



# IPNA Global Registry for Kidney Replacement Therapy in Children

## Annual Report 2018

## Introduction

As part of its mission to improve care for children with kidney disease worldwide, IPNA has established a population-based global registry for pediatric kidney replacement therapy.

We are delighted to present the 2<sup>nd</sup> Annual Registry Report, which provides demographic information on children treated with dialysis or transplantation in 57 countries. The IPNA registry has reached a coverage of 55% of the world childhood population.

A website for direct online data entry has been introduced in 2018 (<http://ipna-registry.org>), which is currently used by 27 countries without established national registries.

In addition to providing prevalence figures on individual RRT modalities, the 2018 report contains information about the distribution of primary renal diseases per country.

We hope that this Report will be perceived informative and useful to readers in the pediatric nephrology community and beyond.

The IPNA Registry team



## Data collection

Each national or international registry around the globe has been invited to submit data to the IPNA Global RRT Registry. In addition, direct data submission is made possible for countries without existing registries

The core dataset requested contains a small set of patient level data: age, sex, primary renal disease, date- and modality of RRT, date- and cause of death. This second annual report is based on the data collected in 2018. It describes country specific RRT prevalence and modality choices.

Future reports will also include incidence rates and detailed demographic and benchmarking figures to compare country specific pediatric RRT characteristics on a regional and global level. In this report, most countries submitted data about 2018. However, the USRDS and ESPN-ERA /EDTA datasets include data until 2016.

This year we have launched an online data platform to facilitate data collection, but we continue to accept data in Excel, SAS and SPSS file format.

For more information on the IPNA Global RRT Registry, please contact the registry coordinator at [ipna-registry@amc.nl](mailto:ipna-registry@amc.nl)

## Objectives

1. To empower clinical and translational research through information on disease demographics and comorbidities in children with end-stage kidney disease
2. To provide information on renal replacement therapy practices and outcomes in the context of socioeconomic conditions in children around the globe
3. To facilitate interventional trials in children undergoing dialysis and kidney transplantation

## General Information

AR = Annual Report, pRRT = pediatric Renal Replacement Therapy, DSA = Data Sharing Agreement, WCP = World childhood population

Status	Countries	WCP
	Number	%
No chronic pediatric RRT available	17	4.6
DSA returned (no data received)	10	16.9
Data transmitted	54	50.1
Included in annual report <sup>1</sup>	71	54.7

<sup>1</sup> Including countries that have transmitted data and countries where pediatric RRT is known to be unavailable.

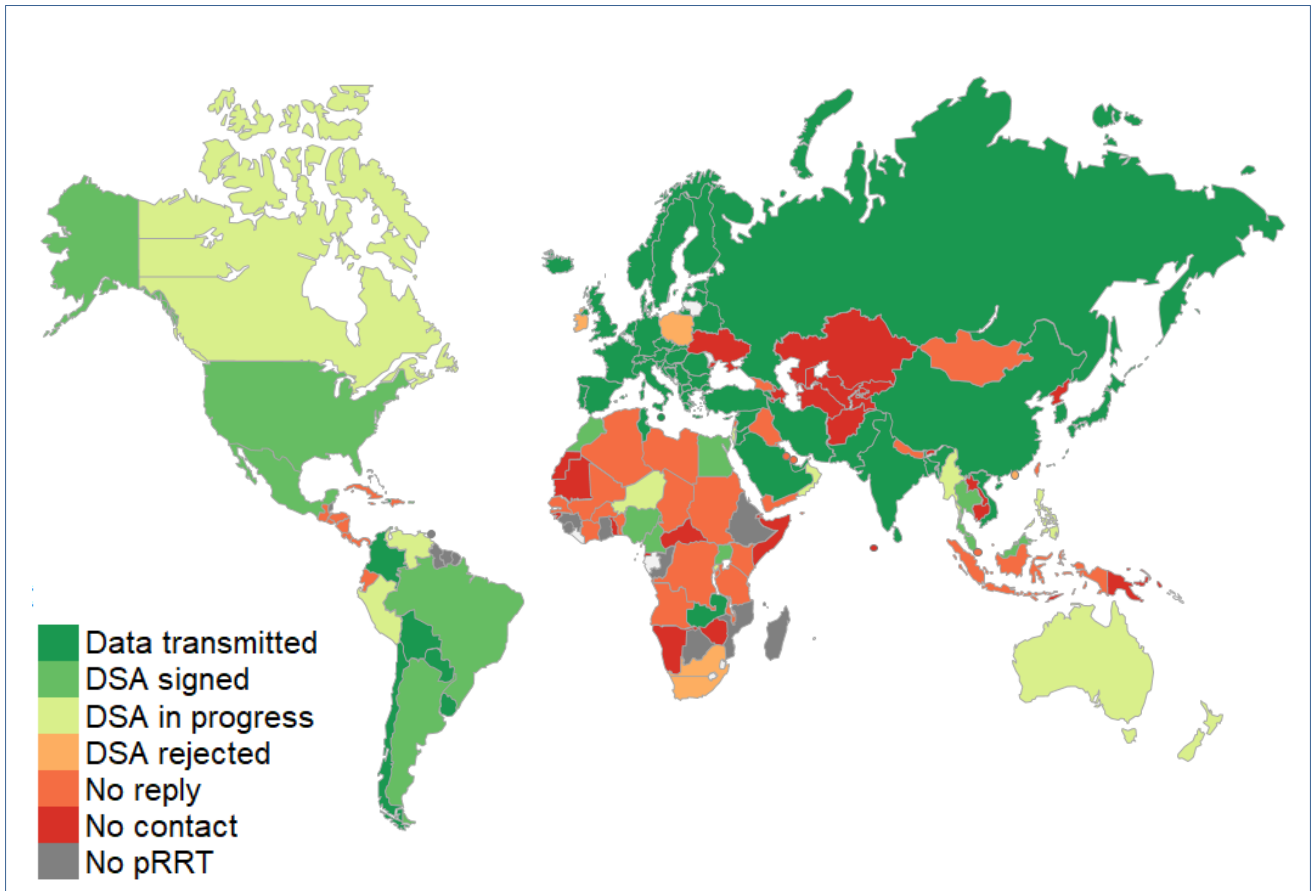


Figure 1: Current status of the IPNA Global RRT Registry, 2018.

## Number of patients and coverage

Number of patients included in the Registry on the 31<sup>st</sup> of December 2018. All coverage percentages are estimates given by the national representatives of the country. When data collection is ongoing, it is impossible to provide a correct estimate of the current percentage of children covered.

Country	Patients	Coverage
	Number	%
<b>AFRICA</b>		
Botswana <sup>1</sup>	-	-
Burkina Faso <sup>2</sup>	16	Unknown
Comoros <sup>1</sup>	-	-
Congo, Rep. of <sup>1</sup>	-	-
Ethiopia <sup>1</sup>	-	-
Ghana <sup>1</sup>	-	-
Guinea <sup>1</sup>	-	-
Lesotho <sup>1</sup>	-	-
Madagascar <sup>1</sup>	-	-
Mozambique <sup>1</sup>	-	-
Seychelles <sup>1</sup>	-	-
Sierra Leone <sup>1</sup>	-	-
Swaziland <sup>1</sup>	-	-
Tunisia	66	Unknown
Zambia	6	100

1. We have strong indications that pediatric RRT is not available in this country. Information on the availability of pediatric RRT is obtained through contacting country representatives or neighbouring countries.
2. This country did not update their dataset this year, numbers are based on 2017.

## Number of patients and coverage

Number of patients included in the Registry on the 31<sup>st</sup> of December 2018. All coverage percentages are estimates given by the national representatives of the country. When data collection is ongoing, it is impossible to provide a correct estimate of the current percentage of children covered.

Country	Patients	Coverage
	Number	%
<b>ASIA</b>		
Bangladesh	68	Unknown
China <sup>3</sup>	561	100
Indonesia <sup>2,4</sup>	220	<100
India	353	60
Iran, Islamic Rep.	589	Unknown
Japan	376	100
Jordan	124	Unknown
Korea, South	447	Unknown
Malaysia	676	81 - 95
Pakistan	246	Unknown
Saudi Arabia	36	Unknown
Sri Lanka	57	100
Syria	130	100
United Arab Emirates	87	100
Vietnam	7	Unknown

2. This country did not update their dataset this year, numbers are based on 2017.
3. Data on transplant patients are derived from centers directly using the online IPNA Registry website. Data on dialysis patients are collected using a dataset from IPDN China.
4. All public hospitals are included. Data of private hospitals (unknown percentage) is currently unavailable.

## Number of patients and coverage

Number of patients included in the Registry on the 31<sup>st</sup> of December 2018. All coverage percentages are estimates given by the national representatives of the country. When data collection is ongoing, it is impossible to provide a correct estimate of the current percentage of children covered.

Country	Patients	Coverage
	Number	%
<b>EUROPE <sup>5</sup></b>		
Albania	18	100
Austria	615	100
Bosnia and Herzegovina	31	100
Bulgaria	74	100
Belarus	121	100
Croatia	44	100
Cyprus	16	100
Czech Republic	168	100
Denmark	351	100
Estonia	8	100
Finland	469	100
France	3371	100
Georgia	32	100
Germany	662	100
Greece	697	100
Hungary	187	100
Iceland	41	100

5. Data on patients included in the ESPN/ERA-EDTA Registry.

## Number of patients and coverage

Number of patients included in the Registry on the 31<sup>st</sup> of December 2018. All coverage percentages are estimates given by the national representatives of the country. When data collection is ongoing, it is impossible to provide a correct estimate of the current percentage of children covered.

Country	Patients	Coverage
	Number	%
<b>EUROPE <sup>5</sup></b>		
Italy	1272	<100
Lithuania	51	100
Malta	5	100
Norway	401	100
Portugal	260	100
Republic of North Macedonia	13	100
Republic of Serbia	118	100
Romania	370	100
Russia	1080	100
Slovakia	119	100
Slovenia	47	100
Spain	1782	100
Sweden	565	100
Switzerland	440	100
The Netherlands	1650	100
Turkey	736	100
United Kingdom <sup>6</sup>	3250	100

5. Numbers of patients included in the ESPN/ERA-EDTA registry.

6. United Kingdom includes: England, Wales, Scotland and Northern Ireland.

## Number of patients and coverage

Number of patients included in the Registry on the 31<sup>st</sup> of December 2018. All coverage percentages are estimates given by the national representatives of the country. When data collection is ongoing, it is impossible to provide a correct estimate of the current percentage of children covered.

Country	Patients	Coverage
	Number	%
<b>LATIN AMERICA</b>		
Bolivia	16	Unknown
Chile	238	Unknown
Colombia <sup>2</sup>	118	100
Haiti	5	Unknown
Panama <sup>2</sup>	29	100
Peru	219	85
Paraguay <sup>2</sup>	20	100
Puerto Rico	30	Unknown
Uruguay	12	Unknown
<b>NORTH AMERICA <sup>7</sup></b>		
United States of America	50418	100%

2. This country did not update their dataset this year, numbers are based on 2017.

7. Data on patients included in the USRDS registry.

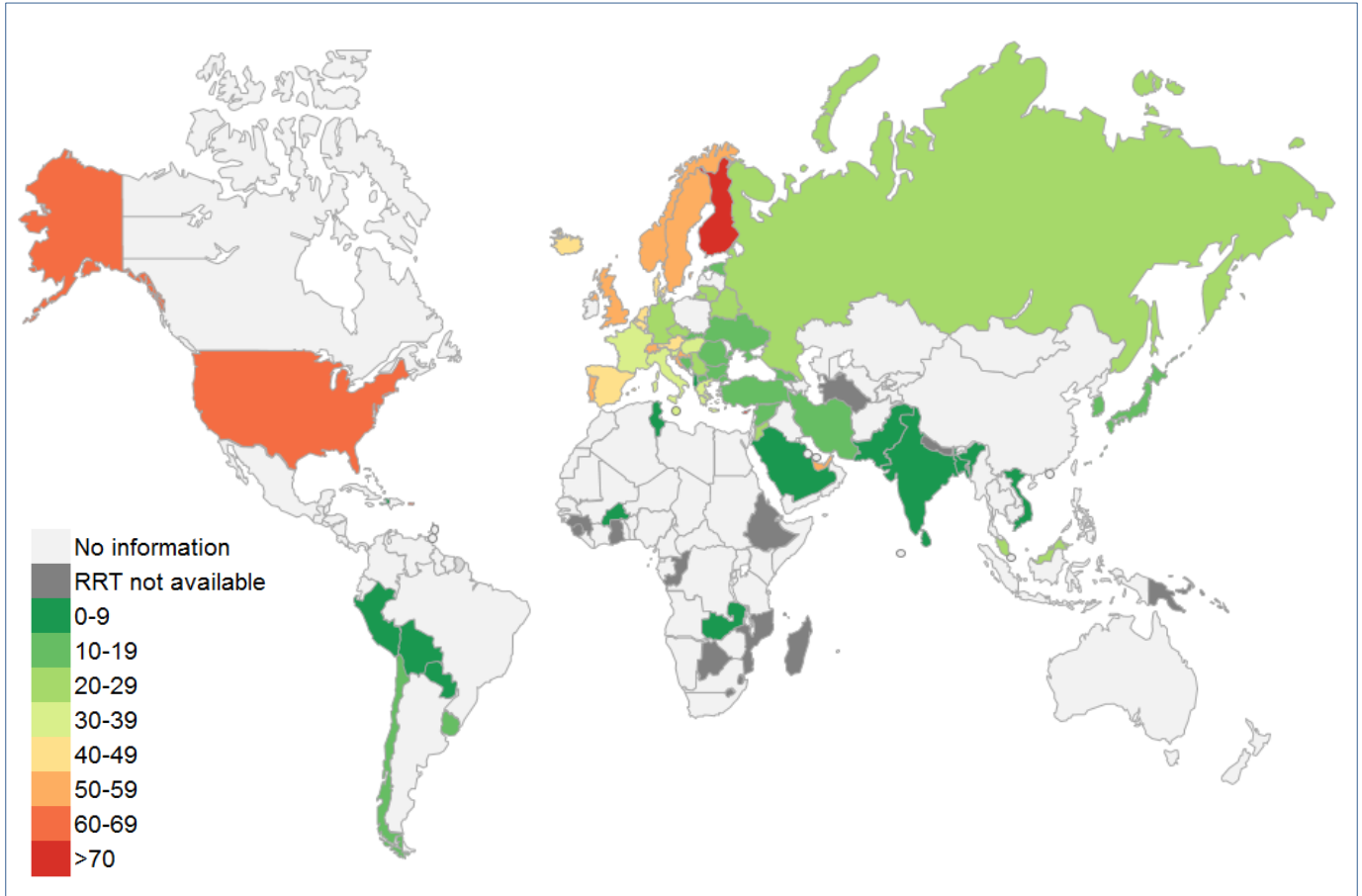


Figure 2: Prevalent patients aged 0 – 14 years on RRT. Prevalence per million age related population (pmarp). US and European data on 31st of December 2016. Other countries on 31st of December 2018.

## Africa <sup>1</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Burkina Faso <sup>2</sup>	2	0.2	6	0.5	-	-	0.8	1.9
Congo, Rep	0	-	0	-	-	-	-	-
Ethiopia	0	-	0	-	-	-	-	-
Ghana	0	-	0	-	-	-	-	-
Guinea	0	-	0	-	-	-	-	-
Mozambique	0	-	0	-	-	-	-	-
Tunisia	24	8.6	32	8.9	1.0	6.3	20.9	10.1
Zambia	3	0.4	3	0.3	-	0.4	0.9	

1. Prevalent pediatric patients on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.
2. This country did not update their dataset, numbers derived from 2017

# Prevalence of RRT by age



## Asia <sup>1</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bangladesh	18	0.4	36	0.6	-	0.3	0.9	1.1
India	138	0.4	245	0.5	0.1	0.5	0.7	0.5
Iran	248	12.7	370	15.0	4.7	9.7	25.2	23.2
Japan	177	10.9	274	12.5	5.4	15.8	11.3	16.8
Jordan	94	27.0	113	25.4	6.5	24.6	53.4	19.5
Korea, South	83	12.0	164	16.9	2.2	11.5	22.0	29.0
Malaysia	160	20.8	297	28.4	1.1	15.5	46.8	50.0
Pakistan	176	2.5	245	2.8	0.1	2.0	6.1	3.6
Saudi Arabia	30	3.6	30	2.8	0.7	2.9	7.9	-
Sri Lanka	11	2.1	26	3.9	-	3.5	2.8	9.0
Syria	77	11.8	89	10.2	0.5	9.7	22.6	5.4
Turkmenistan	0	-	0	-	-	-	-	-
United Arab Emirates	73	55.1	81	46.8	44.3	63.6	57.1	19.7
Vietnam	5	0.2	7	0.2	0.3	0.3	0.1	0.3

1. Prevalent pediatric patients on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Europe <sup>2</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	Pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Albania	5	9.7	-	-	6.0	6.3	15.8	-
Austria	52	41.7	96	57.2	26.4	41.4	57.2	95.1
Belarus	38	24.1	-	-	5.0	31.6	40.2	-
Bosnia and Herzegovina	10	18.4	19	26.2	17.2	17.0	20.8	37.1
Bulgaria	10	10.0	-	-	3.0	11.5	15.7	-
Croatia	31	51.0	-	-	25.5	57.2	69.5	-
Cyprus	10	71.7	-	-	63.5	104.6	45.1	-
Czech Republic	45	27.5	-	-	12.7	15.2	59.1	-
Denmark	39	40.6	86	65.8	16.9	42.4	59.9	134.2
Estonia	4	18.8	-	-	-	-	61.2	-
Finland	72	80.4	120	100.1	79.0	61.6	101.4	160.0
France	470	38.2	910	56.5	19.7	35.2	58.6	106.9
Georgia	15	19.7	-	-	7.1	26.0	28.1	-
Germany	249	22.7	-	-	8.1	22.3	37.7	-
Greece	53	34.1	-	-	6.3	34.7	58.5	-
Hungary	56	39.3	-	-	13.1	31.2	72.3	-
Iceland	3	45.0	5	56.0	-	42.5	93.0	90.8

2. Prevalent pediatric patients on RRT on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report. For most European countries, the prevalence for 15-19 years is not reported due to suspected incompleteness.

# Prevalence of RRT by age

## Europe <sup>2</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Italy	253	30.7	-	-	15.4	30.6	44.5	-
Lithuania	9	21.3	-	-	6.6	28.3	30.7	-
Malta	2	31.0	-	-	-	46.6	48.7	-
Netherlands	128	45.9	232	60.5	16.0	65.6	53.7	101.3
Norway	53	56.6	79	62.7	29.6	46.6	93.7	79.8
Portugal	73	50.3	-	-	13.9	54.8	75.9	-
Rep. of North Macedonia	5	14.5	-	-	-	34.8	8.8	-
Rep. of Serbia	30	29.5	-	-	6.1	27.0	53.4	-
Romania	49	16.0	122	29.8	4.2	15.3	27.6	67.7
Russia	440	20.4	-	-	9.4	20.3	33.9	-
Slovakia	16	19.1	-	-	10.5	20.9	26.6	-
Slovenia	10	32.5	-	-	47.0	9.2	43.3	-
Spain	333	47.5	-	-	17.5	47.0	75.5	-
Sweden	100	57.5	186	83.5	28.7	55.5	90.5	163.5
Switzerland	71	56.6	-	-	32.5	35.7	103.9	-
Turkey	297	15.7	-	-	7.6	10.1	29.9	-
Ukraine	86	13.2	-	-	4.5	10.7	25.8	-
United Kingdom	653	55.9	889	58.2	27.4	56.5	86.9	62.5

2. Prevalent pediatric patients on RRT on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report. For most European countries, the prevalence for 15-19 years is not reported due to suspected incompleteness.

## Latin America <sup>1</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bolivia	8	2.3	14	3.0	-	1.7	5.2	5.4
Chile	72	19.7	120	24.3	3.4	21.3	33.5	37.2
Haiti	2	0.6	2	0.4	-	-	1.7	-
Peru	83	9.4	149	12.8	3.0	4.1	21.7	23.7
Puerto Rico	12	20.5	25	30.5	11.4	31.1	18.5	55.6
Paraguay	12	6.0	19	7.1	5.9	4.8	7.6	10.6
Uruguay	9	12.4	12	12.3	-	12.4	24.4	12.0

## North America <sup>3</sup>

Country	Total RRT				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
United States of America	3827	62.1	7485	90.2	34.0	57.5	93.6	171.2

1. Prevalent pediatric patients on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.
3. Prevalent pediatric patients on RRT on the 31<sup>st</sup> of December 2016. The data reported here have been supplied by the United States Renal Data System (USRDS). The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy or interpretation of the U.S. government.

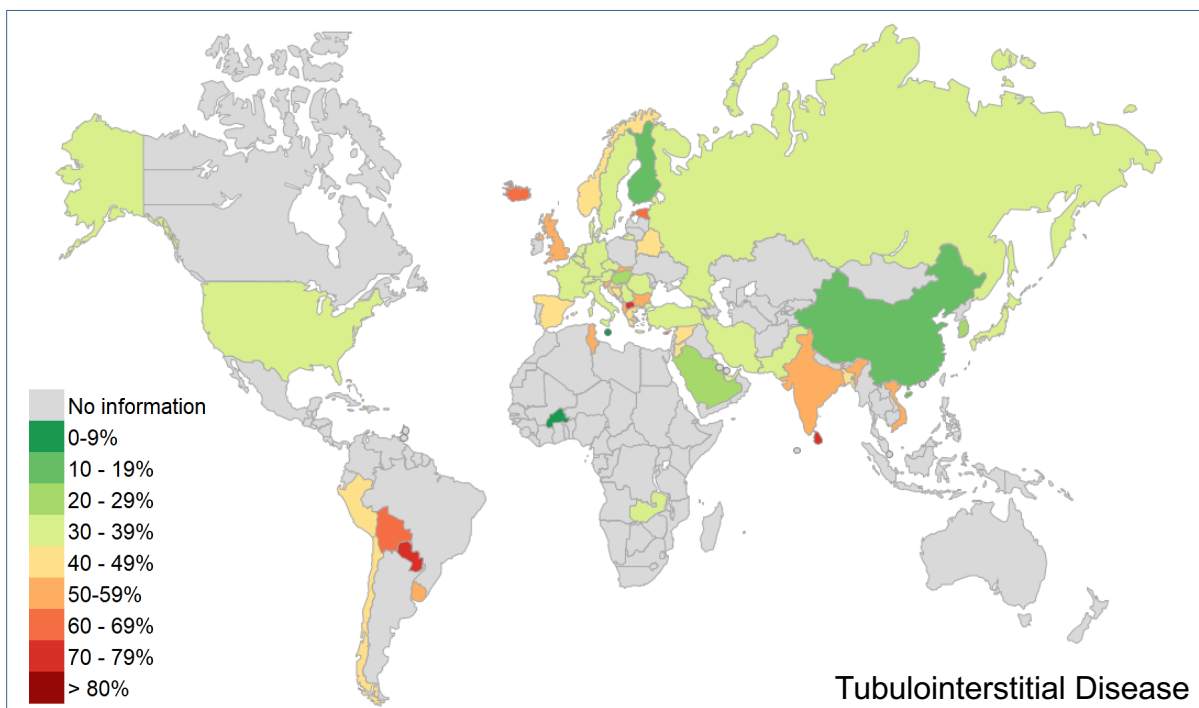
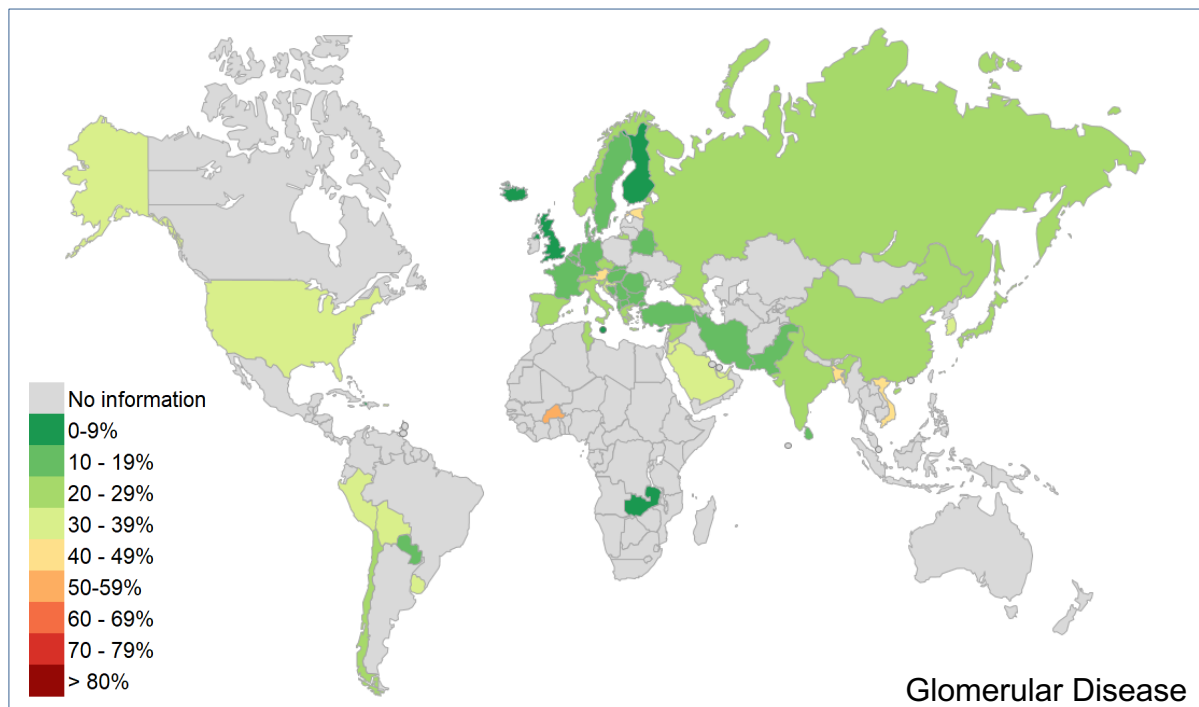


Fig 6a and 6b: Primary renal disease categories (glomerular disease, tubulointerstitial disease), percentage of all prevalent children on chronic renal replacement therapy per country.

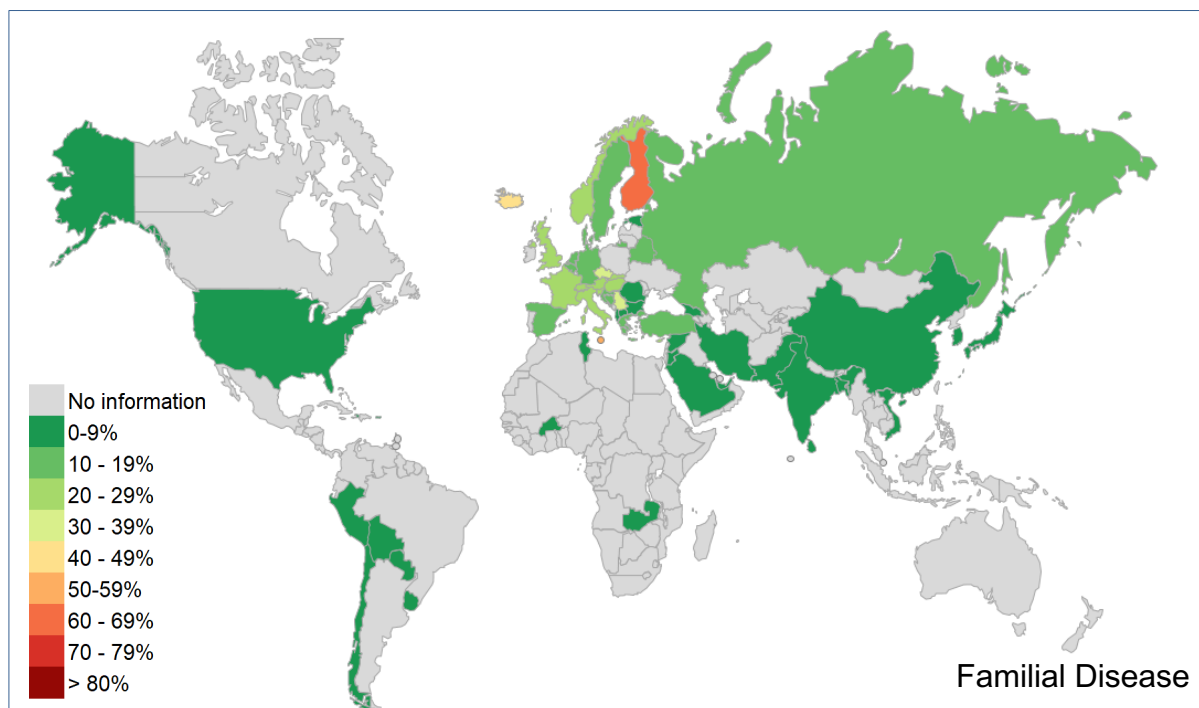
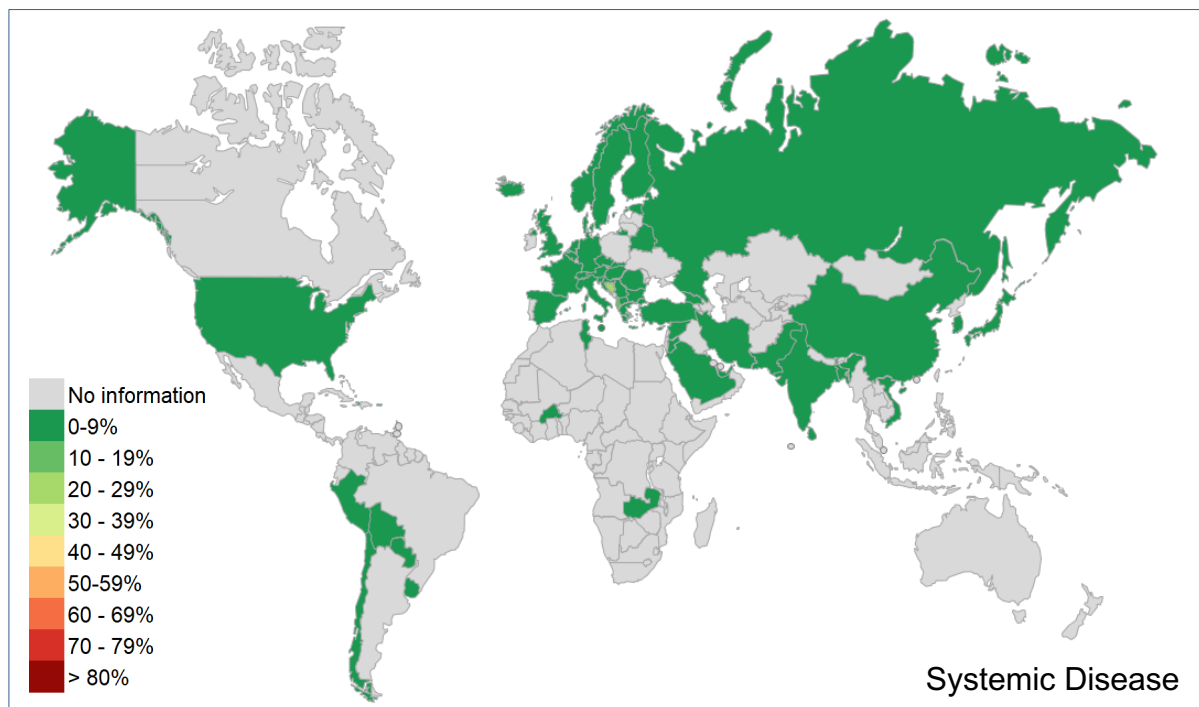


Fig 6c and 6d: Primary renal disease categories (systemic disease, familial disease), percentage of all prevalent children on chronic renal replacement therapy per country.

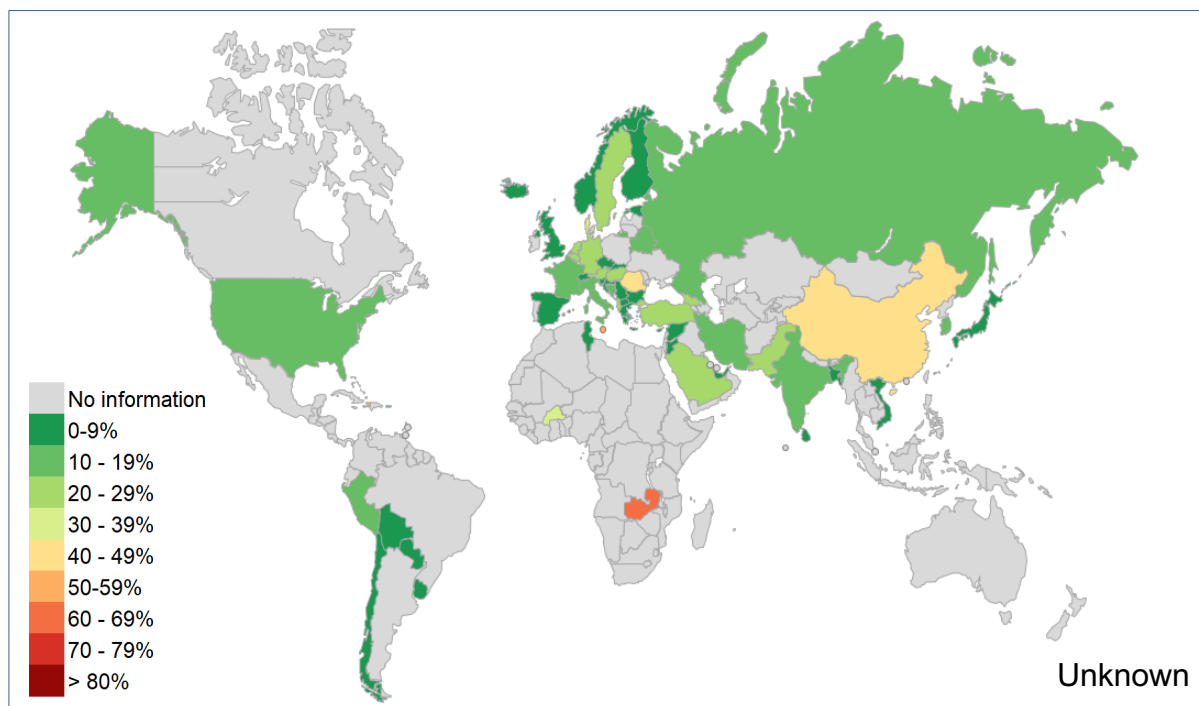
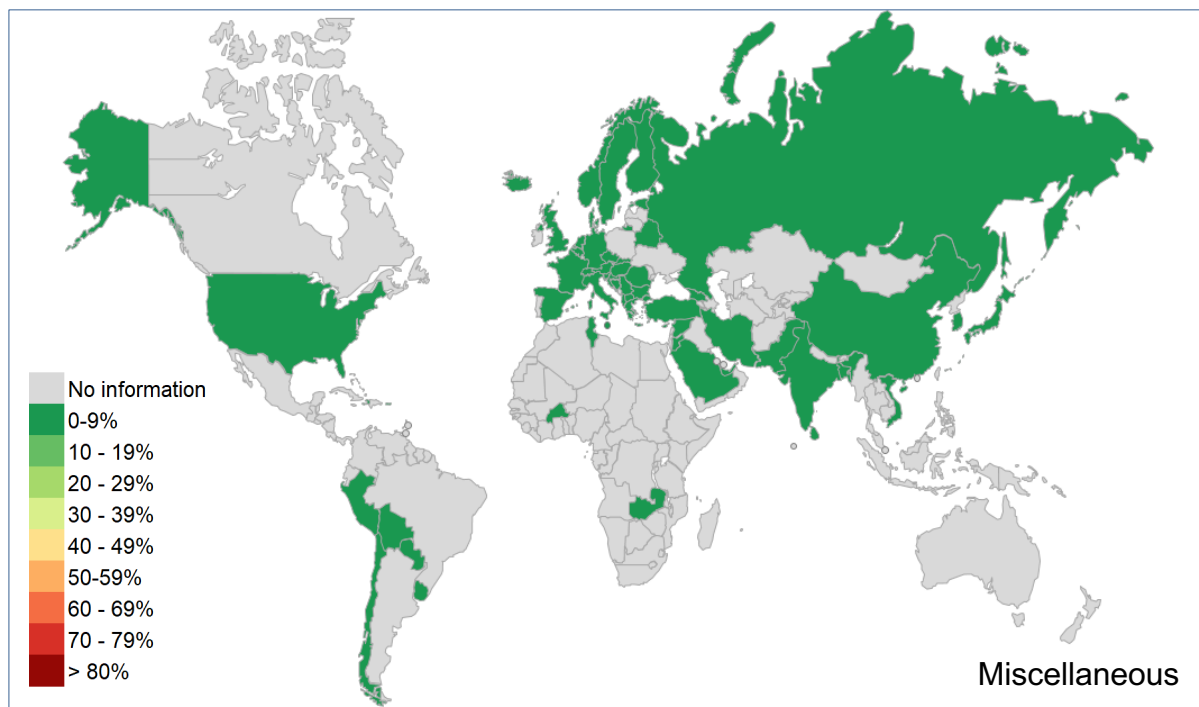


Fig 6e and 6f: Primary renal disease categories (miscellaneous and unknown), percentage of all prevalent children on chronic renal replacement therapy per country on 31<sup>st</sup> of December 2018.

## Primary Renal Diseases in prevalent patients on 31 December 2018 (%)

	Glom. Disease	Tub. Disease	Systemic disease	Familial disease	Misc.	Unknown
<b>AFRICA</b>						
Burkina Faso	56.3	6.25	-	-	-	37.5
Tunisia	23.5	52.9	2.9	14.7	-	5.9
Zambia	-	33.3	-	-	-	66.7
<b>ASIA</b>						
Bangladesh	42.5	40.0	2.5	10.0	-	5.0
China	29.6	19.1	2.6	9.6	1.7	37.5
Indonesia <sup>1</sup>	49.5	26.4	1.1	3.3	3.3	16.5
India	25.2	51.2	4.3	7.1	2.2	10.1
Iran Islamic Rep.	18.2	36.7	3.3	25.3	0.7	15.8
Japan	23.1	37.2	1.1	29.2	5.3	4.2
Jordan	34.2	46.2	0.9	16.2	-	2.6
Korea, South	34.1	28.2	2.0	16.1	2.4	17.3
Malaysia	42.4	21.9	8.1	5.4	0.3	21.9
Pakistan	18.3	30.9	2.9	23.2	1.6	23.2
Saudi Arabia	30.0	23.3	3.3	20.0	-	23.3
Sri Lanka	10.9	78.3	2.2	4.4	4.4	-
Syria	26.1	43.5	4.4	13.0	4.4	8.7
United Arab Emirates	35.4	39.0	2.4	19.5	2.4	1.2
Vietnam	42.9	57.1	-	-	-	-

Abbreviations: Glom. Disease = Glomerular Disease, Tub. Disease = Tubulointerstitial Disease, Misc. = Miscellaneous. Grouping of primary renal diseases based on the ERA-EDTA grouping of primary renal disease codes 2012.

## Primary Renal Diseases in prevalent patients on 31 December 2016 (%)

	<b>Glom. Disease</b>	<b>Tub. Disease</b>	<b>Systemic disease</b>	<b>Familial disease</b>	<b>Misc.</b>	<b>Unknown</b>
<b>EUROPE</b>						
Albania	11.1	55.6	11.1	-	-	22.2
Austria	14.6	35.4	3.1	22.9	3.1	20.8
Bosnia and Herzegovina	10.5	42.1	21.1	15.8	-	10.5
Bulgaria	19.4	58.1	-	9.7	6.5	6.5
Belarus	16.4	44.6	9.1	14.6	0.9	14.6
Croatia	31.6	47.4	-	15.8	2.6	2.6
Cyprus	6.7	66.7	6.7	20.0	-	-
Czech Republic	20.9	35.2	6.6	31.9	1.1	4.4
Denmark	10.3	32.2	2.3	14.9	1.2	39.1
Estonia	40.0	60.0	-	-	-	-
Finland	4.2	19.2	4.2	61.7	3.3	7.5
France	16.3	37.2	6.0	26.5	4.0	10.0
Georgia	32.1	35.7	3.6	7.1	-	21.4
Germany	18.8	31.8	6.2	18.6	0.8	23.8
Greece	20.2	48.1	7.7	15.4	1.0	7.7
Hungary	19.6	24.4	1.8	26.8	0.6	26.8
Iceland	-	60.0	-	40.0	-	-
Italy	23.9	33.8	4.6	20.9	2.3	14.6

Abbreviations: Glom. Disease = Glomerular Disease. Tub. Disease = Tubulointerstitial Disease. Misc. = Miscellaneous. Grouping of primary renal diseases based on the ERA-EDTA grouping of primary renal disease codes 2012.

## Primary Renal Diseases in prevalent patients on 31 December 2016 (%)

	<b>Glom. Disease</b>	<b>Tub. Disease</b>	<b>Systemic disease</b>	<b>Familial disease</b>	<b>Misc.</b>	<b>Unknown</b>
Lithuania	26.1	23.1	4.4	30.4	-	13.0
Malta	-	-	-	50.0	-	50.0
Norway	20.3	43.0	2.5	25.3	6.3	2.5
Portugal	18.6	43.7	6.0	16.8	3.6	11.4
Rep. of North Macedonia	16.7	75.0	8.3	-	-	-
Rep. of Serbia	19.8	33.0	3.3	33.0	4.4	6.7
Romania	11.5	31.2	2.5	7.4	-	47.5
Russia	21.5	38.8	9.1	17.2	2.0	11.4
Slovakia	16.3	53.1	3.1	25.5	-	2.0
Slovenia	25.0	50.0	-	20.0	2.5	2.5
Spain	22.4	41.4	6.1	18.4	5.1	6.6
Sweden	16.6	34.2	2.1	19.3	2.1	25.7
Switzerland	26.4	35.9	6.7	25.4	2.5	3.2
The Netherlands	15.6	36.6	2.5	15.6	5.8	23.9
Turkey	18.4	36.8	2.1	18.7	-	25.1
United Kingdom	8.0	55.7	4.4	21.2	4.1	6.6

Abbreviations: Glom. Disease = Glomerular Disease, Tub. Disease = Tubulointerstitial Disease, Misc. = Miscellaneous.  
Grouping of primary renal diseases based on the ERA-EDTA grouping of primary renal disease codes 2012.

## Primary Renal Diseases in prevalent patients on 31 December 2018 (%)

	Glom. Disease	Tub. Disease	Systemic disease	Familial disease	Misc.	Unknown
<b>LATIN AMERICA</b>						
Bolivia	32.3	62.5	-	6.3	-	-
Chile	26.1	47.1	5.5	10.1	2.9	8.4
Haiti	-	50.0	-	-	-	50.0
Paraguay	10.0	70.0	-	10.0	5.0	5.0
Peru	30.0	47.8	3.9	6.1	0.6	11.7
Puerto Rico	23.3	70.0	3.3	3.3	-	-
Uruguay	33.3	58.3	-	8.3	-	-
<b>NORTH AMERICA <sup>1</sup></b>						
USA	37.9	30.0	5.9	8.3	3.3	14.6

1. Data on prevalent patients in 2016

Abbreviations: Glom. Disease = Glomerular Disease, Tub. Disease = Tubulointerstitial Disease, Misc. = Miscellaneous. Grouping of primary renal diseases based on the ERA-EDTA grouping of primary renal disease codes 2012.

## Africa <sup>1</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	pmarp	pmarp	pmarp	pmarp
Burkina Faso	0.2	0.2	-	-
Congo, Rep.	-	-	-	-
Ethiopia	-	-	-	-
Ghana	-	-	-	-
Guinea	-	-	-	-
Mozambique	-	-	-	-
Tunisia	8.6	5.0	1.4	2.1
Zambia	0.4	-	0.4	-

1. Prevalent pediatric patients aged 0-14 years on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp).

## Asia <sup>1</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	pmarp	pmarp	pmarp	pmarp
Bangladesh	0.4	0.3	0.1	-
China	2.0	1.0	0.6	0.4
India	0.4	0.2	0.1	0.1
Iran	12.7	3.5	2.6	6.7
Japan	10.9	0.3	7.0	3.6
Jordan	27.0	14.1	10.3	2.6
Korea, South	12.0	1.0	3.0	8.0
Malaysia	20.8	7.5	12.2	1.0
Pakistan	2.5	2.5	0.1	-
Saudi Arabia	3.6	1.4	1.8	0.4
Sri Lanka	2.1	-	-	2.2
Syria	11.8	9.0	-	2.8
Turkmenistan	-	-	-	-
United Arab Emirates	55.1	24.9	13.6	16.6
Vietnam	0.2	0.1	0.1	-

1. Prevalent pediatric patients aged 0-14 years on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp).

## Europe <sup>2</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	Pmarp	pmarp	pmarp	pmarp
Albania	9.7	5.8	-	3.9
Austria	41.7	4.8	3.2	33.7
Belarus	24.1	2.5	3.8	17.7
Bosnia and Herzegovina	18.4	12.9	12.9	5.5
Bulgaria	10.0	3.0	2.0	5.0
Croatia	51.0	1.6	31.3	18.1
Cyprus	71.7	7.2	35.9	28.7
Czech Republic	27.5	3.1	4.9	19.6
Denmark	40.6	2.1	4.2	33.3
Estonia	18.8	-	-	18.8
Finland	80.4	1.1	4.5	74.9
France	38.2	6.9	3.7	27.7
Georgia	19.7	10.2	10.5	3.9
Germany	22.5	-	-	22.5
Greece	34.1	9.0	11.6	13.5
Hungary	39.3	2.8	4.9	31.6
Iceland	45.0	-	-	45.0

2. Prevalent pediatric patients aged 0-14 years on RRT on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report. For most European countries, the prevalence for 15-19 years is not reported due to suspected incompleteness.

## Europe <sup>2</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	pmarp	pmarp	pmarp	pmarp
Italy	30.7	4.6	7.5	-
Lithuania	21.3	-	9.5	11.8
Malta	31.0	-	-	31.0
Netherlands	45.9	3.2	2.1	40.1
Norway	56.6	-	2.1	54.5
Portugal	50.3	1.4	9.6	39.3
Rep. of North Macedonia	14.5	5.8	5.8	2.9
Rep. of Serbia	29.5	7.9	3.0	18.7
Romania	16.0	10.1	4.6	1.3
Russia	20.4	5.0	9.0	6.5
Slovakia	19.1	7.2	7.2	4.8
Slovenia	32.5	9.8	6.5	16.3
Spain	47.5	5.0	4.0	38.2
Sweden	57.5	2.3	8.1	47.2
Switzerland	56.6	2.4	7.2	28.7
Turkey	15.7	2.4	6.9	6.3
Ukraine	13.2	3.8	2.8	6.6
United Kingdom	55.9	7.5	7.2	40.9

2. Prevalent pediatric patients aged 0-14 years on RRT on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report. For most European countries, the prevalence for 15-19 years is not reported due to suspected incompleteness.

## Latin America <sup>1</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	pmarp	pmarp	pmarp	pmarp
Bolivia	2.3	2.0	-	0.1
Chile	19.7	-	-	19.7
Haiti	0.6	0.5	-	-
Peru	9.4	4.1	4.5	0.8
Puerto Rico	20.5	12.0	6.8	1.7
Paraguay	6.0	1.0	3.9	1.0
Uruguay	12.4	-	12.4	-

## North America <sup>3</sup>

Country	Total RRT		Modalities	
	ALL	HD	PD	TX
	pmarp	pmarp	pmarp	pmarp
United States of America	62.1	6.5	8.3	47.3

1. Prevalent pediatric patients aged 0-14 years on RRT on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp).
3. The data is on prevalent patients in 2016 and have been supplied by the United States Renal Data System (USRDS) Annual Report. The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy or interpretation of the U.S. government.

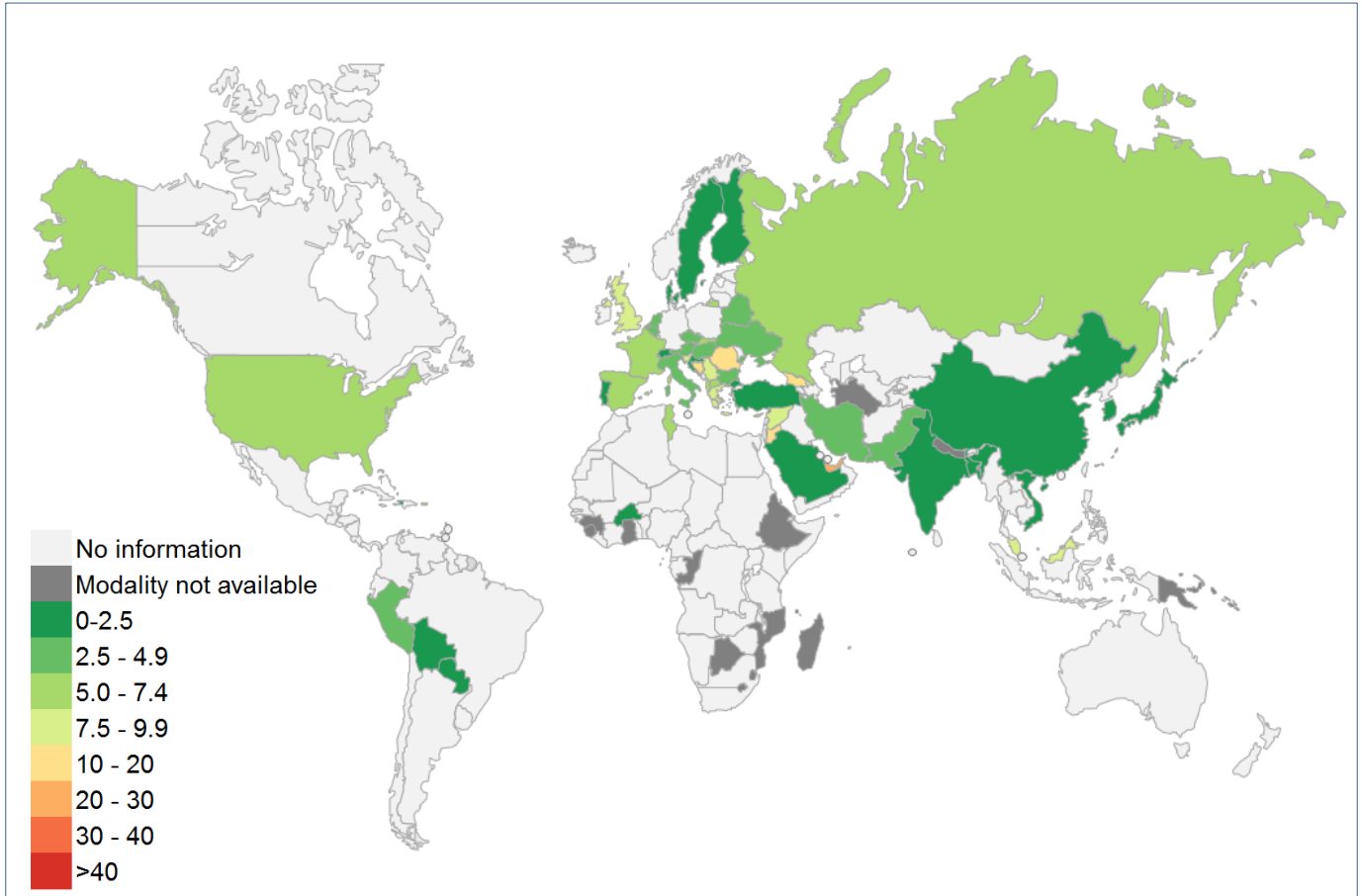


Figure 3: Prevalent patients aged 0 – 14 years on Haemodialysis (HD). Prevalence per million age related population (pmarp). US and European data from 31st of December 2016. Other countries 31st of December 2018.

## Africa <sup>1</sup>

Country	Total HD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Burkina Faso	2	0.2	6	0.5	-	-	0.8	1.9
Congo, Rep	0	-	0	-	-	-	-	-
Ethiopia	0	-	0	-	-	-	-	-
Ghana	0	-	0	-	-	-	-	-
Guinea	0	-	0	-	-	-	-	-
Mozambique	0	-	0	-	-	-	-	-
Tunisia	14	5.0	20	5.6	-	3.1	13.5	7.8
Zambia	0	-	0	-	-	-	-	-

1. Prevalent pediatric patients on hemodialysis (HD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Asia <sup>1</sup>

Country	Total HD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bangladesh	13	0.3	24	0.4	-	0.1	0.8	0.7
China	248	1.0	353	1.1	0.2	0.9	1.9	1.4
India	59	0.2	82	0.2	0.1	0.2	0.3	0.2
Iran	68	3.5	97	3.9	0.5	2.8	7.7	5.5
Japan	5	0.3	12	0.5	0.2	0.6	0.2	1.2
Jordan	49	14.1	67	15.0	2.4	6.8	35.6	18.5
Korea, South	7	1.0	16	1.7	-	1.3	1.7	3.2
Malaysia	58	7.5	110	10.5	-	5.2	17.9	19.0
Pakistan	173	2.5	242	2.7	2.0	6.1	3.6	2.5
Saudi Arabia	12	1.4	12	1.1	-	1.1	3.8	-
Sri Lanka	0	-	0	-	-	-	-	-
Syria	59	9.0	69	7.9	0.5	7.5	17.2	4.5
Turkmenistan	0	-	0	-	-	-	-	-
United Arab Emirates	33	24.9	35	20.2	17.7	38.2	17.4	4.9
Vietnam	3	0.1	3	0.1	0.1	0.3	-	-

1. Prevalent pediatric patients on hemodialysis (HD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Europe <sup>2</sup>

Country	Total HD
	0-14 years
	Pmarp
Albania	5.8
Austria	4.8
Belarus	2.5
Bosnia and Herzegovina	12.9
Bulgaria	3.0
Croatia	1.6
Cyprus	7.2
Czech Republic	3.1
Denmark	2.1
Estonia	-
Finland	1.1
France	6.9

Country	Total HD
	0-14 years
	Pmarp
Rep. of North Macedonia	5.8
Georgia	10.2
Greece	9.0
Hungary	2.8
Iceland	-
Italy	4.6
Lithuania	-
Malta	-
Norway	-
Portugal	1.4
Republic of Serbia	7.9

Country	Total HD
	0-14 years
	Pmarp
Romania	10.1
Russia	5.0
Slovakia	7.2
Slovenia	9.8
Spain	5.0
Sweden	2.3
Switzerland	2.4
The Netherlands	3.2
Turkey	2.4
Ukraine	3.8
United Kingdom	7.5

2. Prevalent pediatric patients on haemodialysis (HD) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report 2018.

## Latin America <sup>1</sup>

Country	Total HD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bolivia	7	2.0	13	2.9	-	1.7	4.4	5.4
Chile	0	-	0	-	-	-	-	-
Haiti	2	0.5	2	0.4	-	-	1.7	-
Peru	36	4.1	68	5.9	-	0.7	11.9	11.5
Puerto Rico	7	12.0	13	15.9	5.7	15.5	13.9	25.6
Paraguay	2	1.0	4	1.5	-	-	3.0	3.0
Uruguay	0	-	0	-	-	-	-	-

## North America <sup>3</sup>

Country	Total HD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
United States of America	403	6.5	1074	12.9	5.7	4.7	9.1	31.4

1. Prevalent pediatric patients on hemodialysis (HD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.
3. Prevalent pediatric patients on hemodialysis (HD) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp), by age group. The data reported here have been supplied by the United States Renal Data System (USRDS) Annual Report 2016. The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy or interpretation of the U.S. government

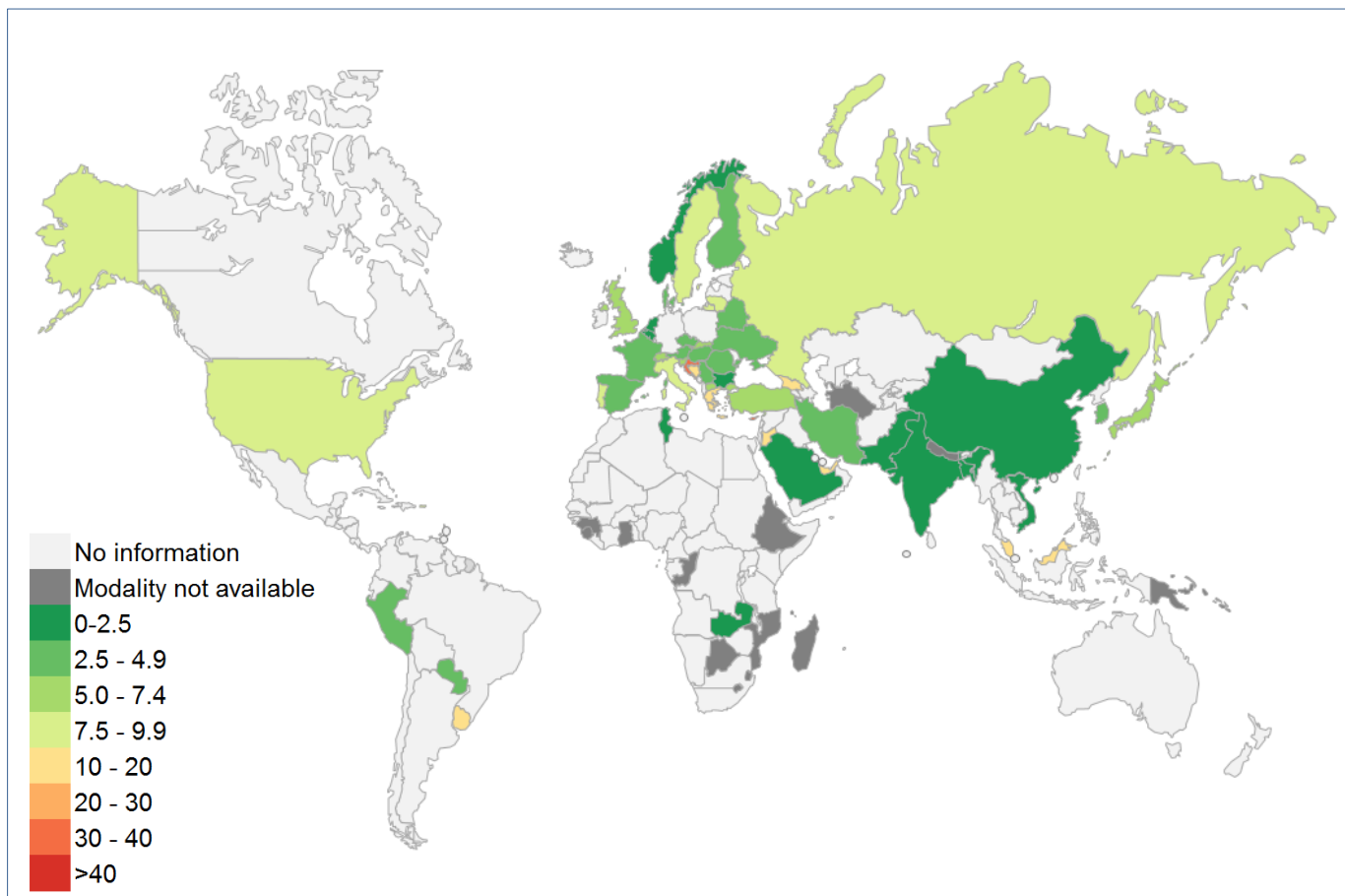


Figure 4: Prevalent patients aged 0 – 14 years on Peritoneal Dialysis (PD). Prevalence per million age related population (pmarp). US and European data from 31st of December 2016. Other countries 31st december 2018.

## Africa <sup>1</sup>

Country	Total PD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Burkina Faso	0	-	0	-	-	-	-	-
Congo, Rep	0	-	0	-	-	-	-	-
Ethiopia	0	-	0	-	-	-	-	-
Ghana	0	-	0	-	-	-	-	-
Guinea	0	-	0	-	-	-	-	-
Mozambique	0	-	0	-	-	-	-	-
Tunisia	4	1.4	4	1.1	1.0	2.1	1.2	-
Zambia	3	0.4	3	0.3	-	0.4	0.9	-

1. Prevalent pediatric patients on peritoneal dialysis (PD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Asia <sup>1</sup>

Country	Total PD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	Pmarp
Bangladesh	4	0.1	4	0.1	-	0.2	0.1	-
China	136	0.6	192	0.6	0.1	0.5	1.0	0.7
India	55	0.1	62	0.1	0.1	0.2	0.2	0.1
Iran	50	2.6	58	2.4	3.5	2.1	2.2	1.5
Japan	113	7.0	152	6.9	5.0	11.6	4.3	6.8
Jordan	36	10.3	37	8.3	3.2	15.3	13.1	1.0
Korea, South	21	3.0	47	4.8	2.2	3.5	3.4	9.3
Malaysia	94	12.2	163	15.6	1.1	10.3	25.8	25.2
Pakistan	3	0.1	3	0.1	0.1	-	-	-
Saudi Arabia	15	1.8	15	1.4	0.7	1.4	3.6	-
Sri Lanka	0	-	0	-	-	-	-	-
Syria	0	-	0	-	-	-	-	-
Turkmenistan	0	-	0	-	-	-	-	-
United Arab Emirates	18	13.6	22	12.7	24.4	8.5	7.4	9.9
Viet Nam	1	0.1	1	0.1	0.1	-	-	-

1. Prevalent pediatric patients on peritoneal dialysis (PD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Europe <sup>2</sup>

Country	Total PD
	0-14 years
	Pmarp
Albania	-
Austria	3.2
Belarus	3.8
Bosnia and Herzegovina	12.9
Bulgaria	2.0
Croatia	31.3
Cyprus	35.9
Czech Republic	4.9
Denmark	4.2
Estonia	-
Finland	4.5
France	3.7

Country	Total PD
	0-14 years
	Pmarp
Rep. of North Macedonia	5.8
Georgia	10.5
Greece	11.6
Hungary	4.9
Iceland	-
Italy	7.5
Lithuania	9.5
Malta	-
Norway	2.1
Portugal	9.6
Republic of Serbia	3.0

Country	Total PD
	0-14 years
	Pmarp
Romania	4.6
Russia	9.0
Slovakia	7.2
Slovenia	6.5
Spain	4.0
Sweden	8.1
Switzerland	7.2
The Netherlands	2.1
Turkey	6.9
Ukraine	2.8
United Kingdom	7.2

2. Prevalent pediatric patients on peritoneal dialysis (PD) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report 2018.

## Latin America <sup>1</sup>

Country	Total PD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bolivia	0	-	0	-	-	-	-	-
Chile	0	-	0	-	-	-	-	-
Haiti	0	-	0	-	-	-	-	-
Peru	40	4.5	57	4.9	3.0	3.0	7.7	6.1
Puerto Rico	4	6.8	10	12.2	5.7	10.4	4.6	25.6
Paraguay	8	3.9	8	3.0	5.9	4.4	1.5	-
Uruguay	9	12.4	12	12.3	-	12.4	24.4	12.0

## North America <sup>3</sup>

Country	Total PD				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
United States of America	509	8.3	810	9.8	13.7	5.0	6.4	14.1

1. Prevalent pediatric patients on peritoneal dialysis (PD) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.
3. Prevalent pediatric patients on peritoneal dialysis (PD) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp), by age group. The data reported here have been supplied by the United States Renal Data System (USRDS) Annual Report 2016. The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy or interpretation of the U.S. government

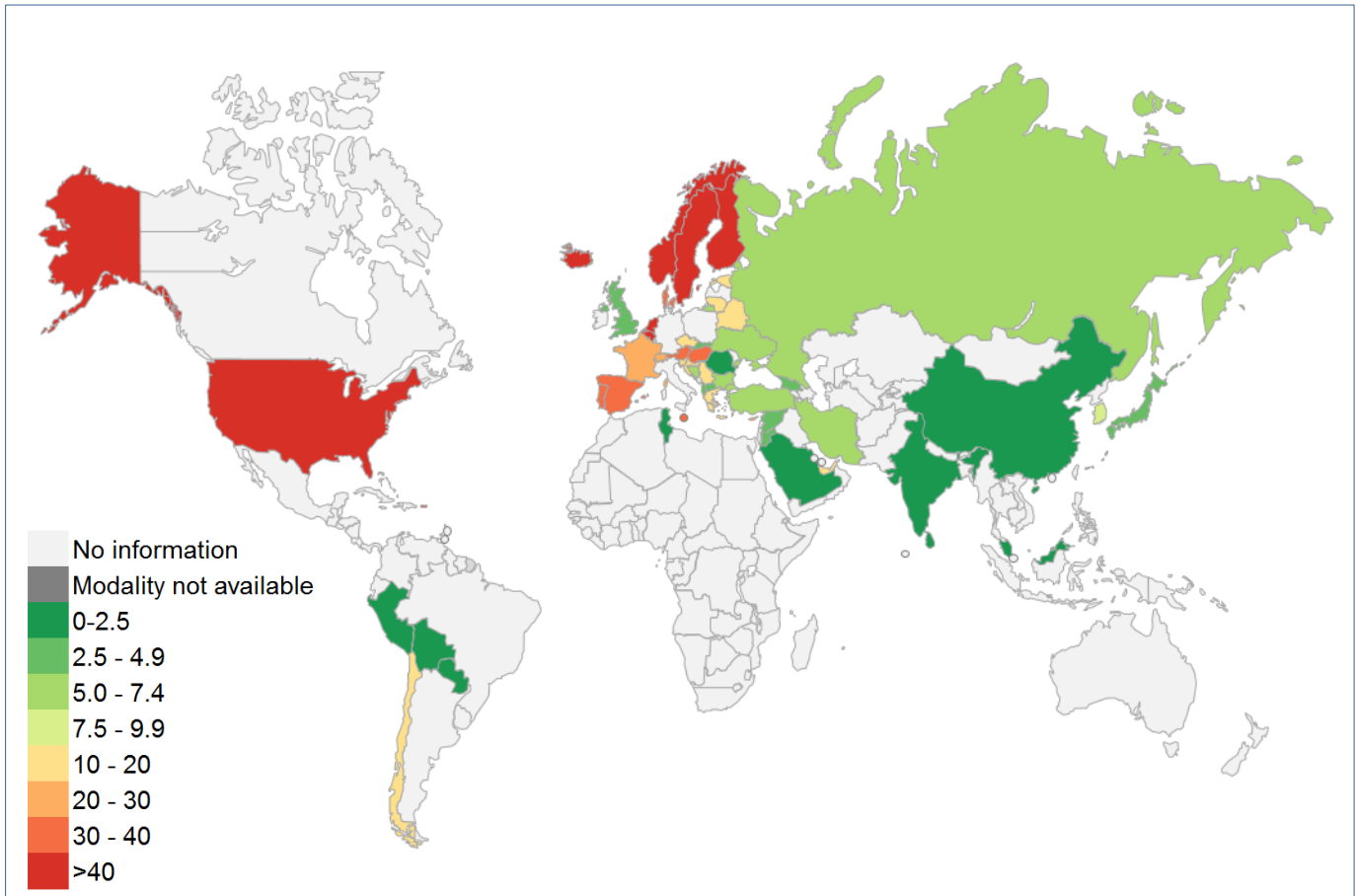


Figure 5: Prevalent patients aged 0 – 14 years on transplantation (TX). Prevalence per million age related population (pmarp). US and European data from 31st of December 2016. Other countries 31st of December 2018.

## Africa <sup>1</sup>

Country	Total TX				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Burkina Faso	0	-	0	-	-	-	-	-
Congo, Rep	0	-	0	-	-	-	-	-
Ethiopia	0	-	0	-	-	-	-	-
Ghana	0	-	0	-	-	-	-	-
Guinea	0	-	0	-	-	-	-	-
Mozambique	0	-	0	-	-	-	-	-
Tunisia	6	2.1	8	2.2	-	1.0	6.1	2.5
Zambia	0	-	0	-	-	-	-	-

1. Prevalent pediatric patients on a functioning graft (TX) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Asia <sup>1</sup>

Country	Total TX				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	Pmarp
Bangladesh	1	-	8	0.1	-	-	0.1	0.4
China	94	0.4	136	0.4	0.1	0.3	0.7	0.5
India	45	0.1	101	0.2	-	0.1	0.3	0.4
Iran	130	6.7	215	8.7	0.8	4.8	15.4	16.2
Japan	59	3.6	110	5.0	0.2	3.7	6.8	8.8
Jordan	9	2.6	9	2.0	0.8	2.5	4.7	-
Korea, South	55	8.0	101	10.4	-	6.6	16.9	16.5
Malaysia	8	1.0	24	2.3	-	-	3.2	5.8
Saudi Arabia	3	0.4	3	0.3	-	0.4	0.8	-
Sri Lanka	11	2.2	26	3.8	-	3.5	2.8	9.0
Syria	18	2.8	20	2.3	-	2.2	5.5	0.9
Turkmenistan	0	-	0	-	-	-	-	-
United Arab Emirates	22	16.6	24	13.9	2.2	16.9	32.3	4.9
Vietnam	1	-	3	0.1	-	-	0.1	0.3

1. Prevalent pediatric patients on a functioning graft (TX) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.

## Europe <sup>2</sup>

Country	Total TX
	0-14 years
	Pmarp
Albania	3.9
Austria	33.7
Belarus	17.7
Bosnia and Herzegovina	5.5
Bulgaria	5.0
Croatia	18.1
Cyprus	28.7
Czech Republic	19.6
Denmark	33.3
Estonia	18.8
Finland	74.9
France	27.7

Country	Total TX
	0-14 years
	Pmarp
Rep. of North Macedonia	2.9
Georgia	3.9
Germany	22.5
Greece	13.5
Hungary	31.6
Iceland	45.0
Italy	-
Lithuania	11.8
Malta	31.0
Norway	54.5
Portugal	39.3

Country	Total TX
	0-14 years
	Pmarp
Republic of Serbia	18.7
Romania	1.3
Russia	6.5
Slovakia	4.8
Slovenia	16.3
Spain	38.2
Sweden	47.2
Switzerland	28.7
The Netherlands	40.1
Turkey	6.3
Ukraine	6.6
United Kingdom	40.9

2. Prevalent pediatric patients on functioning graft (TX) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp). Numbers are derived from ESPN/ERA-EDTA Registry Report 2018.

## Latin America <sup>1</sup>

Country	Total TX				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
Bolivia	1	0.1	1	0.1	-	-	0.9	-
Chile	72	19.7	120	24.3	3.4	21.3	33.5	37.2
Haiti	0	-	0	-	-	-	-	-
Peru	7	0.8	24	2.1	-	0.3	2.1	6.1
Puerto Rico	1	1.7	2	2.4	-	5.2	-	4.3
Paraguay	2	1.0	7	2.6	-	-	3.0	7.5
Uruguay	0	-	0	-	-	-	-	-

## North America <sup>3</sup>

Country	Total TX				Age groups			
	0-14 yr		0-19 yr		0-4 yr	5-9 yr	10-14 yr	15-19 yr
	N	pmarp	N	pmarp	pmarp	pmarp	pmarp	pmarp
United States of America	2915	47.3	5601	90.2	14.6	47.8	78.1	125.7

1. Prevalent pediatric patients on a functioning graft (TX) on the 31st of December 2018. Prevalent counts and prevalence per million age related population (pmarp), by age group.
3. Prevalent pediatric patients on a functioning graft (TX) on the 31st of December 2016. Prevalent counts and prevalence per million age related population (pmarp), by age group. The data reported here have been supplied by the United States Renal Data System (USRDS) Annual Report 2016. The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy or interpretation of the U.S. government

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