

INTERNATIONAL REPORT ON Organ Donation and Transplantation Activities

EXECUTIVE SUMMARY
2019

April 2021

www.transplant-observatory.org

Global activity in organ transplantation Estimations 2019

Kidney	Liver	Heart	Lung	Pancreas	S. bowel
100 097	35 784	8 722	6 800	2 323	137

≈ 153 863 solid organ transplants

≈ 4.8% increase vs 2018

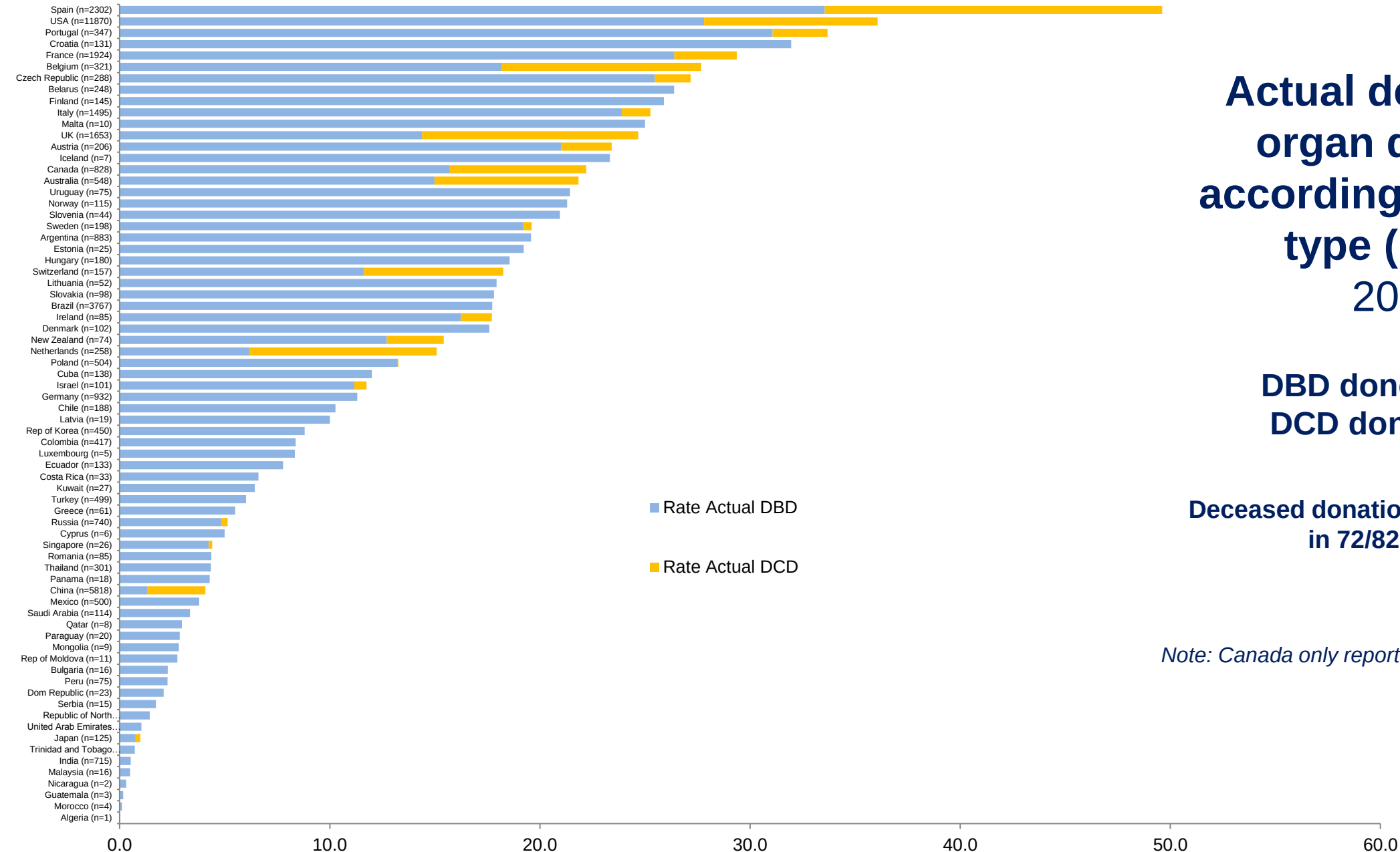
≤ 10% of global needs

37.3 % living kidney transplants

21.3% living liver transplants

40 608 deceased donors (31 366 DBD and 9 242 DCD donors)

DECEASED DONATION ACTIVITY



Actual deceased organ donors according to donor type (pmp) 2019

DBD donors: 31 366
DCD donors: 9 242

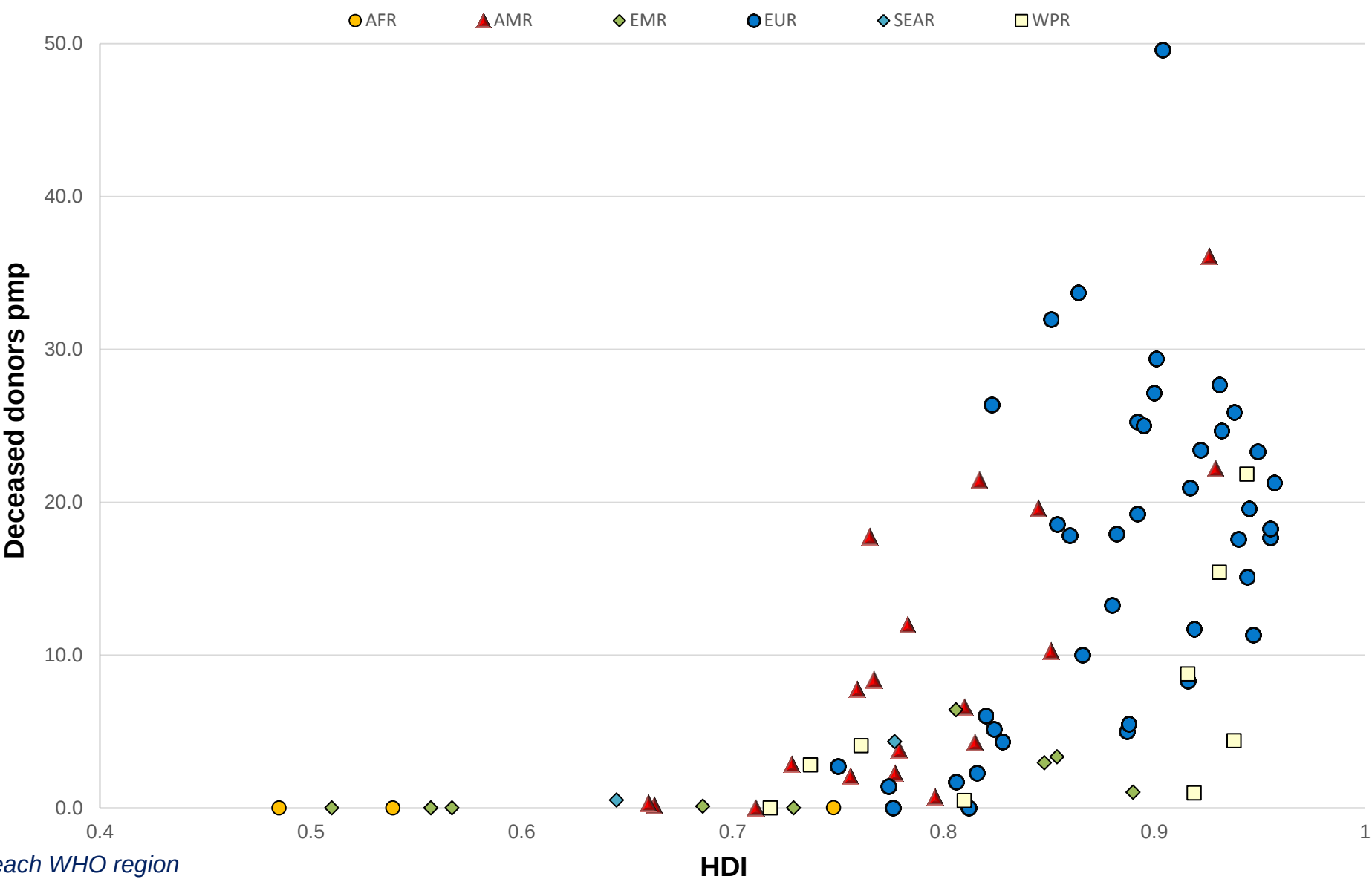
Deceased donation activities reported in 72/82 countries

Note: Canada only reported utilized deceased donors

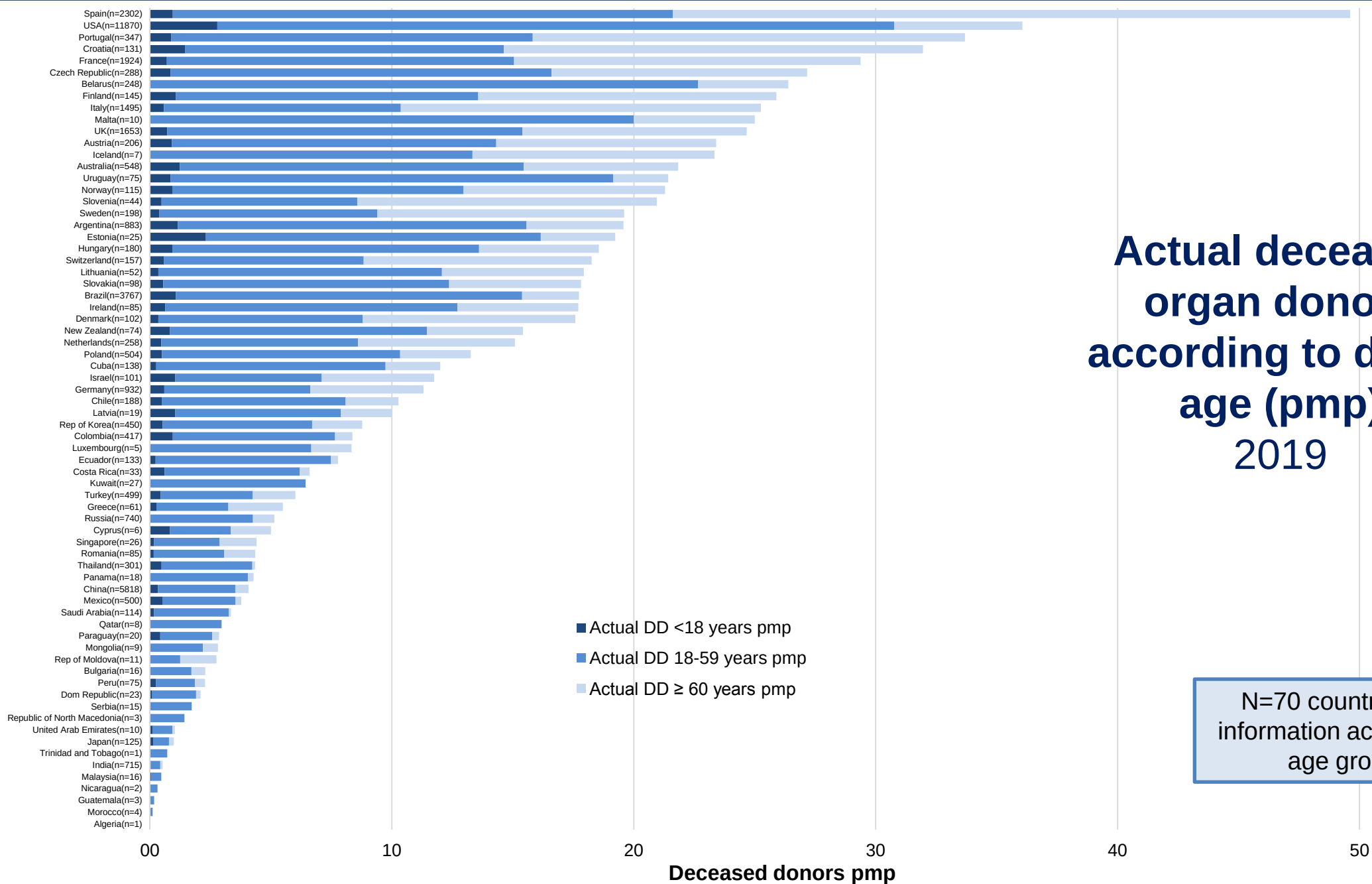
Deceased donation pmp in relation to HDI 2019

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)

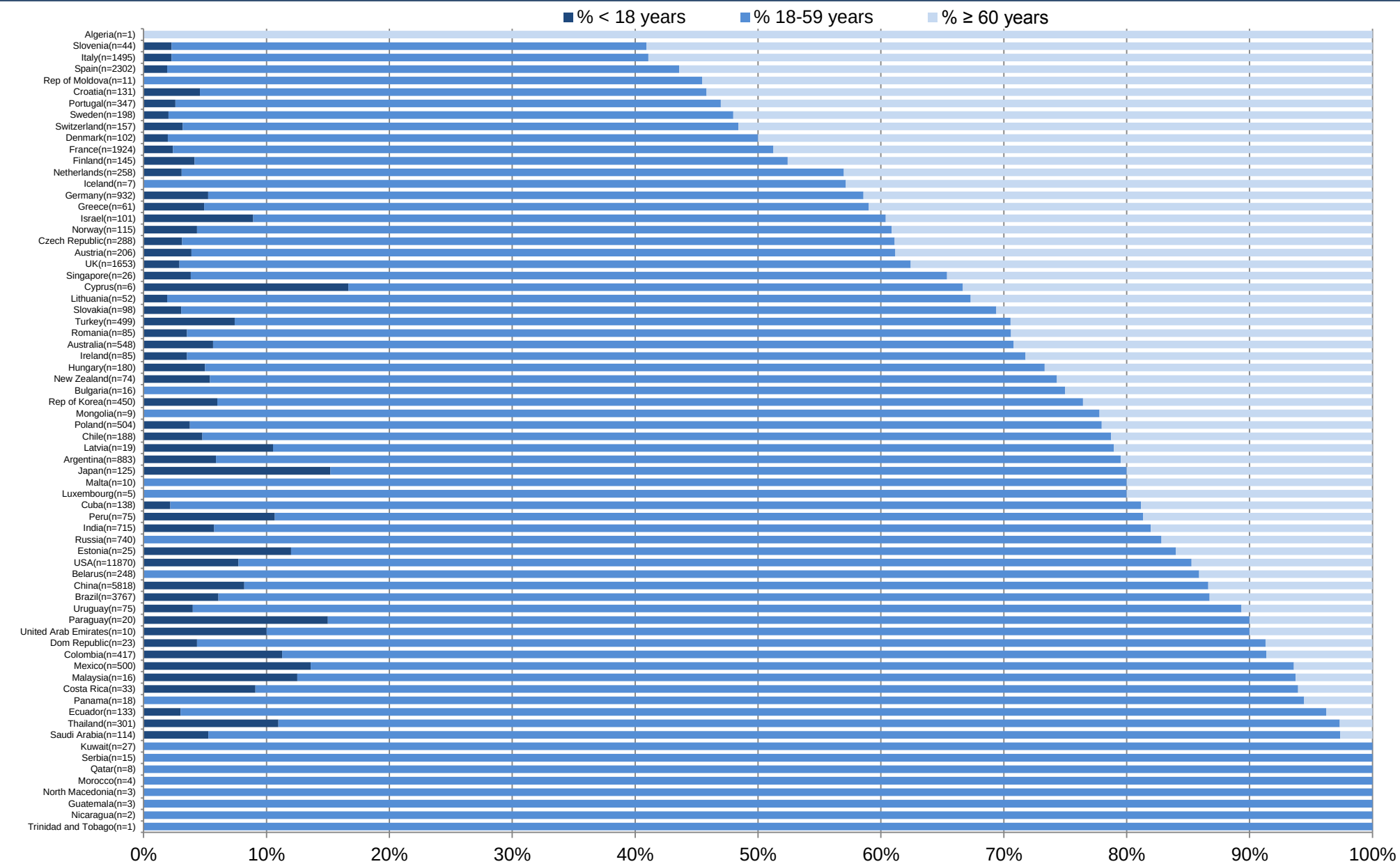


Note: Dots represent Member States in each WHO region



**Actual deceased
organ donors
according to donor
age (pmp)
2019**

N=70 countries with
information according to
age groups



**Actual deceased
donors
according to
donor age (%)
2019**

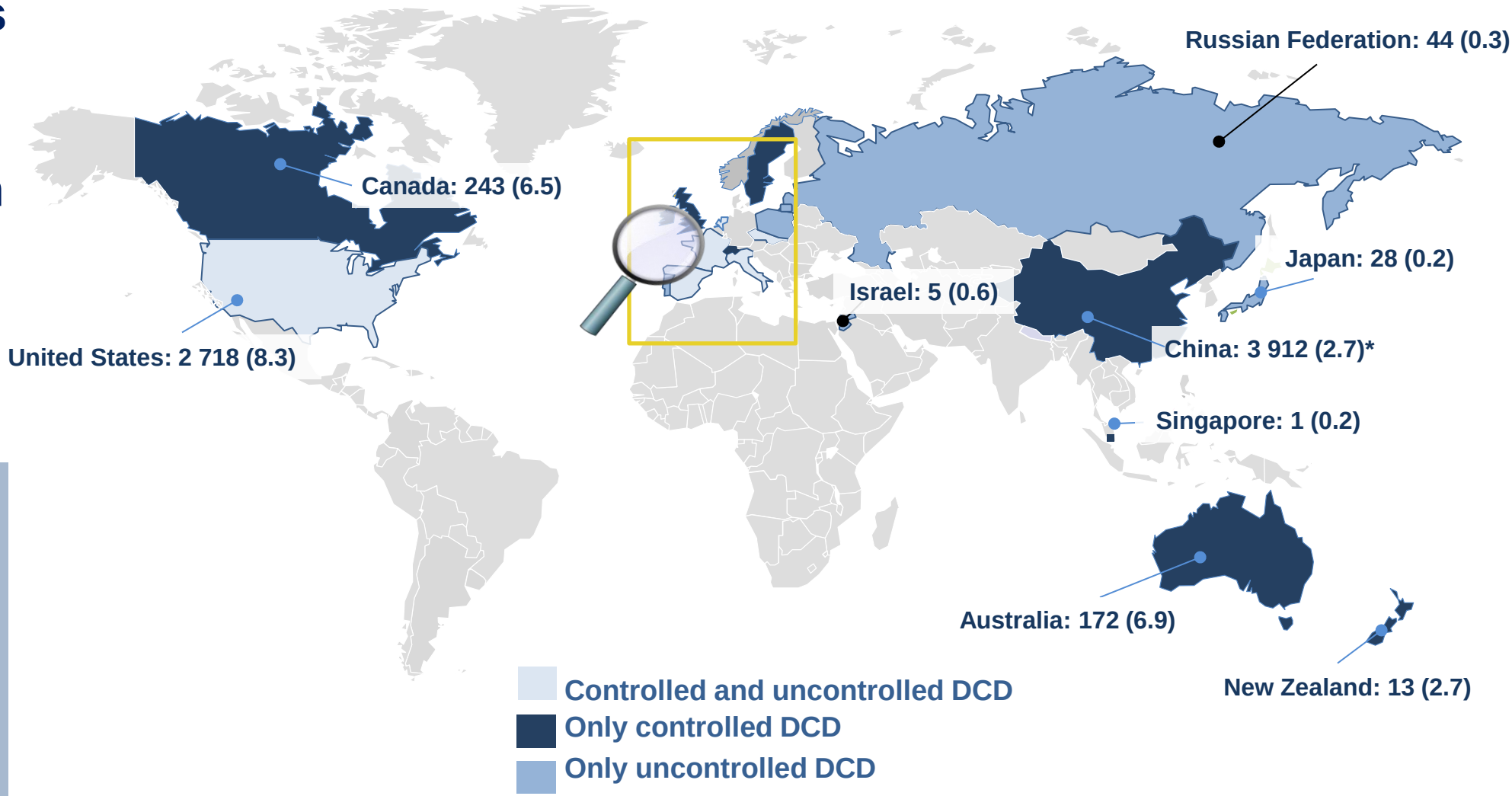
N=70 countries with
information according to
age groups

Actual donors after the circulatory determination of death 2019

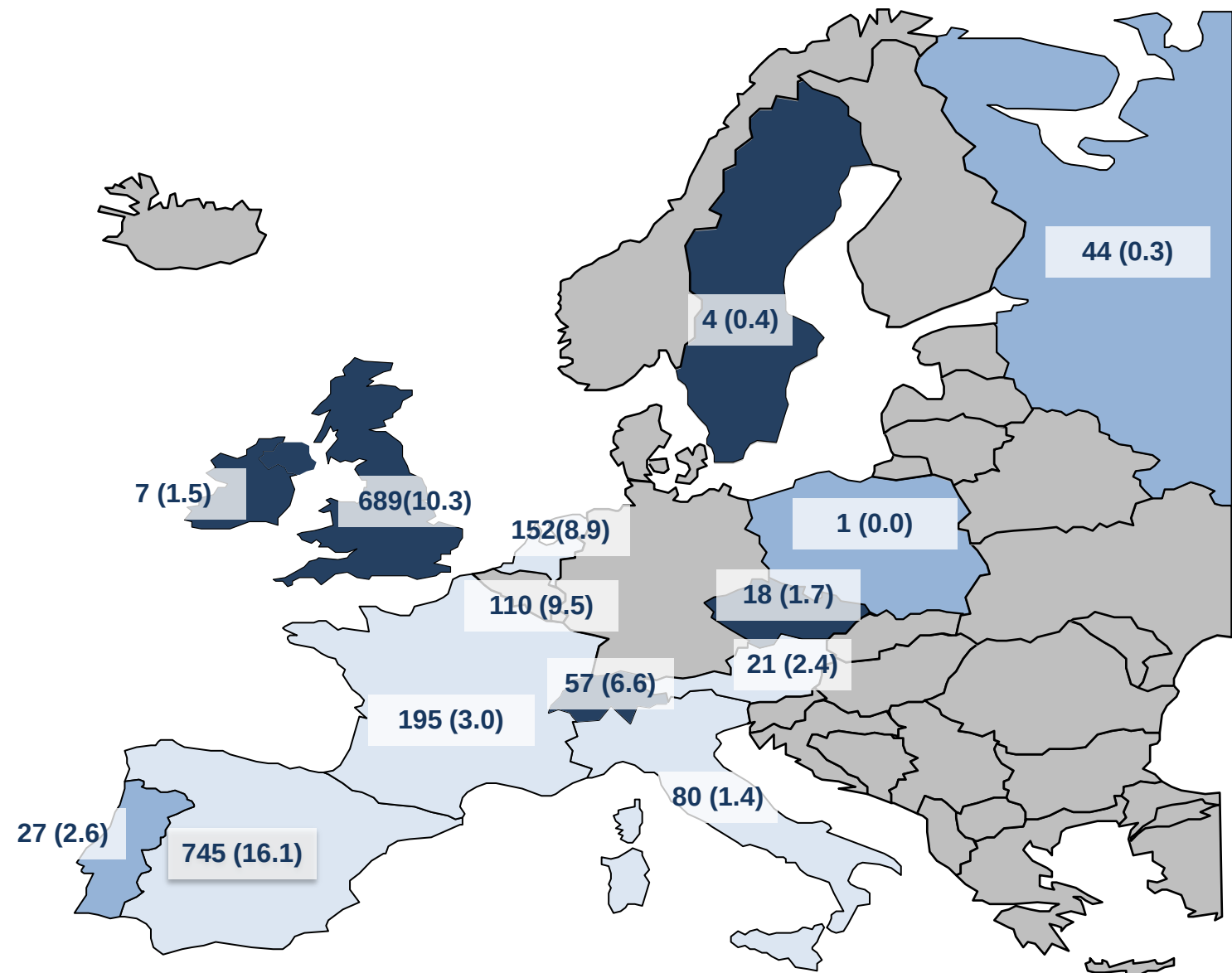
Absolute number (pmp)

9 242 DCD donors were reported in 2019 (23% of total actual deceased organ donors)

(N = 22 countries)
*Includes 1 332 DBCD donors



Note: Colour codes for countries are based on active programmes, regardless of activities reported in 2019

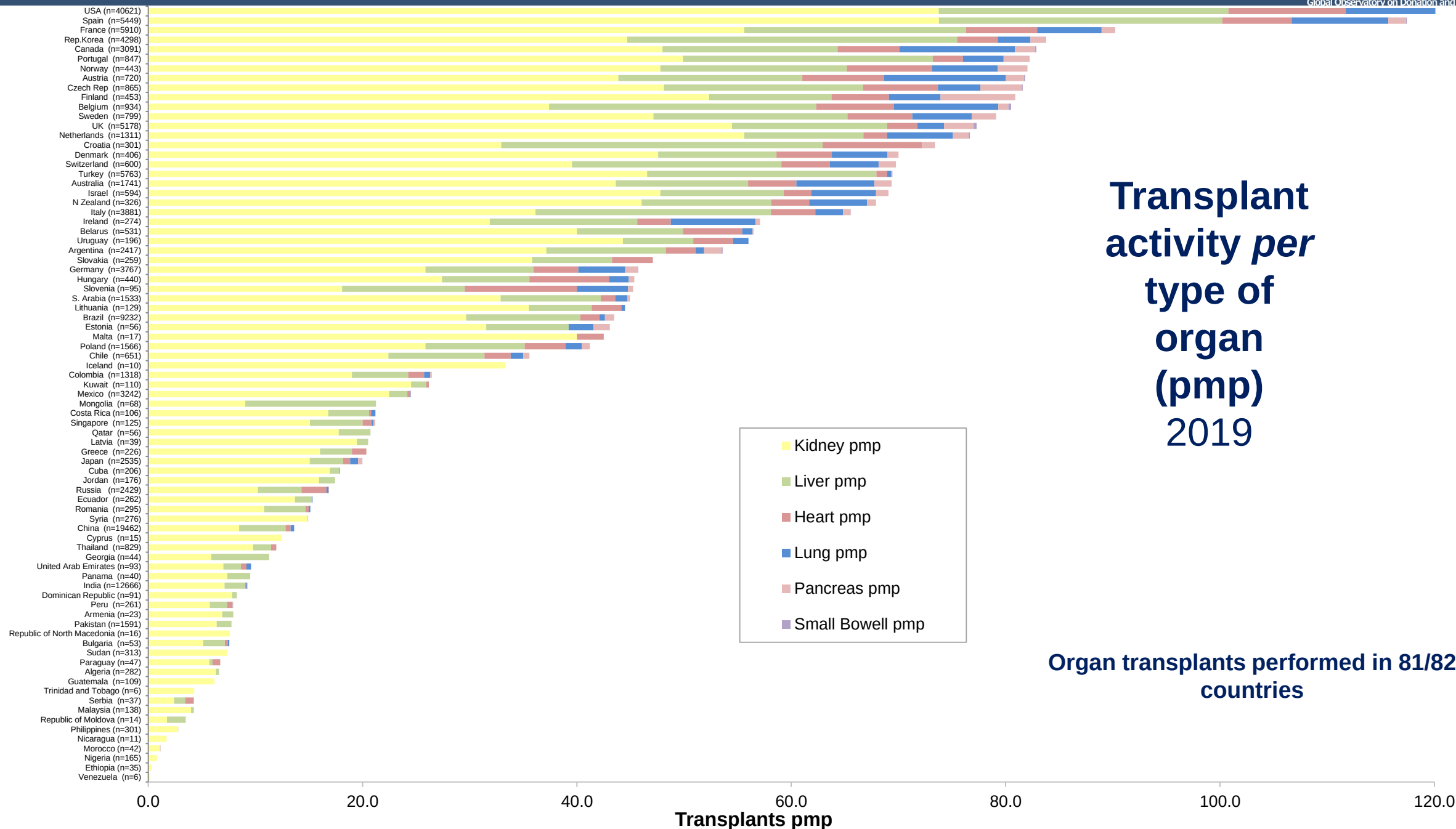


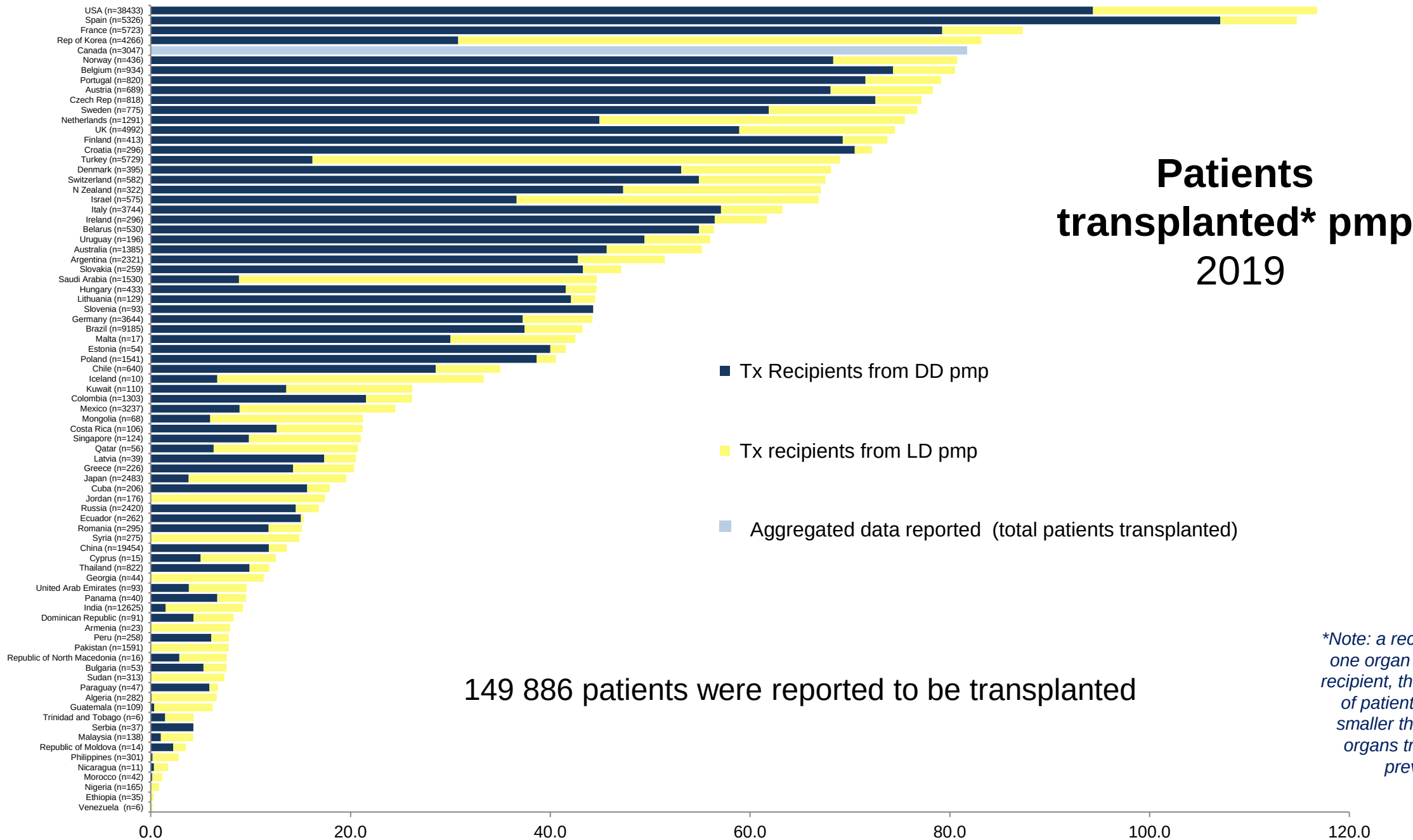
**Actual donors after
the circulatory
determination of
death in Europe
2019**
*Absolute number
(pmp)*

- Controlled and uncontrolled DCD
- Only controlled DCD
- Only uncontrolled DCD

Note: Colour codes for countries are based on active programmes, regardless of activities reported in 2019

GLOBAL ORGAN TRANSPLANT ACTIVITY





**Note: 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)*

Kidney transplants per million population (pmp). 2019



✓ 100 097 kidney transplants

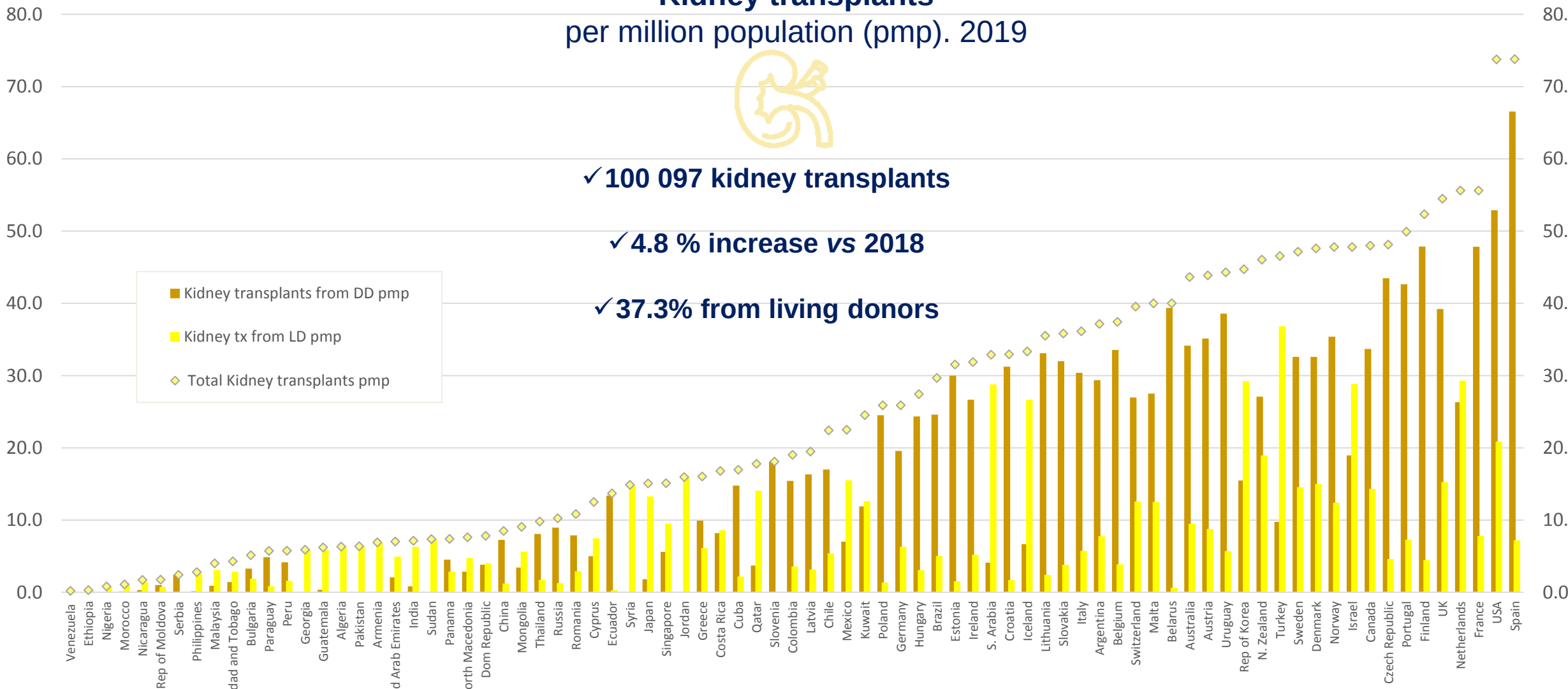
✓ 4.8 % increase vs 2018

✓ 37.3% from living donors

■ Kidney transplants from DD pmp

■ Kidney tx from LD pmp

◆ Total Kidney transplants pmp

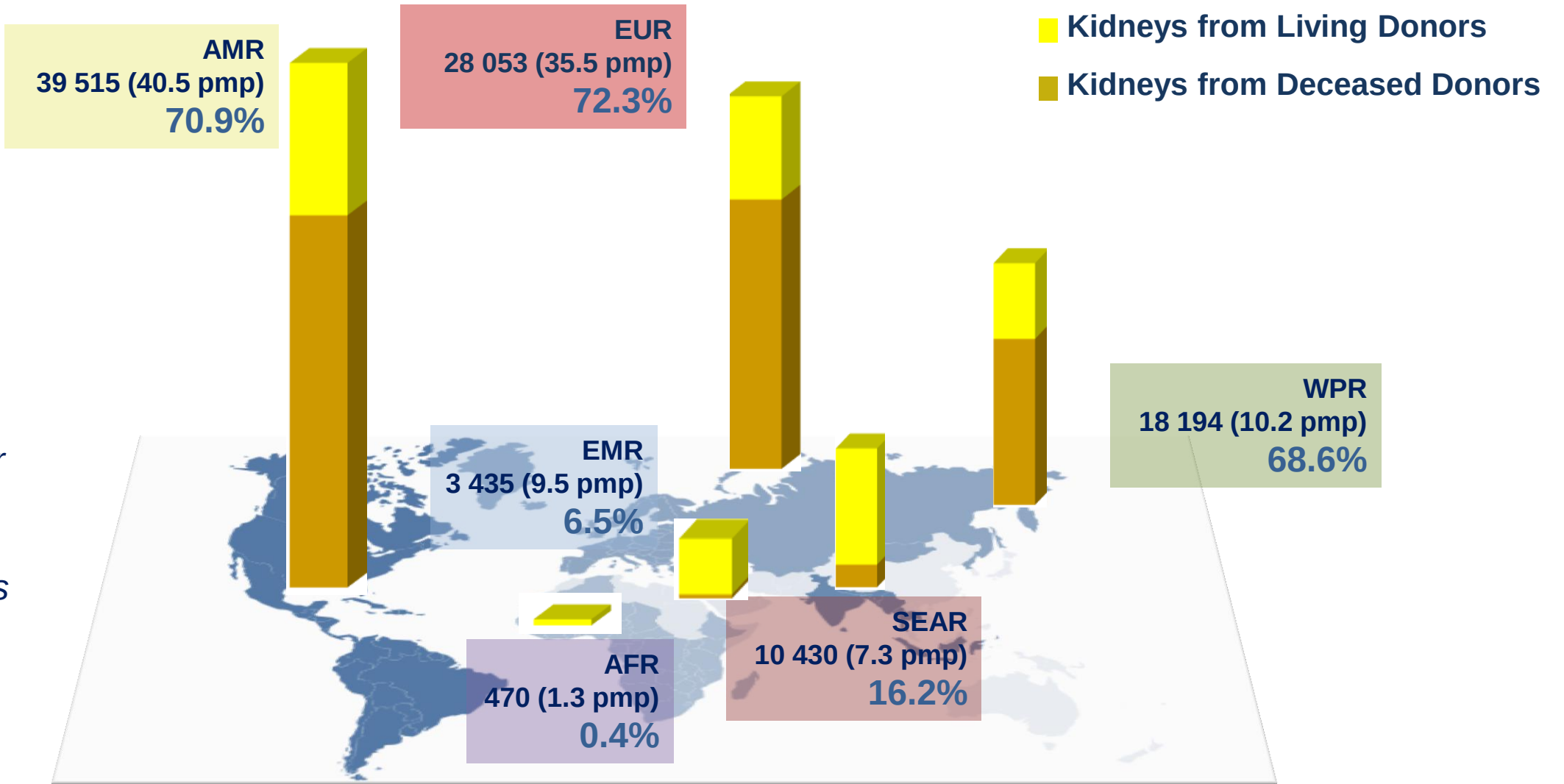


81/82 countries reported kidney transplant activities (living or deceased) in 2019



Kidney transplants by WHO regions 2019

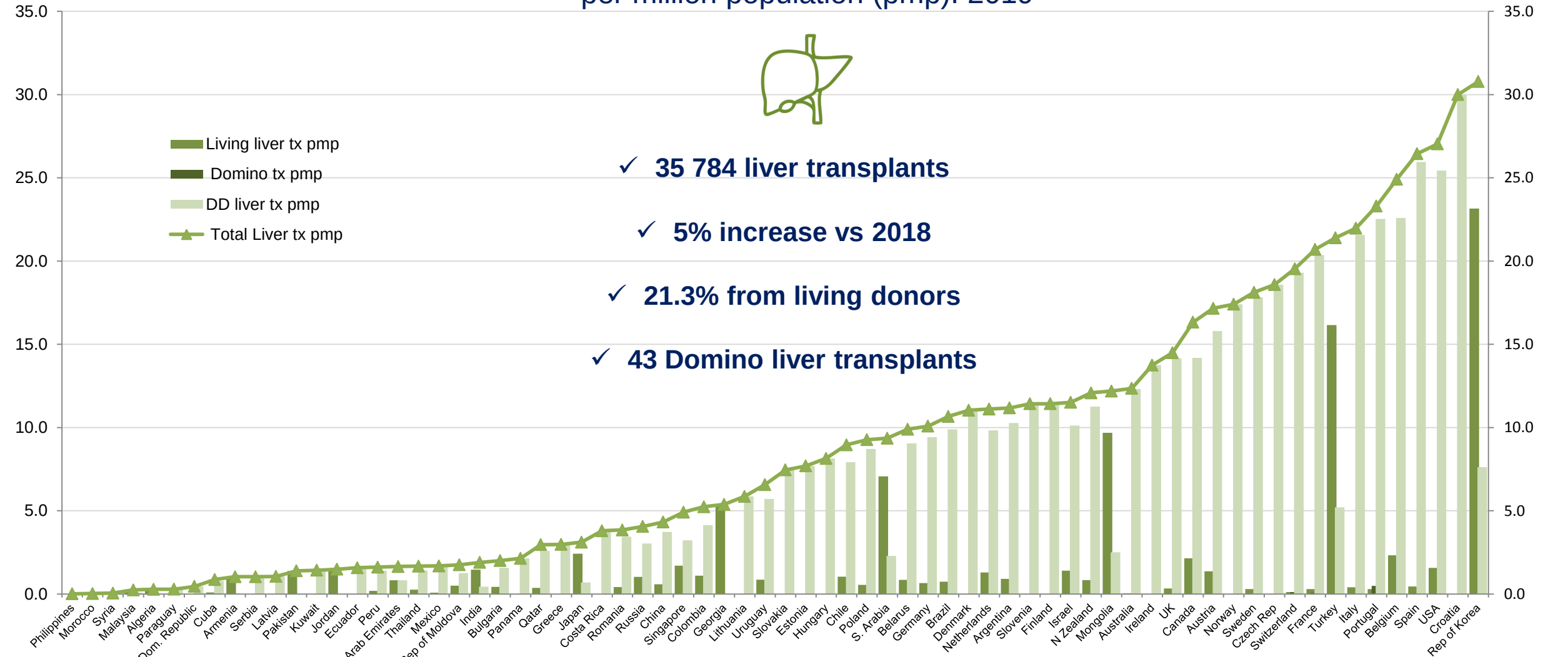
Absolute number
(pmp);
% kidney tx from
deceased donors



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

Liver Transplants

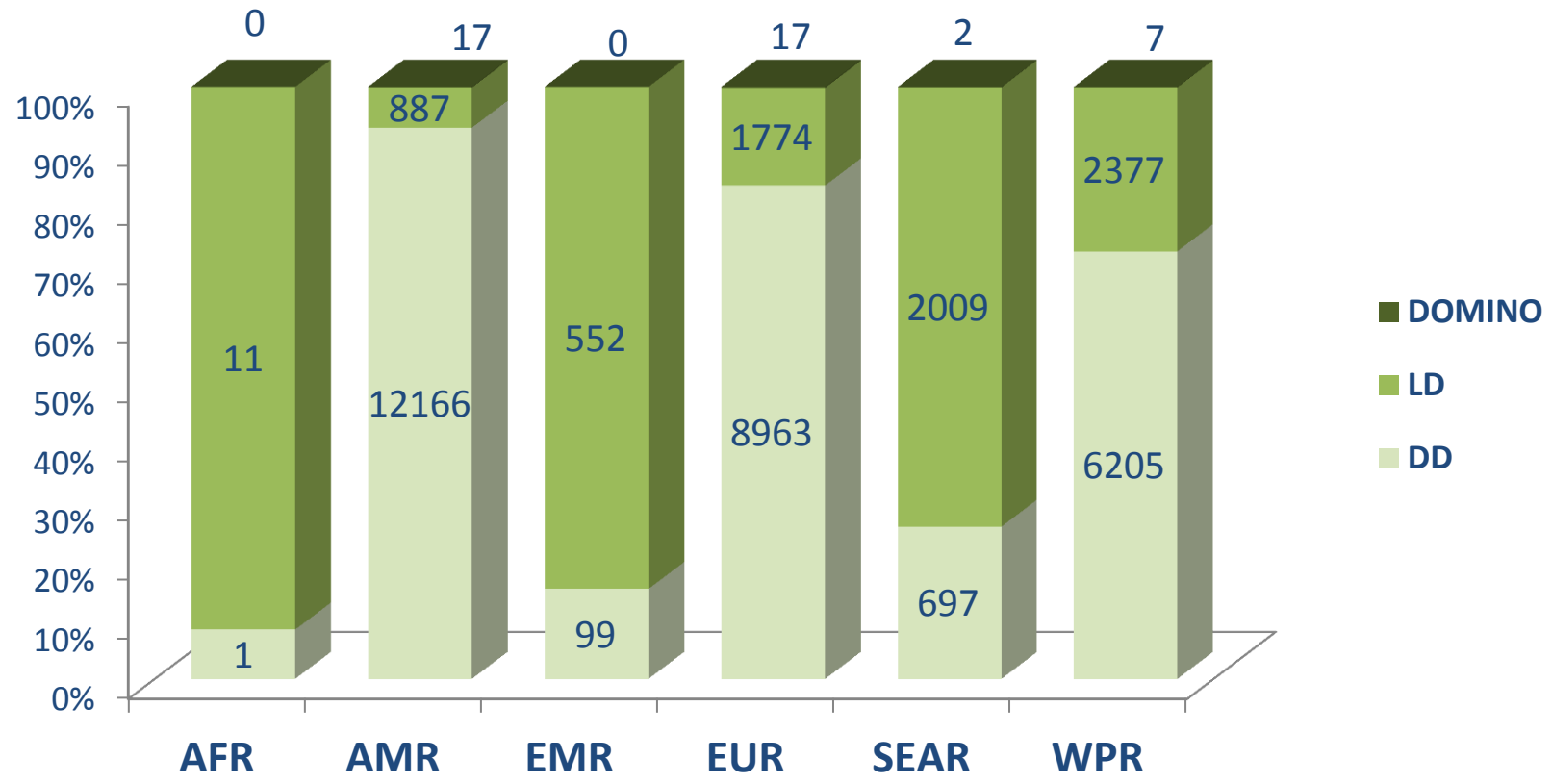
per million population (pmp). 2019





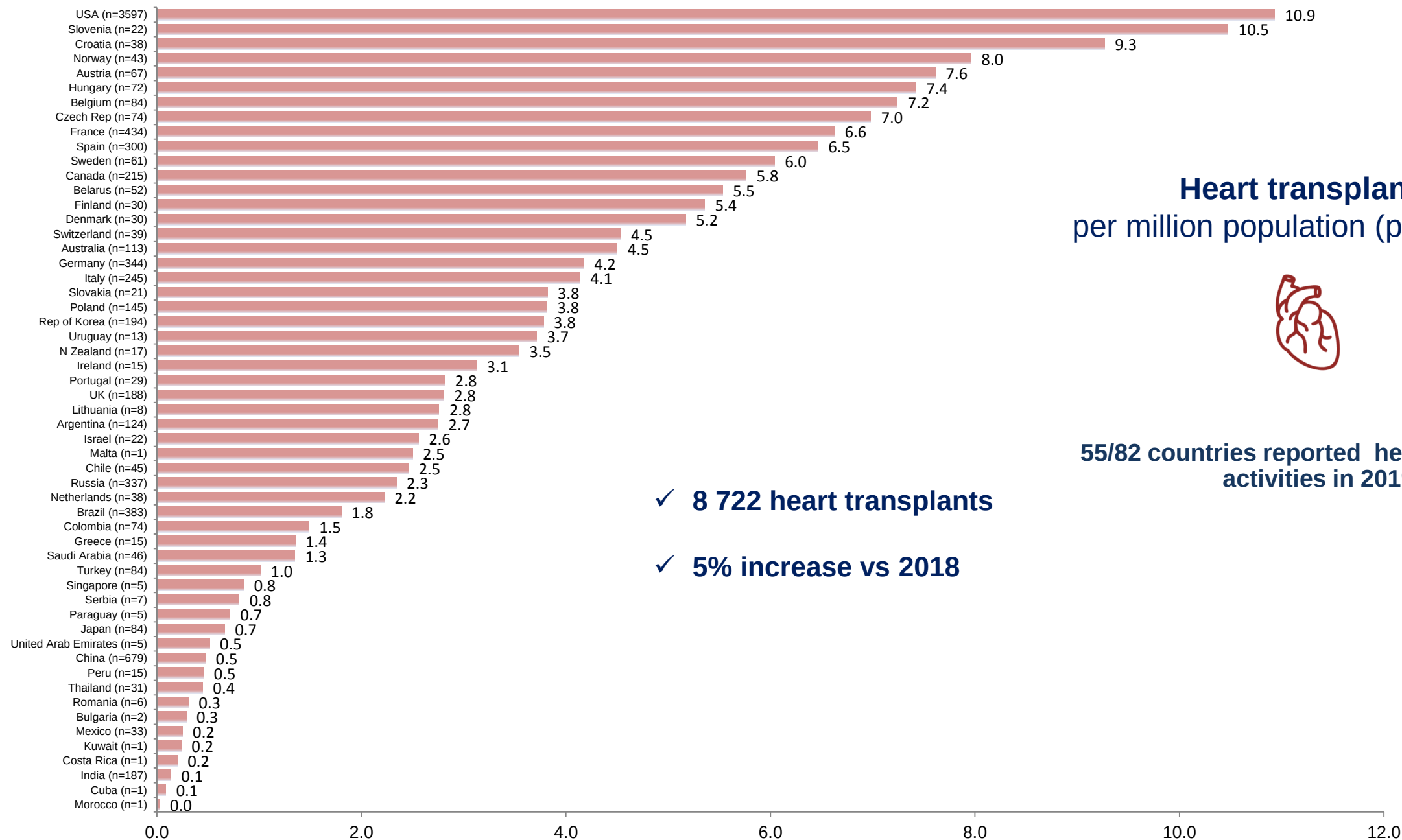
Liver transplants by WHO Regions 2019

Absolute number;
 % per donor type



TOTAL LIVER TX (pmp)	12 (0.0)	13 070 (13.4)	651 (1.8)	10 754 (13.6)	2 708 (1.9)	8 589 (4.8)
% Deceased Donors	8.3	93.1	15.2	83.3	25.7	72.2
Countries with liver tx activity	1	15	8	35	2	9

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



Heart transplants per million population (pmp). 2019



**55/82 countries reported heart transplant
activities in 2019**

✓ **8 722 heart transplants**

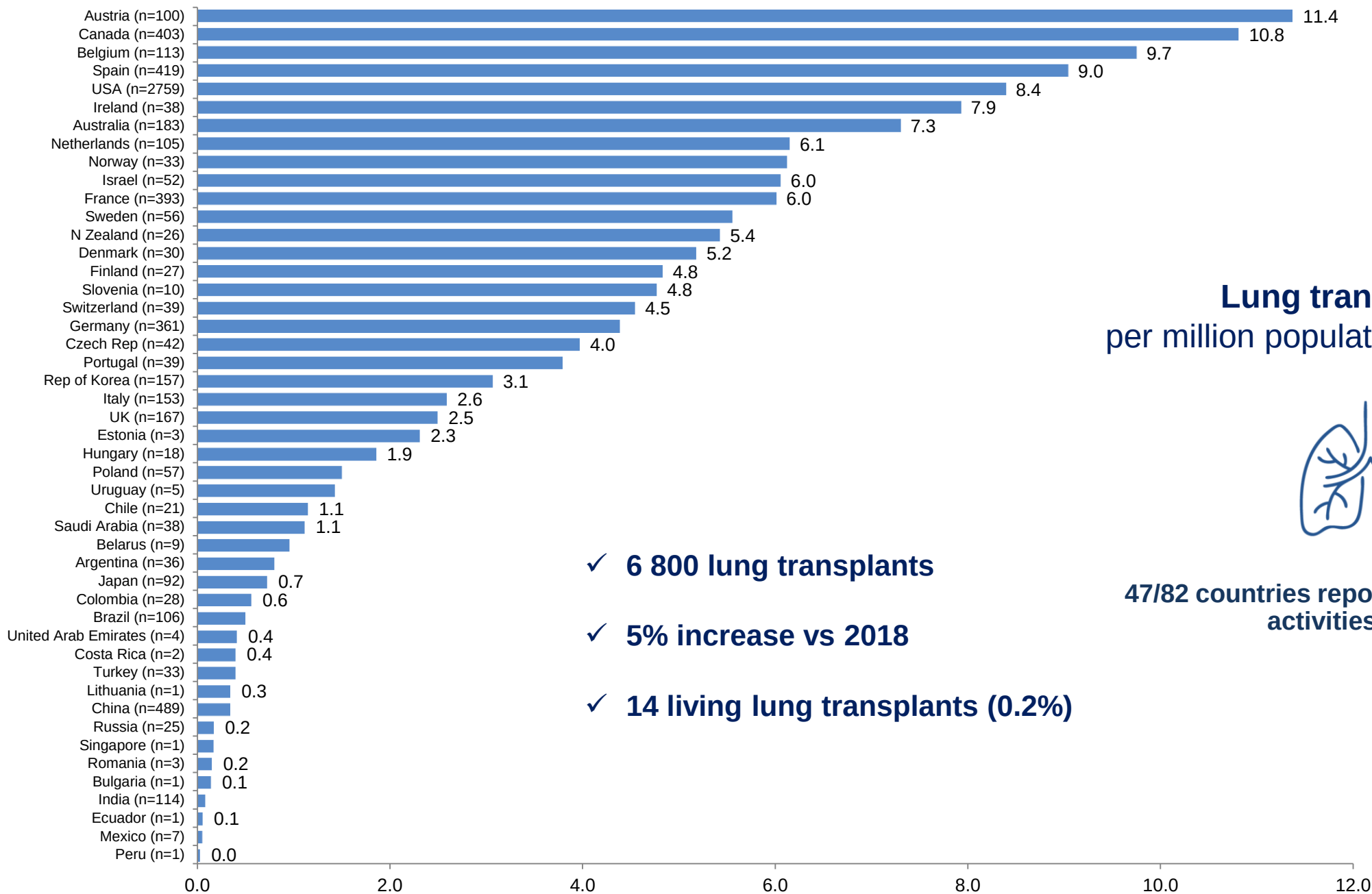
✓ **5% increase vs 2018**

Heart transplants by WHO Regions 2019



WHO Region	Number of Heart Transplants (pmp)	Number of Paediatric Heart Transplants (pmp) (<18 years)	Number of countries with any activity
AFR	0 (0.0)	0 (0.0)	0
AMR	4 506 (4.6)	601 (0.6)	12
EMR	53 (0.1)	17 (0.0)	4
EUR	2 853 (3.6)	240 (0.3)	31
SEAR	218 (0.2)	25 (0.0)	2
WPR	1 092 (0.6)	107 (0.1)	6

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



Lung transplants per million population (pmp). 2019



✓ 6 800 lung transplants

✓ 5% increase vs 2018

✓ 14 living lung transplants (0.2%)

47/82 countries reported lung transplant
activities in 2019

Lung transplants by WHO regions 2019



WHO Region	Number of Lung Transplants (pmp)	Number of Paediatric Lung Transplants (pmp) (<18 years)	Number of countries with any activity
AFR	0 (0.0)	0 (0.0)	0
AMR	3 369 (3.5)	69 (0.1)	11
EMR	42 (0.1)	0 (0.0)	2
EUR	2 327 (2.9)	66 (0.1)	27
SEAR	114 (0.1)	8 (0.0)	1
WPR	948 (0.5)	29 (0.0)	6

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

Pancreas transplants by WHO regions 2019

WHO Region	N. of Pancreas Tx (pmp)*	N. of countries with any activity
AFR	0 (0.0)	0
AMR	1 358 (1.4)	8
EMR	8 (0.0)	1
EUR	763 (1.0)	25
SEAR	25 (0.0)	2
WPR	169 (0.1)	5

✓ 2 323 pancreas transplants

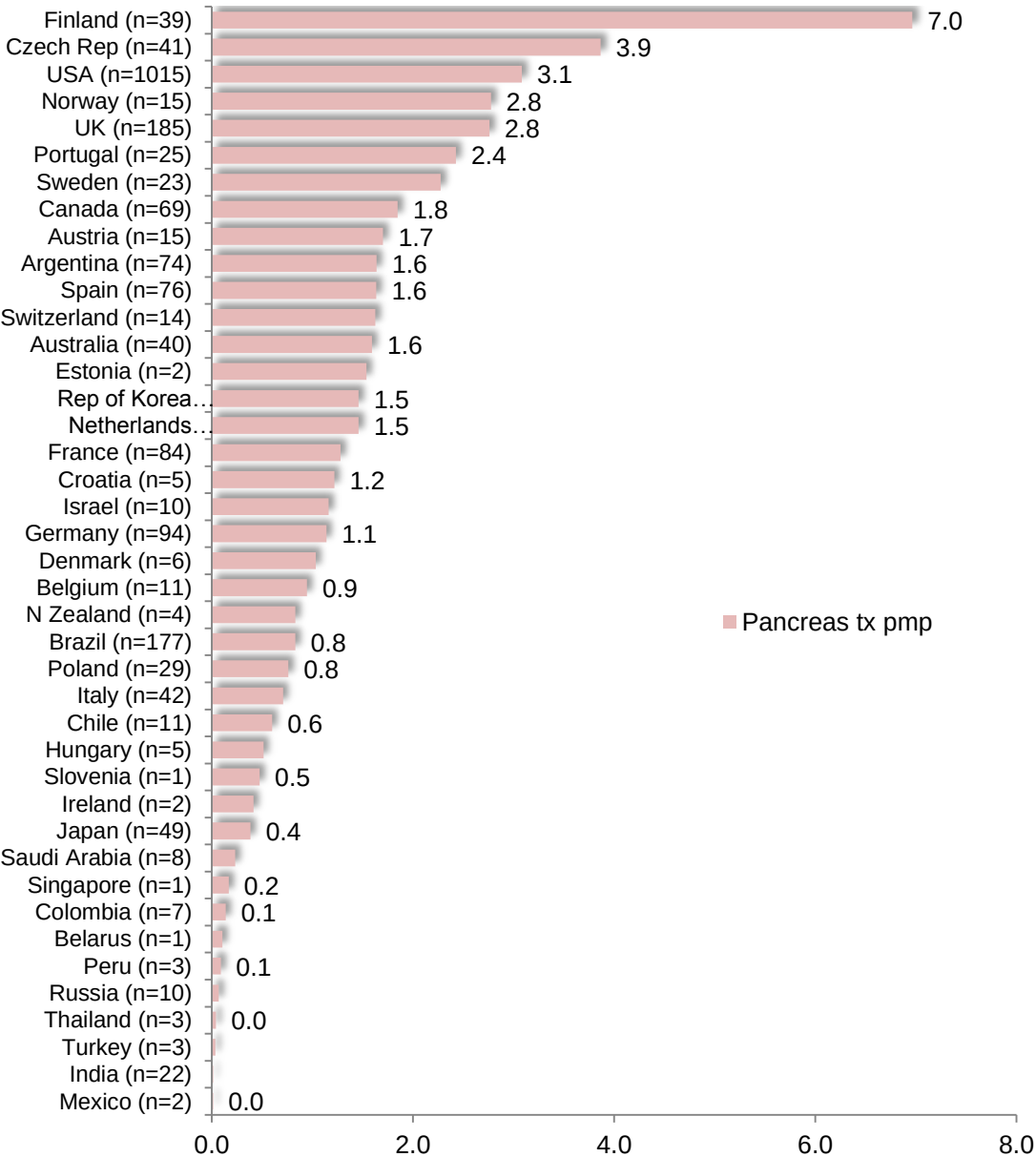
✓ 0.6% of decrease vs 2018

41/82 countries reported pancreas transplant activities in 2019

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



Pancreas
 transplants
 per million
 population
 (pmp). 2019



Small bowel transplants by WHO region 2019

WHO Region	N. of S. Bowel Tx (pmp)*	N. of countries with any activity
AFR	0 (0.0)	0
AMR	95 (0.1)	6
EMR	1 (0.0)	1
EUR	39 (0.0)	9
SEAR	0 (0.0)	0
WPR	2 (0.0)	1

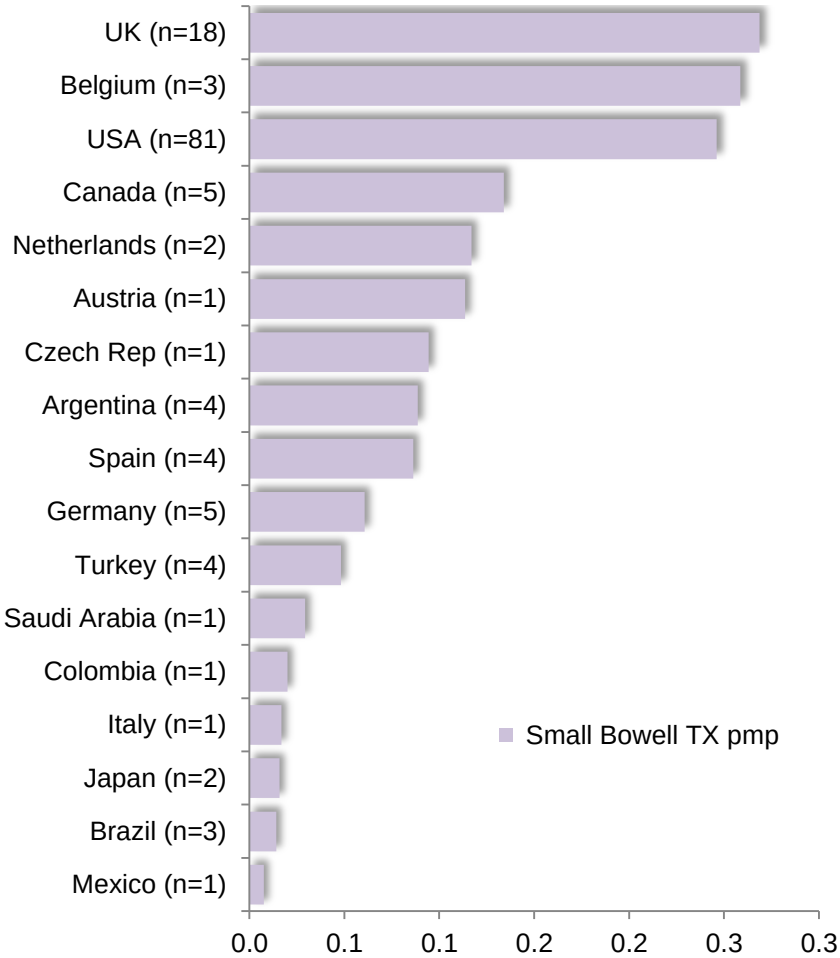
✓ 137 transplants of small bowel

✓ 16% of decrease vs 2018

17/82 countries reported small bowel transplant activities in 2019



Small bowel
transplants
per million population
(pmp). 2019



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

WHO-ONT Collaboration

The GODT is a collaborative effort of WHO and the ONT of Spain. 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 2020.

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 2019.

Only countries reporting data for 2019 have been included in this report.

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 2020.

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

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 2019 Report. Global Observatory on Donation and Transplantation (GODT).

For citations of the 2019 GODT data please quote the following: Those 2019 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.

ACKNOWLEDGEMENTS

The GODT team is thankful to the identified focal points in Member States for their valuable participation in this international data sharing exercise, the Council of Europe for its support through the Newsletter Transplant, and the Spanish Government for its contribution to maintain the GODT.