

INTERNATIONAL REPORT ON ORGAN DONATION AND TRANSPLANTATION ACTIVITIES 2023

www.transplant-observatory.org

December 2024



WHO Collaborating
Centre on Donation
and Transplantation

WHO-ONT Collaboration

The GODT is a collaborative effort of WHO and the Spanish ONT. It is running since 2007 and came up in response to the request of the World Health Assembly, in Resolutions WHA57.18 and WHA63.22, to collect global data on the practices, safety, quality, efficacy, epidemiology and ethical issues of allogeneic transplantation. This database collects data on global donation and transplantation practices, and it is recognized as a tool for ensuring transparency, equity and monitoring national transplant systems.

Methods and definitions

An *ad hoc* standardized questionnaire for activities related to organ donation and transplantation is annually distributed to the identified health authorities and national focal points contributing to the global database.

The definitions applied for the completion of the standardized questionnaire are derived from the WHO Global Glossary on Donation and Transplantation, which is accessible at <http://www.transplant-observatory.org/download/global-glossary/> or through the WHO website (<http://www.who.int/transplantation/activities/en/>).

Definitions and explanations about how to complete the questionnaire can be found at the Global Observatory on Donation and Transplantation website (<http://www.transplant-observatory.org/>).

Actual donor (=donor): a deceased person from whom at least one organ has been recovered for the purpose of organ transplantation.

DBD donor: a deceased donor whose death has been determined by neurological criteria.

DCD donor: a deceased donor whose death has been determined by circulatory criteria.

Domino Transplant: a procedure in which an organ is removed from one transplant candidate and immediately transplanted into a second patient, with the first patient receiving a new organ from a deceased donor.

HDI: A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See [Human Development Report 2023/2024](#).

Transplants are counted as those performed only within the country. Counts for multiorgan or double organ transplants are counted as follows:

- ✓ One double kidney transplant is considered as one transplant.
- ✓ One heart-lung transplant is counted as one lung transplant and one heart transplant.
- ✓ One double lung transplant is considered as one transplant.
- ✓ One kidney-pancreas transplant is counted as one kidney transplant and one pancreas transplant.

Counts for the number of recipients transplanted: a recipient of more than one organ is counted as one recipient.

Specific indicators have been added to the questionnaire along the years, in order to provide further information about the donation and transplantation activities performed around the globe.

The data provided correspond to the period from January 1st to December 31st 2023. Only countries reporting data for 2023 have been included in this report.

Comparisons 2021 vs 2022 vs 2023 have been made with the most up to date data collected in the database (last accessed: November 2023).

To calculate rates per million population, the State of World Population reports, from the United Nations Population Fund (UNFPA), has been used as the source to estimate the population size. Figures for Human Development Index (HDI) are obtained from the United Nations Development Programme (UNDP), [Human Development Report 2023/2024](#).

Data were analysed using descriptive statistics. Statistical analysis was performed with SPSS software (version 25.0) and the Excel tool was used for the creation of bar charts.

Acronyms

- ✓ **DBD:** Actual donors after the neurologic determination of death
 - ✓ **DCD:** Actual donors after the circulatory determination of death
 - ✓ **DD:** Actual deceased organ donors
 - ✓ **LD:** Living organ donors
 - ✓ **GODT:** Global Observatory on Donation and Transplantation
 - ✓ **KT:** Kidney transplants
 - ✓ **LT:** Liver transplants
-
- ✓ **ONT:** Organización Nacional de Trasplantes, Spain
 - ✓ **pmp:** per million population
 - ✓ **Tx:** Transplants
 - ✓ **WHO:** World Health Organization
 - ✓ **HDI:** Human Development Index

Global activity in organ transplantation

Estimations 2023

Kidney	Liver	Heart	Lung	Pancreas	S. bowel
111 135	41 099	10 121	7 811	2 054	177

≈ 172 397 solid organ transplants

≈ 9.5 % increase vs 2022

≤ 10% of global needs

39% living kidney transplants

25% living liver transplants

45 861 deceased donors (34 466 DBD and 11 395 DCD donors)

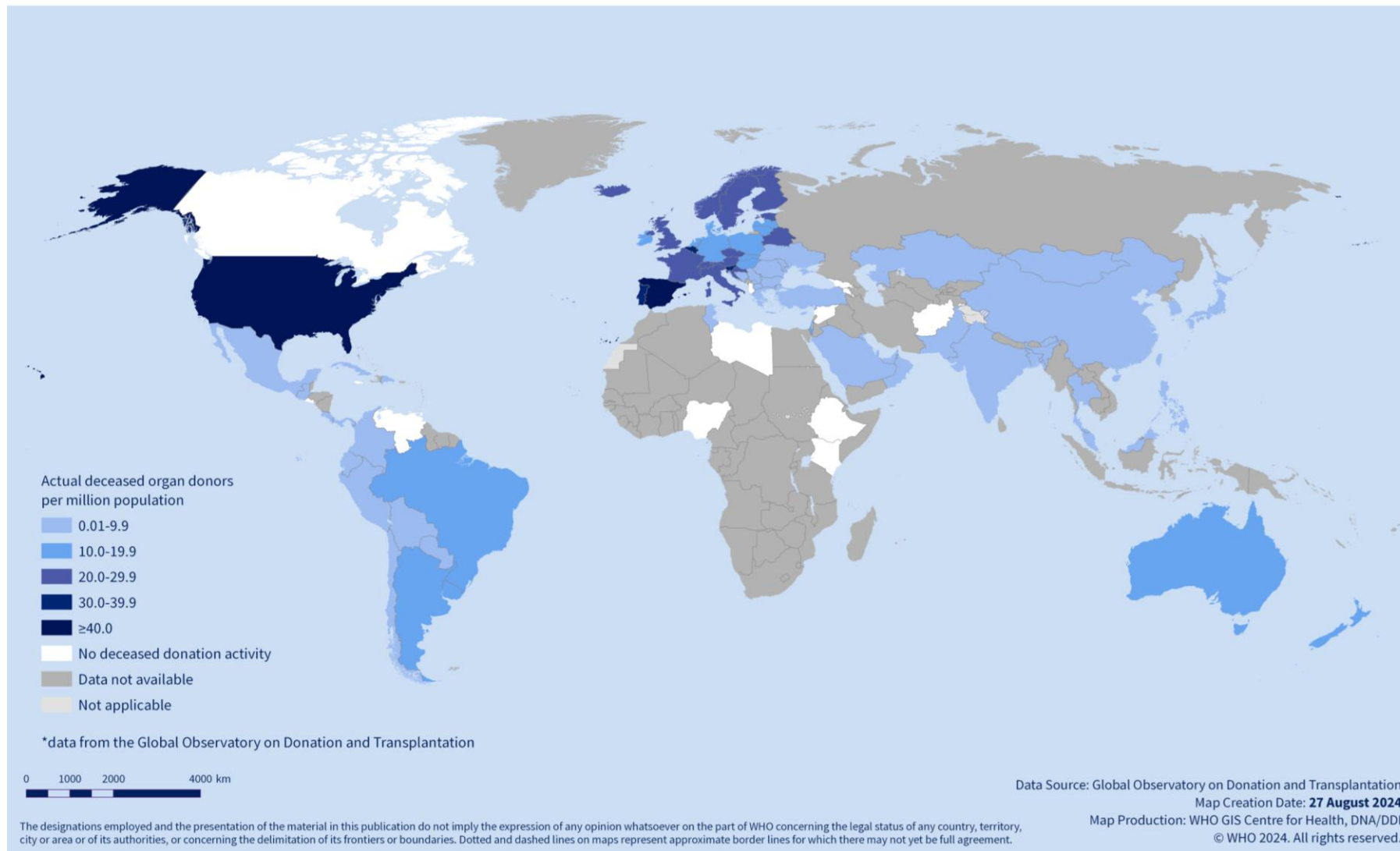
Information of 93 Member States on organ transplantation activities (75% of the total population)

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

1

DECEASED DONATION ACTIVITY

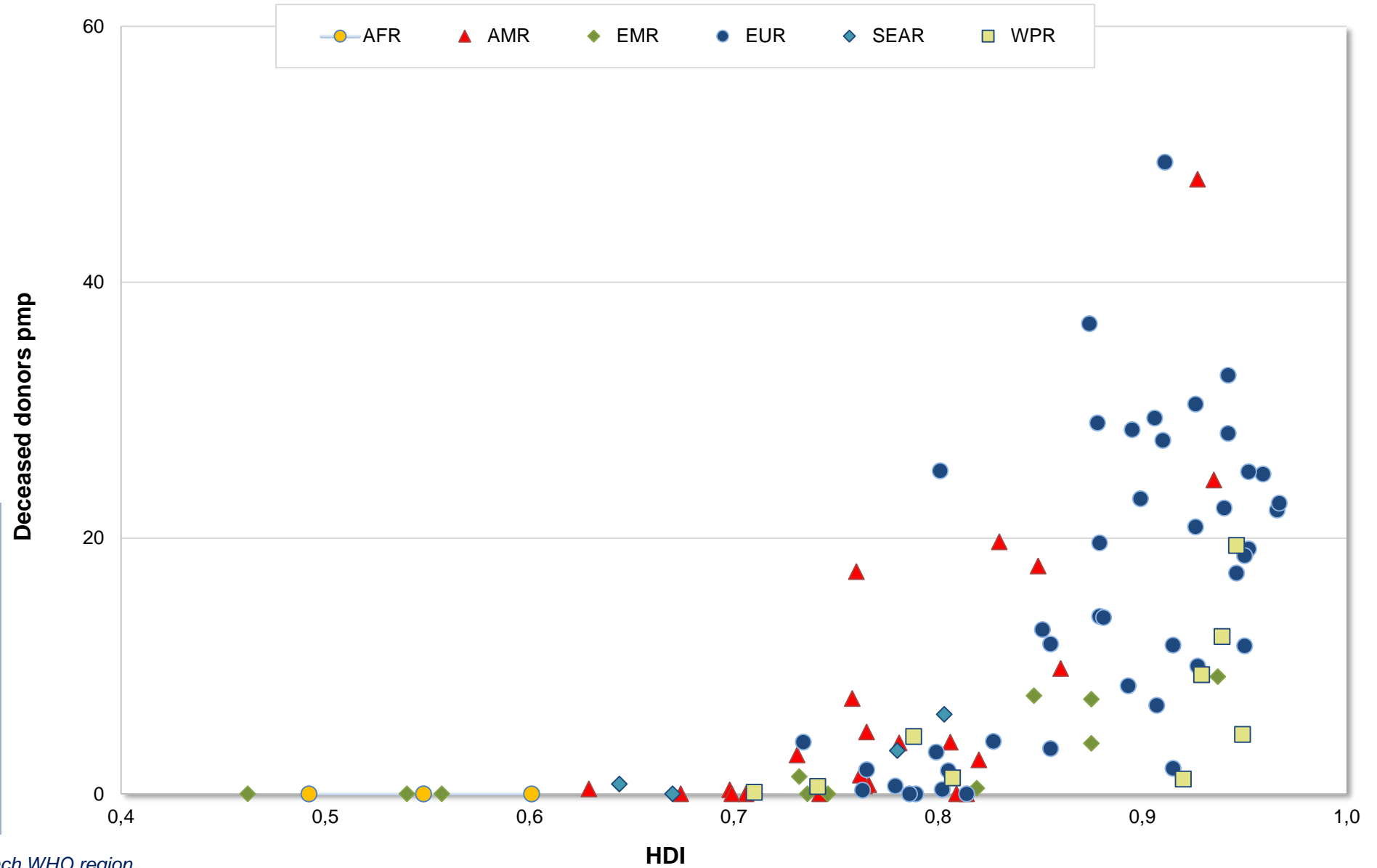
Actual donors from deceased persons, 2023*



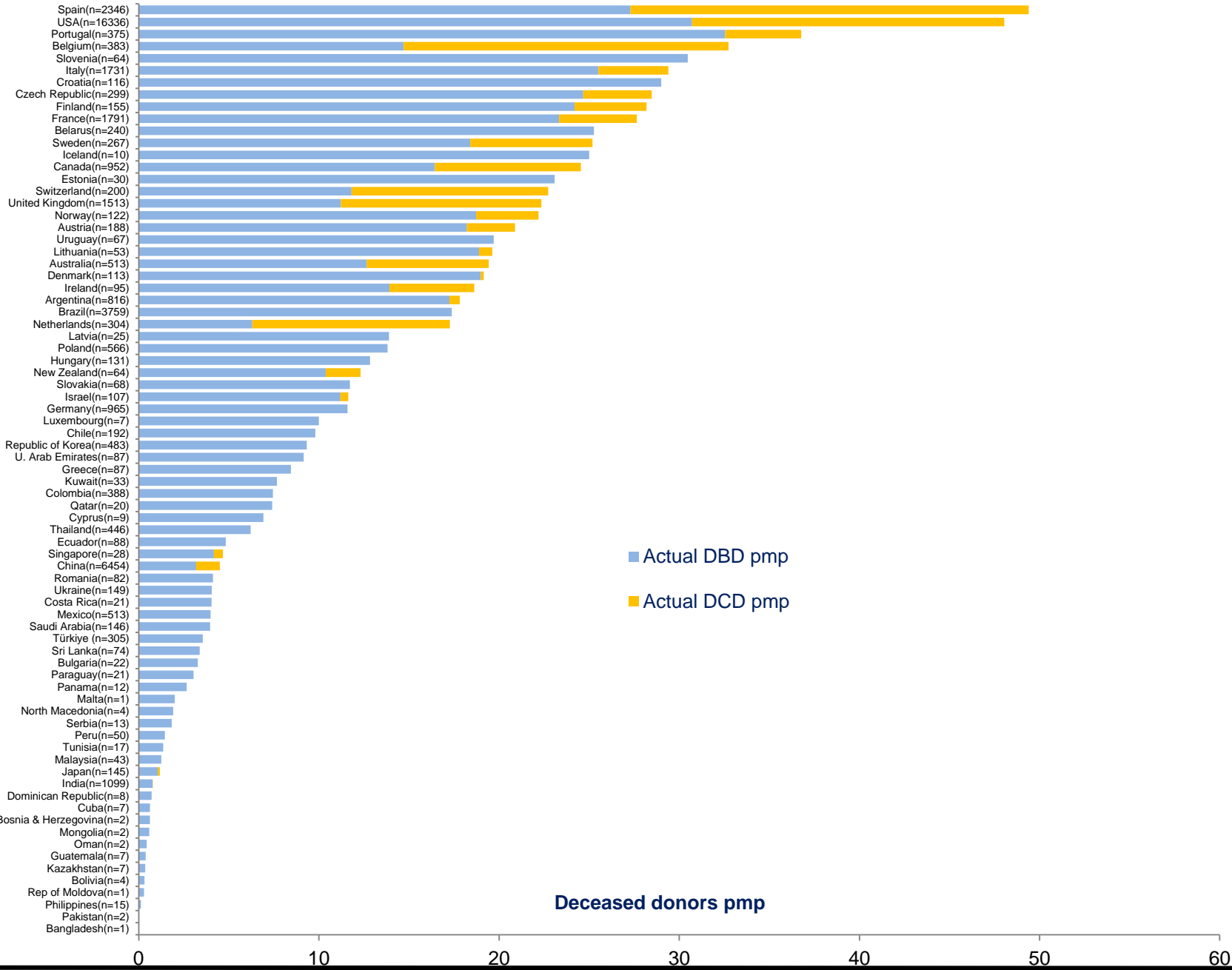
Deceased donation pmp in relation to the Human Development Index (HDI) 2023

WHO Regions:

- African Region (AFR)
- Region of the Americas (AMR)
- Eastern Mediterranean Region (EMR)
- European Region (EUR)
- South-East Region (SEAR)
- Western Pacific Region (WPR)



Dots represent responding Member States in each WHO region



Actual deceased organ donors by donor type (pmp) 2023

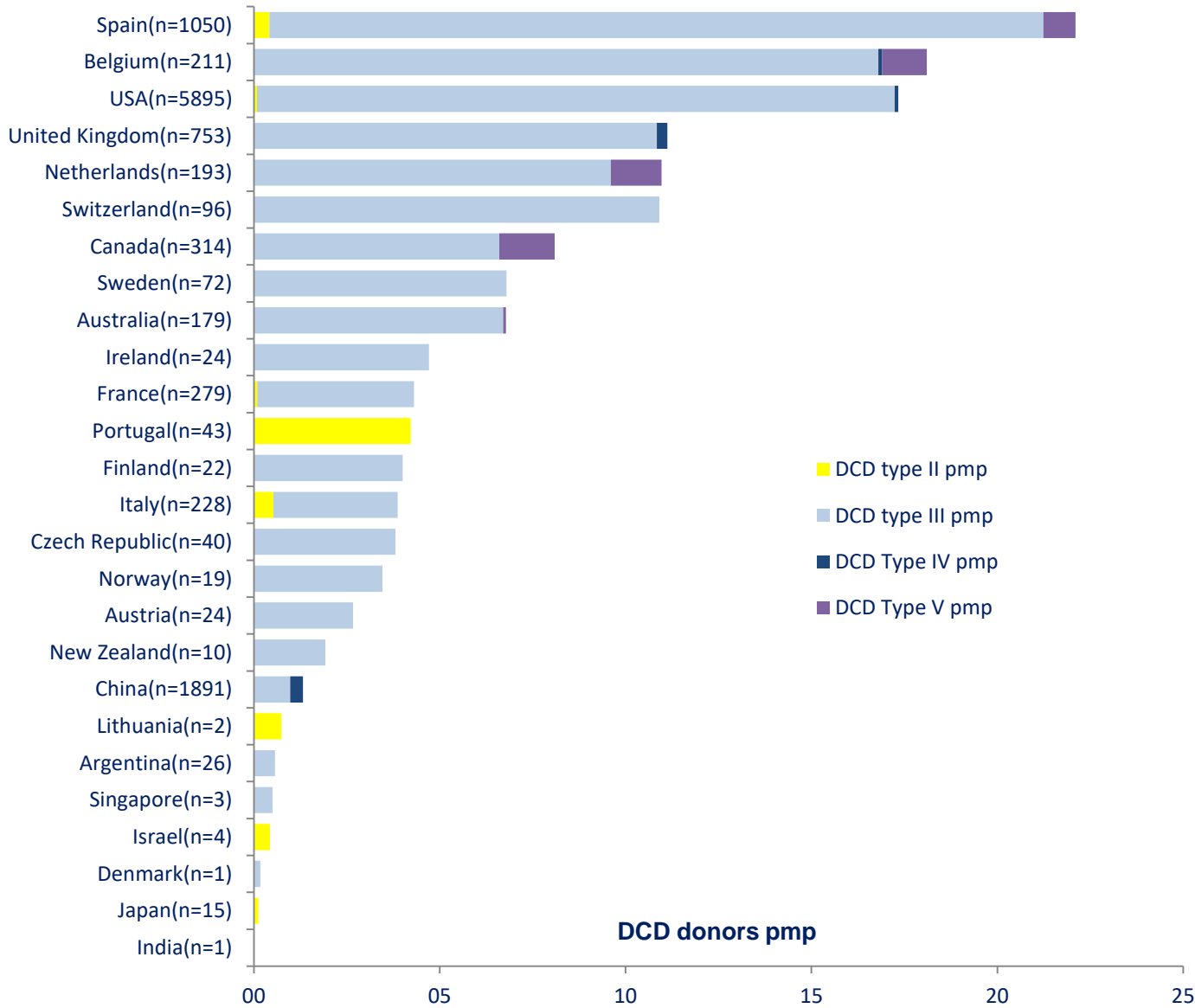
Deceased donors: 45 861
DBD: 34 466 (75%)
DCD: 11 395 (25%)

Deceased donation activities reported in 77/93 countries

≈ 10 % increase vs 2022

Actual donor: deceased person from whom at least one organ was recovered for the purpose of transplantation.

**Canada - utilized deceased donors*



Actual DCD donors by Maastricht type (pmp) 2023

DCD donors: 11 395

Type II: 150 (1.3%)
Type III: 10 562 (93%)
Type IV: 544 (4.7%)
Type V: 139 (1%)

DCD activities reported in 26/93 countries

Type II: Unexpected cardiac arrest, unsuccessfully resuscitated

Type III: Planned WLST with an expected cardiac arrest.

Type IV : Sudden or planned cardiac arrest after brain death.

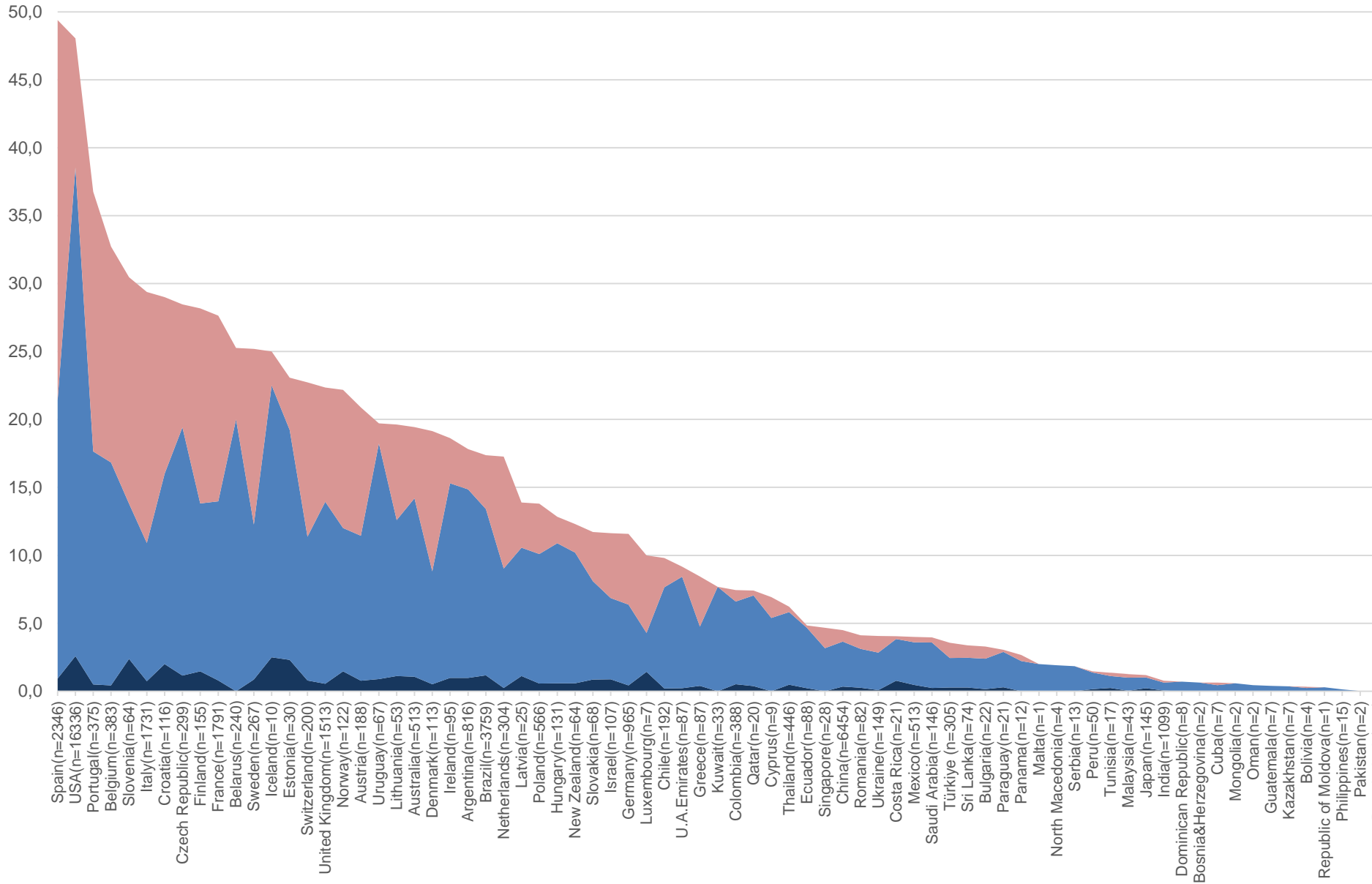
Type V: DCD donors (donors after MAiD) for Australia, Belgium, Canada, Netherlands and Spain

*Canada - utilized deceased donors

Actual DD <18 pmp Actual DD 18-59 pmp Actual DD >60 pmp

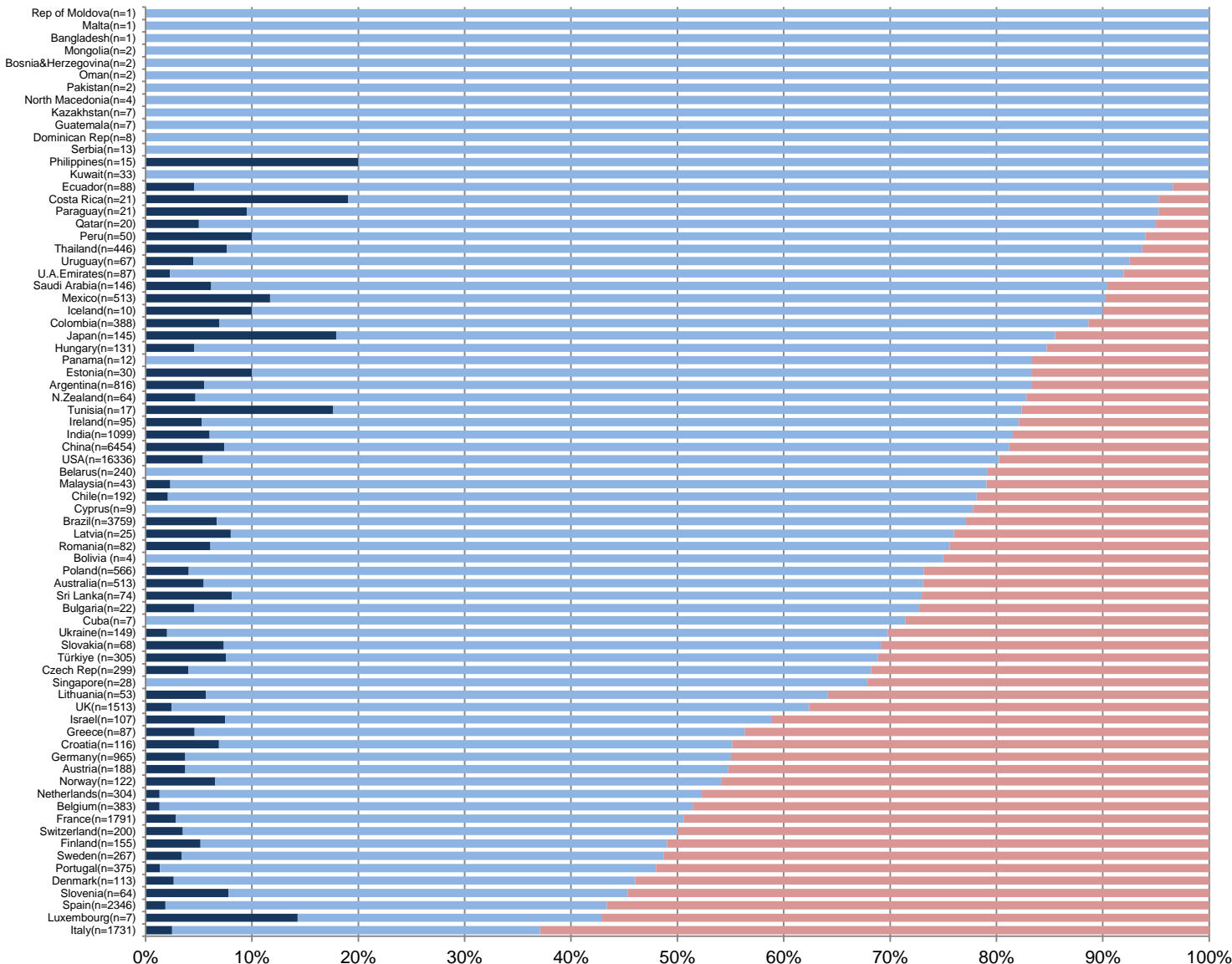
Actual deceased organ donors by donor age (pmp) 2023

Deceased donors pmp



N=75 countries provided information on donor age groups

2 330 (5%) DD < 18 years
 29 964 (68%) DD 18-59 years
 12 132 (27%) DD ≥ 60 years



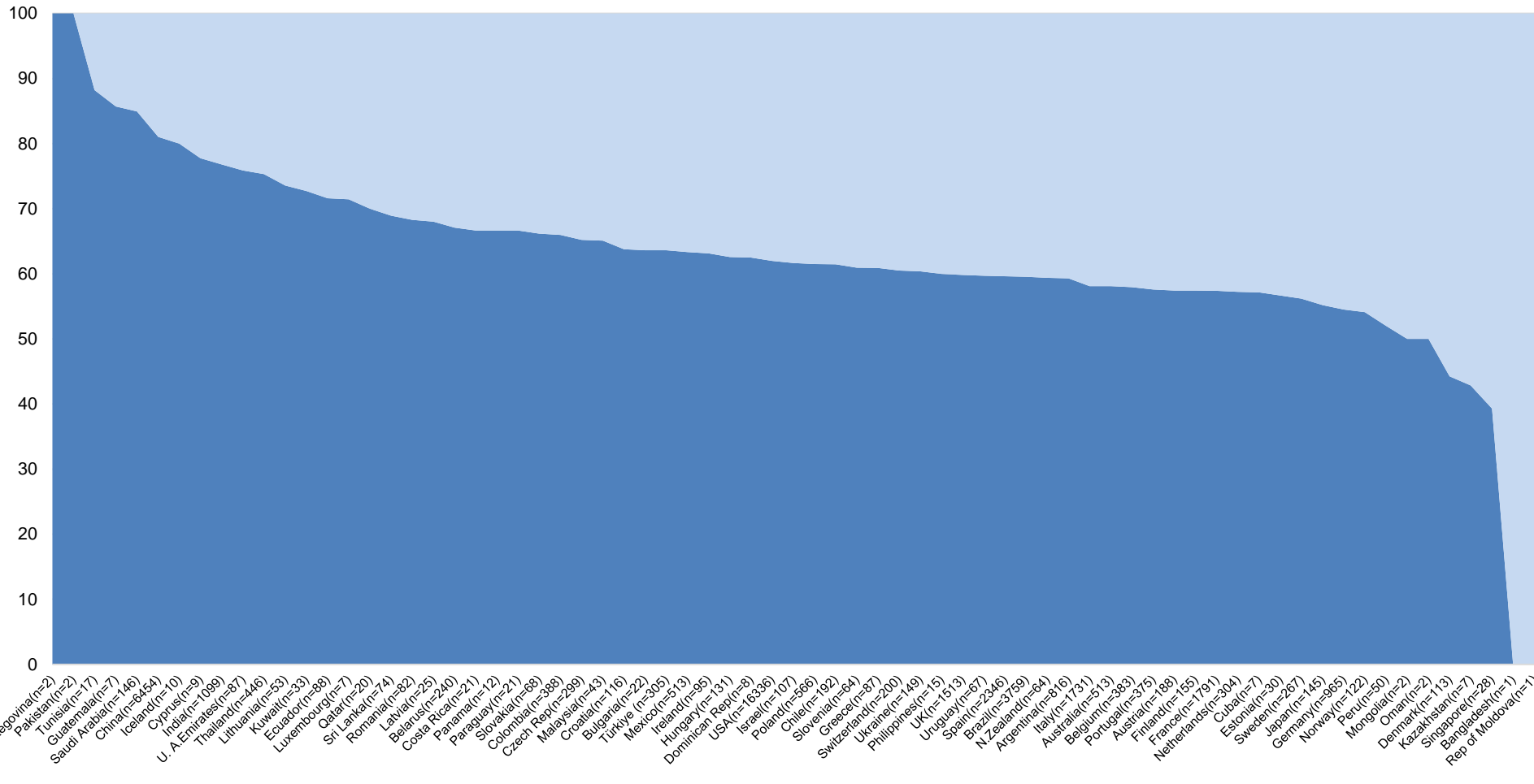
Actual deceased organ donors by donor age (%) 2023

- % < 18 years
- % 18-59 years
- % ≥ 60 years

N=75 countries provided information on donor age groups

2 330 (5%) DD < 18 years
29 964 (68%) DD 18-59 years
12 132 (27%) DD ≥ 60 years

■ %Female ADD ■ %Male ADD

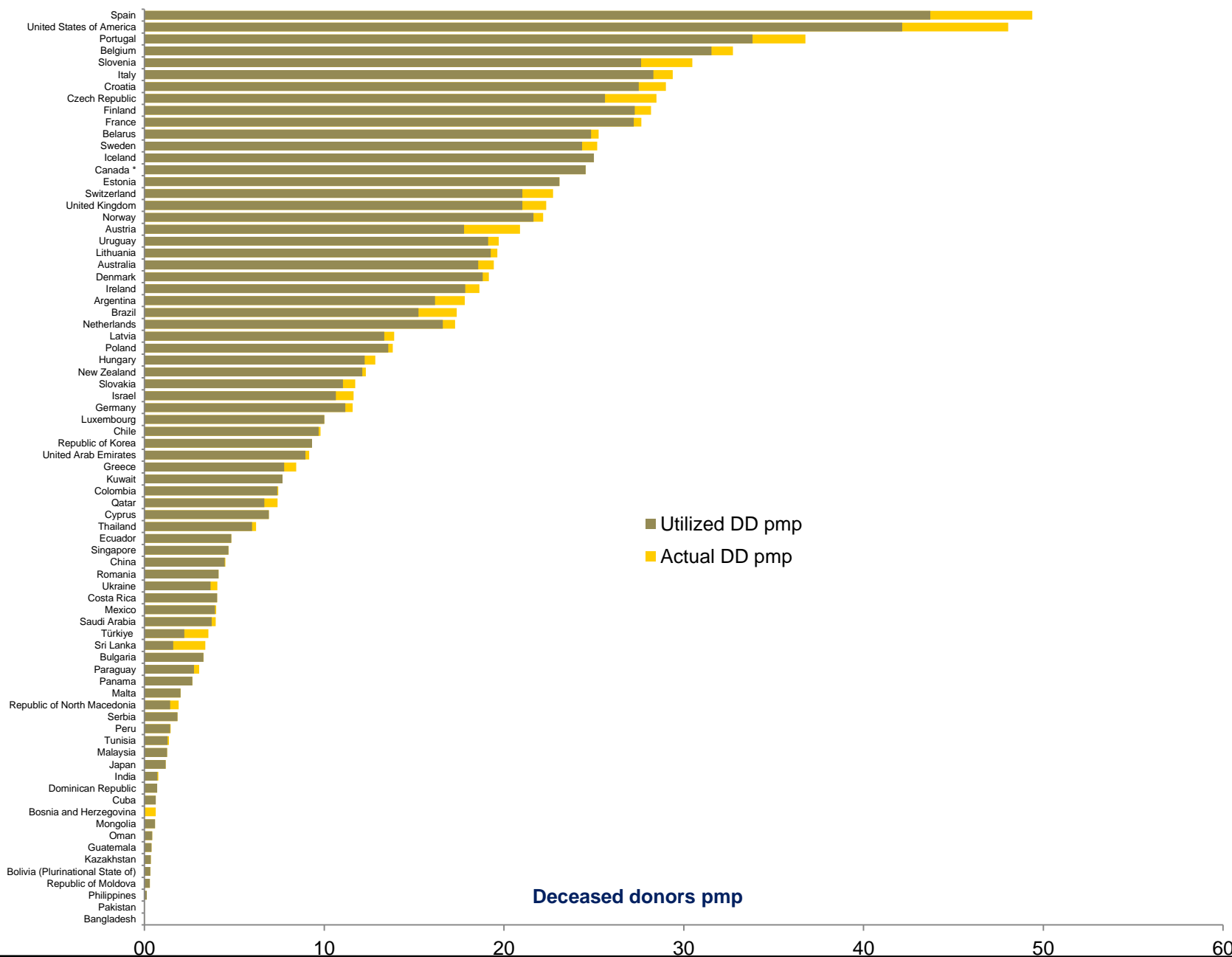


Actual deceased organ donors by donor sex (%) 2023

71 countries provided information according to donor sex

28 535 (64%) male donors
15 869 (36%) female donors

Actual and utilized deceased organ donors (pmp) 2023



Deceased donation activities reported in 77/93 countries

Actual donor: deceased person from whom at least one organ was recovered for the purpose of transplantation.

Utilized donor: deceased person from whom at least one organ was transplanted.

*Canada - utilized deceased donors

Bangladesh
Pakistan
Philippines
Republic of Moldova
Bolivia (Plurinational State of)
Kazakhstan
Guatemala
Oman
Mongolia
Cuba
Bosnia and Herzegovina
Dominican Republic
India
Japan
Malaysia
Tunisia
Peru
Serbia
Republic of North Macedonia
Malta
Panama
Paraguay
Bulgaria
Sri Lanka
Türkiye
Saudi Arabia
Mexico
Costa Rica
Ukraine
Romania
China
Singapore
Ecuador
Thailand
Cyprus
Qatar
Colombia
Kuwait
Greece
United Arab Emirates
Republic of Korea
Chile
Luxembourg
Germany
Israel
Slovakia
New Zealand
Hungary
Poland
Latvia
Netherlands
Brazil
Argentina
Ireland
Denmark
Australia
Lithuania
Uruguay
Austria
Norway
United Kingdom
Switzerland
Estonia
Canada
Iceland
Sweden
Belarus
France
Finland
Czech Republic
Croatia
Italy
Slovenia
Belgium
Portugal
United States of America
Spain

- Actual DD pmp
- Kidney tx from DD pmp
- Liver tx from DD pmp
- Lung tx from DD pmp
- Heart tx pmp
- Pancreas tx pmp
- Small Bowell tx pmp

Actual deceased organ donors and transplants from deceased donors by type of organ (pmp) 2023

Deceased donation activities reported in 77/93 countries

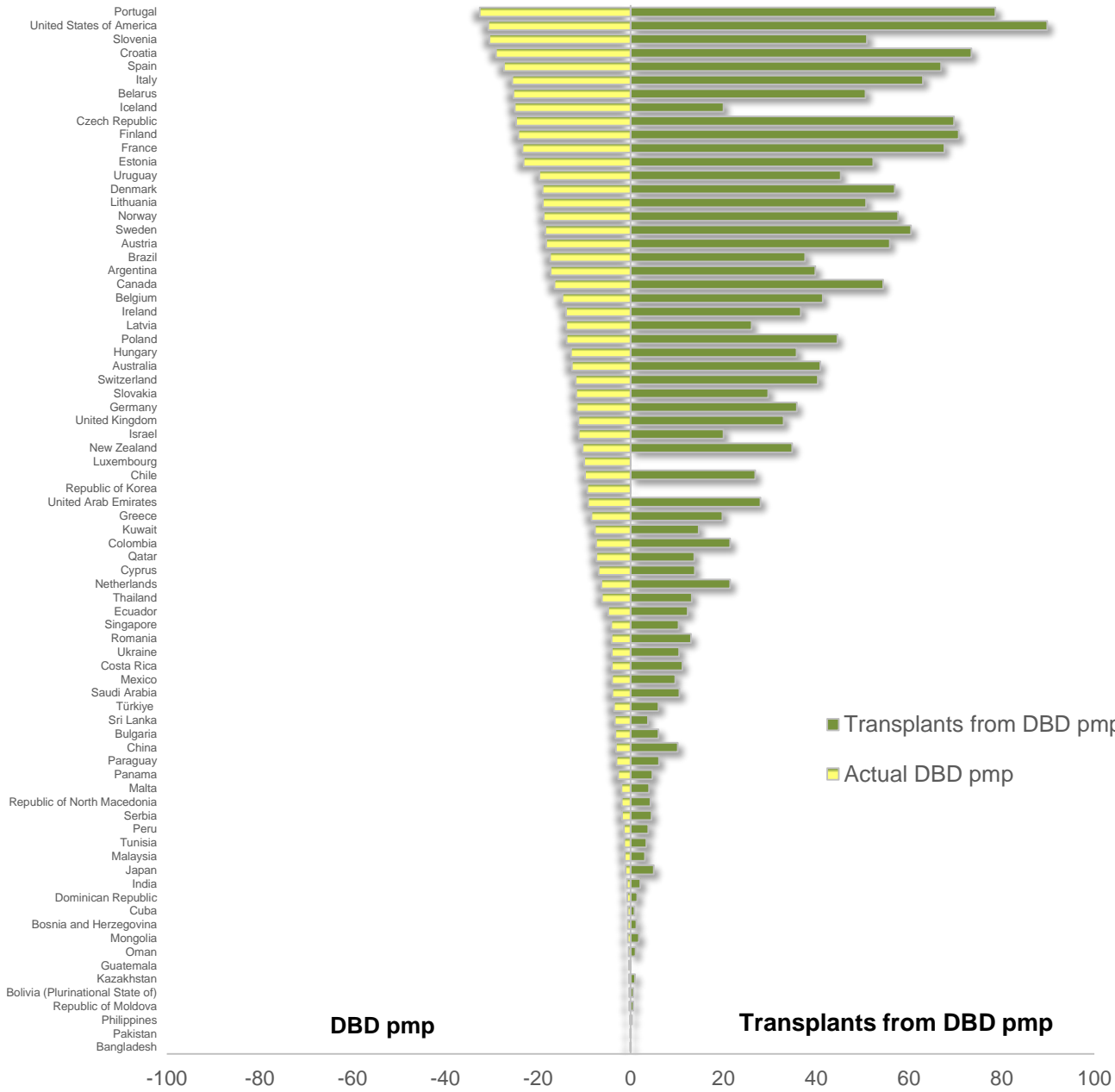
* Organs recovered from deceased donors may be used for Transplantation in other jurisdictions, particularly in the absence of local transplant programs.

** Canada - utilized deceased donors

DD pmp

Transplants from DD pmp

-130 -110 -90 -70 -50 -30 -10 10 30 50 70 90 110 130



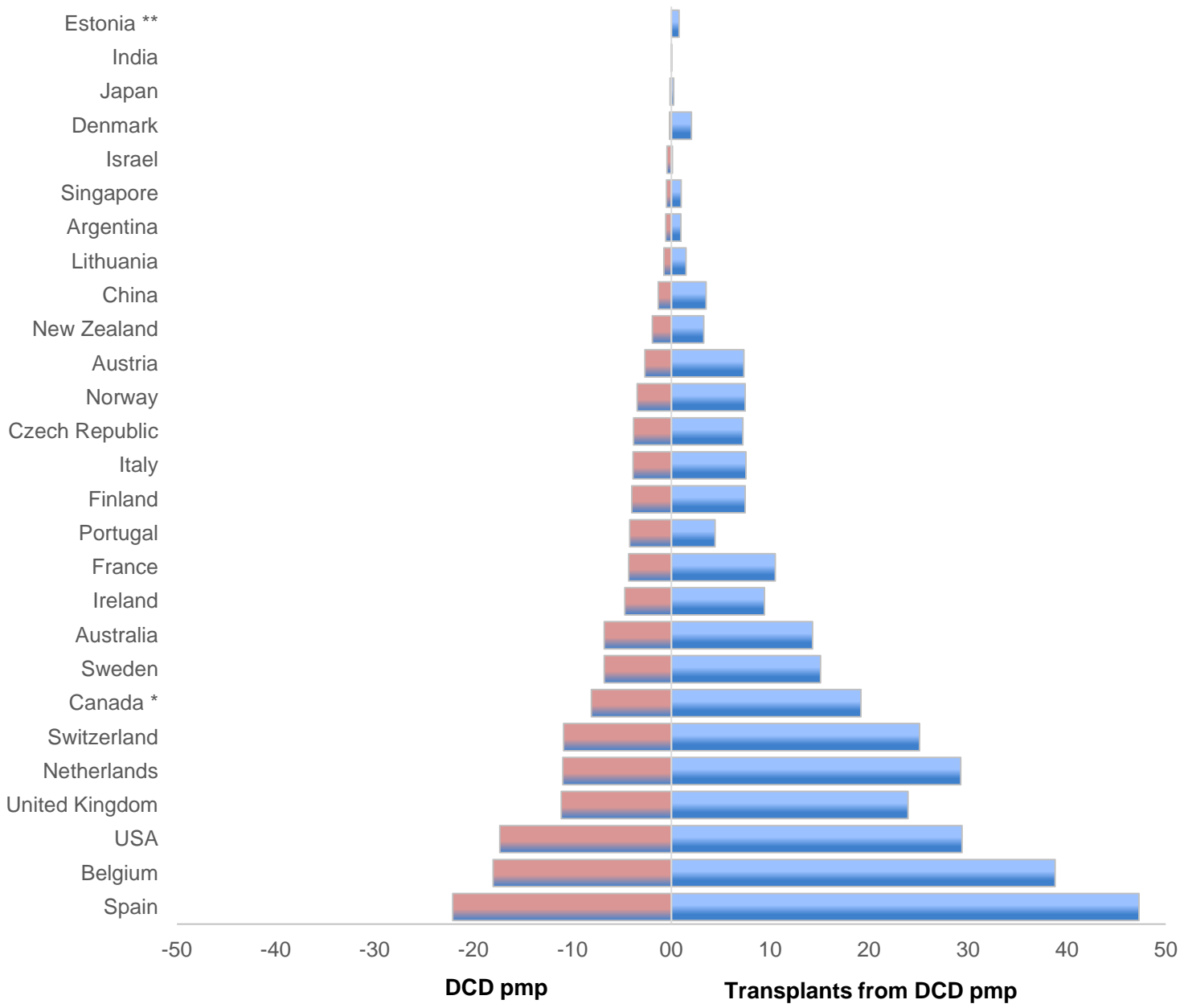
Actual DBD donors and transplants from DBD donors (pmp) 2023

DBD donors: 34 466 (75%)

DBD activities reported in 77/93 countries

**Organs recovered from deceased donors may be used for transplantation in other jurisdictions, particularly in the absence of local transplant programs.*

***Canada - utilized deceased donors*



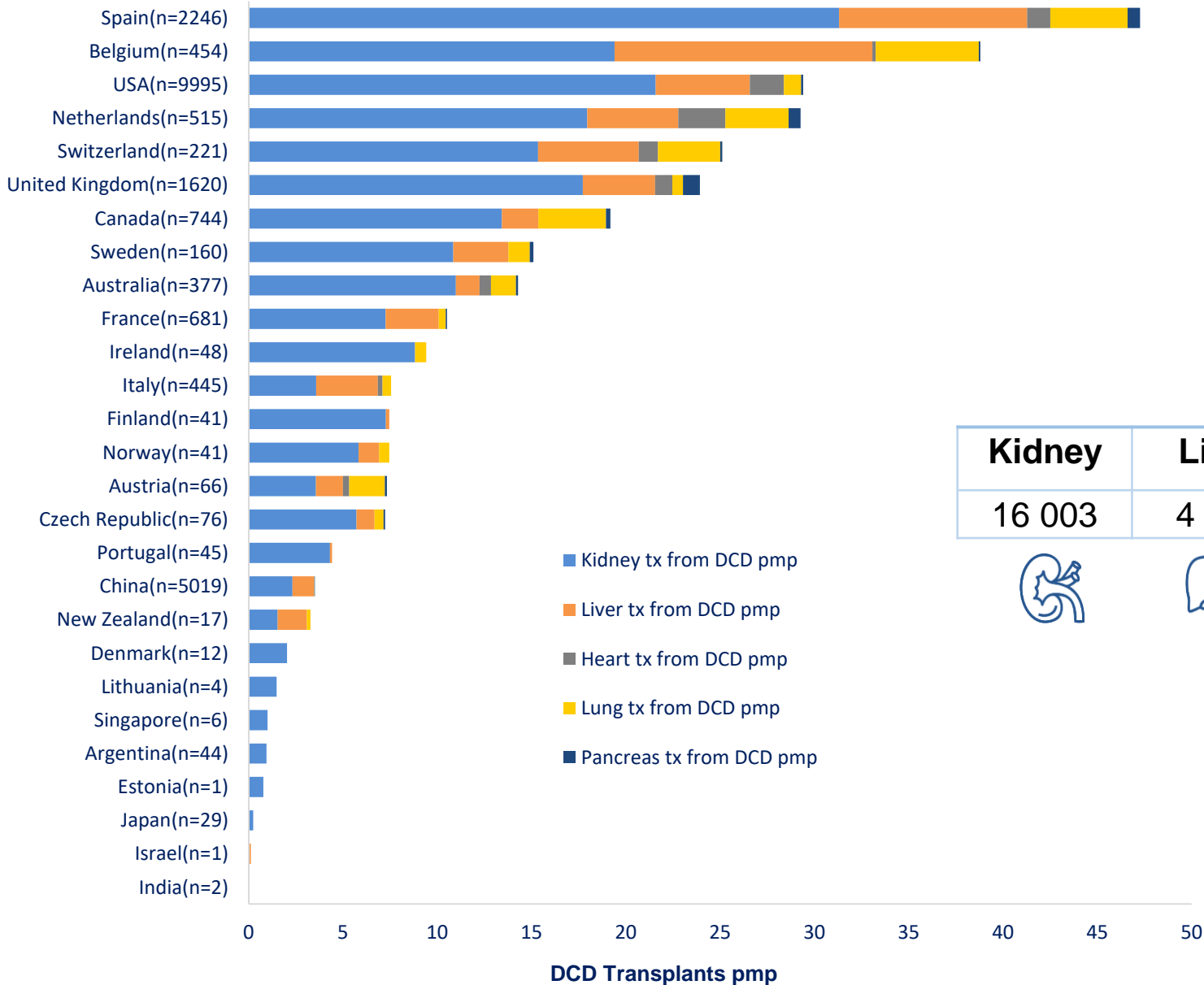
Actual DCD donors and transplants from DCD donors (pmp) 2023






DCD TRANSPLANT activities reported in 27/93 countries

DCD donors: 11 395 (25%)

* Canada - utilized deceased donors
 ** Estonia reported 1 tx, with an imported organ

Transplants from DCD donors per type of organ (pmp) 2023



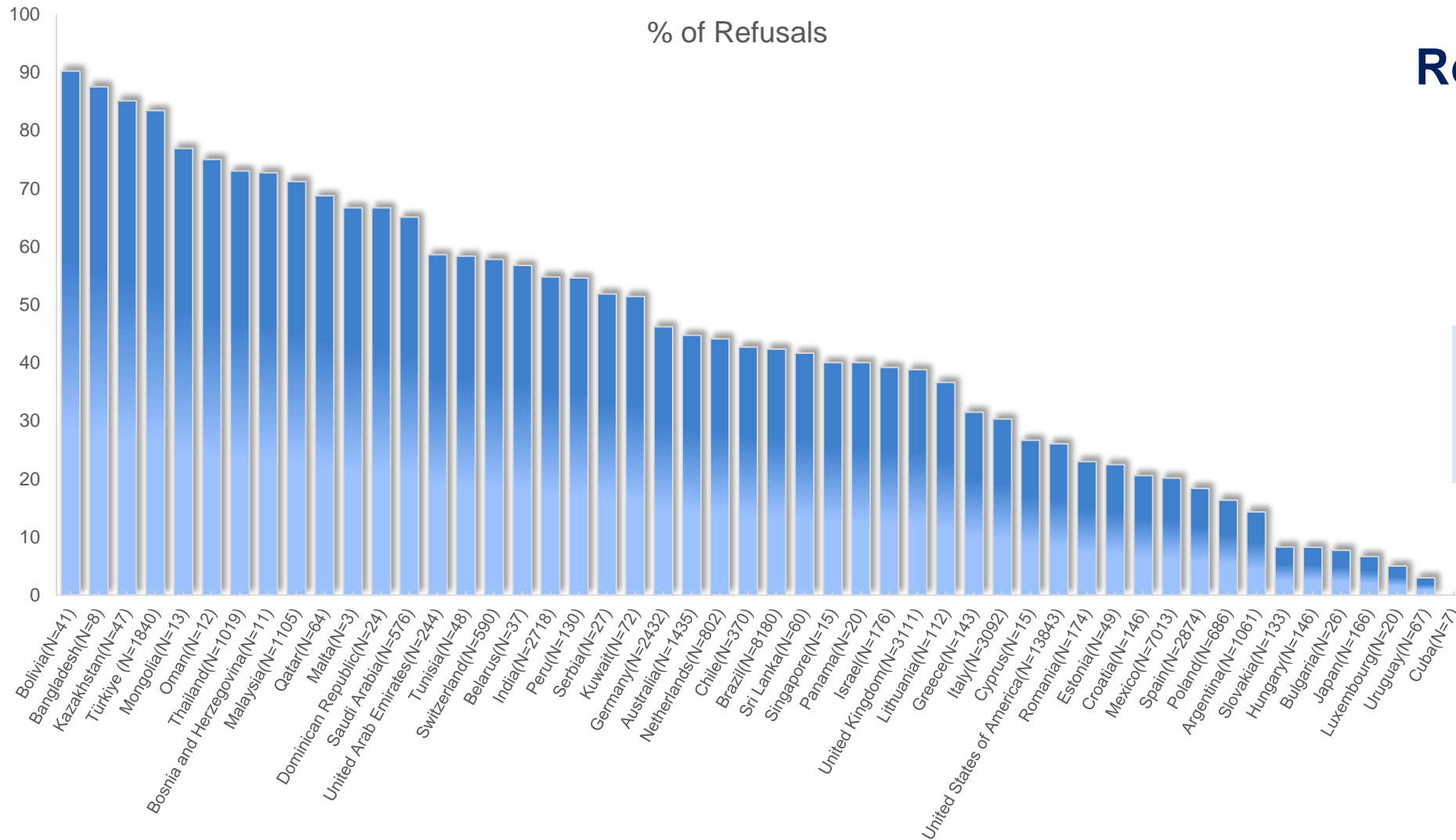
Kidney	Liver	Lung	Heart	Pancreas	Total
16 003	4 903	998	823	182	22 909
					

*Additionally, small bowel transplants from DCD were reported by Spain (n=1)

Refusals to deceased donation (%)

2023

N=50 countries provided information on refusals to deceased donation and family interviews

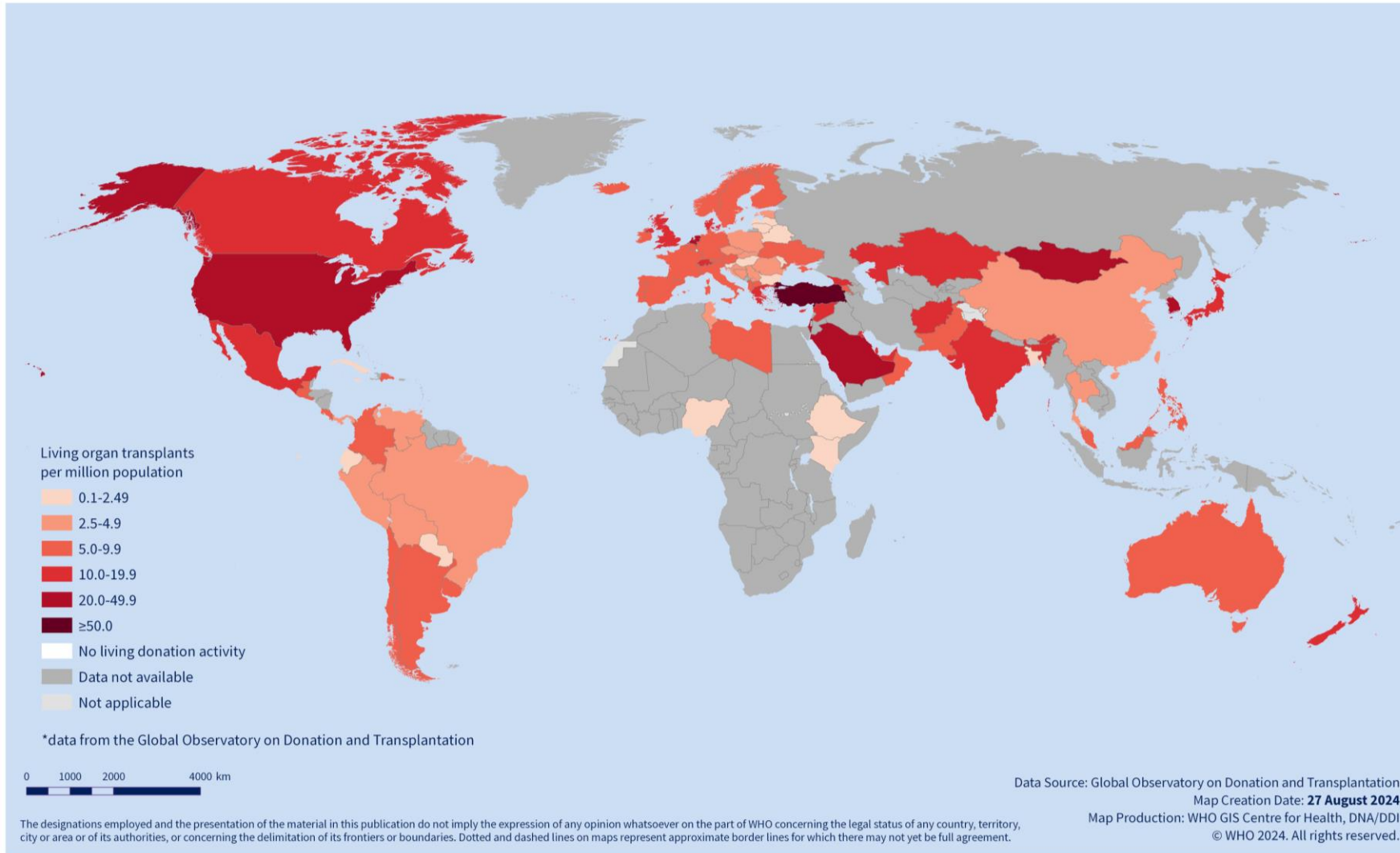


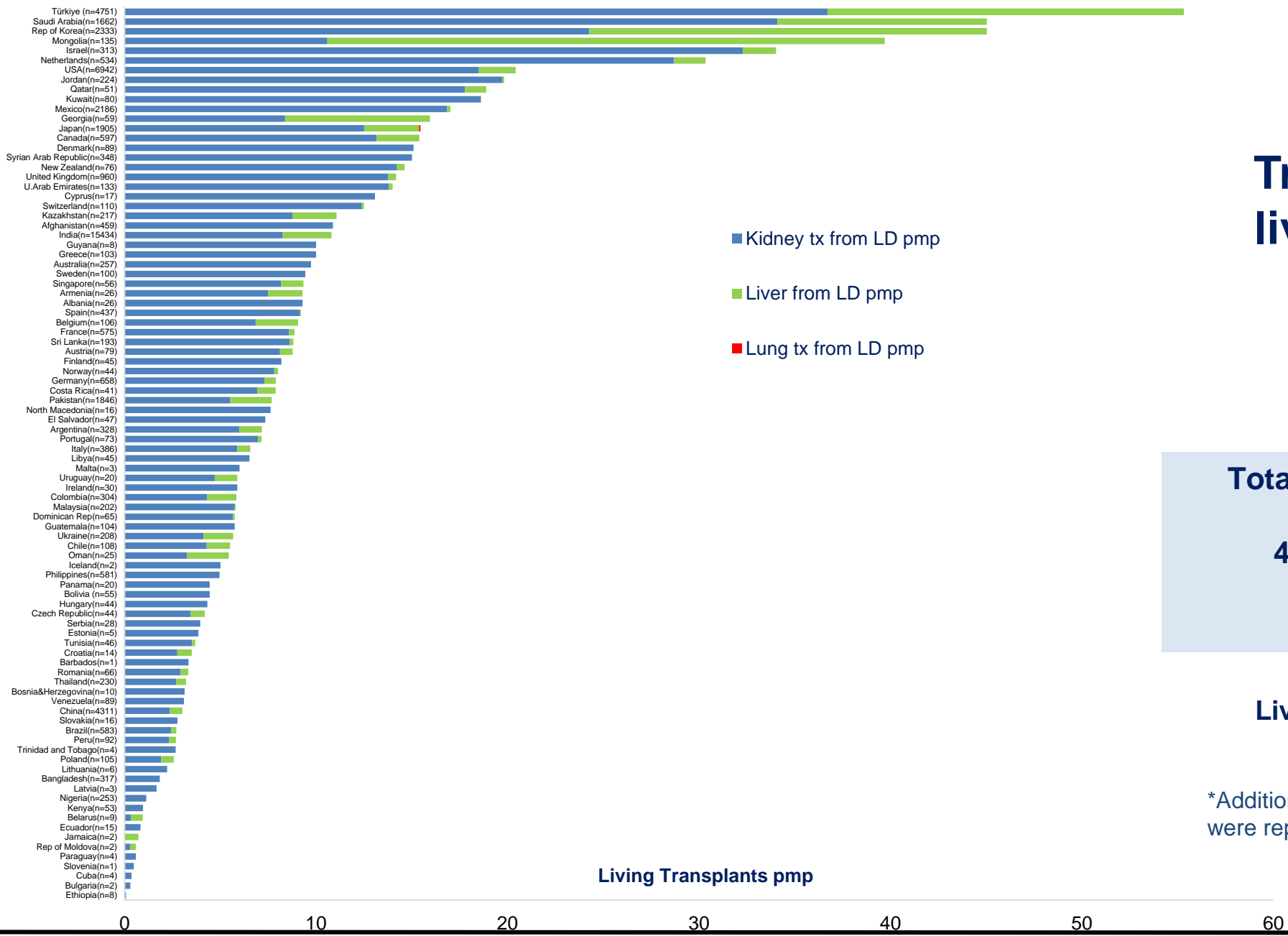
*Number of interviews is presented in brackets.

2

LIVING DONATION ACTIVITY

Organ transplantation from living donors, 2023*





Transplants from living donors *per* type of organ (pmp) 2023

Total number of LD transplants:

43 101 kidney transplants
10 081 liver transplants
10 lung transplants

Living transplants performed in 92/93 countries

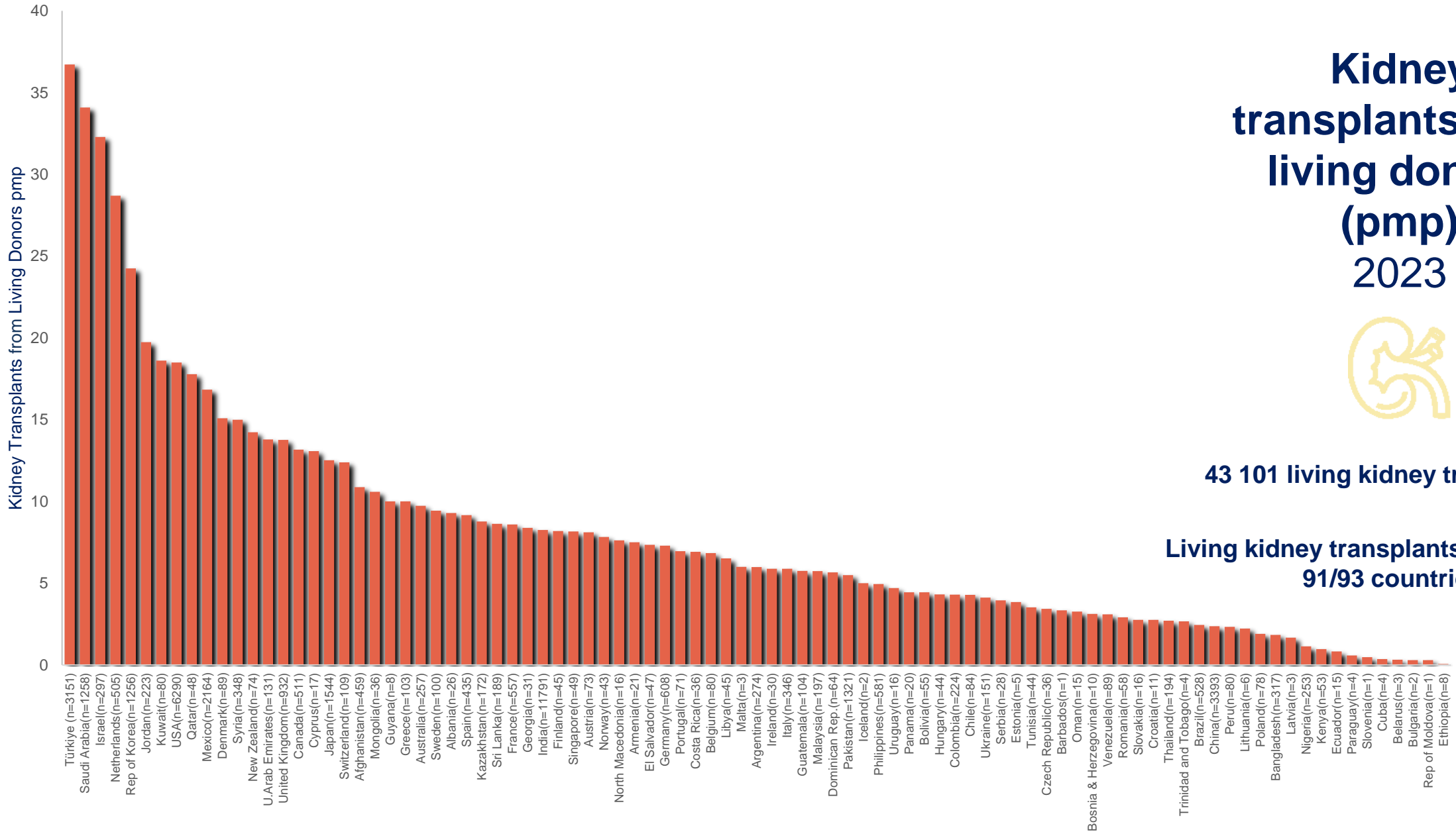
*Additionally, living donor pancreas transplants were reported by India (n=1) and China (n=7)

Kidney transplants from living donors (pmp) 2023



43 101 living kidney transplants

Living kidney transplants performed in 91/93 countries

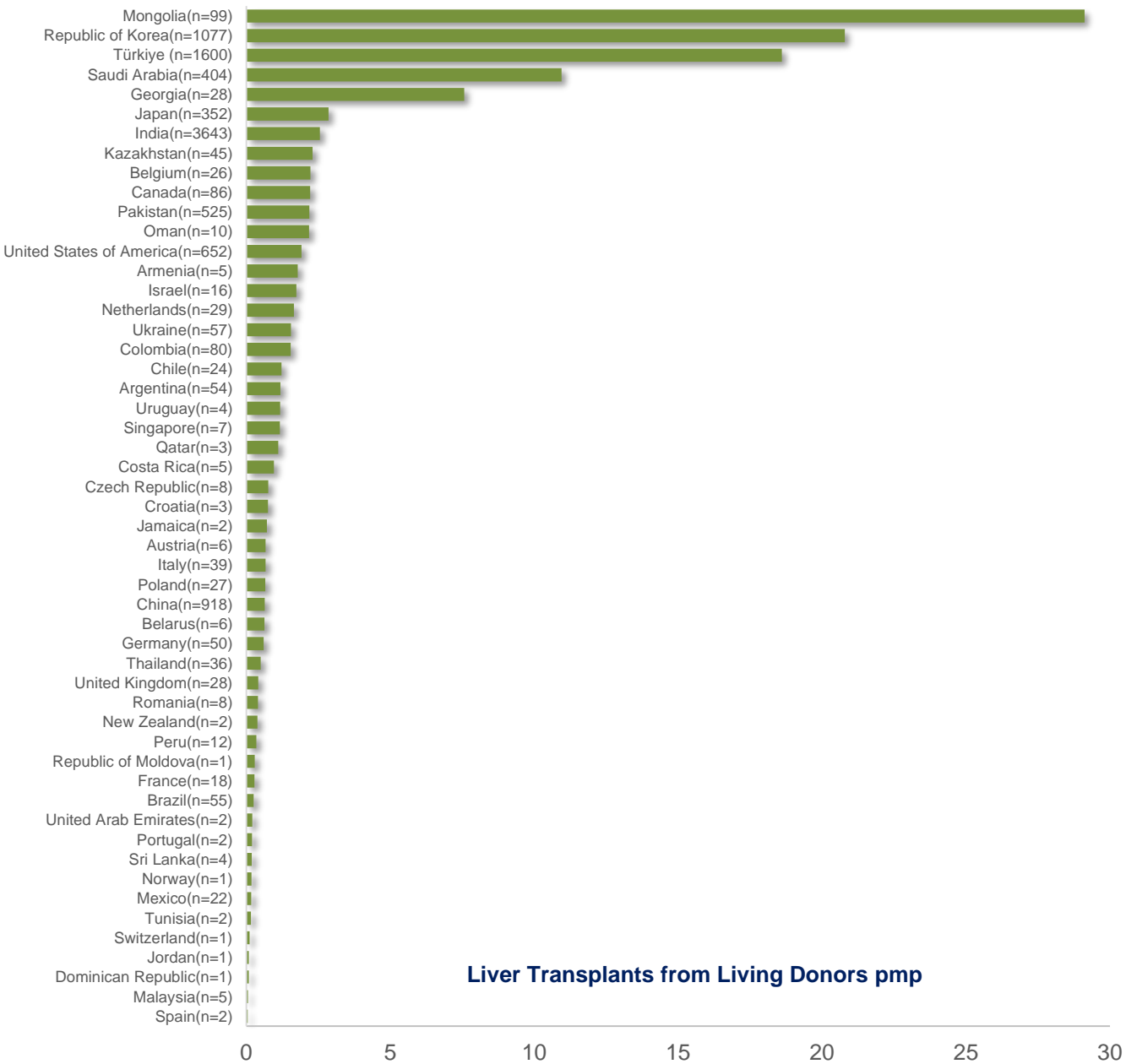


Liver transplants activities from living donors (pmp) 2023

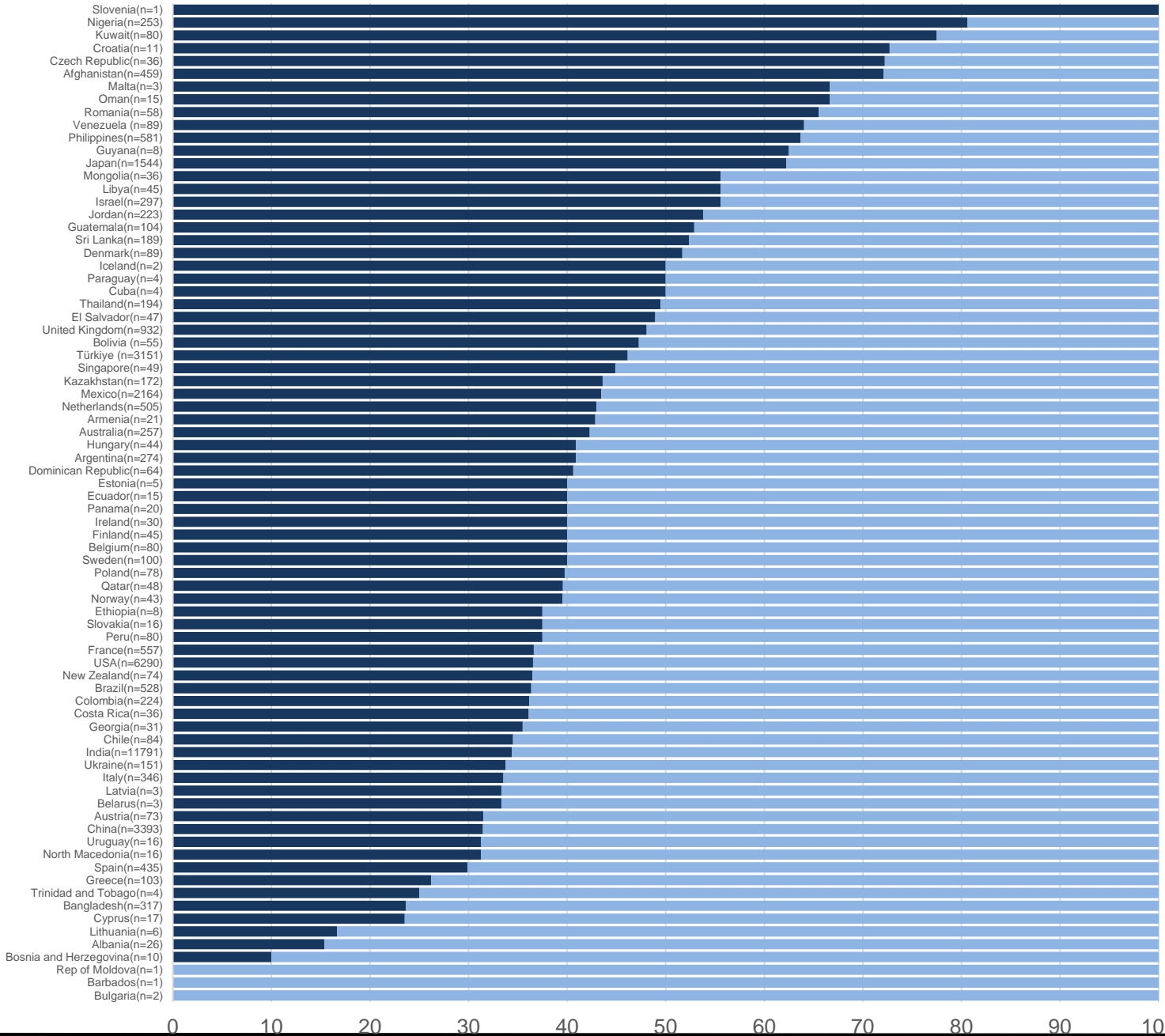


10 093 living liver transplants

Living Liver transplants performed in 52/93 countries



Liver Transplants from Living Donors pmp



Living kidney donors by donor sex (%) 2023

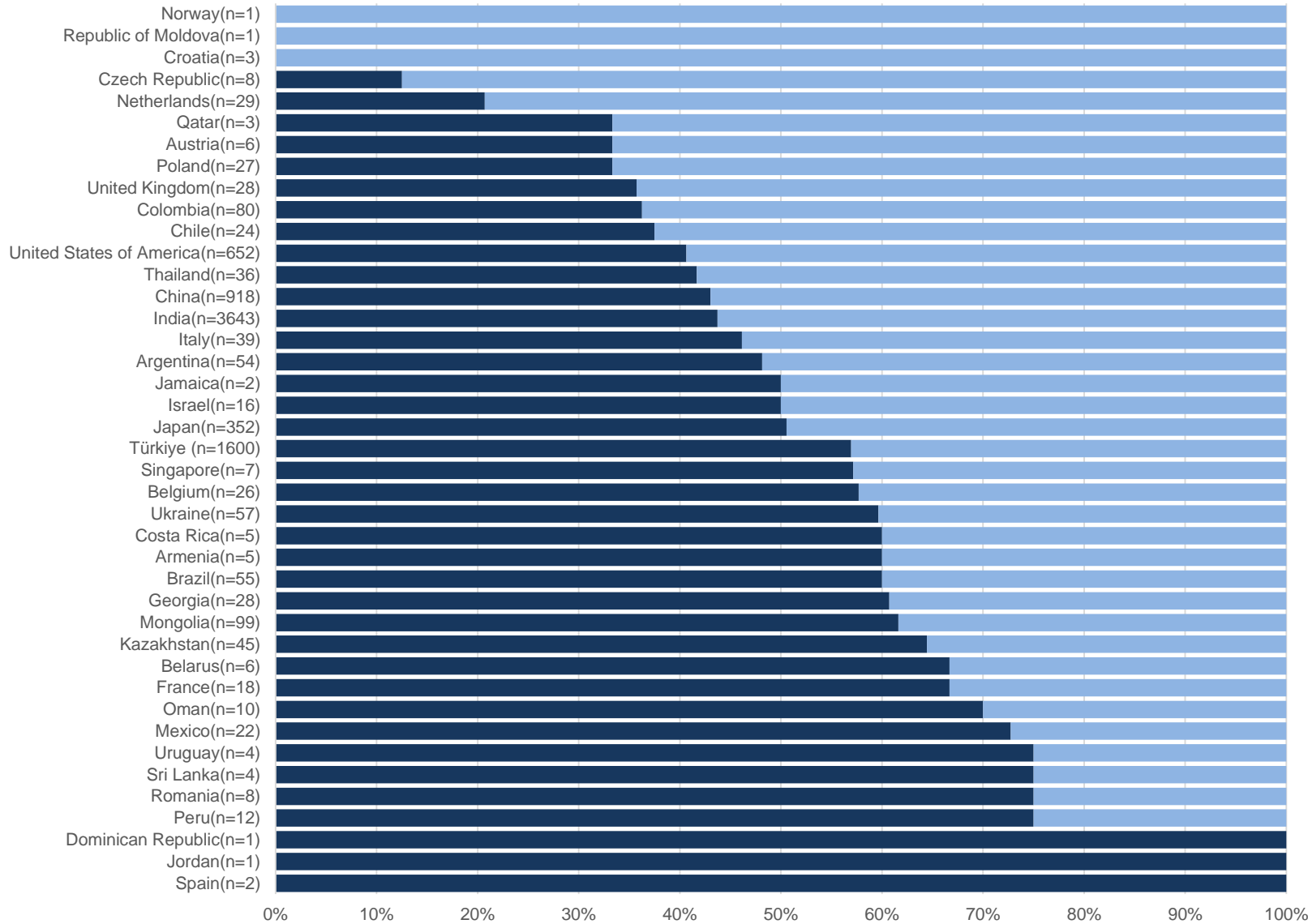
■ % Male Kidney LD
 ■ % Female Kidney LD



14 833 (40%) male kidney living donors
22 331 (60%) female kidney living donors

N= 78 countries provided information on donor sex

■ % Male Liver LD ■ % Female Liver LD



Living liver donors by donor sex (%)

2023



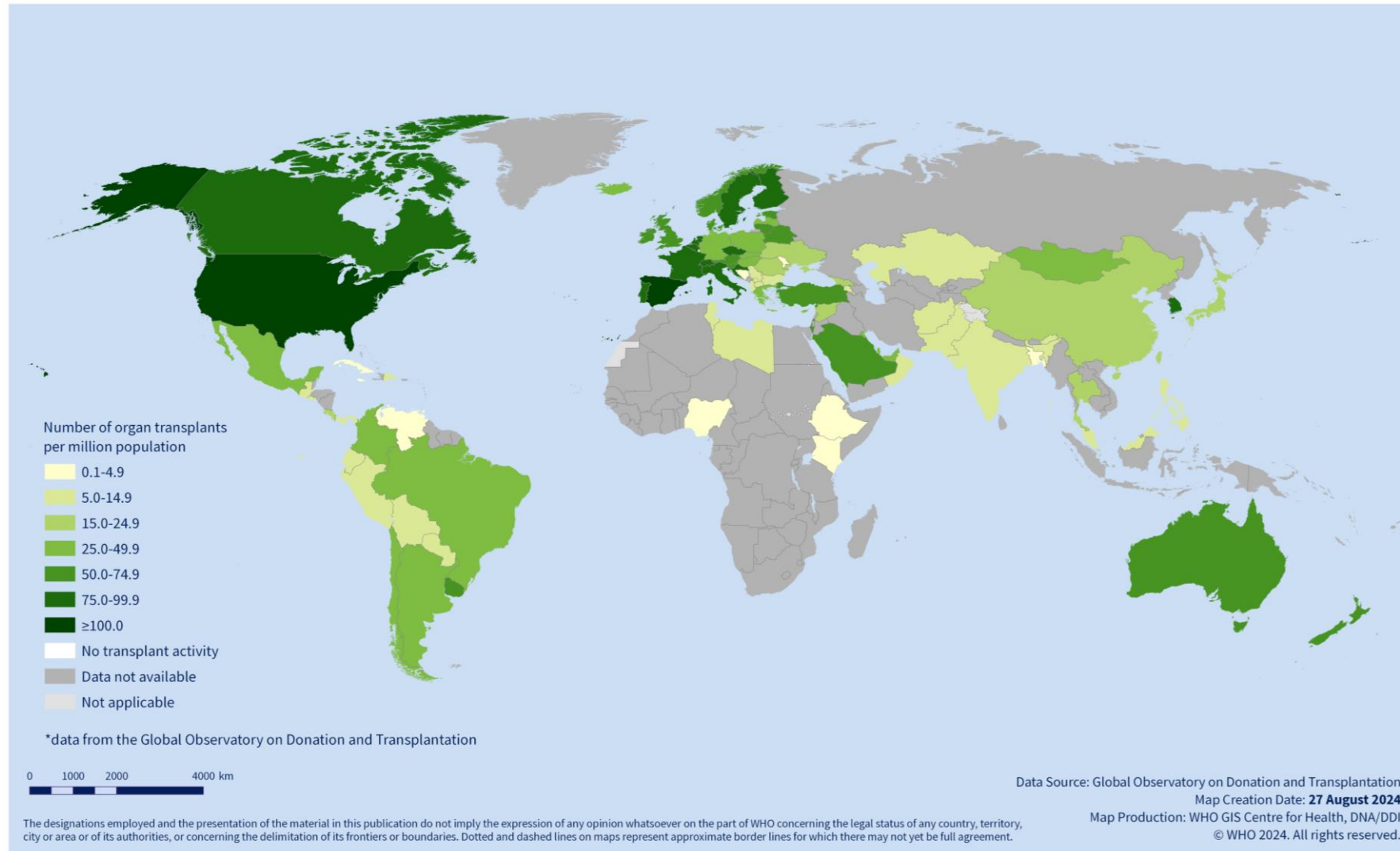
3 740 (47%) male living liver donors
4 198 (53%) female living liver donors

N= 41 countries provided information on donor sex

3

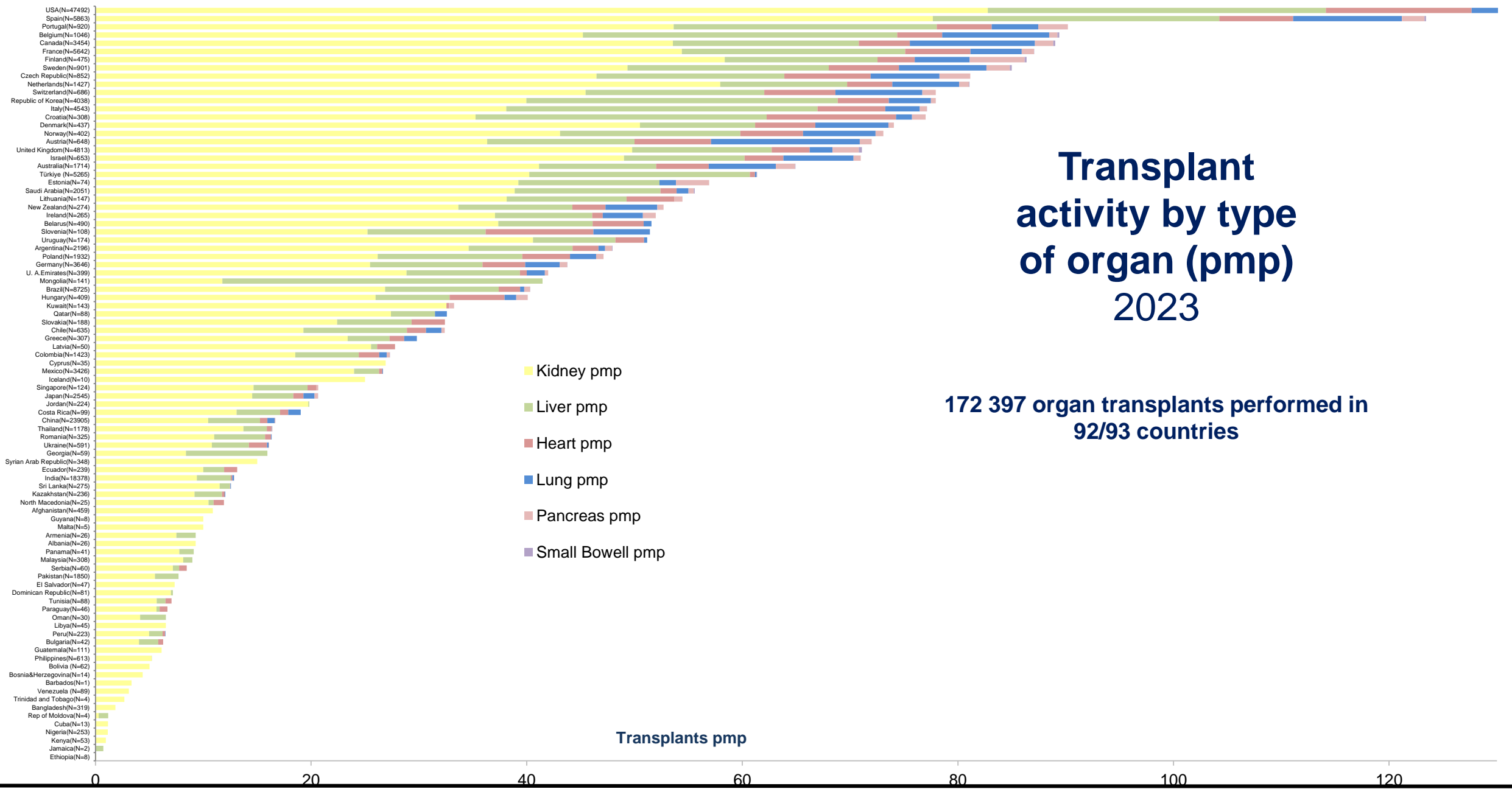
GLOBAL ORGAN TRANSPLANT ACTIVITY

Global transplantation activities of solid organs, 2023*



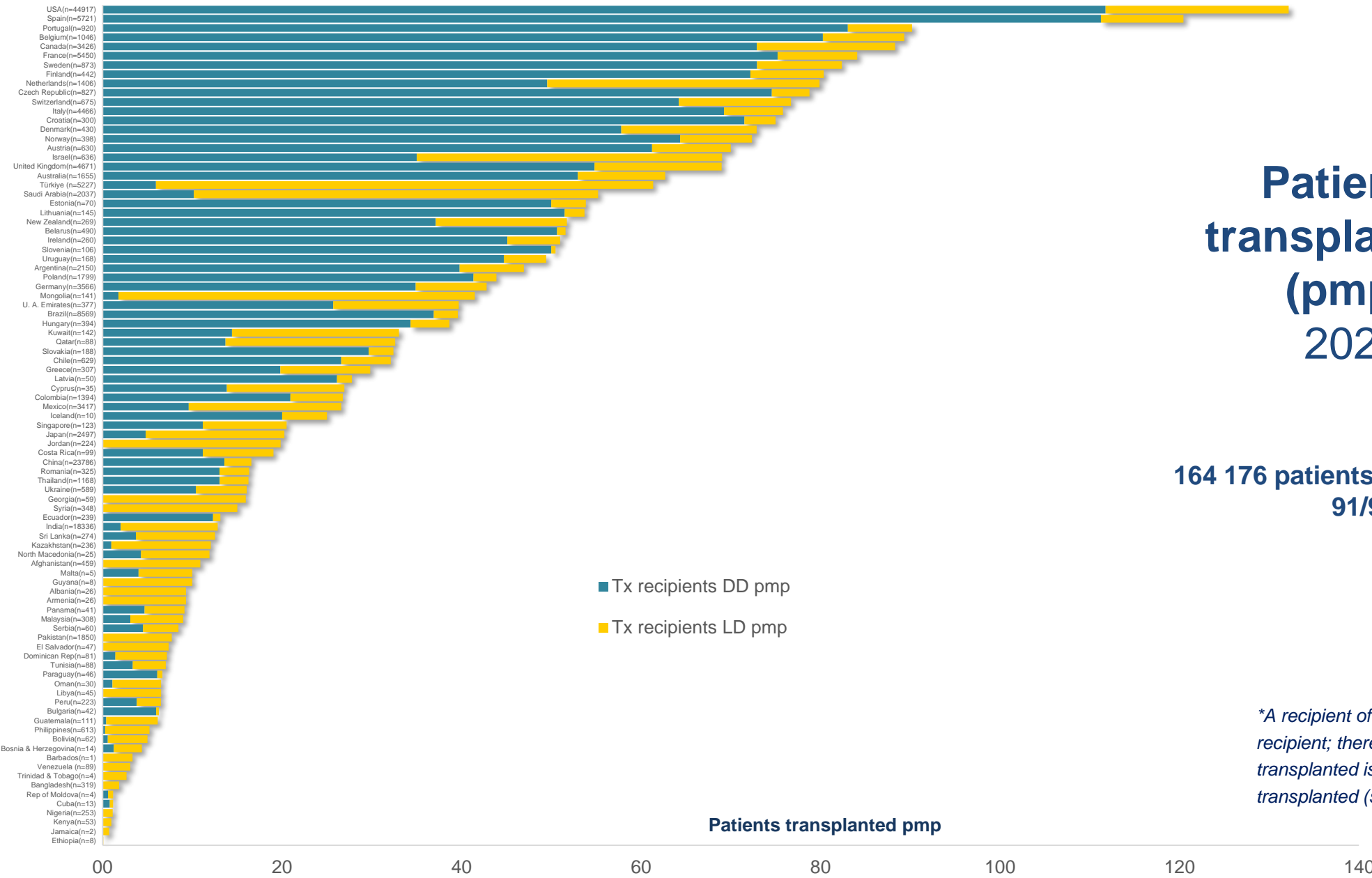
Transplant activity by type of organ (pmp) 2023

172 397 organ transplants performed in 92/93 countries



- Kidney pmp
- Liver pmp
- Heart pmp
- Lung pmp
- Pancreas pmp
- Small Bowell pmp

Transplants pmp



Patients transplanted* (pmp) 2023

164 176 patients transplanted reported in 91/93 countries

■ Tx recipients DD pmp
 ■ Tx recipients LD pmp

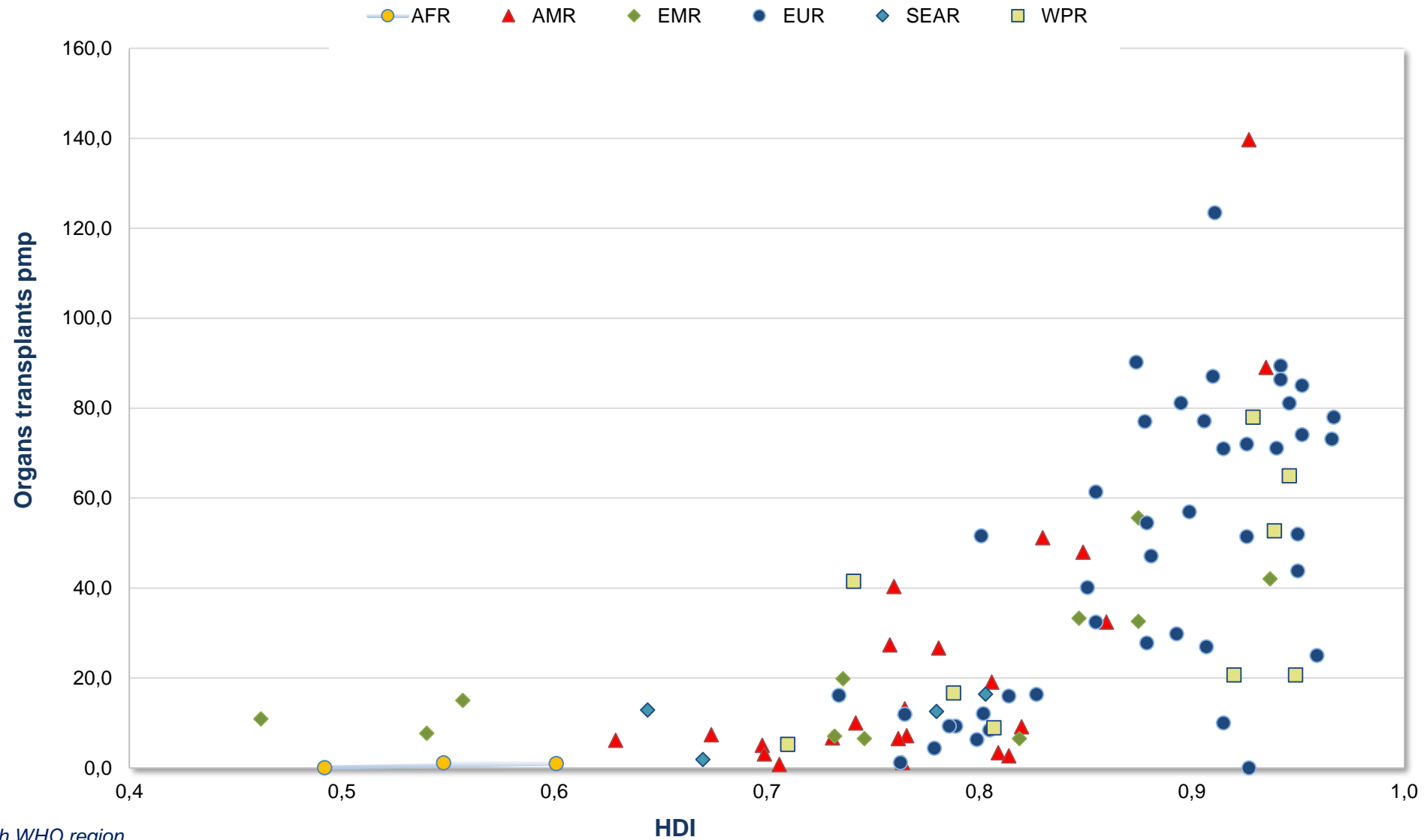
Patients transplanted pmp

**A recipient of more than one organ is counted as one recipient; therefore, the number of patients transplanted is smaller than the number of organs transplanted (see previous slide)*

Organs transplanted pmp in relation to the Human Development Index (HDI) 2023

WHO Regions:

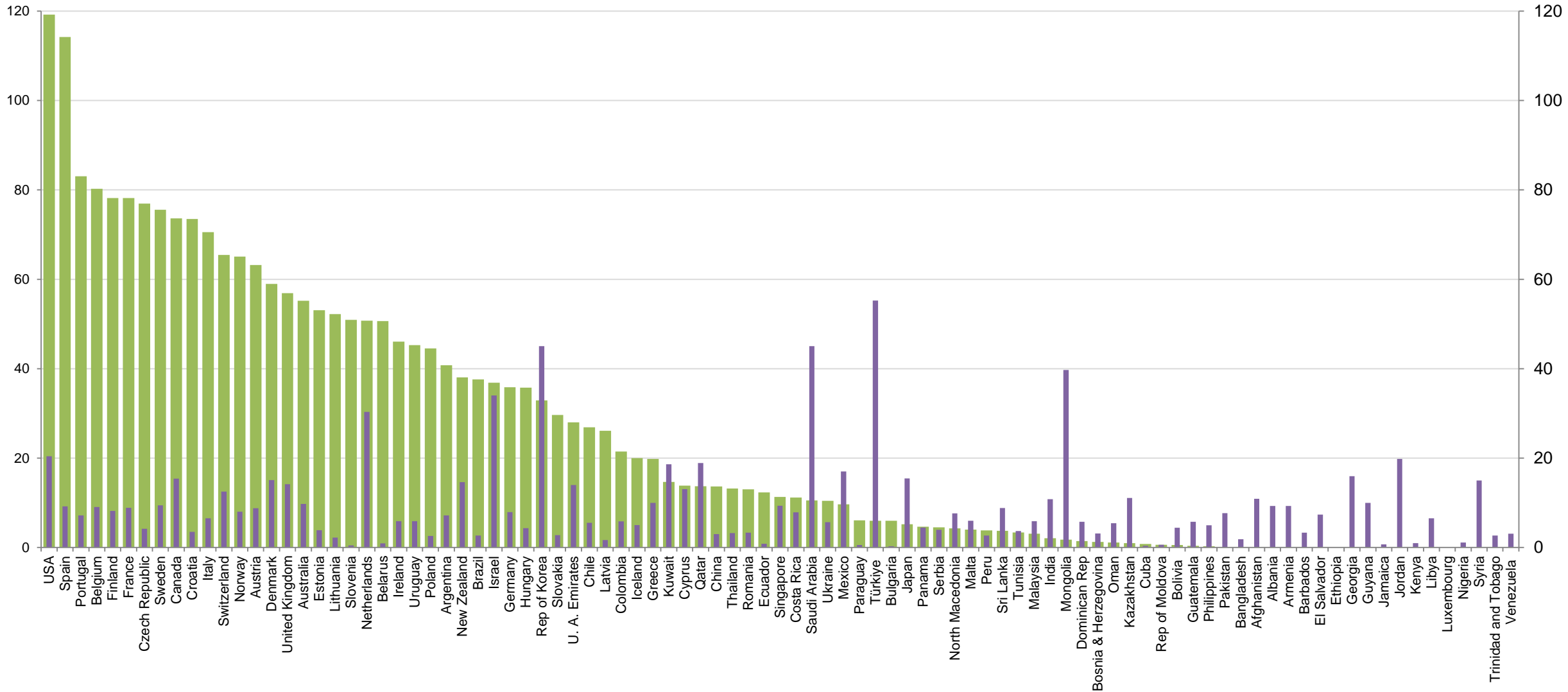
- African Region (AFR)
- Region of the Americas (AMR)
- Eastern Mediterranean Region (EMR)
- European Region (EUR)
- South-East Region (SEAR)
- Western Pacific Region (WPR)



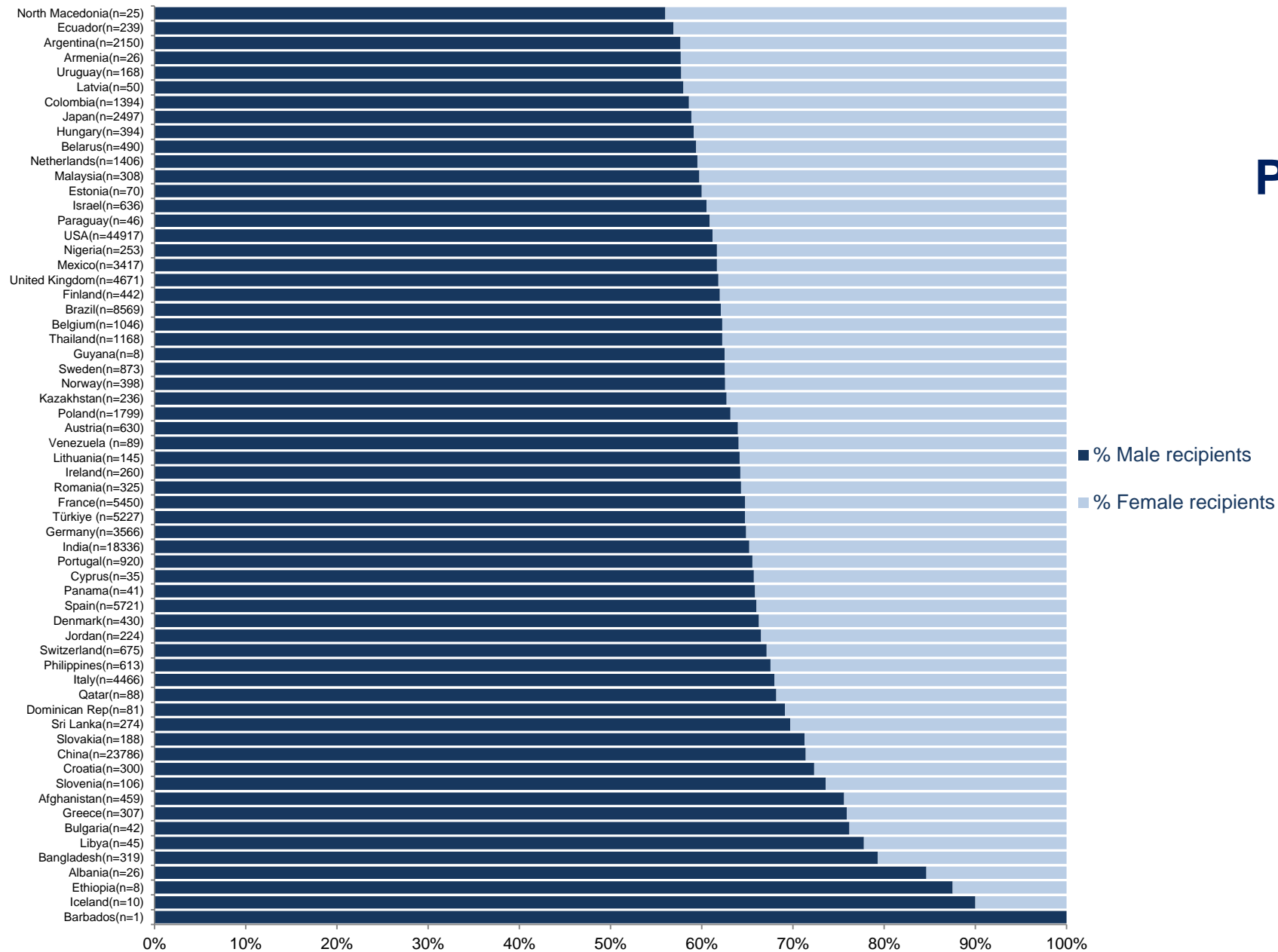
Dots represent responding Member States in each WHO region

Transplants from deceased persons vs transplants from living persons (pmp). 2023

■ Total tx from DD pmp ■ Total living transplants pmp



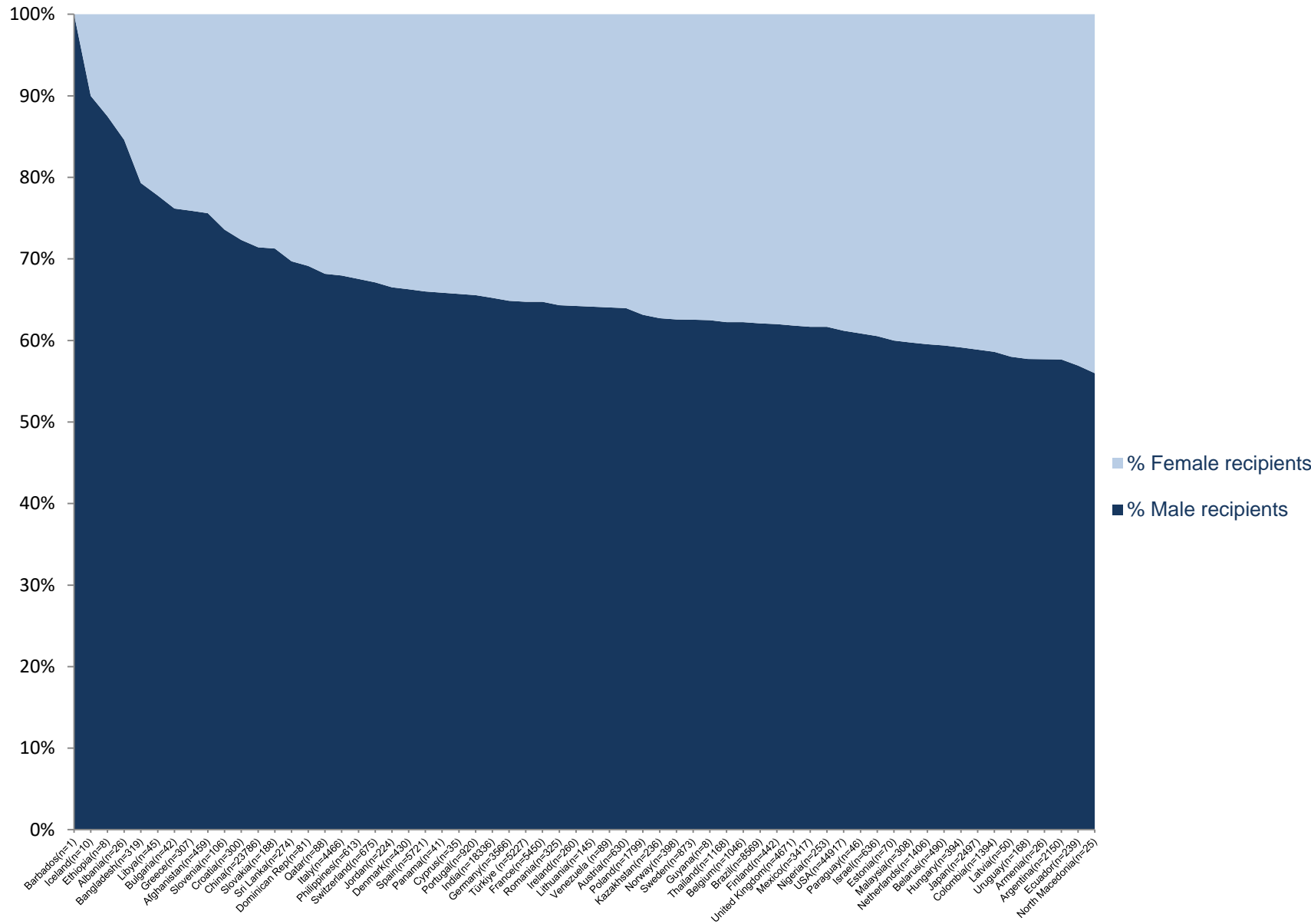
Patients transplanted by sex (%) 2023



97 928 (64%) male recipients
54 634 (36%) female recipients

N= 76 countries provided information on the sex of recipients

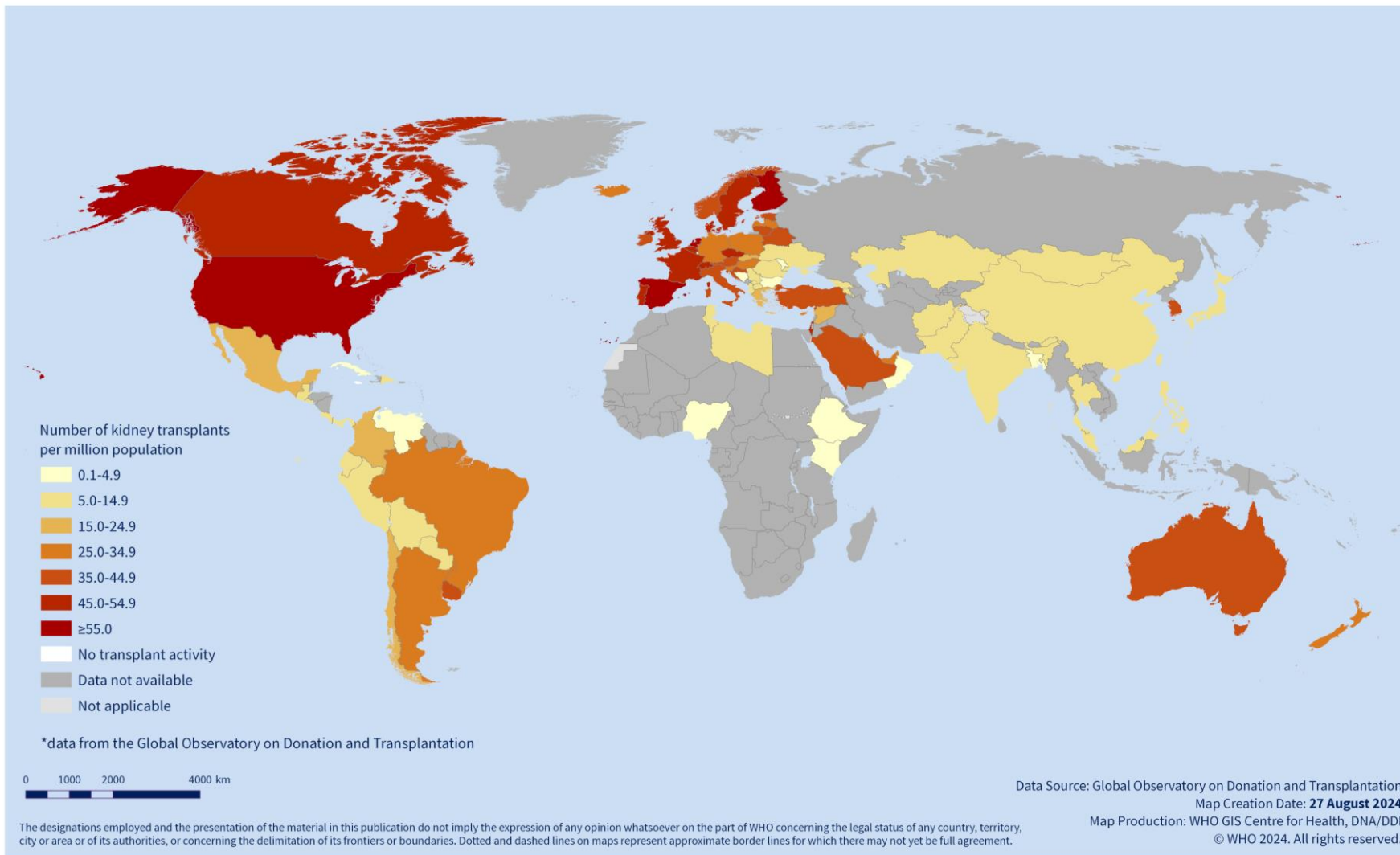
Patients transplanted by sex (%) 2023



97 928 (64%) male recipients
54 634 (36%) female recipients

N= 76 countries provided information on the sex of recipients

Kidney transplantation activities, 2023*



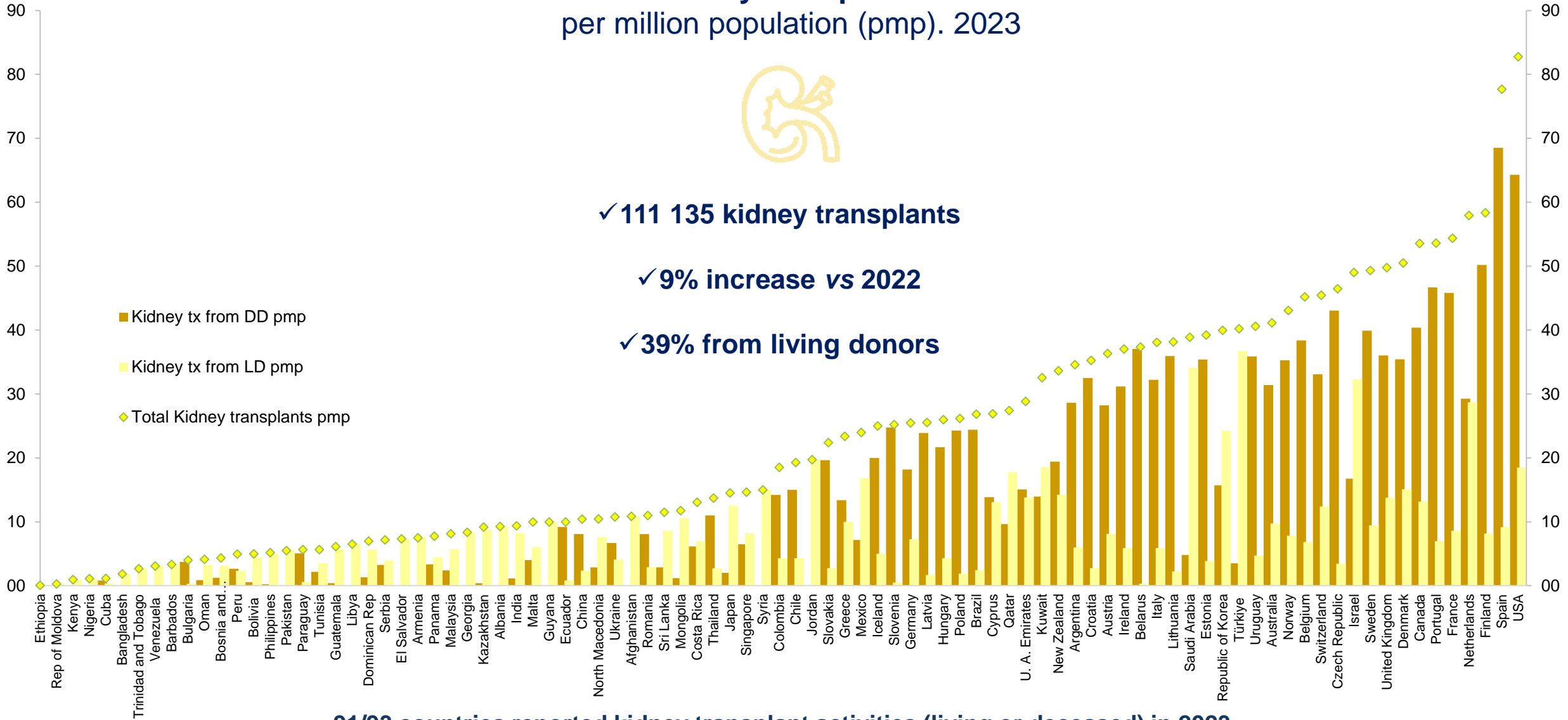
Kidney transplants per million population (pmp). 2023



✓ 111 135 kidney transplants

✓ 9% increase vs 2022

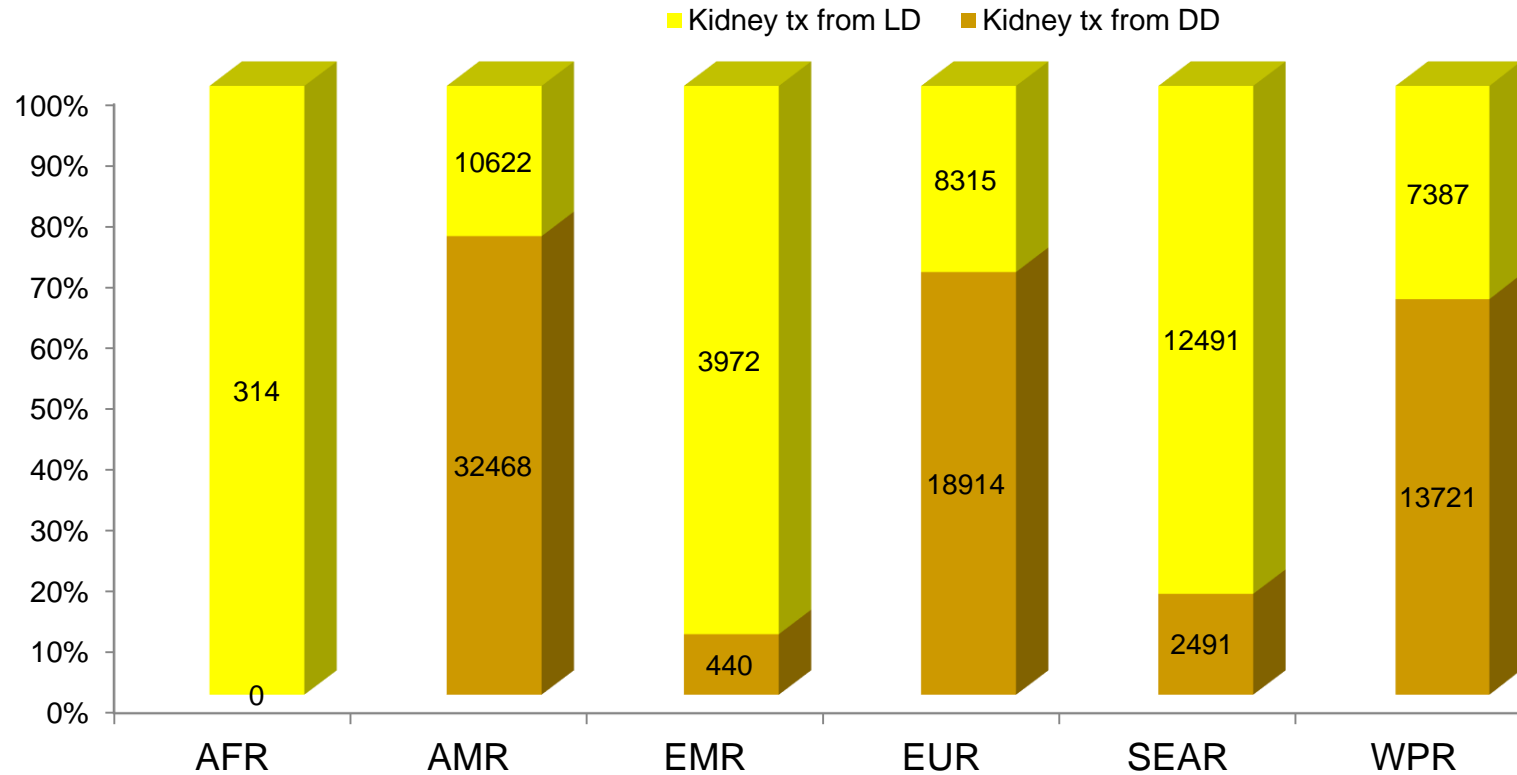
✓ 39% from living donors



91/93 countries reported kidney transplant activities (living or deceased) in 2023

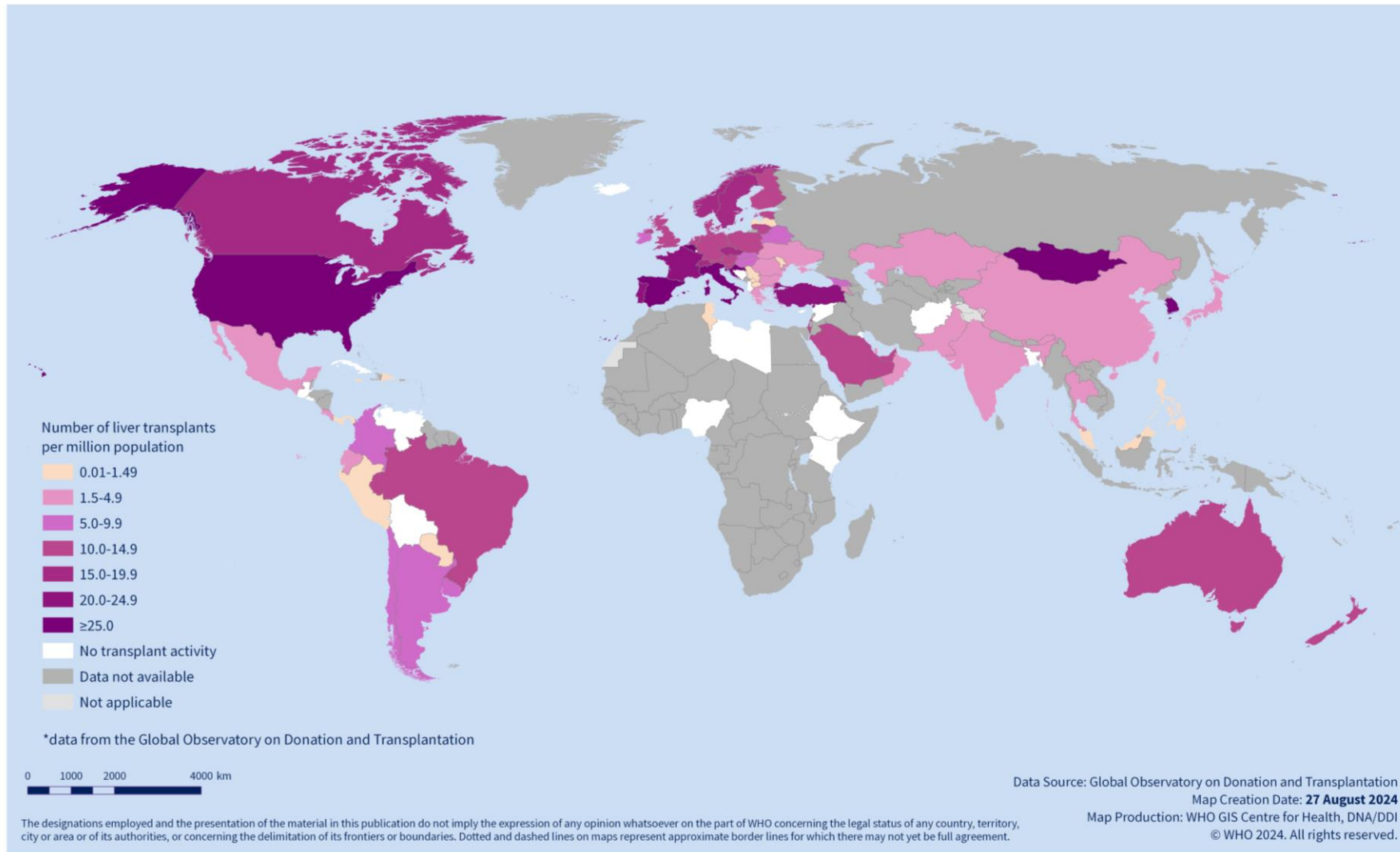


Kidney transplants by WHO regions 2023



KIDNEY TX, absolute number (pmp)*	314 (0.8)	43 090 (42.8)	4 412 (11.2)	27 229 (38.0)	14 982 (8.8)	21 108 (11.7)
% from deceased donors	0	75	10	69	17	65
Countries with kidney tx activity/ countries reporting to the GODT (total countries in the region)	3/3 (46)	22/23 (35)	11/11 (22)	42/43 (53)	4/4 (11)	9/9 (27)
Kidney tx centres (millions inhabitants/centre)*	22 (18.4)	910 (1.1)	99 (4.0)	426 (1.7)	709 (2.4)	357 (5.0)

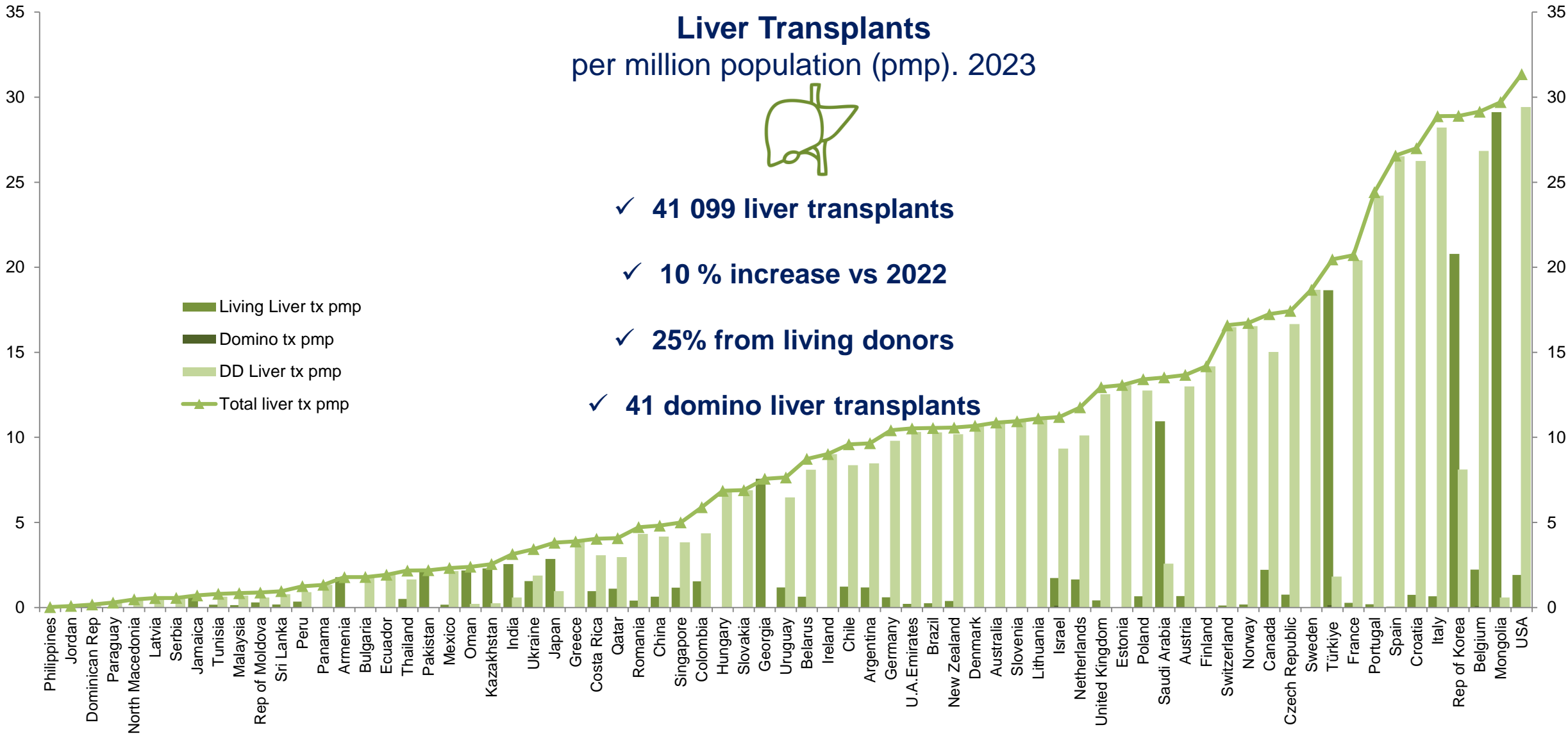
*Rates (pmp) and Millions inhabitants per transplant centre are calculated by applying the population of the responding countries



Liver Transplants per million population (pmp). 2023



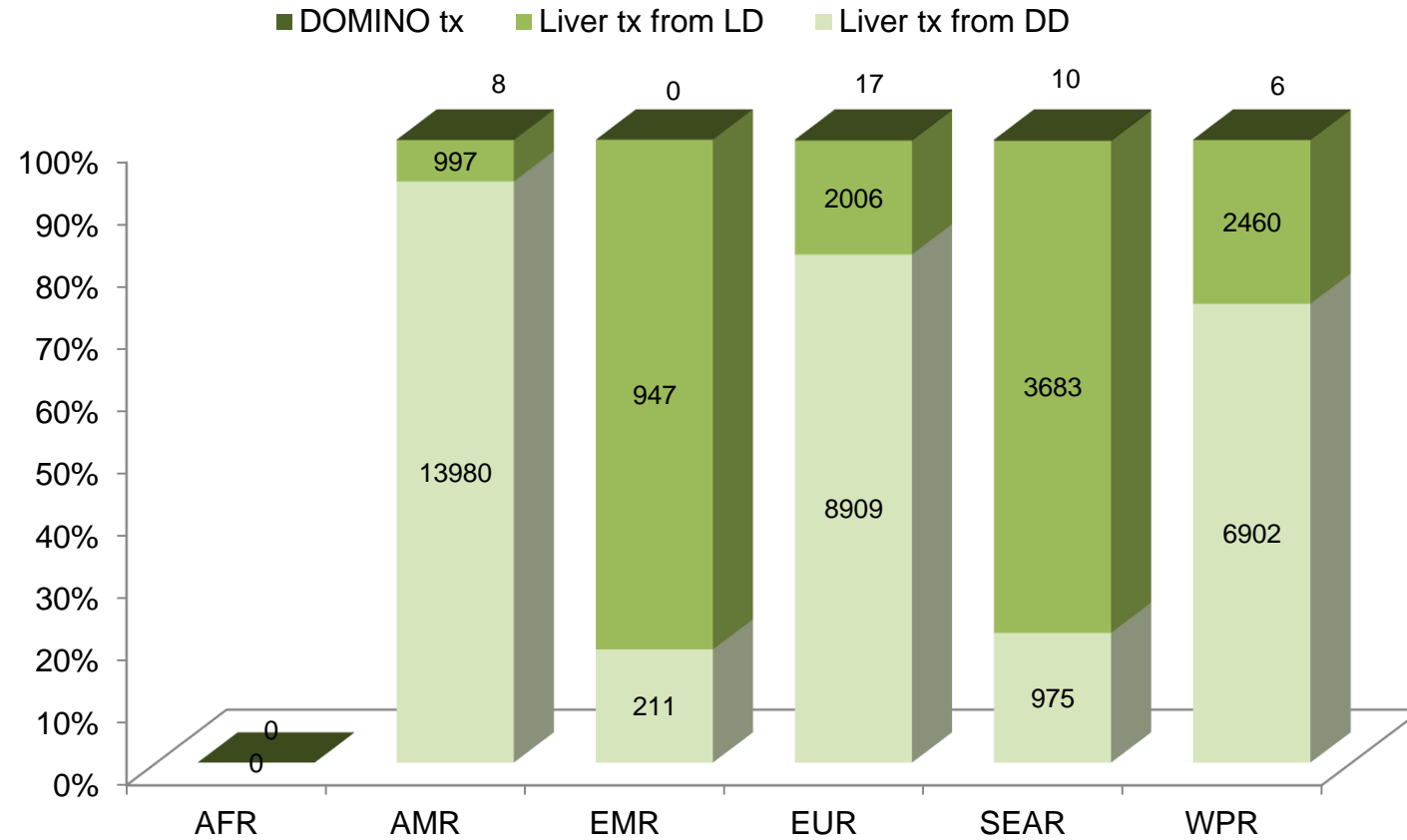
- ✓ 41 099 liver transplants
- ✓ 10 % increase vs 2022
- ✓ 25% from living donors
- ✓ 41 domino liver transplants



71/93 countries reported liver transplant activities (living or deceased) in 2023



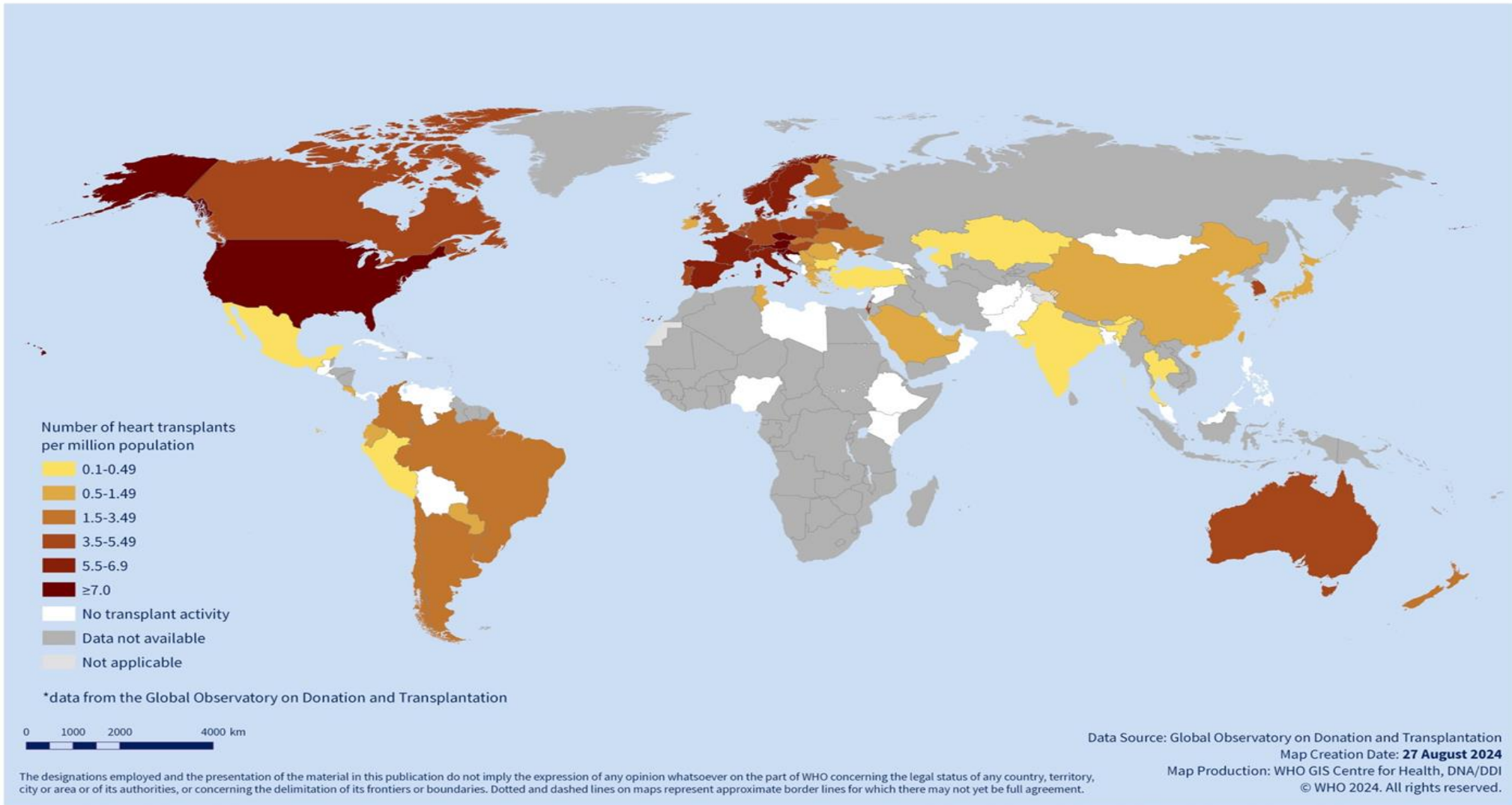
Liver transplants by WHO Regions 2023



LIVER TX, absolute number (pmp)*	0 (0.0)	14 985 (14.9)	1 158 (2.9)	10920 (15.2)	4 668 (2.8)	9 368 (5.2)
% from deceased donors	0	93	18	82	21	74
Countries with liver tx activity/ countries reporting to the GODT (total countries in the region)	0/3 (46)	15/23 (35)	7/11 (22)	37/43 (53)	3/4 (11)	9/9 (27)
Liver tx centres (millions inhabitants/centre)*	0	412 (2.4)	24 (16.4)	232 (3.1)	278 (6.1)	161 (11.2)

*Rates (pmp) and Millions inhabitants per transplant centre are calculated by applying the population of the responding countries

Heart transplantation activities, 2023*



Heart transplants per million population (pmp) 2023

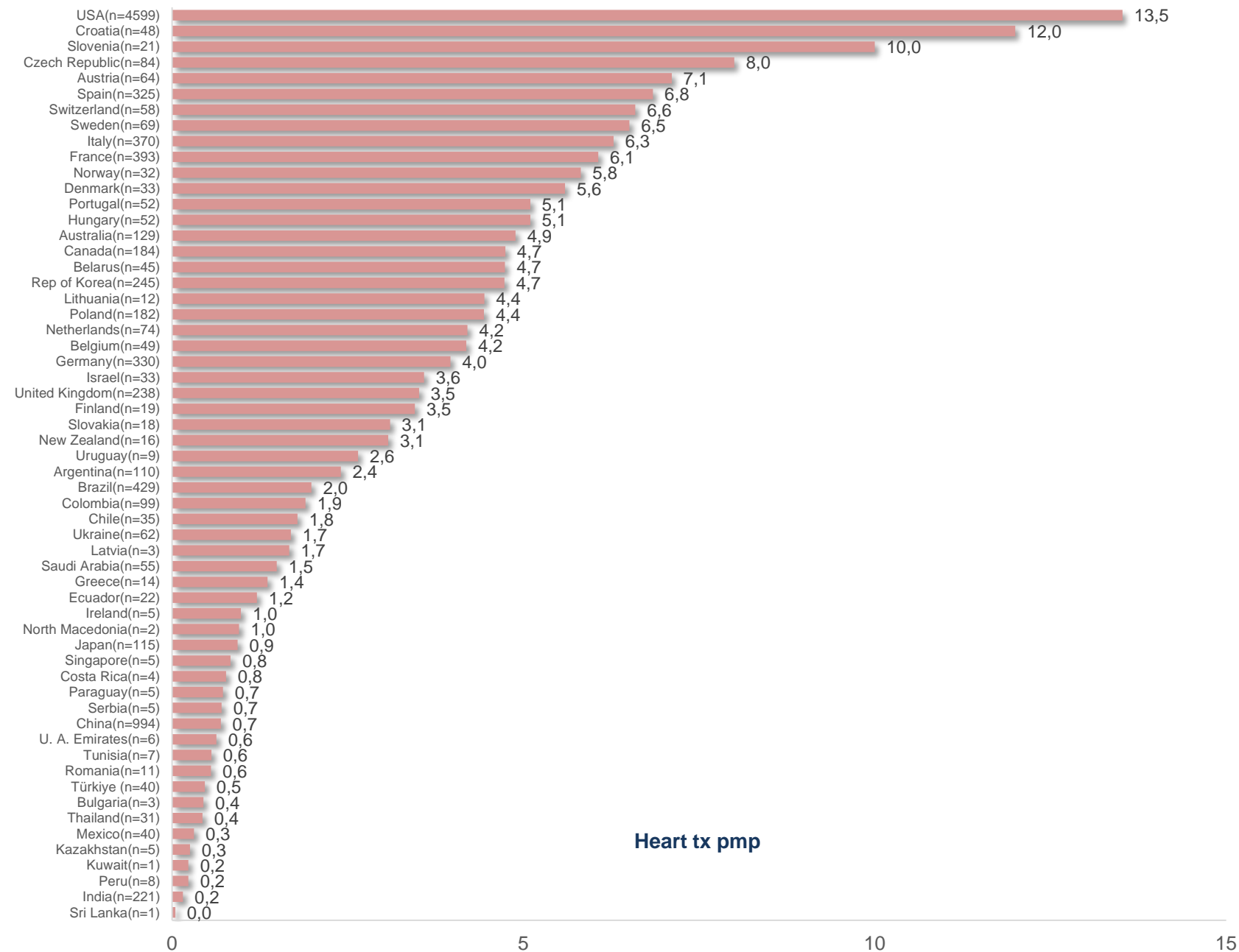


✓ 10 121 heart transplants

✓ 13 % increase vs 2022

58/93 countries reported heart
transplant activities in 2023

Heart tx pmp



Heart transplants by WHO Regions 2023

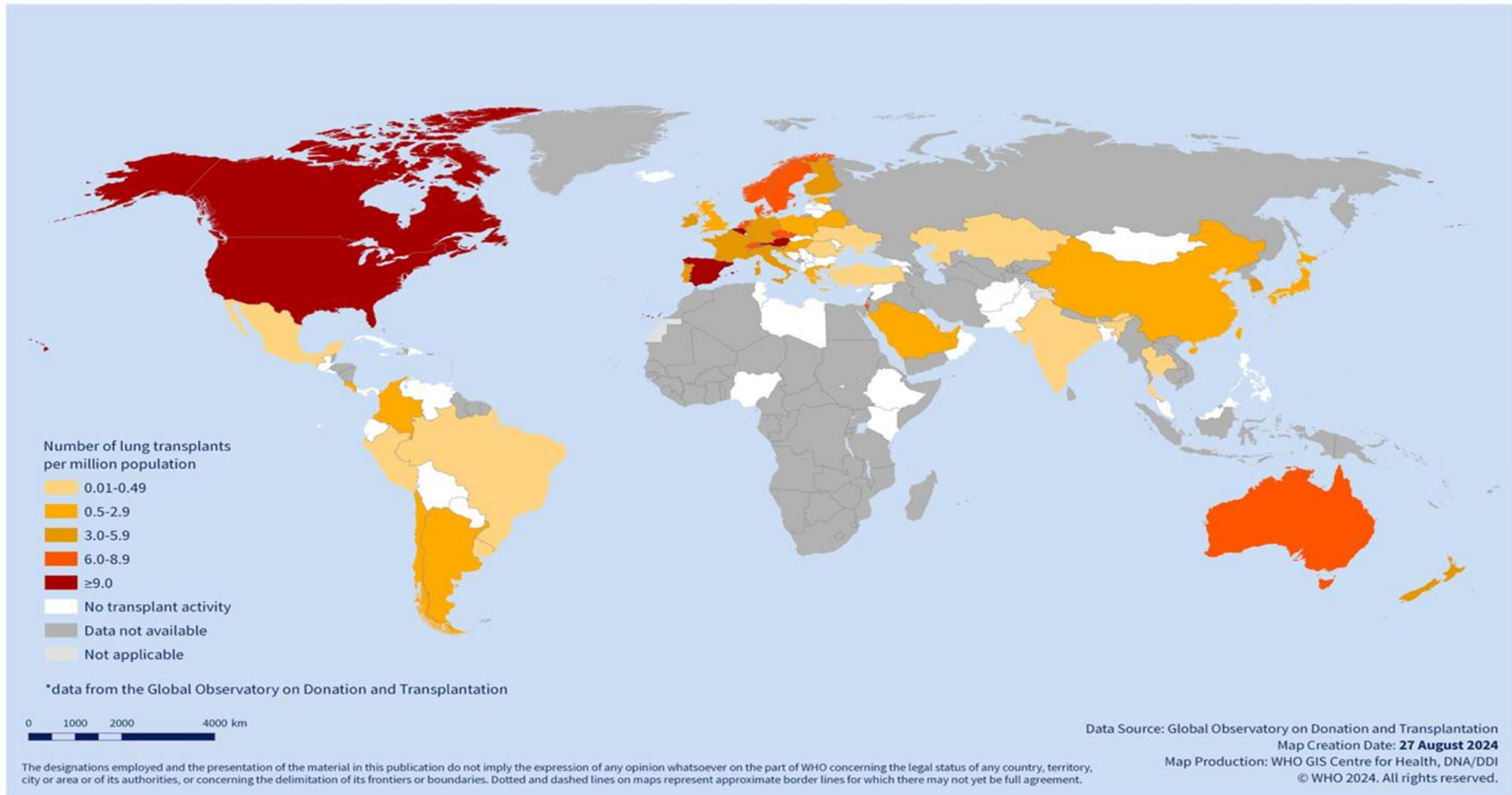


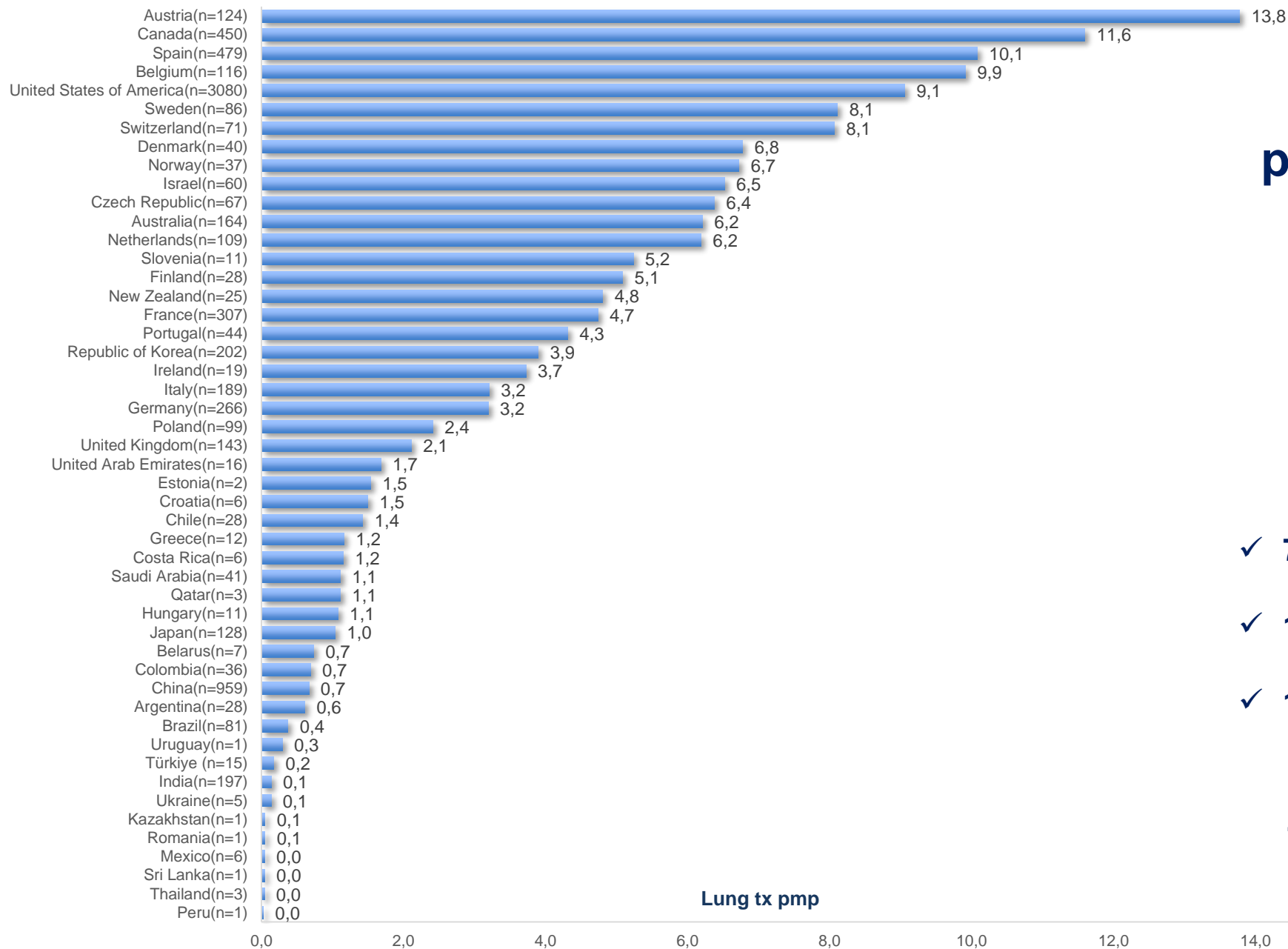
WHO Region	Heart transplants (pmp)*	Paediatric Heart transplants (pmp) (<18 years)	Countries with any heart tx activity/countries reporting to GODT (countries in the region)	Heart transplant centres (million inhabitants/centre)**
AFR	0 (0.0)	0 (0.0)	0/3 (46)	0
AMR	5 544 (5.5)	616 (0.6)	12/23 (35)	346 (2.9)
EMR	69 (0.2)	22 (0.1)	4/11 (22)	11 (35.9)
EUR	2 751 (3.8)	261 (0.4)	33/43 (53)	169 (4.2)
SEAR	253 (0.1)	33 (0.0)	3/4 (11)	175 (9.7)
WPR	1 504 (0.8)	143 (0.1)	6/9 (27)	96 (18.8)

*Rates (pmp) are calculated by applying the population of the responding countries

** Million inhabitants per transplant centre are calculated by applying the population of the responding countries

Lung transplantation activities, 2023*





Lung transplants per million population (pmp) 2023



- ✓ 7 811 lung transplants
- ✓ 15 % increase vs 2022
- ✓ 10 living lung transplants (0.1%)

49/93 countries reported lung transplant activities in 2023

Lung transplants by WHO regions 2023

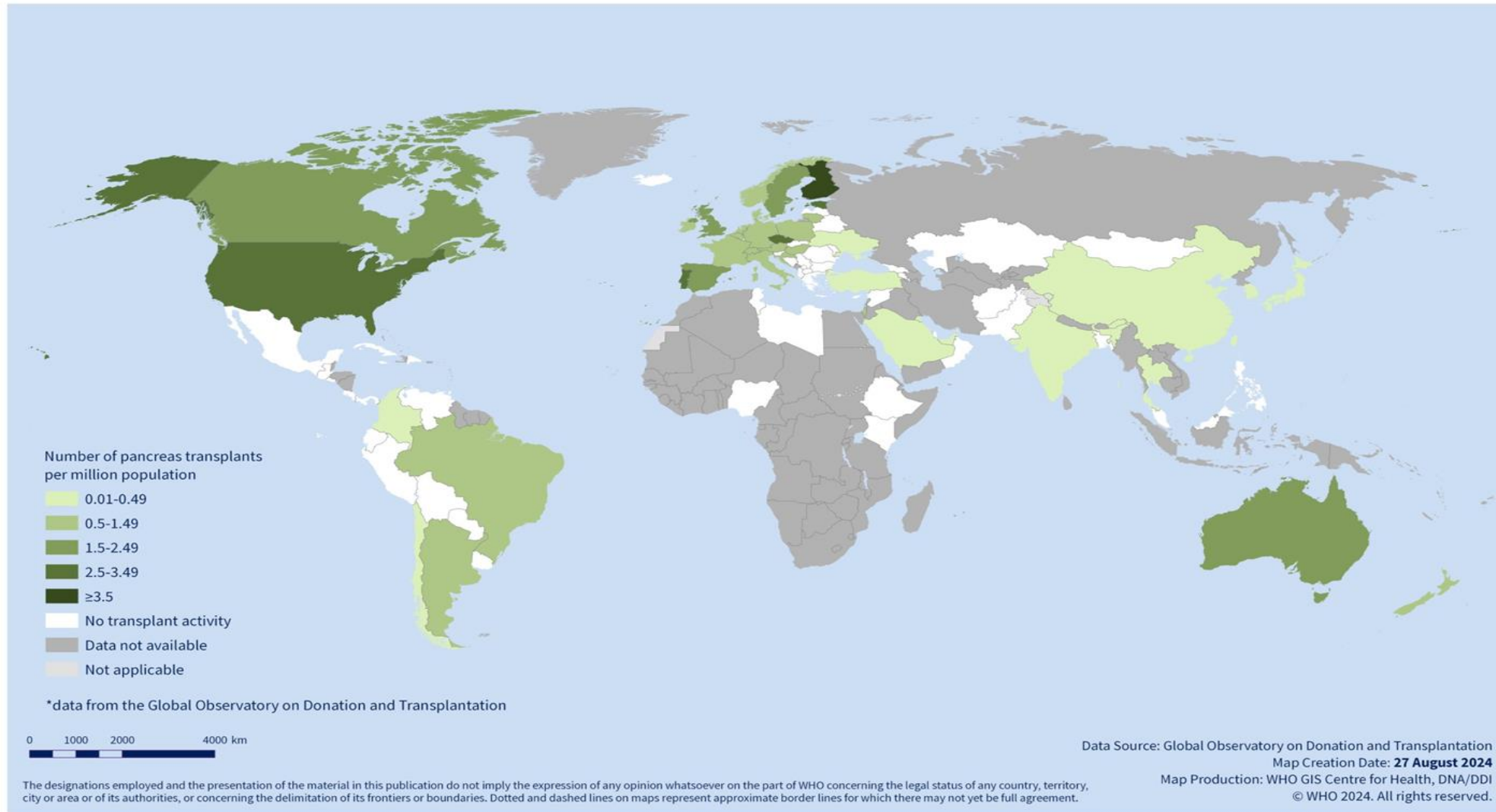


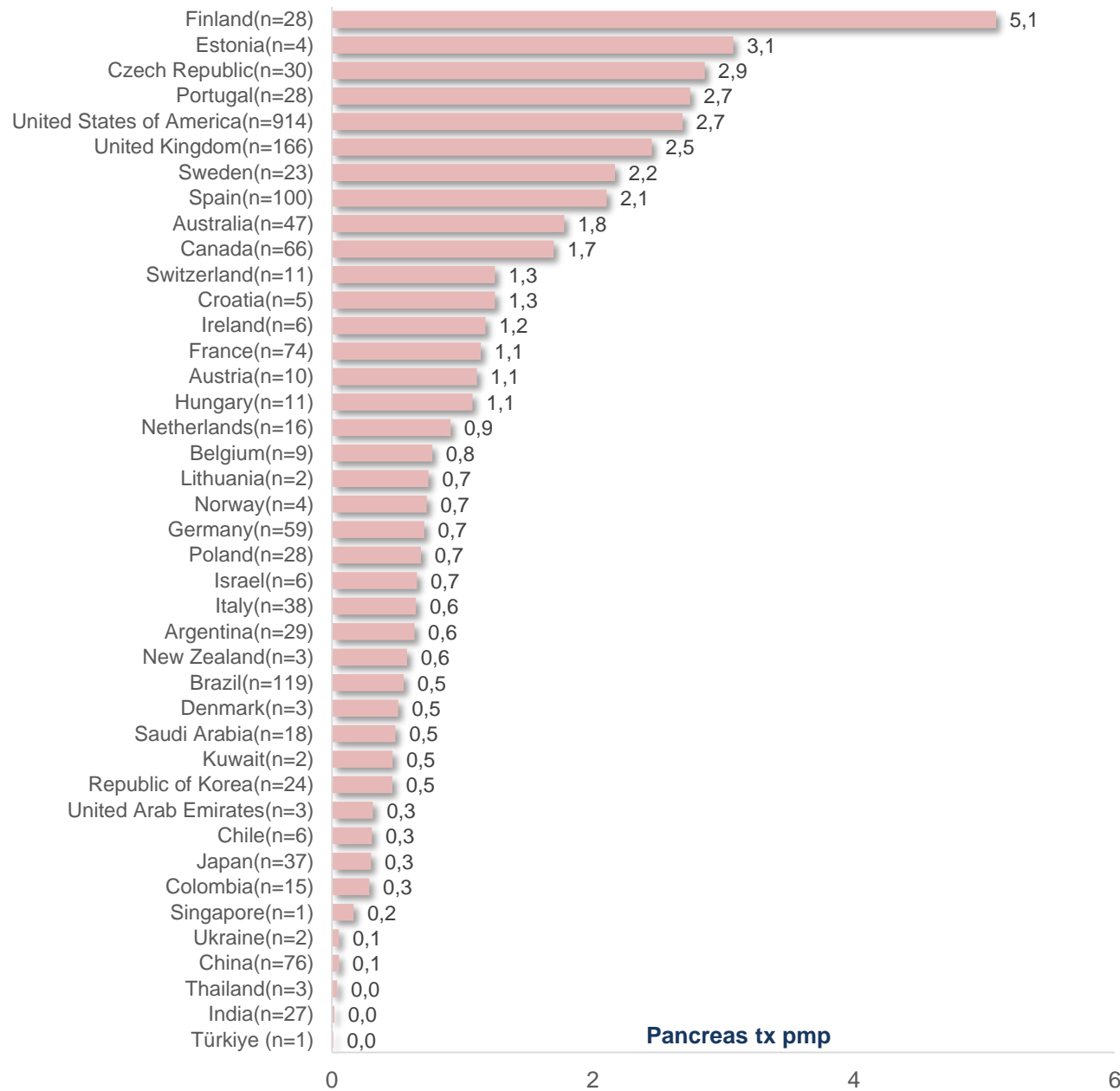
WHO Region	Lung transplants (pmp)*	Paediatric Lung transplants (pmp) (<18 years)	Countries with any lung tx activity/countries reporting to GODT (countries in the region)	Lung transplant centres (million inhabitants/centre)**
AFR	0 (0.0)	0 (0.0)	0/3 (46)	0
AMR	3 717 (3.7)	42 (0.0)	10/23 (35)	138 (7.3)
EMR	60 (0.2)	0 (0.0)	3/11 (22)	6 (65.8)
EUR	2 355 (3.3)	47 (0.1)	28/43 (53)	95 (7.5)
SEAR	201 (0.1)	4 (0.0)	3/4 (11)	109 (15.6)
WPR	1 478 (0.8)	36 (0.0)	5/9 (27)	79 (22.8)

*Rates (pmp) are calculated by applying the population of the responding countries

** Million inhabitants per transplant centre are calculated by applying the population of the responding countries

Pancreas transplantation activities, 2023*





Pancreas transplants per million population (pmp) 2023



- ✓ 2 054 pancreas transplants
- ✓ 41/93 countries reported pancreas transplant activities in 2023
- ✓ 1.4 % of increase vs 2022

Pancreas transplants per WHO regions 2023

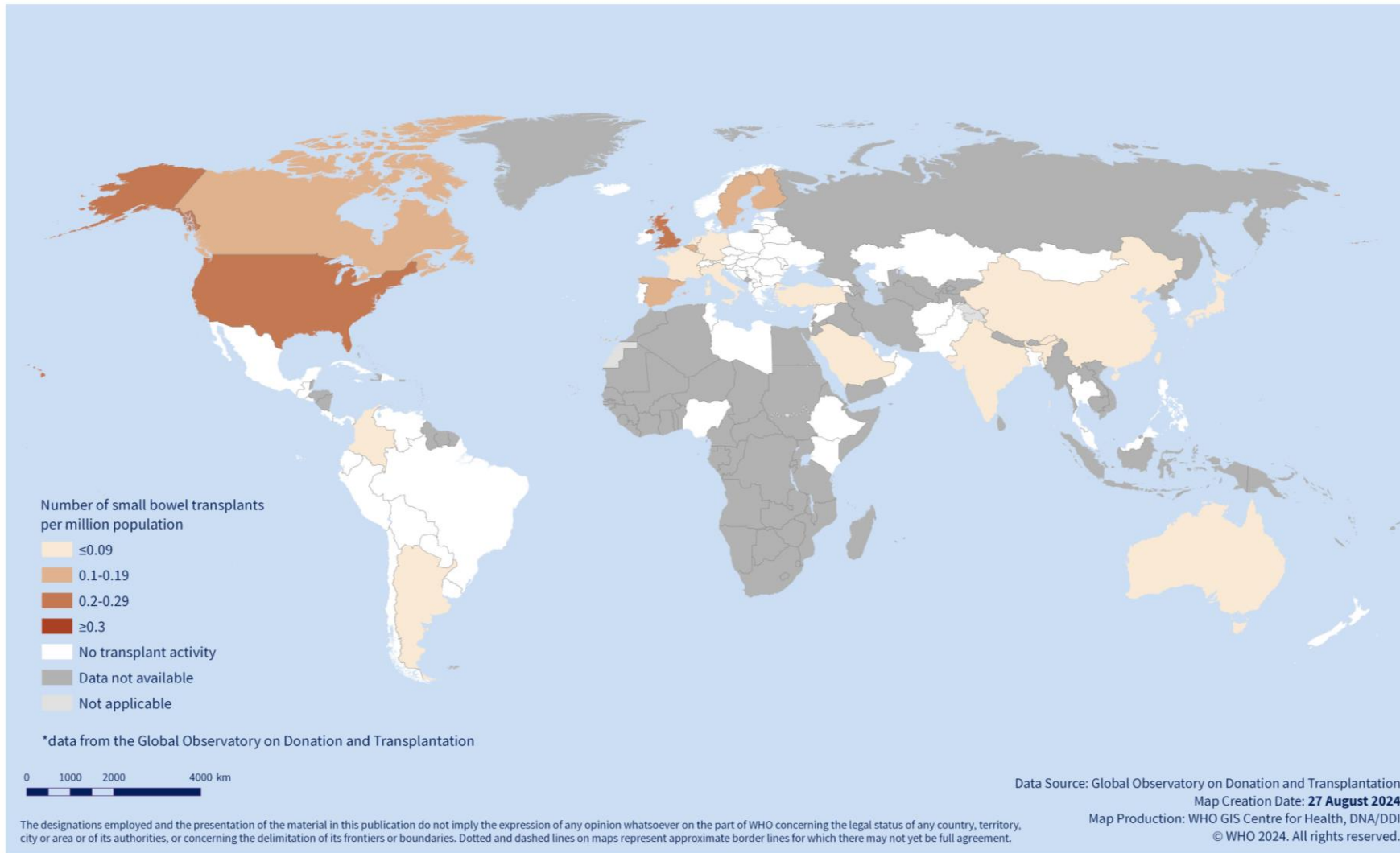


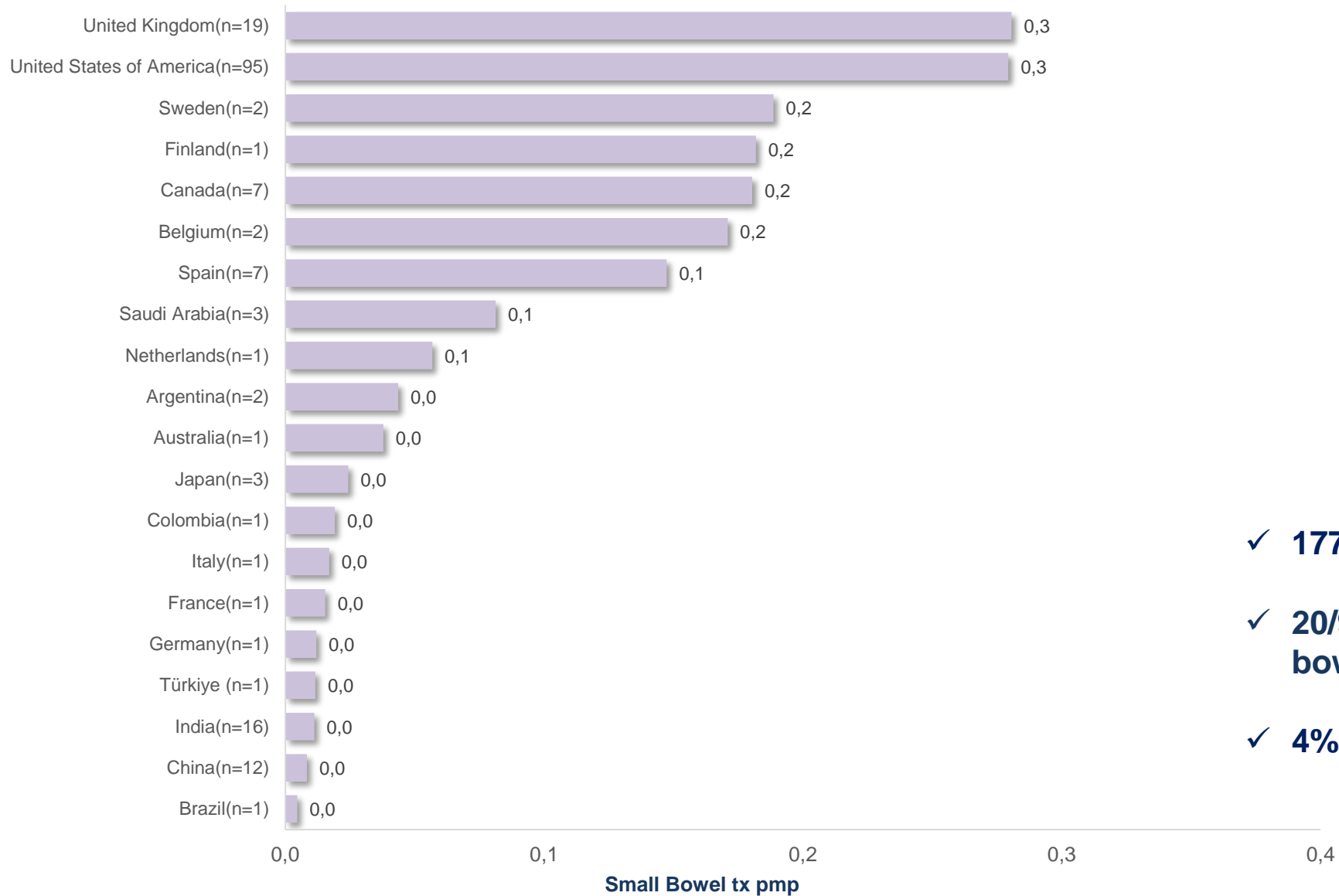
WHO Region	Pancreas Transplants (pmp)*	Paediatric Pancreas transplants (pmp) (<18 years)	countries with any pancreas tx activity/ countries reporting to GODT (countries in the region)	Pancreas tx centres (million inhabitants / centre)**
AFR	0 (0.0)	0 (0.0)	0/3 (46)	0
AMR	1 149 (1.1)	23 (0.0)	6/23 (35)	237 (4.3)
EMR	23 (0.1)	1 (0.0)	3/11 (22)	5 (78.9)
EUR	664 (0.9)	8 (0.0)	24/43 (53)	114 (6.3)
SEAR	30 (0.0)	0 (0.0)	2/4 (11)	67 (25.3)
WPR	188 (0.1)	0 (0.0)	6/9 (27)	77 (23.4)

*Rates (pmp) are calculated by applying the population of the responding countries

** Million inhabitants per transplant centre are calculated by applying the population of the responding countries

Small bowel transplantation activities, 2023*





Small bowel transplants per million population (pmp) 2023



- ✓ **177 transplants of small bowel**
- ✓ **20/93 countries reported small bowel transplant activities in 2023**
- ✓ **4% increase vs 2022**

Small bowel transplants per WHO regions 2023



WHO Region	Small bowel transplants (pmp)*	Paediatric Small bowel transplants (pmp) (<18 years)	Countries with any S.B tx activity/ countries reporting to GODT (countries in the region)	S.B tx centres (million inhabitants/centre)**
AFR	0 (0.0)	0 (0.0)	0/3 (46)	0
AMR	106 (0.1)	37 (0.0)	5/23 (35)	43 (23.4)
EMR	3 (0.0)	2 (0.0)	1/11 (22)	1 (394.6)
EUR	36 (0.1)	11 (0.0)	10/43 (53)	46 (15.6)
SEAR	16 (0.0)	2 (0.0)	1/4 (11)	35 (48.4)
WPR	16 (0.0)	4 (0.0)	3/9 (27)	59 (30.5)

*Rates (pmp) are calculated by applying the population of the responding countries

** Million inhabitants per transplant centre are calculated by applying the population of the responding countries

4

EVOLUTION OF ACTIVITIES BY WHO REGION

Donation and transplantation activities from 2021 to 2023 and percentage of variation 2023 vs 2022

	Africa				America				Eastern Mediterranean				Europe				South East Asia				Western Pacific			
	2021 (n=3)	2022 (n=3)	2023 (n=3)	% Var.	2021 (n=22)	2022 (n=22)	2023 (n=23)	% Var.	2021 (n=12)	2022 (n=12)	2023 (n=11)	% Var.	2021 (n=41)	2022 (n=43)	2023 (n=43)	% Var.	2021 (n=4)	2022 (n=3)	2023 (n=4)	% Var.	2021 (n=9)	2022 (n=8)	2023 (n=9)	% Var.
Deceased donors	0 (0.0)	0 (0.0)	0 (0.0)	(-)	18 994 (19.3)	20 946 (21.3)	23 241 (23.1)	11	1 158 (2.4)	1 251 (2.7)	307 (0.8)	-75	10 917 (16.2)	11 649 (16.9)	12 946 (18.1)	11	776 (0.5)	1 244 (0.8)	1 620 (1.0)	30	6 311 (3.5)	6 702 (3.8)	7 747 (4.3)	16
DBD	0 (0.0)	0 (0.0)	0 (0.0)	(-)	14 572 (14.8)	15 899 (16.2)	17 006 (16.9)	7	1 158 (2.4)	1 251 (2.7)	307 (0.8)	-75	8 925 (13.2)	9 166 (13.3)	9 885 (13.8)	8	776 (0.5)	1 244 (0.8)	1 619 (1.0)	30	4 180 (2.3)	4 688 (2.6)	5 649 (3.1)	20
DCD	0 (0.0)	0 (0.0)	0 (0.0)	(-)	4 442 (4.5)	5 047 (5.1)	6 235 (6.2)	24	0 (0.0)	0 (0.0)	0 (0.0)	(-)	1 992 (3.0)	2 843 (4.1)	3 061 (4.3)	8	0 (0.0)	0 (0.0)	1 (0.0)	(-)	2 131 (1.2)	2 014 (1.1)	2 098 (1.2)	4
Kidney Tx	359 (0.9)	286 (0.7)	314 (0.8)	10	36 232 (36.9)	39 196 (39.8)	43 090 (42.8)	10	4 829 (9.9)	6 364 (13.7)	4 412 (11.2)	-31	23 593 (34.9)	25 329 (36.7)	27 229 (38.0)	8	10 003 (6.1)	12 696 (7.7)	14 982 (8.8)	18	17 516 (9.7)	18 219 (10.2)	21 108 (11.7)	(-)
DDKT	0 (0.0)	0 (0.0)	0 (0.0)	(-)	27 317 (27.8)	29 607 (30.1)	32 468 (32.2)	10	1 312 (2.7)	1 564 (3.4)	440 (1.1)	-72	16 229 (24.0)	17 286 (25.1)	18 914 (26.4)	9	1 247 (0.8)	2 088 (1.3)	2 491 (1.5)	19	11 260 (6.2)	11 944 (6.7)	13 721 (7.6)	15
LDKT	359 (0.9)	286 (0.7)	314 (0.8)	10	8 915 (9.1)	9 589 (9.7)	10 622 (10.5)	11	3 517 (7.2)	4 800 (10.4)	3 972 (10.1)	-17	7 364 (10.9)	8 043 (11.7)	8 315 (11.6)	3	8 756 (5.3)	10 608 (6.5)	12 491 (7.4)	18	6 256 (3.5)	6 275 (3.5)	7 387 (4.1)	18
Liver Tx	0 (0.0)	0 (0.0)	0 (0.0)	(-)	12 790 (13.0)	13 387 (13.6)	14 985 (14.9)	12	1 455 (3.0)	1 817 (3.9)	1 158 (2.9)	-36	9 333 (13.8)	9 840 (14.3)	10 920 (15.2)	11	2 958 (1.8)	4 067 (2.5)	4 668 (2.8)	15	8 158 (4.5)	8 325 (4.7)	9 368 (5.2)	13
DDLTL	0 (0.0)	0 (0.0)	0 (0.0)	(-)	11 926 (12.1)	12 444 (12.7)	13 980 (13.9)	12	854 (1.8)	943 (2.0)	211 (0.5)	-78	7 643 (11.3)	8 055 (11.7)	8 909 (12.4)	11	558 (0.3)	842 (0.5)	975 (0.6)	16	5 758 (3.2)	6 059 (3.4)	6 902 (3.8)	14
LDLT	0 (0.0)	0 (0.0)	0 (0.0)	(-)	859 (0.9)	938 (1.0)	997 (1.0)	6	601 (1.2)	874 (1.9)	947 (2.4)	8	1 684 (2.5)	1 773 (2.6)	2 006 (2.8)	13	2 398 (1.5)	3 216 (2.0)	3 683 (2.2)	15	2 388 (1.3)	2 260 (1.3)	2 460 (1.4)	9
Heart Tx	0 (0.0)	0 (0.0)	0 (0.0)	(-)	4 599 (4.7)	4 996 (5.1)	5 544 (5.5)	11	192 (0.4)	184 (0.4)	69 (0.2)	-63	2 350 (3.5)	2 444 (3.5)	2 751 (3.8)	13	175 (0.1)	274 (0.2)	253 (0.1)	-8	1 093 (0.6)	1 090 (0.6)	1 504 (0.8)	38
Lung Tx	0 (0.0)	0 (0.0)	0 (0.0)	(-)	3 096 (3.2)	3 313 (3.4)	3 717 (3.7)	12	43 (0.1)	55 (0.1)	60 (0.2)	9	1 964 (2.9)	2 073 (3.0)	2 355 (3.3)	14	134 (0.1)	144 (0.1)	201 (0.1)	40	1 233 (0.7)	1 199 (0.7)	1 478 (0.8)	23
Pancreas Tx	0 (0.0)	0 (0.0)	0 (0.0)	(-)	1 234 (1.3)	1 171 (1.2)	1 149 (1.1)	-2	58 (0.1)	56 (0.1)	23 (0.1)	-59	609 (0.9)	611 (0.9)	664 (0.9)	9	20 (0.01)	30 (0.0)	30 (0.0)	0	104 (0.06)	158 (0.1)	188 (0.1)	19
Small bowel Tx	0 (0.0)	0 (0.0)	0 (0.0)	(-)	108 (0.1)	90 (0.1)	106 (0.1)	18	9 (0.02)	14 (0.0)	3 (0.0)	-79	46 (0.07)	40 (0.1)	36 (0.1)	-10	5 (0.0)	3 (0.0)	16 (0.0)	433	4 (0.0)	23 (0.0)	16 (0.0)	-30
Total organ Tx	359 (0.9)	286 (0.7)	314 (0.8)	10	58 059 (59.1)	62 153 (63.2)	68 591 (68.1)	10	6 586 (13.6)	8 490 (18.3)	5 725 (14.5)	-33	37 895 (56.1)	40 337 (68.7)	43 955 (61.3)	9	13 295 (8.1)	17 214 (10.5)	20 150 (11.9)	17	28 108 (15.5)	29 014 (16.2)	33 662 (18.7)	16

N= number of responding countries. High decreases in EMR reflect the reporting absence of one active country (Iran) in 2023.

Note: Rates (pmp) are calculated by applying the population of the responding countries

Global donation and transplantation activities from 2020 to 2022

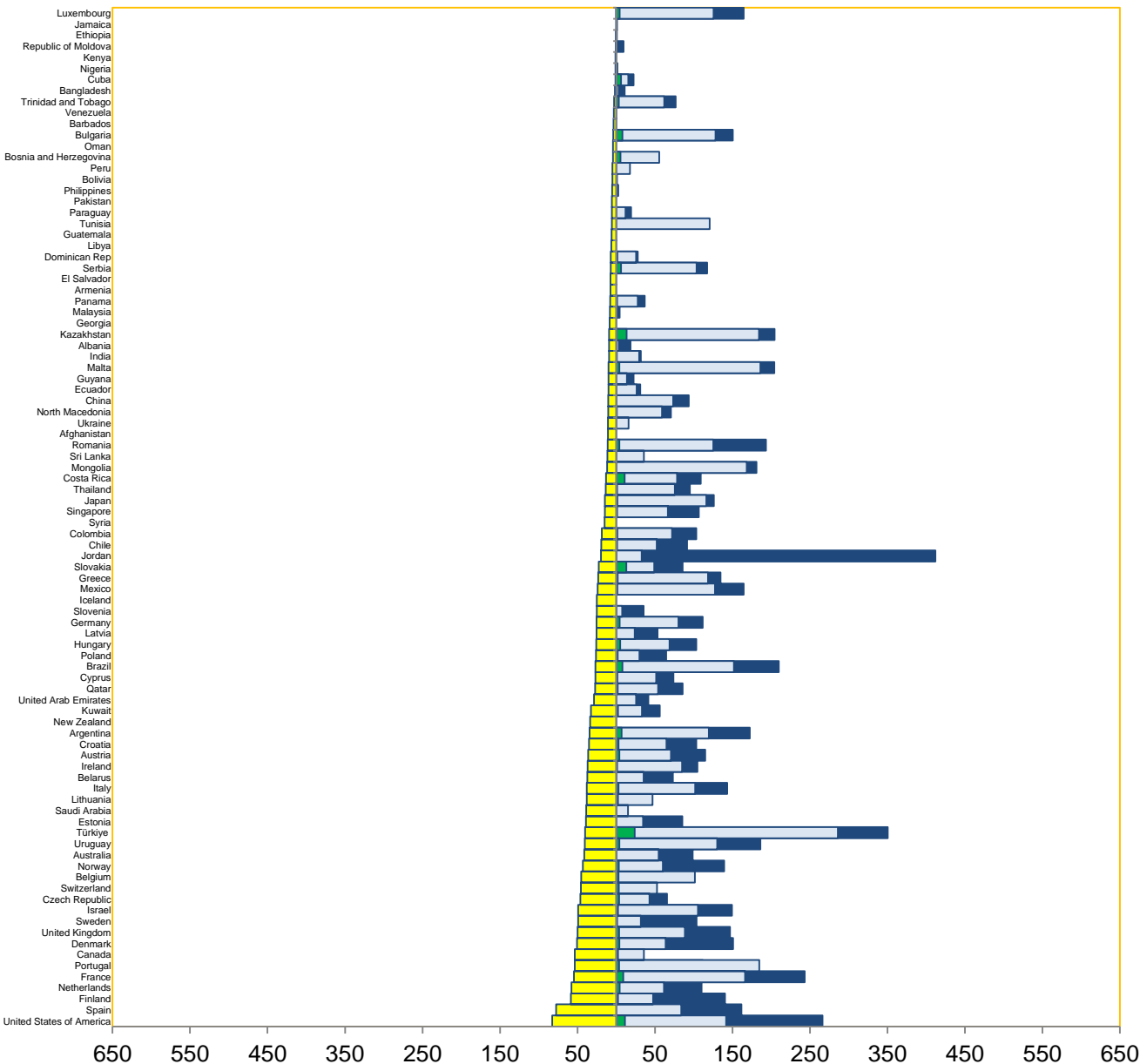
	Global			
	2021	2022	2023	% Variation 2023 vs 2022
Deceased donors	38 156 (6.4)	41 792 (7.0)	45 861 (7.6)	10
DBD donors	29 611 (4.9)	32 248 (5.4)	34 466 (5.7)	7
DCD donors	8 545 (1.4)	9 544 (1.6)	11 395 (1.9)	19
Kidney Tx	92 532 (15.4)	102 090 (17.1)	111 135 (18.5)	9
DD Kidney Tx	57 365 (9.6)	62 489 (10.5)	68 034 (11.3)	9
LD Kidney Tx	35 167 (5.9)	39 601 (6.6)	43 101 (7.2)	9
Liver Tx	34 694 (5.8)	37 436 (6.3)	41 099 (6.8)	10
DD Liver Tx	26 739 (4.5)	28 343 (4.8)	30 977 (5.1)	9
LD Liver Tx	7 930 (1.3)	9 061 (1.5)	10 093 (1.7)	11
Heart Tx	8 409 (1.4)	8 988 (1.5)	10 121 (1.7)	13
Lung Tx	6 470 (1.1)	6 784 (1.1)	7 811 (1.3)	15
Pancreas Tx	2 025 (0.3)	2 026 (0.3)	2 054 (0.3)	1
Small bowel Tx	172 (0.03)	170 (0.0)	177 (0.0)	4
Total organ Tx	144 302 (24.1)	157 494 (26.4)	172397 (28.6)	9

**Rates (pmp) are calculated by applying the population of the responding countries*

5

WAITING LISTS

■ Patients ever active on Kidney WL pmp
 □ Patients awaiting on Kidney WL at 31st Dec pmp
 ■ Total Kidney transplants pmp



Patients on the Kidney WL versus Kidney transplants (pmp) 2023

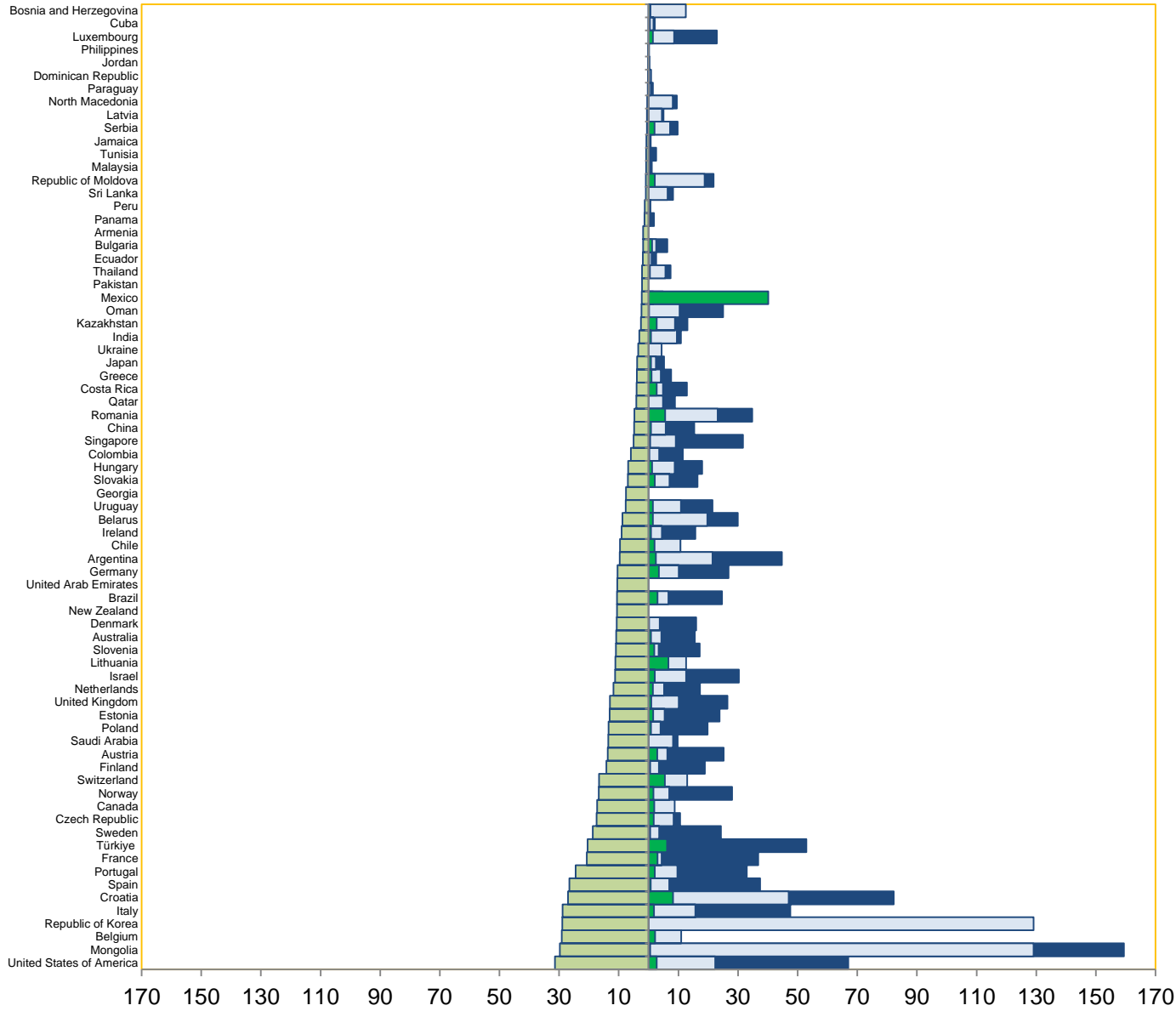
N= 92 countries

Patients ever active on WL: Patients who have been active on the WL at any moment along the year. A patient active on the WL is defined as a candidate eligible to receive organ offers for transplantation at a given point in time.

Patients awaiting on the WL at 31st Dec: Patients who are active on the WL at the end of the year.

Patients dead on the WL: Patients who have died while on the WL along the year.

■ Patients ever active on Liver WL pmp
■ Patients dead on Liver WL pmp
■ Patients awaiting on Liver WL at 31st Dec pmp
■ Total liver transplants pmp



Patients on the Liver WL versus Liver transplants (pmp) 2023

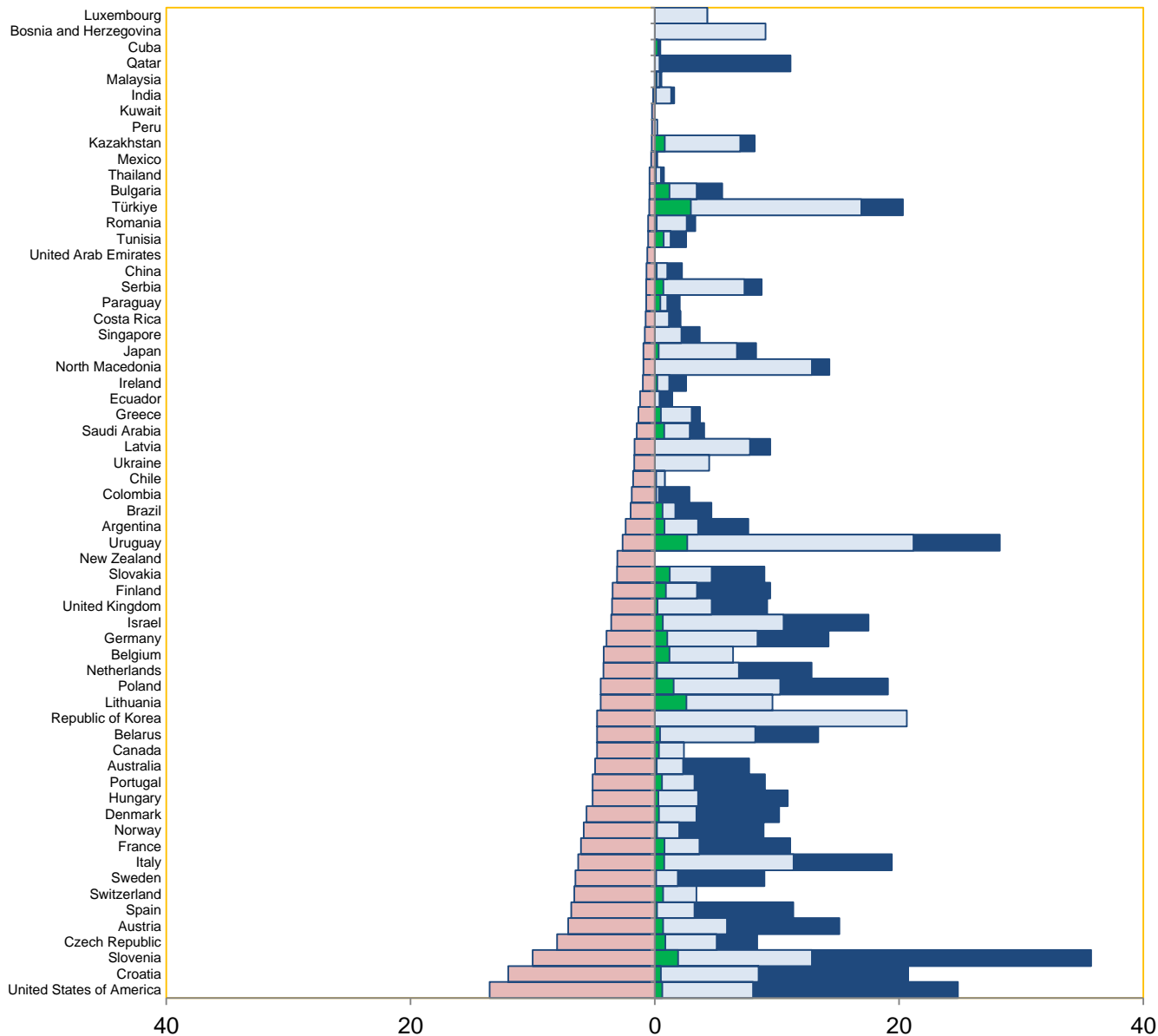
N= 74 countries

Patients ever active on WL: Patients who have been active on the WL at any moment along the year. A patient active on the WL is defined as a candidate eligible to receive organ offers for transplantation at a given point in time.

Patients awaiting on the WL at 31st Dec: Patients who are active on the WL at the end of the year.

Patients dead on the WL: Patients who have died while on the WL along the year.

■ Patients ever active on Heart WL pmp
■ Patients dead on Heart WL pmp
□ Patients awaiting on Heart WL at 31st Dec pmp
■ Total Heart transplants pmp



Patients on the Heart WL versus Heart transplants (pmp) 2023

N= 62 countries

Patients ever active on WL: Patients who have been active on the WL at any moment along the year. A patient active on the WL is defined as a candidate eligible to receive organ offers for transplantation at a given point in time.

Patients awaiting on the WL at 31st Dec: Patients who are active on the WL at the end of the year.

Patients dead on the WL: Patients who have died while on the WL along the year.

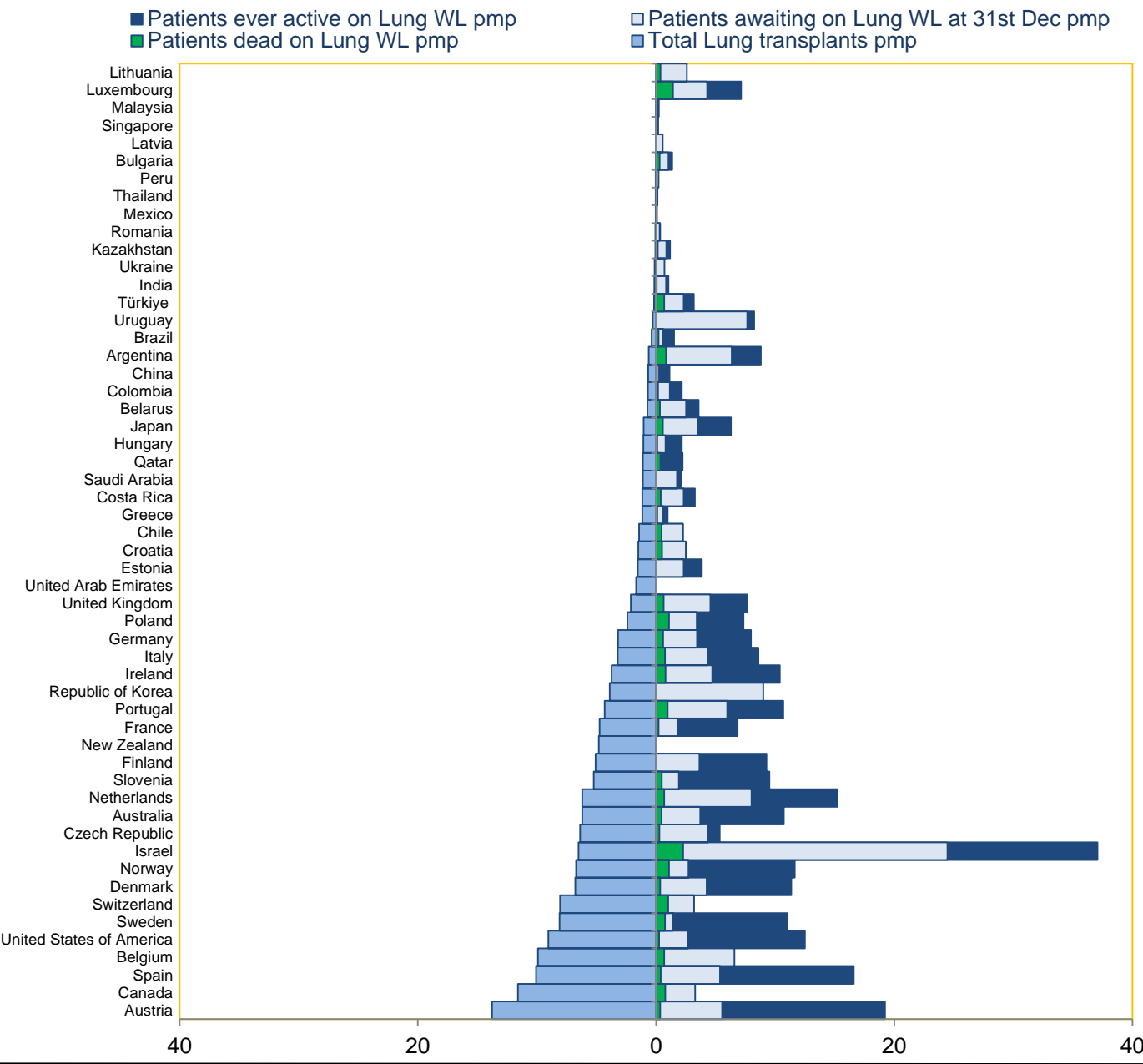
Patients on the Lung WL versus Lung transplants (pmp) 2023

N= 54 countries

Patients ever active on WL: Patients who have been active on the WL at any moment along the year. A patient active on the WL is defined as a candidate eligible to receive organ offers for transplantation at a given point in time.

Patients awaiting on the WL at 31st Dec: Patients who are active on the WL at the end of the year.

Patients dead on the WL: Patients who have died while on the WL along the year.

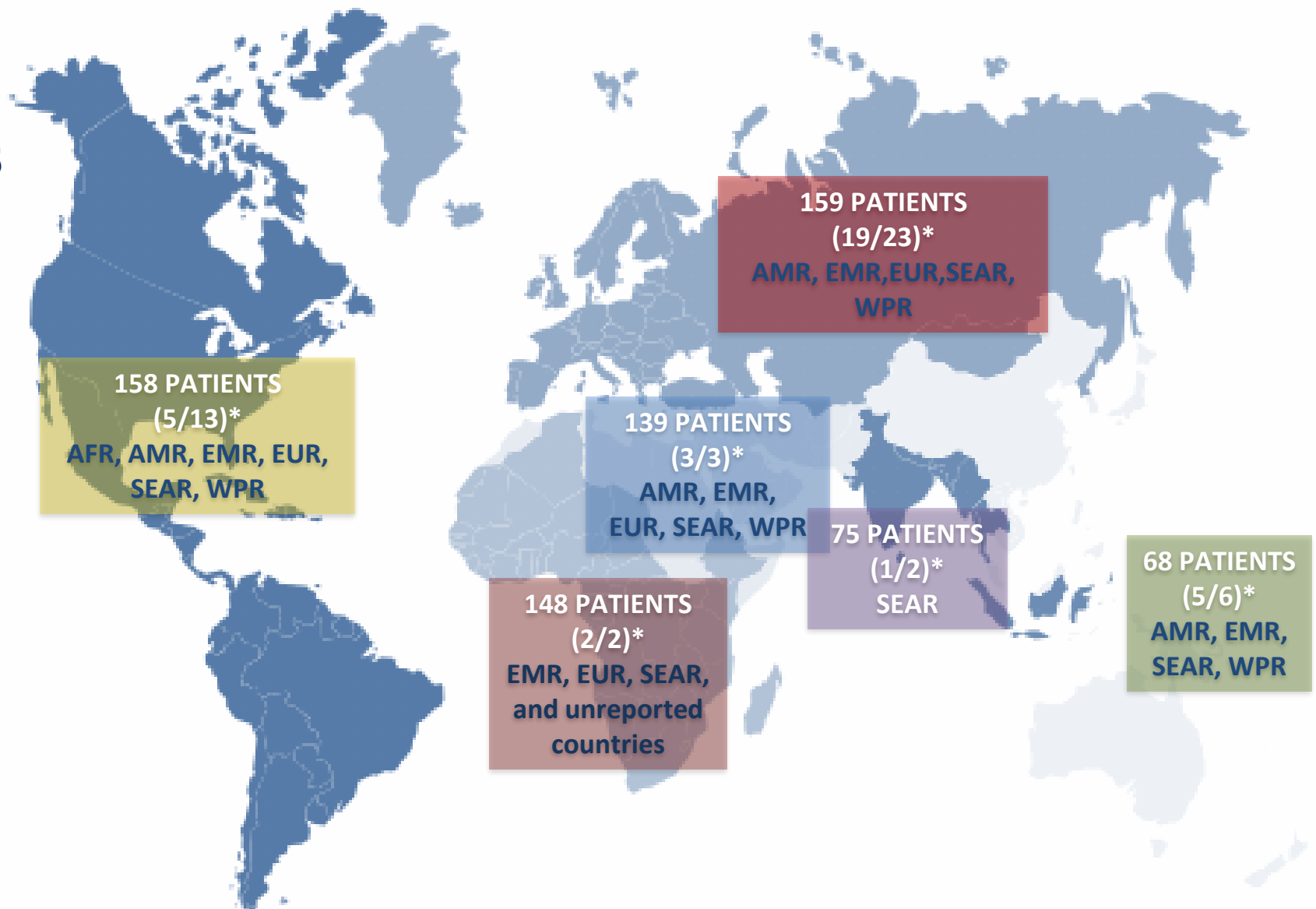


6

TRANSPLANTS PERFORMED ABROAD AND NON-RESIDENTS TRANSPLANTS

At least 747 patients from 35 countries travelled for transplantation abroad in 2023

Cases reported by the country of origin
49/93 countries were able to provide this information



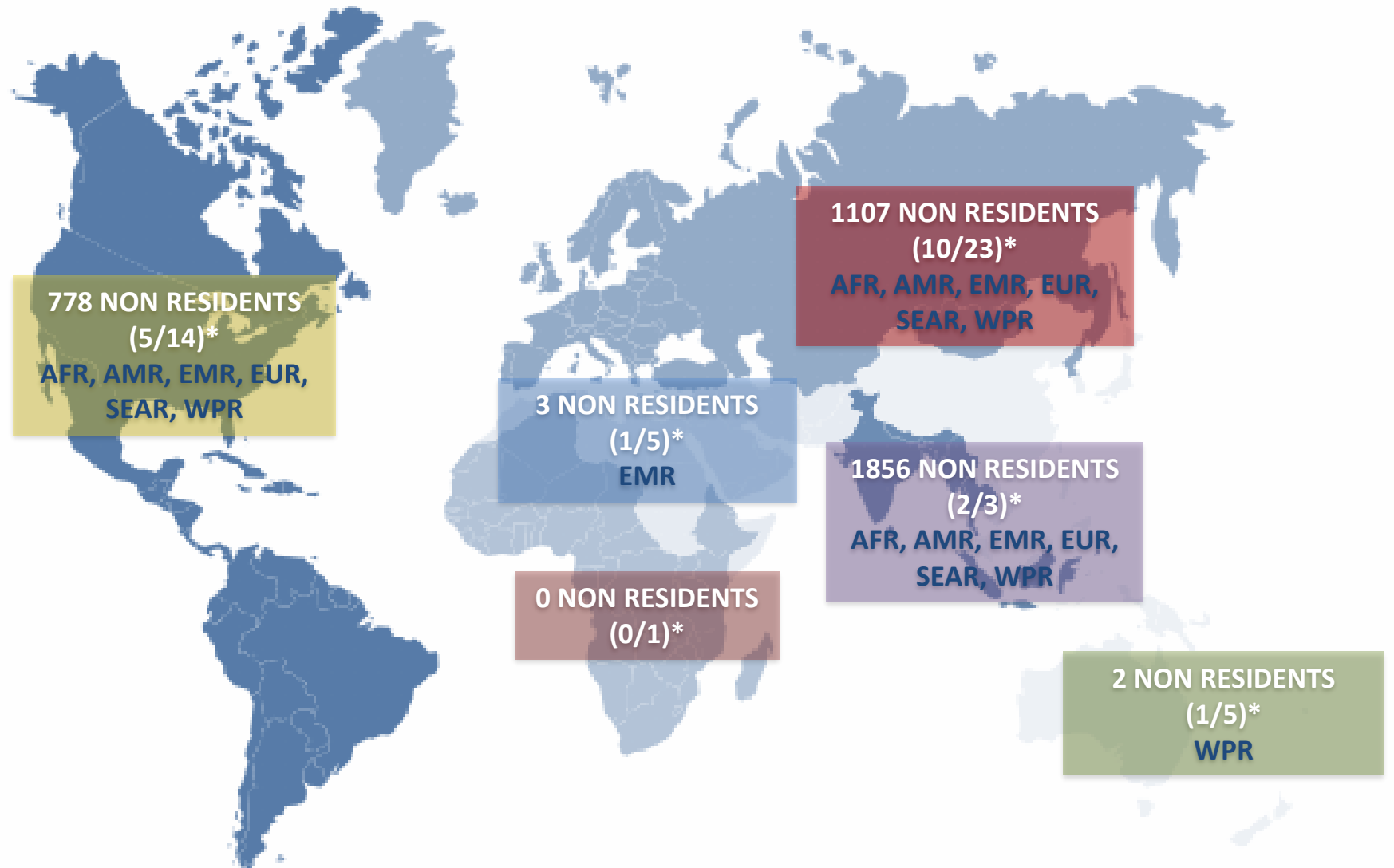
Note: Not all countries were able to provide detailed information. Therefore figures may be underestimated.

** Countries that reported at least one patient who travelled abroad for transplantation/countries able to provide this information within the corresponding region*

More than 3 700 non-resident patients from 19 countries were reported to be transplanted from a living (n=2995) or a deceased (n=752) donor in 2023

Cases reported by the country of destination

51/93 countries were able to provide this information



Note: Not all countries were able to provide detailed information. Therefore figures may be underestimated.

** Countries that reported at least one case of transplantation in non-residents/countries able to provide this information within the corresponding region*

DISCLAIMER

The data and information presented here are published in order to promote transparency in transplantation activities.

Whenever possible this information has been confirmed by official national sources. However, in some instances, there are still provisional estimates. It is therefore anticipated that some data presented may be modified without prior notice.

As the facts displayed here are not definitive, they cannot be reproduced or quoted unless shown with the appropriate warning and the date.

For any references to this report, the following should be quoted: Organ Donation and Transplantation Activities 2023 Report. Global Observatory on Donation and Transplantation (GODT).

For citations of the 2023 GODT data please quote the following: Those 2023 data are based on the Global Observatory on Donation and Transplantation (GODT) data, produced by the WHO-ONT collaboration.

For any references in Charts and bar chart, please quote: * Data of the WHO-ONT Global Observatory on Donation and Transplantation.

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