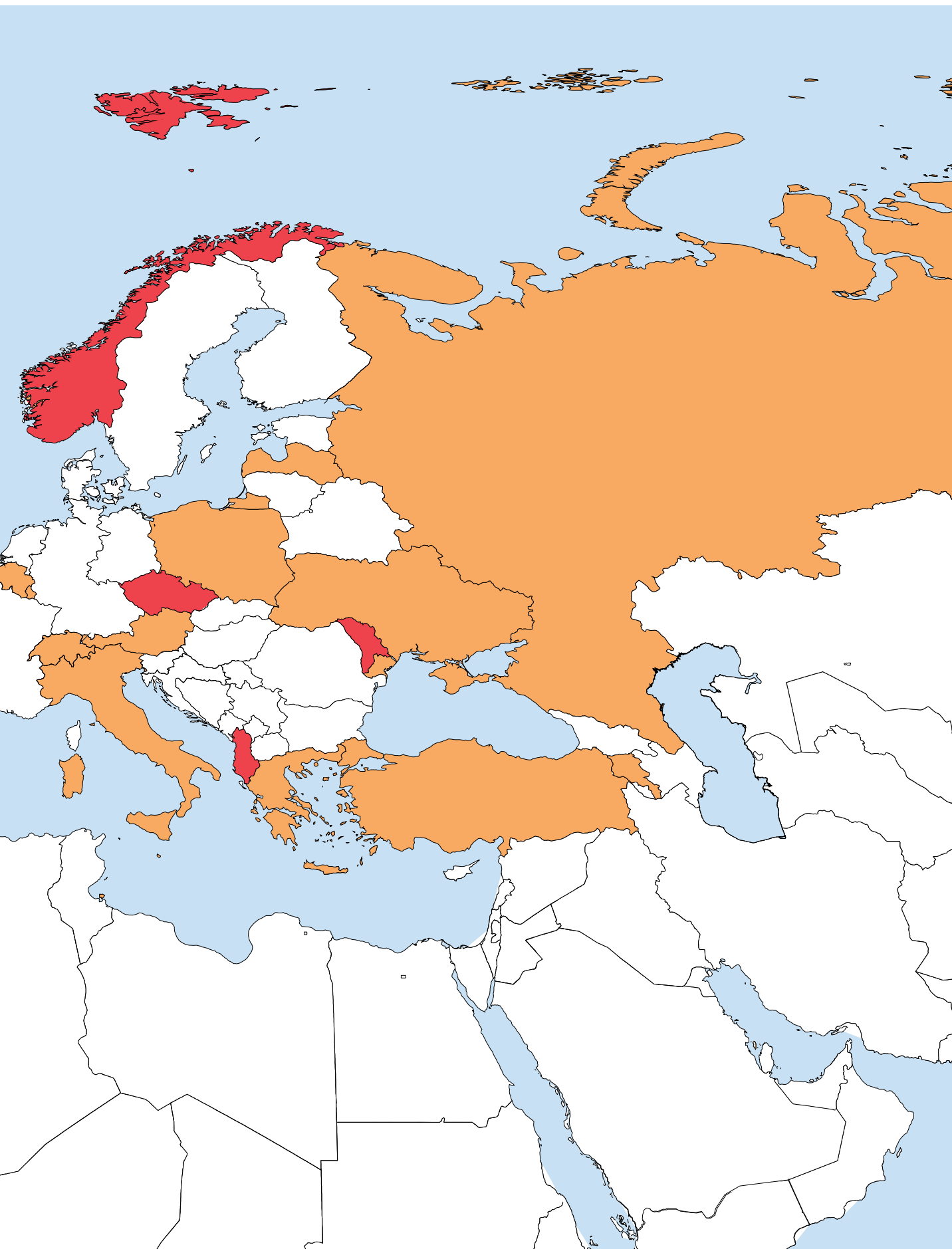
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Albania	06/06/2016
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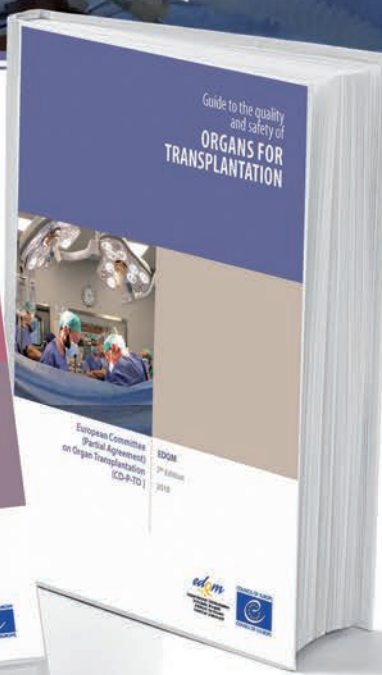
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