

Annual report 2018



Founded 1969 by the Nordic Council

ScandiTransplant office

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Introduction

Two thousand and eighteen was the first complete year with Tartu University Hospital participation in the ScandiTransplant cooperation. It was also the first year with the ScandiTransplant tool for reporting serious adverse events/reactions to the competent authorities. The number of utilized donors and the number of transplanted patients seems to have stabilized over the last few years, but the number of patients waiting for a transplant is still increasing.

Organisation

ScandiTransplant is the Organ Exchange Organisation (OEO) of the countries: Denmark, Finland, Iceland, Norway, Sweden and Estonia. It is an association and the members are the 11 hospitals performing organ transplantation in these countries. According to the articles the main purposes of the association are:

- to serve as a common organ exchange organization and allocation resource for its member hospitals including kidney, liver, heart, lung, pancreas, pancreatic islet, liver cells, composite graft, intestinal and multivisceral transplantation. This is done transparently, using ethical principles and in full compliance with the national legislation of the members' countries,
- to maintain and operate a common waiting list for transplantation,
- to ensure complete traceability from organ donors to patients,
- to maintain and operate follow-up registries of transplanted patients,
- to maintain and operate follow-up registries of living donors,
- to serve as a collaborative platform through specialized working groups and advisory groups in order to facilitate best practice recommendations and policies optimizing retrieval, allocation and transplantation of organs, and
- to form a collaborative network for the member hospitals to promote research and development related to organ donation, allocation and transplantation.

The member hospitals elect representatives to the Council, which is the association's supreme authority. During 2018 the council had 34 representatives. The Council of Representatives approves the members of the board, which represent all the countries, and is responsible for the day to day operations of the association.

Lars Wennberg from Sweden left the board after serving 6 years and was replaced by Tomas Lorant, but he left the Board after one Board meeting and was replaced by Amir Sedigh. The other members of the Board were Morten Hagness, Norway; Finn Gustafsson, Denmark; Runólfur Pálsson, Iceland and Arno Nordin, Finland. Bo-Göran Ericzon from Sweden was chairman.

Suggestions for the activity and allocation rules are brought forward by a number of specialised expert groups and committees.

The Scandiatransplant Office is located at Aarhus University Hospital, Denmark. The primary task of the office is to maintain and develop the IT-system holding data on all patients enlisted for organ transplantation in the member hospitals. It is accessible 24/7 for all health personnel performing organ retrieval and transplantation ensuring correct allocation of organs. In addition to this primary task the Scandiatransplant Office takes care of many other tasks such as running follow-up registries, educate and support users, arrange meetings for council, board, groups and committees, comply with demands from owners, researchers, authorities and the public, and participate in meetings with local health competent authorities, EU-commission and EU projects.

At the end of 2018 the staff consisted of 9 people, 4 full-time programmers and 2 clinical data managers. A student programmer, the secretary and the Medical Director are working part-time. The total expenses during the year (5.5 mill. DKK ~ 737.000 EUR) were kept within the budget (6 mill. DKK). The maintenance costs of Scandiatransplant are fully financed by the member hospitals in relation to the number of organ transplantations performed at each hospital.

Activities in the organisation in 2018

The majority of the work done at the Office has been customizing the IT-system to the user's wishes and optimizing security and functionality of the system. The Office has also put resources into education and guidance in relation with usage of the IT-system. Developing the IT-system for the requirements to run the STEP (ScandiaTransplant kidney living donor Exchange Program) has required many resources and has high priority.

The work on implementing the new model for the responsibility of data continued in 2018. Data processor agreements have been signed with Helsinki, Odense, Aarhus, Reykjavik, Copenhagen, Gothenburg, Tartu, Skåne and Uppsala, but at the end of year Stockholm and Oslo are still missing.¹

The annual meeting with the 6 countries' health authorities in October was held in Tartu. Among other matters, the reporting SAE/SAR in relation to transplantation to the health authorities was discussed. This solution is logic and practical, since many of the data needed for the report would already be in the Scandiatransplant IT system.

Scandiatransplant has participated in the meetings of the competent authorities and the EU-commission on matters of organ transplantation. The main reason has been to balance the participation of Scandiatransplant in the EU projects and to support the competent authorities of the 6 countries. The Office has adopted a policy of trying to have at least one

¹ Stockholm signed the agreement in February 2019

person from the Office present at every meeting in the groups in Scandiatransplant to ensure continuity and updated information on decisions and wishes from the users.

Transplantation and organ procurement activity

In this report we have chosen to present some key figures and compare some of them with data from 2009 and onwards showing the last ten-year period.

First, we looked at the total number of transplanted organs and compared with the number of patients on the waiting list at the end of the year. Then we looked at the utilized deceased donors and the transplanted patients.

The competent authorities of the countries have requested data on import/export between Scandiatransplant and the other European organ exchange organisations as well as data on import/export within the Nordic countries. We therefore give a thorough presentation of these data. We also give a summary of the reported SAE/SARs.

Finally, data on waiting list and transplantation activities for the different organs are presented in the same manner as the previous years, but we also looked at the donor/recipient age and ABO relationship.

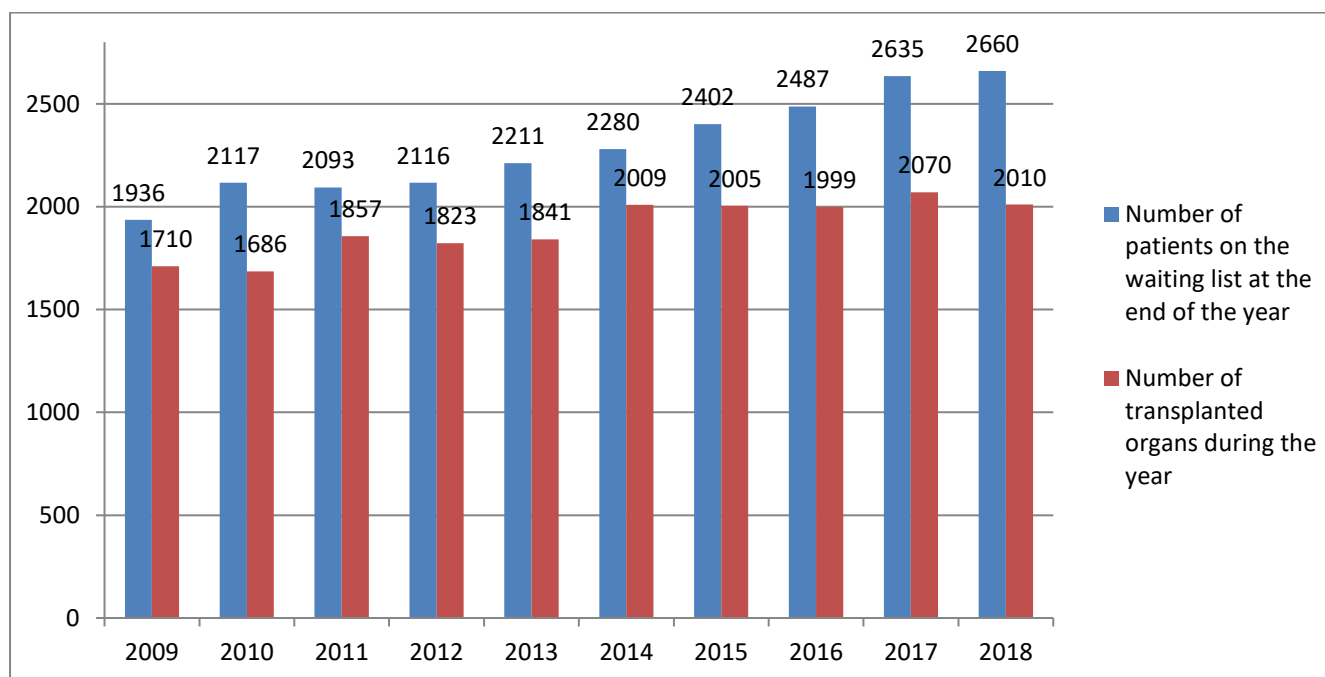
Further presentation of Scandiatransplant data is available in the annual slideshow:

<http://www.scandiatransplant.org/resources/dias2018.pdf>

In relation with the statistics presented please keep in mind that data subjects to change based on future data submission and/or correction.

Total number of organs transplanted and patients waiting for organs within Scandiatriplant

Year	Number of waiting patients ²	Number of transplanted organs ³
2009	1936	1710
2010	2117	1686
2011	2093	1857
2012	2116	1823
2013	2211	1841
2014	2280	2009
2015	2402	2005
2016	2487	1999
2017	2635	2070
2018	2660	2010

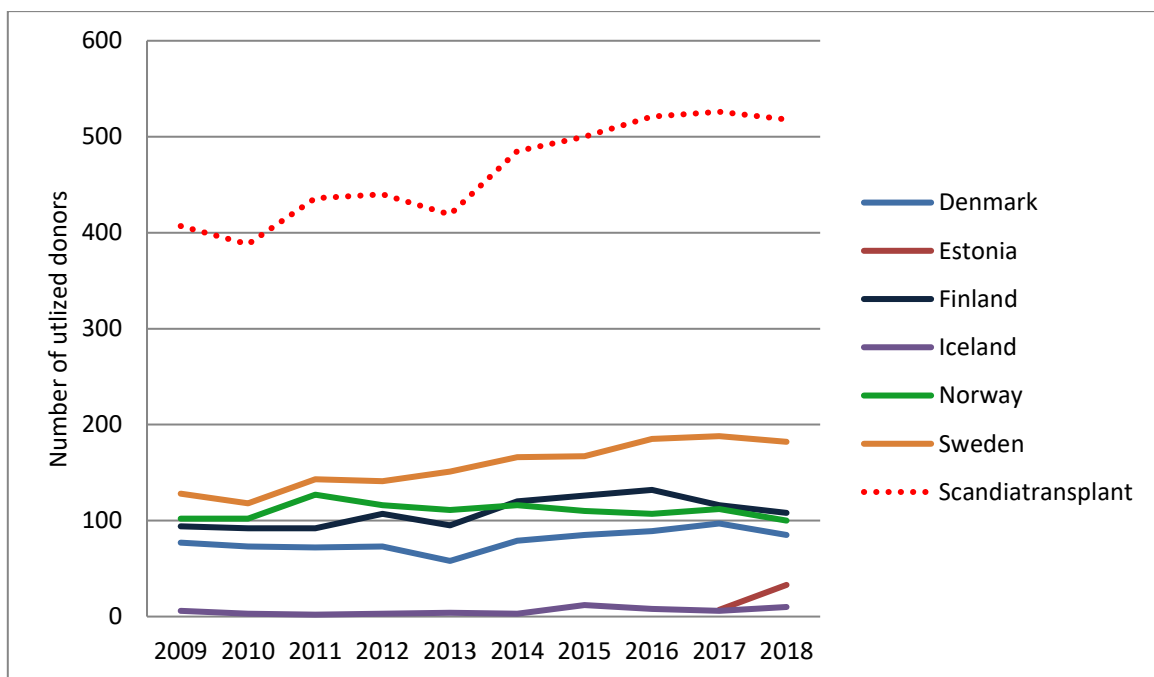


² Including patients (active/temp. on hold) waiting for kidney, liver, liver-kidney, heart, heart-lung, single lung, double lung, kidney-pancreas, pancreas and pancreatic islets

³ Including kidney, liver, heart, , lung, pancreas and pancreatic islet

Utilized deceased donors⁴ in numbers in Scandiatransplant

Year	Denmark	Estonia ⁵	Finland	Iceland	Norway	Sweden	Scandiatransplant
2009	77		94	6	102	128	407
2010	73		92	3	102	118	388
2011	72		92	2	127	143	436
2012	73		107	3	116	141	440
2013	58		95	4	111	151	419
2014	79		120	3	116	166	485
2015	85		126	12	110	167	500
2016	89		132	8	107	185	521
2017	97	7	116	6	112	188	526
2018	85	33	108	10	100	182	518

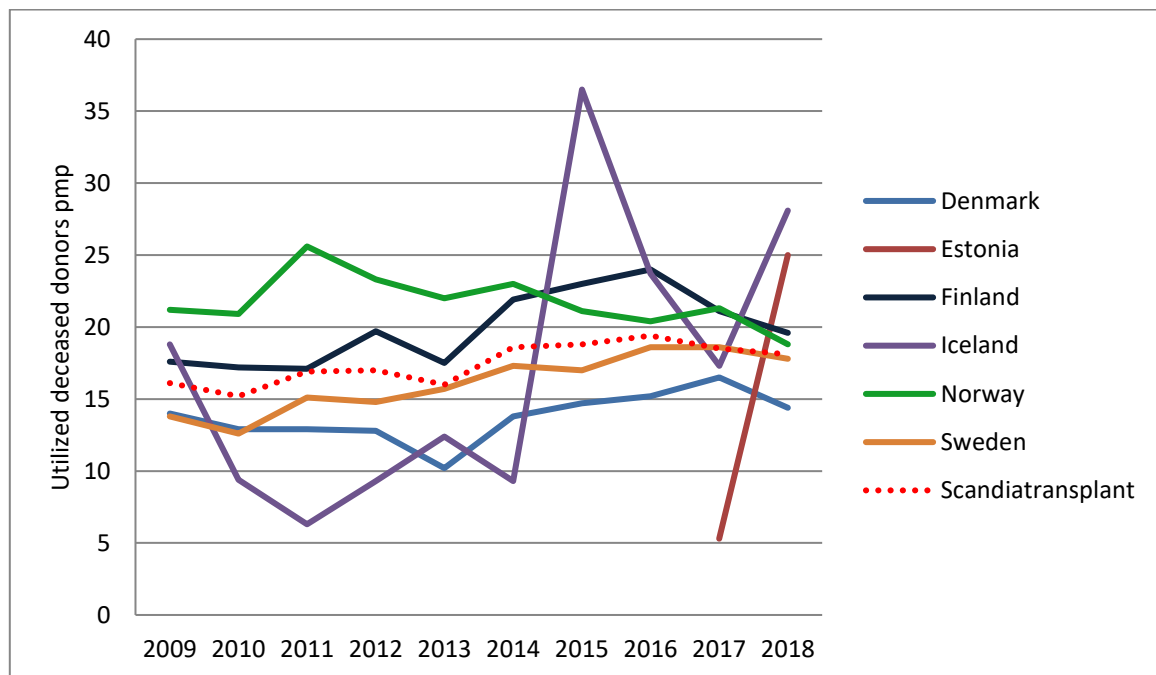


⁴Definition of utilized donor: An actual donor from whom at least one solid organ was transplanted.
http://www.scandiatransplant.org/data/Deceaseddonordefv_3.pdf

⁵ Figures included from Estonia year 2017 starts from October 1st 2017

Utilized deceased donors pmp⁶ in Scandiatransplant

Year	Denmark	Estonia ⁷	Finland	Iceland	Norway	Sweden	Scandiatransplant
2009	14,0		17,6	18,8	21,2	13,8	16,1
2010	12,9		17,2	9,4	20,9	12,6	15,2
2011	12,9		17,1	6,3	25,6	15,1	16,9
2012	12,8		19,7	9,3	23,3	14,8	17,0
2013	10,2		17,5	12,4	22,0	15,7	16,0
2014	13,8		21,9	9,3	23,0	17,3	18,6
2015	14,7		23,0	36,5	21,1	17,0	18,8
2016	15,2		24,0	23,7	20,4	18,6	19,4
2017	16,5	5,3	21,1	17,3	21,3	18,6	18,5
2018	14,4	25,0	19,6	28,1	18,8	17,8	18,1

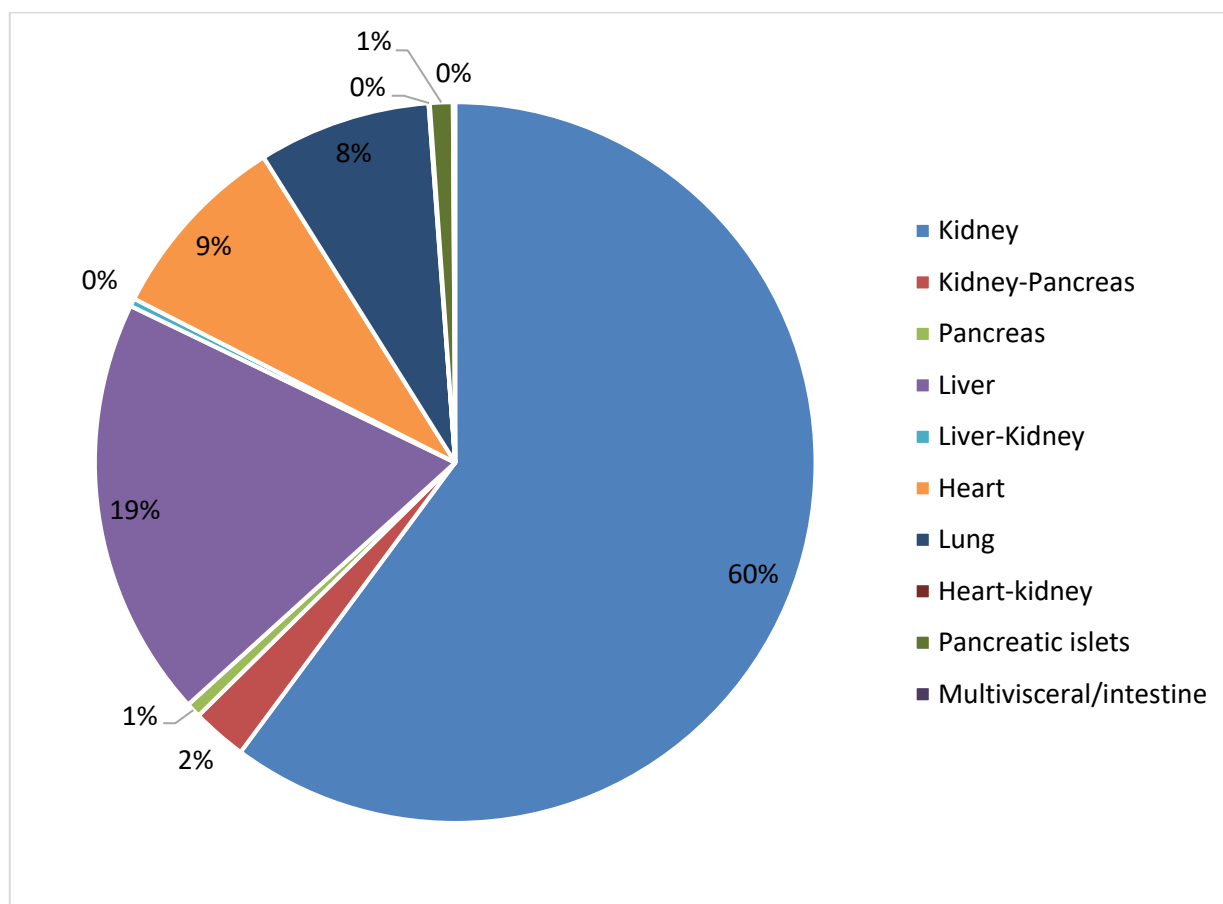


⁶ pmp: per million population

⁷ Figures included from Estonia year 2017 starts from October 1st 2017

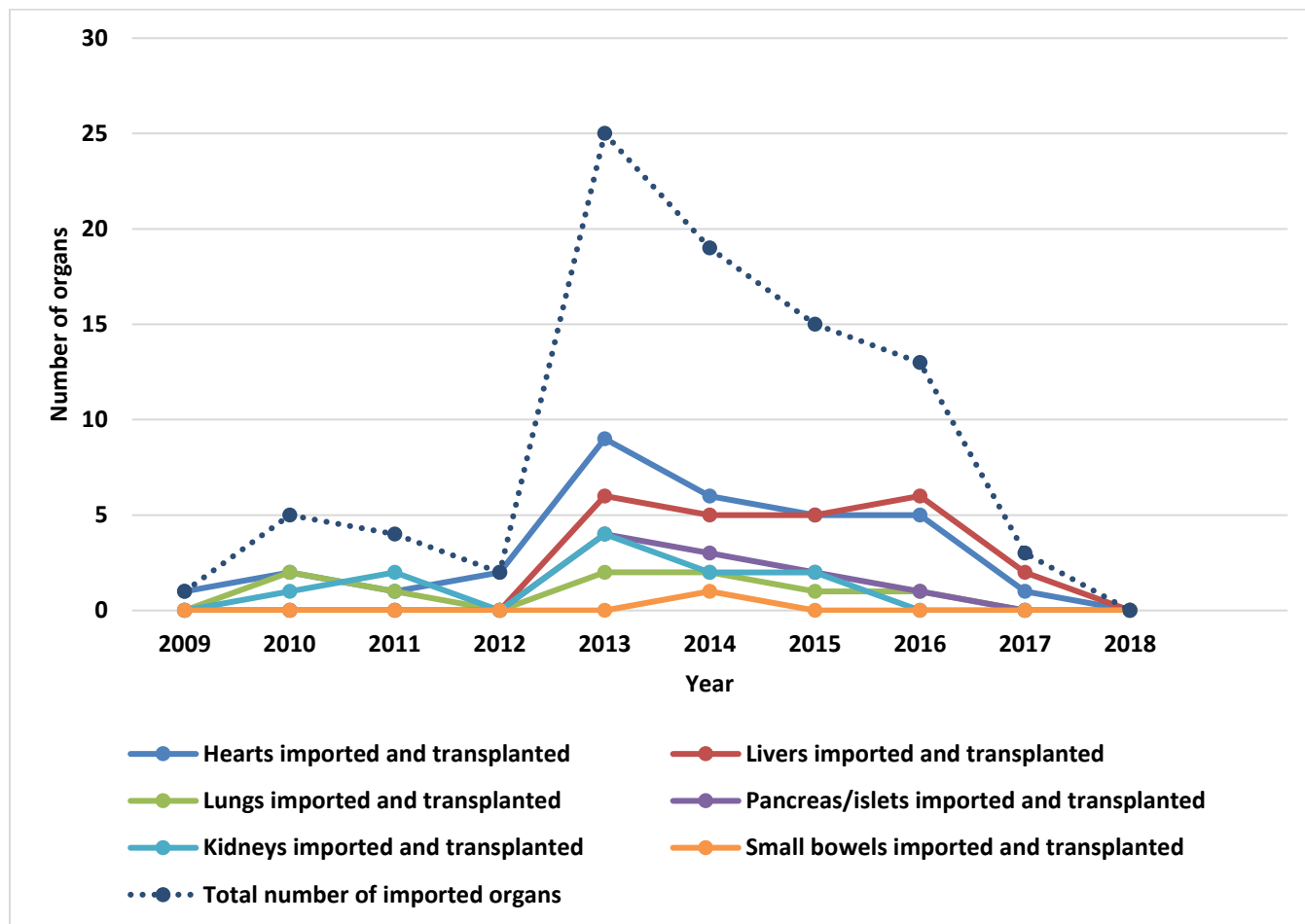
Transplanted patients in ScandiTransplant 2018

Organ(s) transplanted	Number of transplantations
Kidney	1173
Kidney-Pancreas	48
Pancreas	13
Liver	368
Liver-Kidney	7
Heart	167
Lung	151
Heart-Kidney	1
Pancreatic islets	20
Multivisceral/intestine	2
Total transplanted patients	1950



Organs imported and exported between EOEO's⁸ and Scandiatriplant⁹

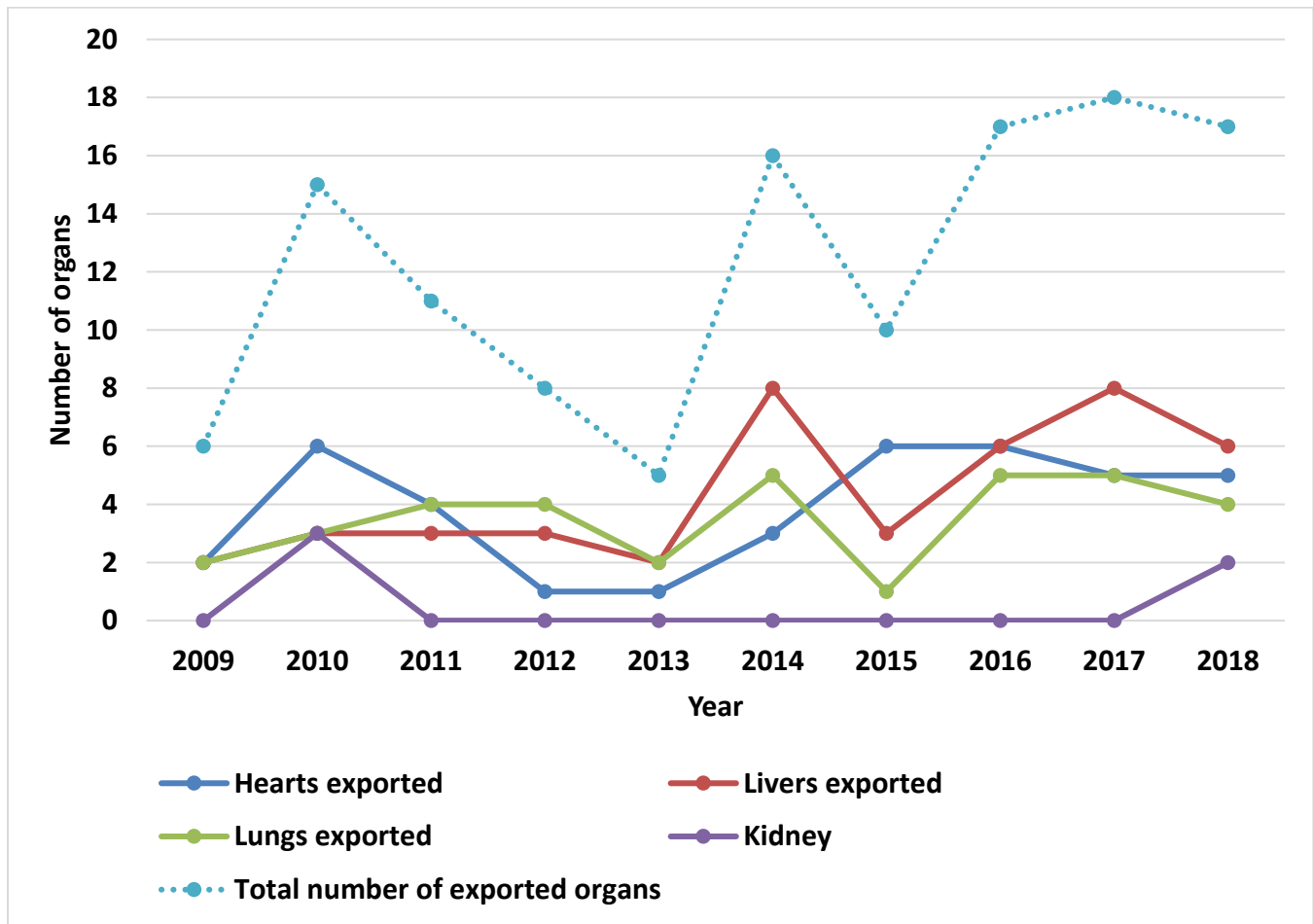
Organs imported from other EOEO's to Scandiatriplant



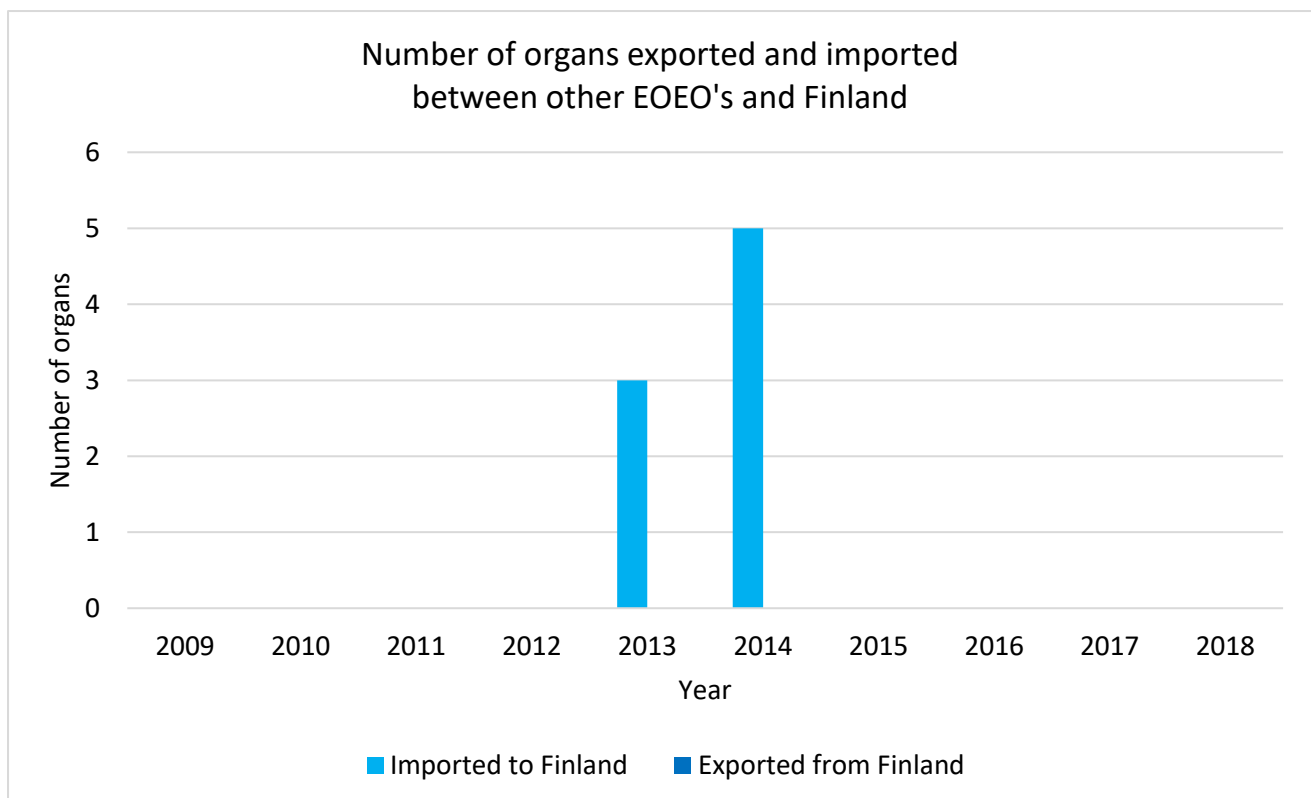
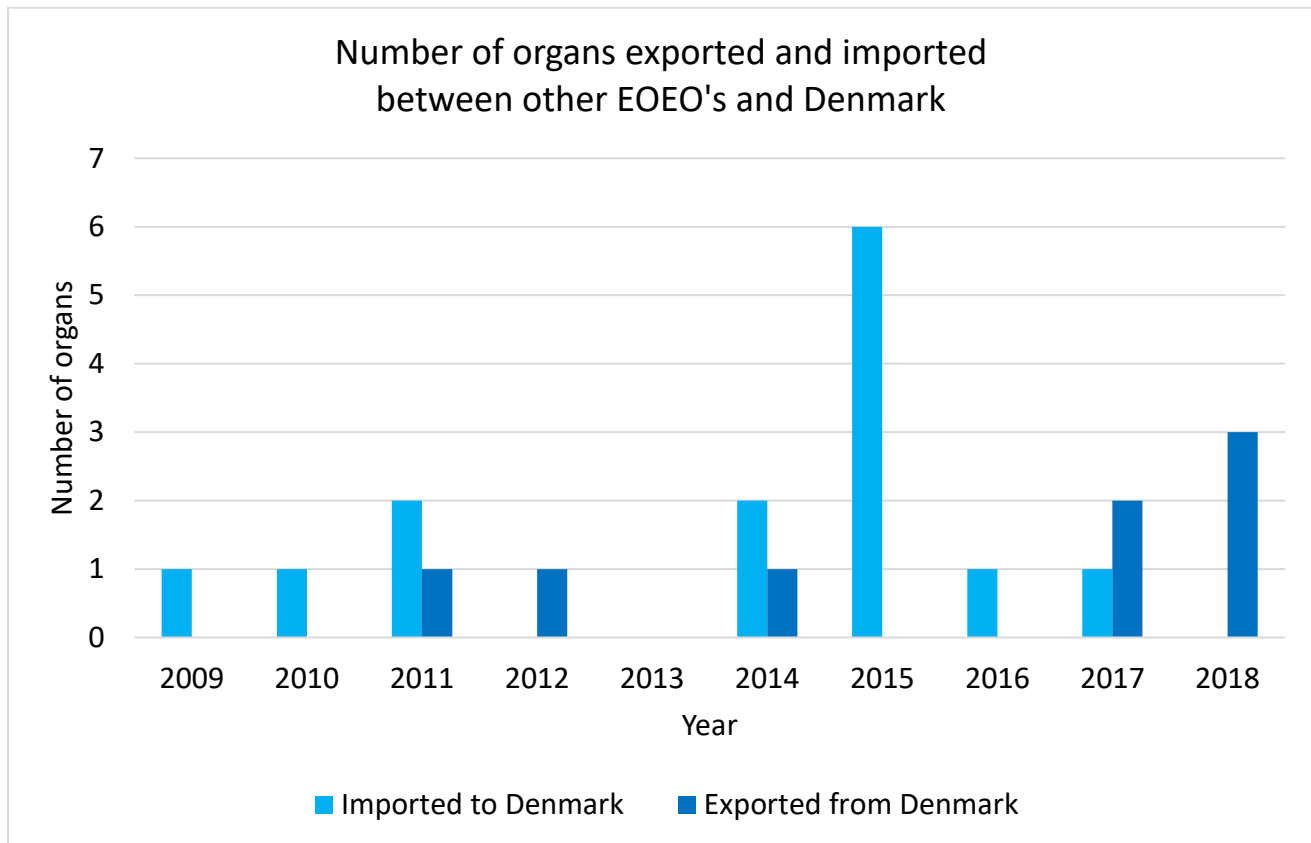
⁸ EOEO: European Organ Exchange Organisations

⁹ From October 1st 2017 Estonia is regarded as part of Scandiatriplant

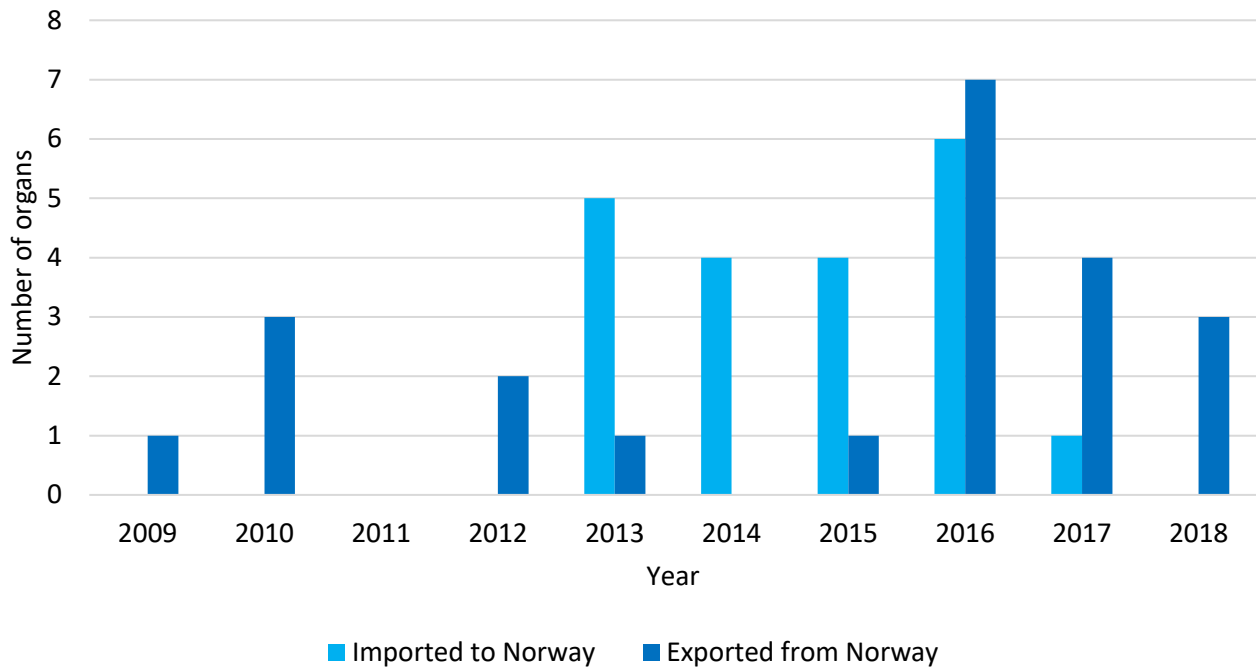
Organs exported to other EOEO's from Scandiatransplant



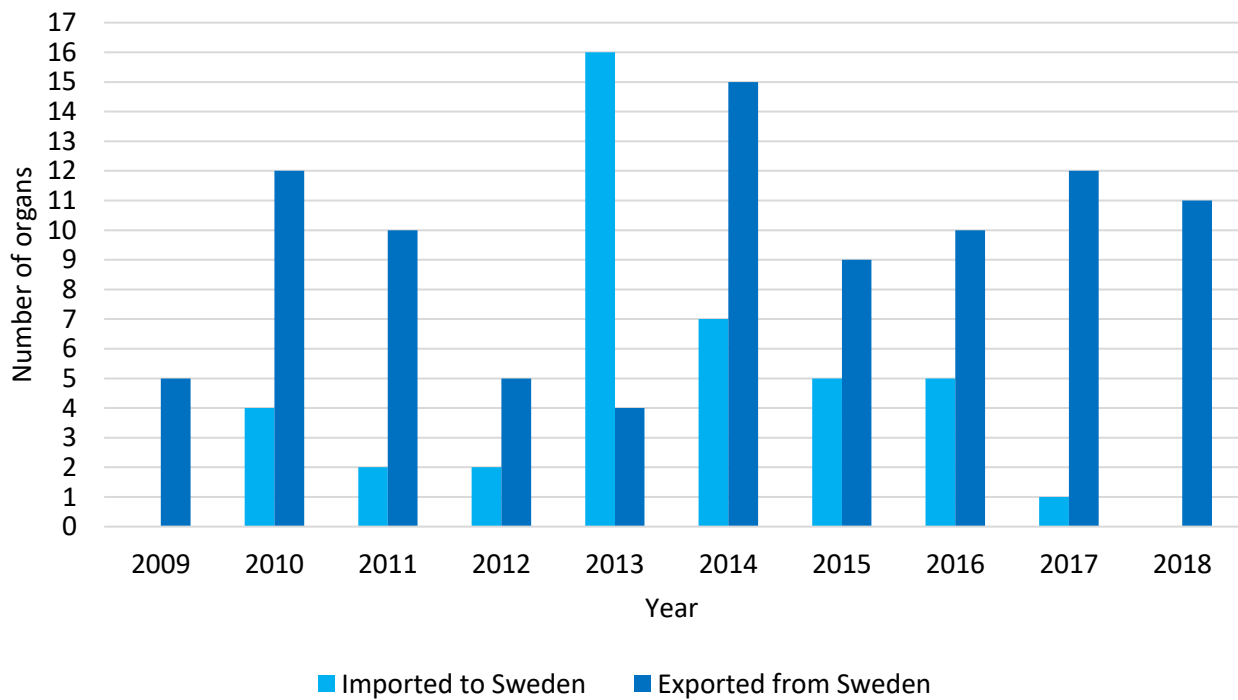
Organs exported and imported between Scandiatriplant countries and other EOEO's



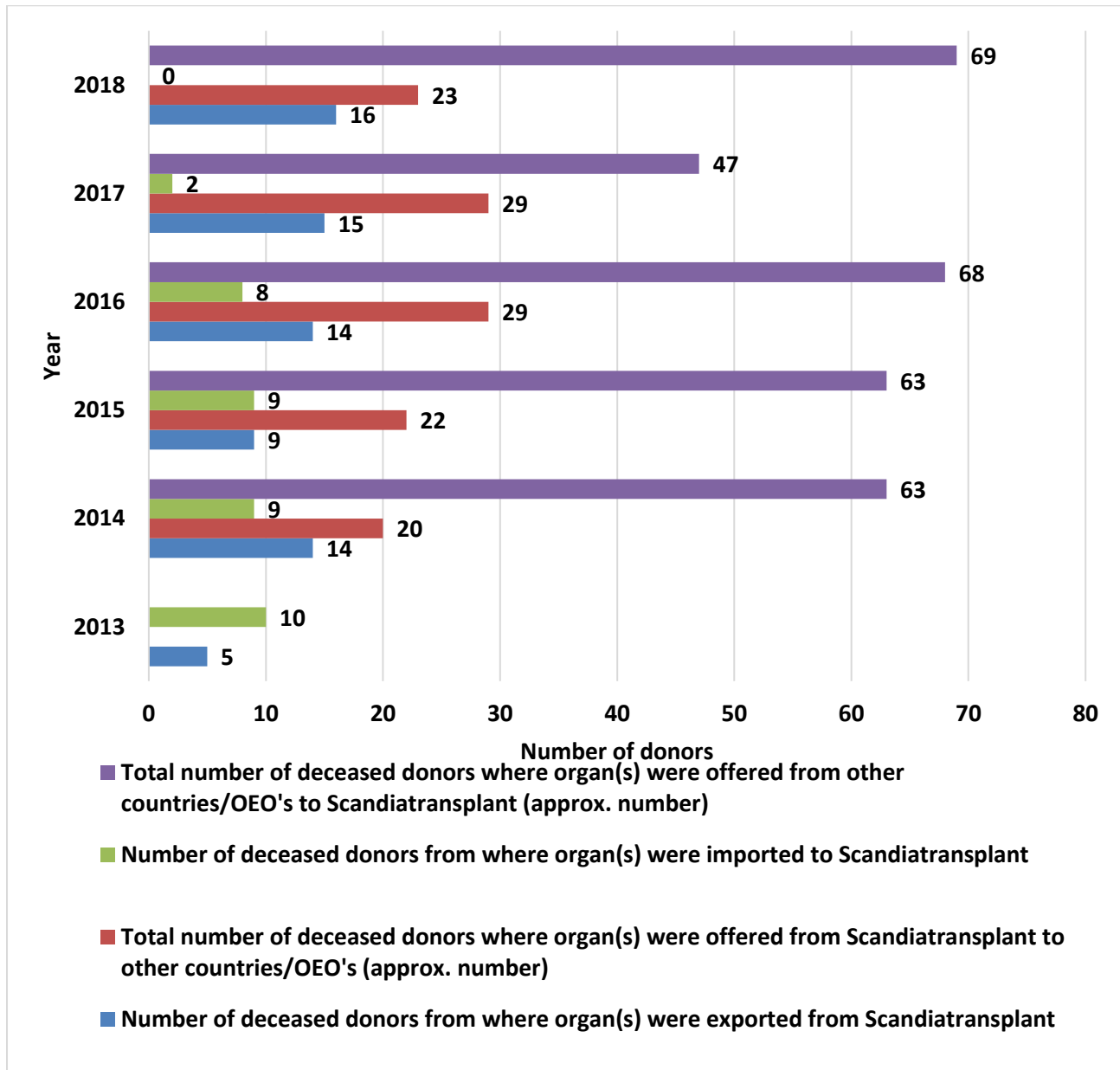
Number of organs exported and imported between other EOEO's and Norway



Number of organs exported and imported between other EOEO's and Sweden



Number of deceased donors where organ(s) were offered^{10,11}

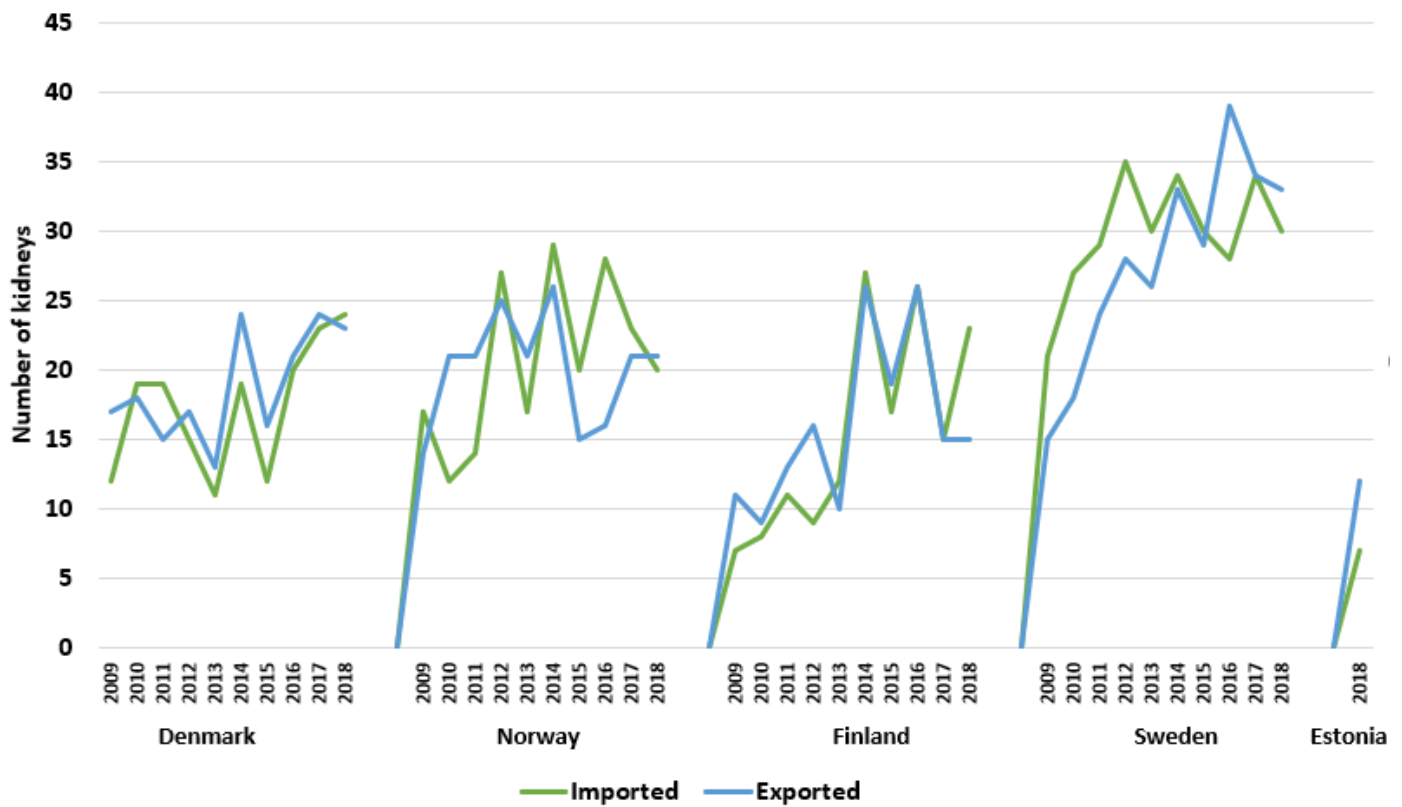


¹⁰ The web-based organ offer form and related communication systems for organ offers were introduced in year 2013

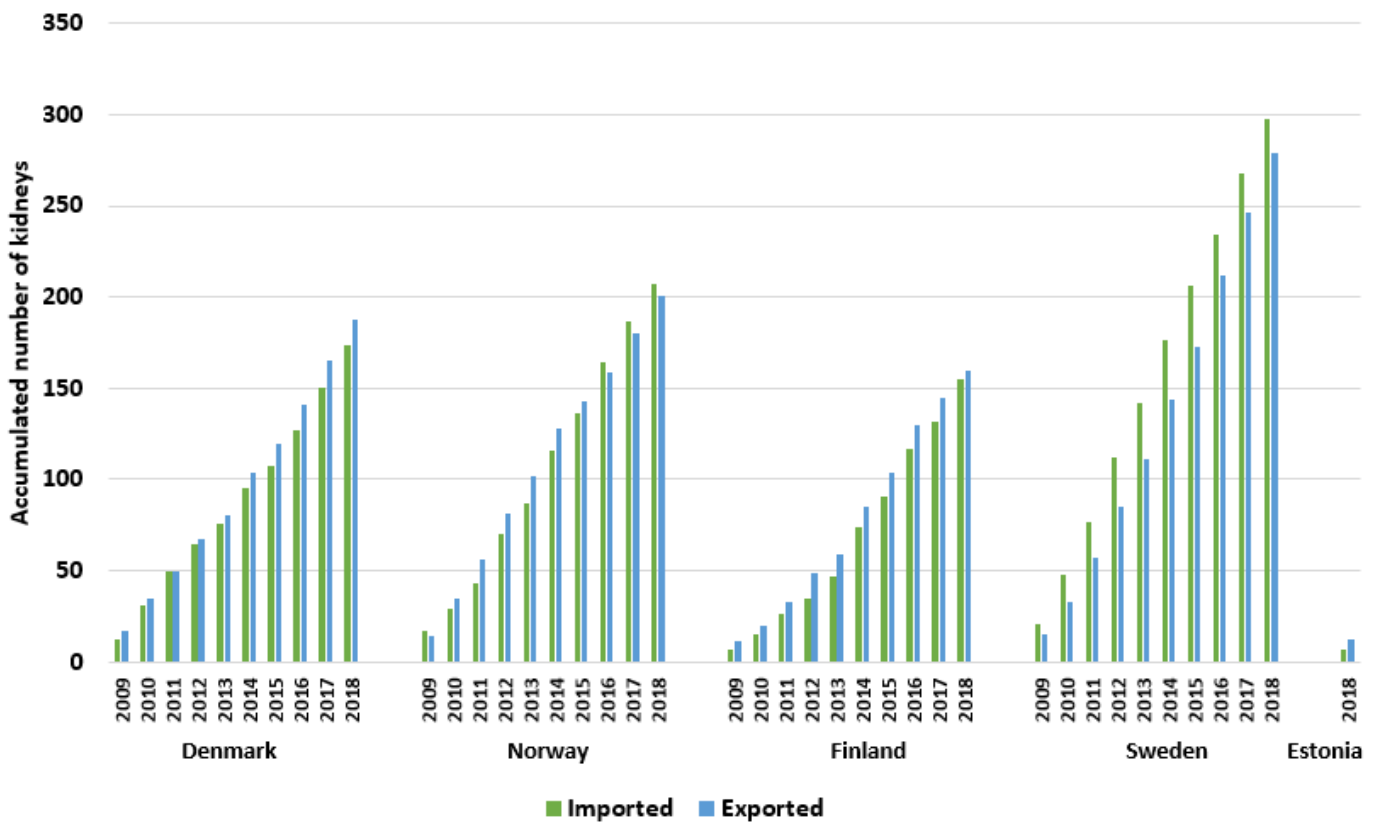
¹¹ From October 1st 2017 Estonia is regarded as part of Scandiatriplant

Kidneys exported and imported between the Scandi transplant countries¹²

Import and export of kidneys



Import and export of kidneys - accumulated figures



¹² Only kidneys used for transplantation are included

Kidneys exported and imported¹³ between the Scandi transplant countries in numbers¹⁴ (including import and export to other EOEO's)

Denmark

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2009	141	12	17	0	0
2010	130	19	18	1	0
2011	135	19	15	1	0
2012	137	15	17	0	0
2013	108	11	13	0	0
2014	139	19	24	1	0
2015	154	12	16	2	0
2016	154	20	21	0	0
2017	165	23	24	0	0
2018	159	24	23	0	0

Norway

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2009	188	17	14	0	0
2010	180	12	21	0	0
2011	229	14	21	0	0
2012	218	27	25	0	0
2013	202	17	21	0	0
2014	206	29	26	0	0
2015	191	20	15	0	0
2016	193	28	16	0	0
2017	197	23	21	0	0
2018	168	20	21	0	0

¹³ Only kidneys used for transplantation are included

¹⁴ Kidney double transplantations are counted as 1

Finland

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2009	174	7	11	0	0
2010	164	8	9	0	0
2011	164	11	13	0	0
2012	188	9	16	0	0
2013	176	12	10	0	0
2014	225	27	26	0	0
2015	229	17	19	0	0
2016	240	26	26	0	0
2017	211	15	15	0	0
2018	206	23	15	0	0

Sweden

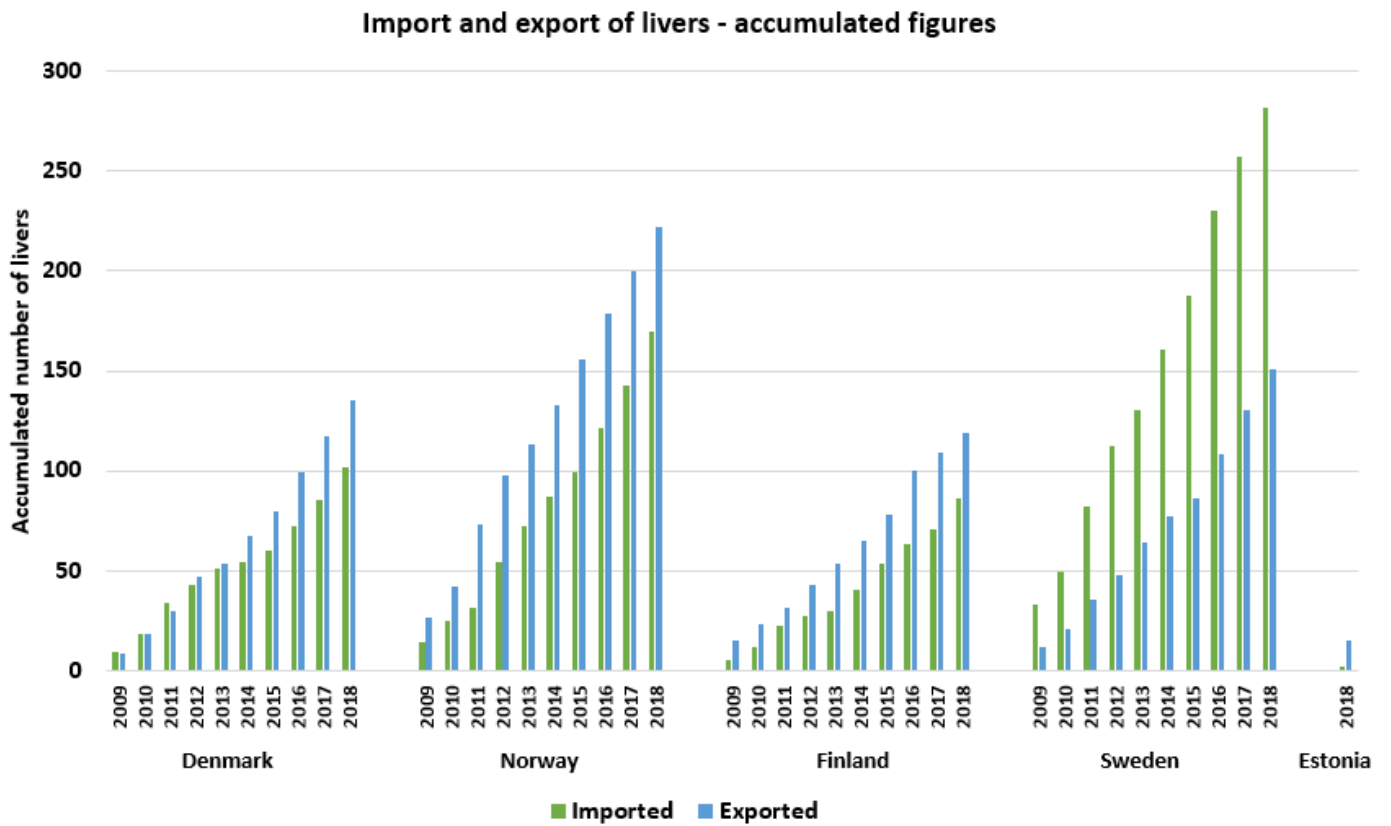
	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2009	229	21	15	0	0
2010	202	27	18	0	3
2011	251	29	24	1	0
2012	243	35	28	0	0
2013	270	30	26	4	0
2014	289	34	33	1	0
2015	295	30	29	0	0
2016	290	28	39	0	0
2017	349	34	34	0	0
2018	304	30	33	0	2

Estonia¹⁵

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2017	10	0	1	0	0
2018	54	7	12	0	0

¹⁵ From October 1st 2017 Estonia is regarded as part of ScandiTransplant

Livers exported and imported between the Scandi transplant countries¹⁶



¹⁶ Only livers used for transplantation are included

**Livers exported and imported¹⁷ between the Scandi transplant countries in numbers¹⁸
(including import and export to other EOEO's)**

Denmark

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2009	39	9	8	0	0
2010	47	9	10	0	0
2011	51	16	12	0	0
2012	48	9	17	0	0
2013	42	8	6	0	0
2014	47	3	14	1	0
2015	58	6	13	1	0
2016	59	12	19	0	0
2017	57	13	18	1	1
2018	43	17	18	0	1

Norway

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2009	82	14	26	0	1
2010	89	11	16	0	1
2011	89	6	31	0	0
2012	100	23	25	0	2
2013	110	18	15	2	1
2014	100	15	20	1	0
2015	83	12	23	2	1
2016	100	22	23	4	4
2017	102	22	21	1	3
2018	94	27	22	0	2

¹⁷ Only livers used for transplantation are included

¹⁸ If the liver is transplanted as split liver, each split is counted as 1

Finland

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2009	48	5	15	0	0
2010	50	7	8	0	0
2011	56	10	8	0	0
2012	52	5	12	0	0
2013	49	3	10	0	0
2014	59	10	12	0	0
2015	77	13	13	0	0
2016	61	10	22	0	0
2017	63	8	9	0	0
2018	66	15	10	0	0

Sweden

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2009	137	33	12	0	1
2010	122	16	9	0	2
2011	149	33	14	0	3
2012	142	30	13	0	1
2013	150	18	16	4	1
2014	171	31	13	3	3
2015	176	27	9	2	5
2016	197	42	22	2	2
2017	176	27	22	0	4
2018	162	25	21	0	3

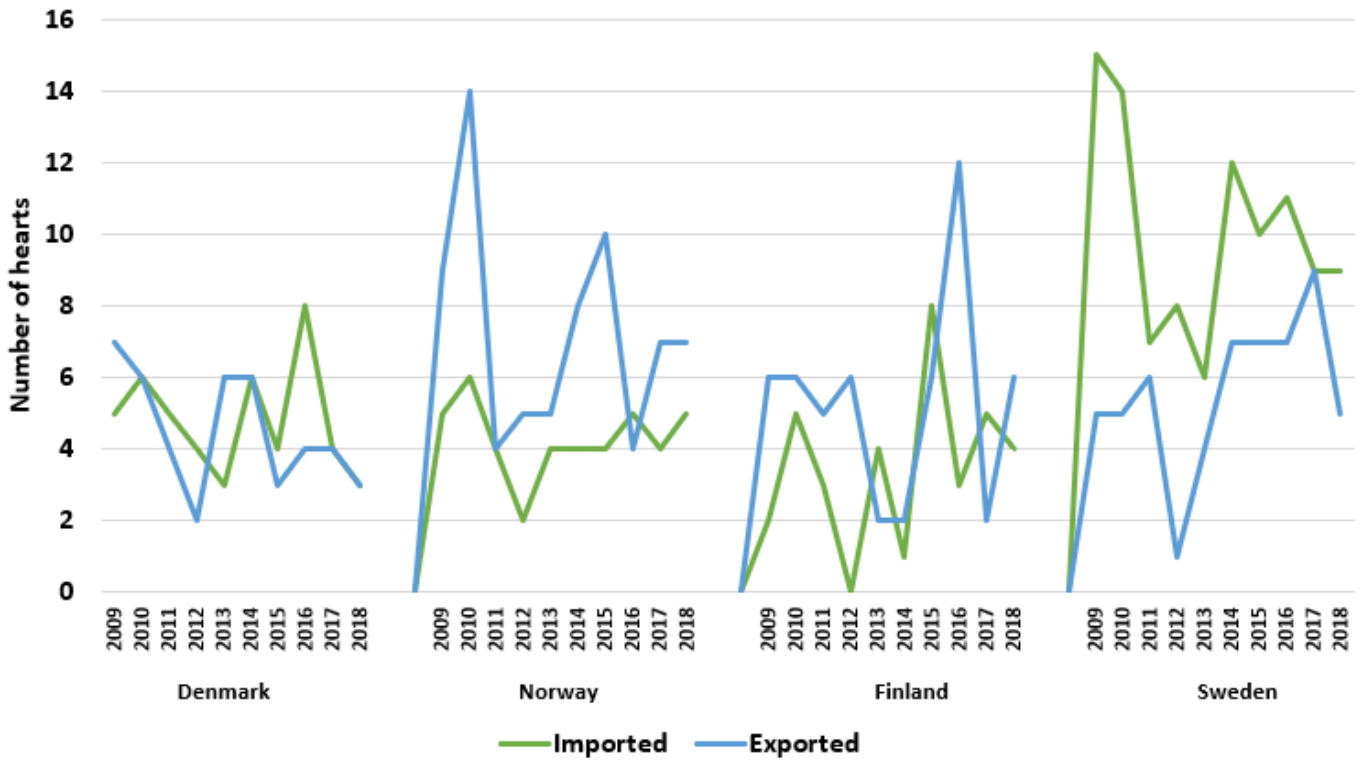
Estonia¹⁹

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2017	6	2	2	0	0
2018	10	2	15	0	0

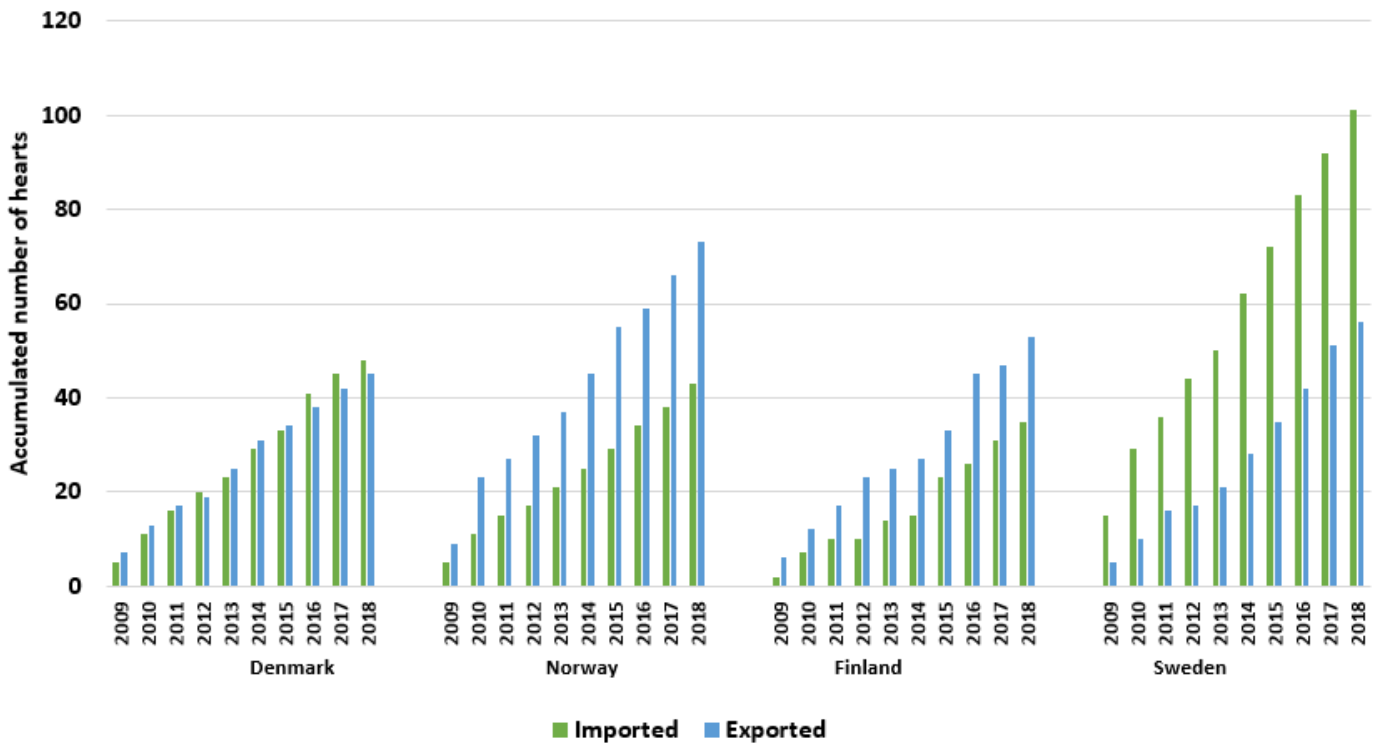
¹⁹ From October 1st 2017 Estonia is regarded as part of ScandiTransplant

Hearts exported and imported between the Scandi transplant countries²⁰

Import and export of hearts



Import and export of hearts - accumulated figures



²⁰ Only hearts used for transplantation are included

Hearts exported and imported²¹ between the Scandi transplant countries in numbers (including import and export to other EOEO's)

Denmark

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
2009	27	5	7	1	0
2010	22	6	6	0	0
2011	29	5	4	0	0
2012	26	4	2	0	0
2013	17	3	6	0	0
2014	32	6	6	0	0
2015	27	4	3	2	0
2016	29	8	4	1	0
2017	25	4	4	0	1
2018	26	3	3	0	2

Norway

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
2009	27	5	9	0	0
2010	30	6	14	0	2
2011	29	4	4	0	0
2012	32	2	5	0	0
2013	37	4	5	0	0
2014	34	4	8	1	0
2015	37	4	10	0	0
2016	21	5	4	1	2
2017	32	4	7	0	1
2018	29	5	7	0	1

²¹ Only hearts used for transplantation are included

Finland²²

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
2009	13	2	6	0	0
2010	22	5	6	0	0
2011	18	3	5	0	0
2012	22	0	6	0	0
2013	21	4	2	3	0
2014	24	1	2	4	0
2015	27	8	6	0	0
2016	31	3	12	0	0
2017	26	5	2	0	0
2018	47	4	6	0	0

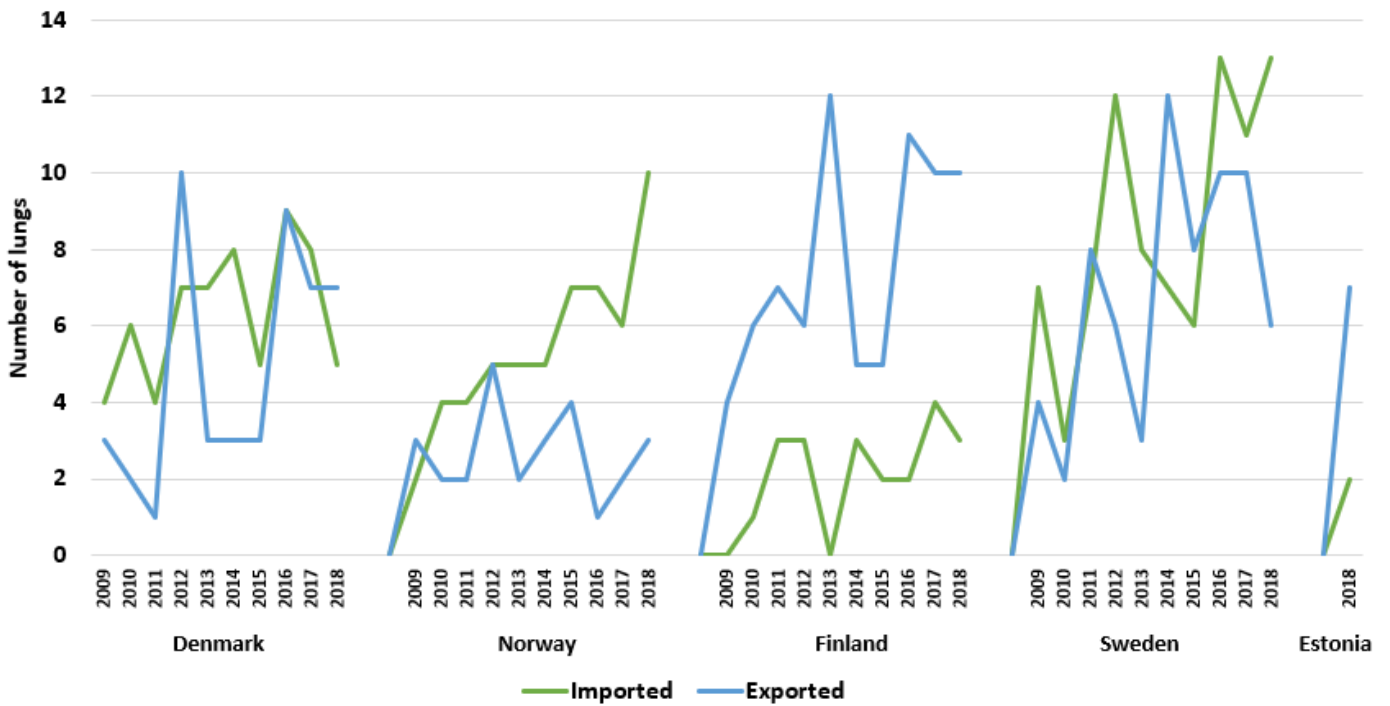
Sweden

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
2009	55	15	5	0	2
2010	56	14	5	2	4
2011	51	7	6	1	4
2012	46	8	1	2	1
2013	55	6	4	6	1
2014	67	12	7	1	4
2015	63	10	7	3	1
2016	64	11	7	2	4
2017	62	9	9	1	3
2018	66	9	5	0	2

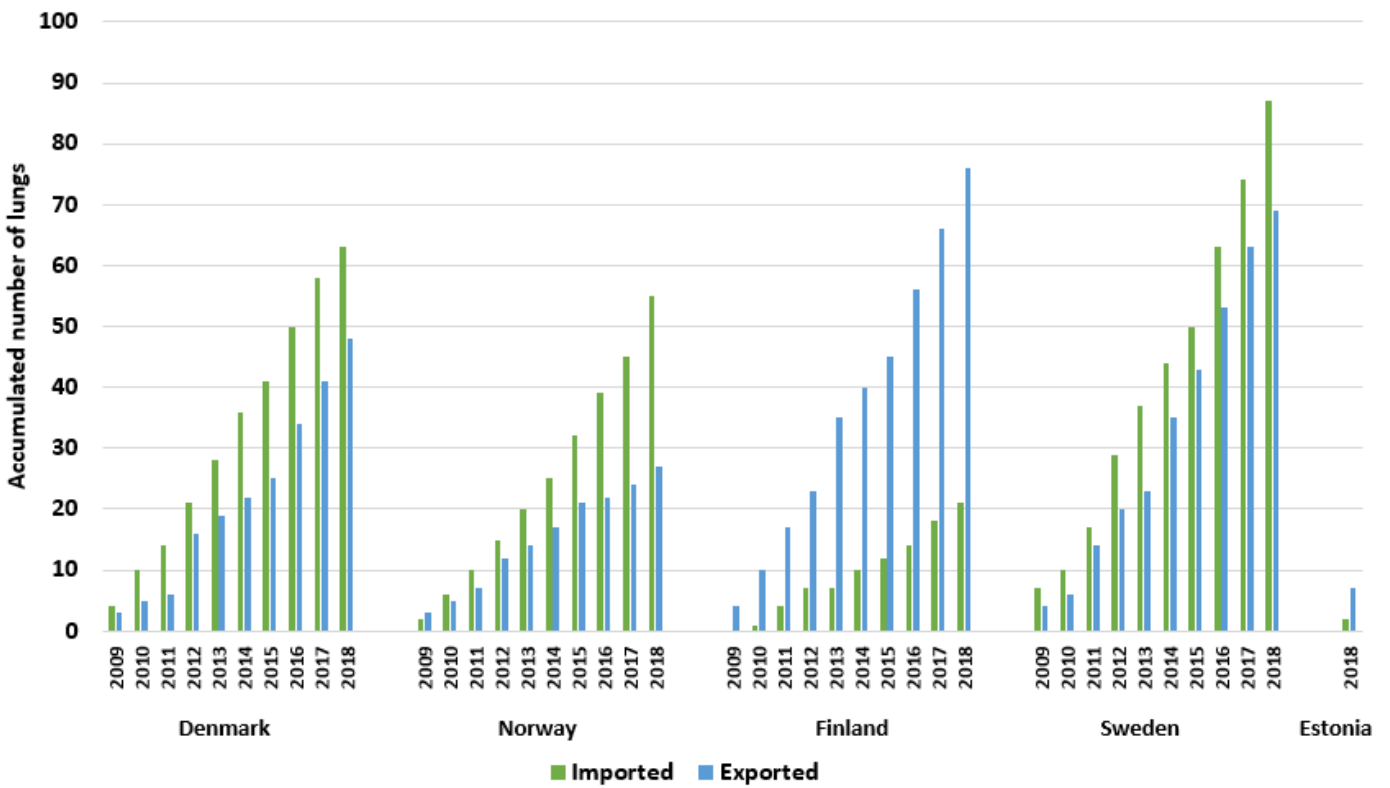
²² Estonian heart transplantations are performed in Finland and included in the number of heart transplantation. Furthermore, Estonian heart donors are not calculated as import/export when used for transplantation in Finland.

Lungs exported and imported between the Scandi transplant countries²³

Import and export of lungs



Import and export of lungs - accumulated figures



²³ Only lungs used for transplantation are included

**Lungs exported and imported²⁴ between the Scandiatransplant countries in numbers²⁵
(including import and export to other EOEO's)**

Denmark

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2009	29	4	3	0	0
2010	31	6	2	0	0
2011	30	4	1	1	1
2012	30	7	10	0	1
2013	31	7	3	0	0
2014	29	8	3	0	1
2015	35	5	3	1	0
2016	29	9	9	0	0
2017	35	8	7	0	0
2018	25	5	7	0	0

Norway

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2009	24	2	3	0	0
2010	32	4	2	0	0
2011	28	4	2	0	0
2012	28	5	5	0	0
2013	33	5	2	1	0
2014	33	5	3	0	0
2015	34	7	4	0	0
2016	34	7	1	1	1
2017	35	6	2	0	0
2018	30	10	3	0	0

²⁴ Only lungs used for transplantation are included

²⁵ Single lung, double lung and heart-lung transplantations are all counted as 1

Finland

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2009	14	0	4	0	0
2010	15	1	6	0	0
2011	23	3	7	0	0
2012	27	3	6	0	0
2013	15	0	12	0	0
2014	17	3	5	1	0
2015	24	2	5	0	0
2016	18	2	11	0	0
2017	24	4	10	0	0
2018	18	3	10	0	0

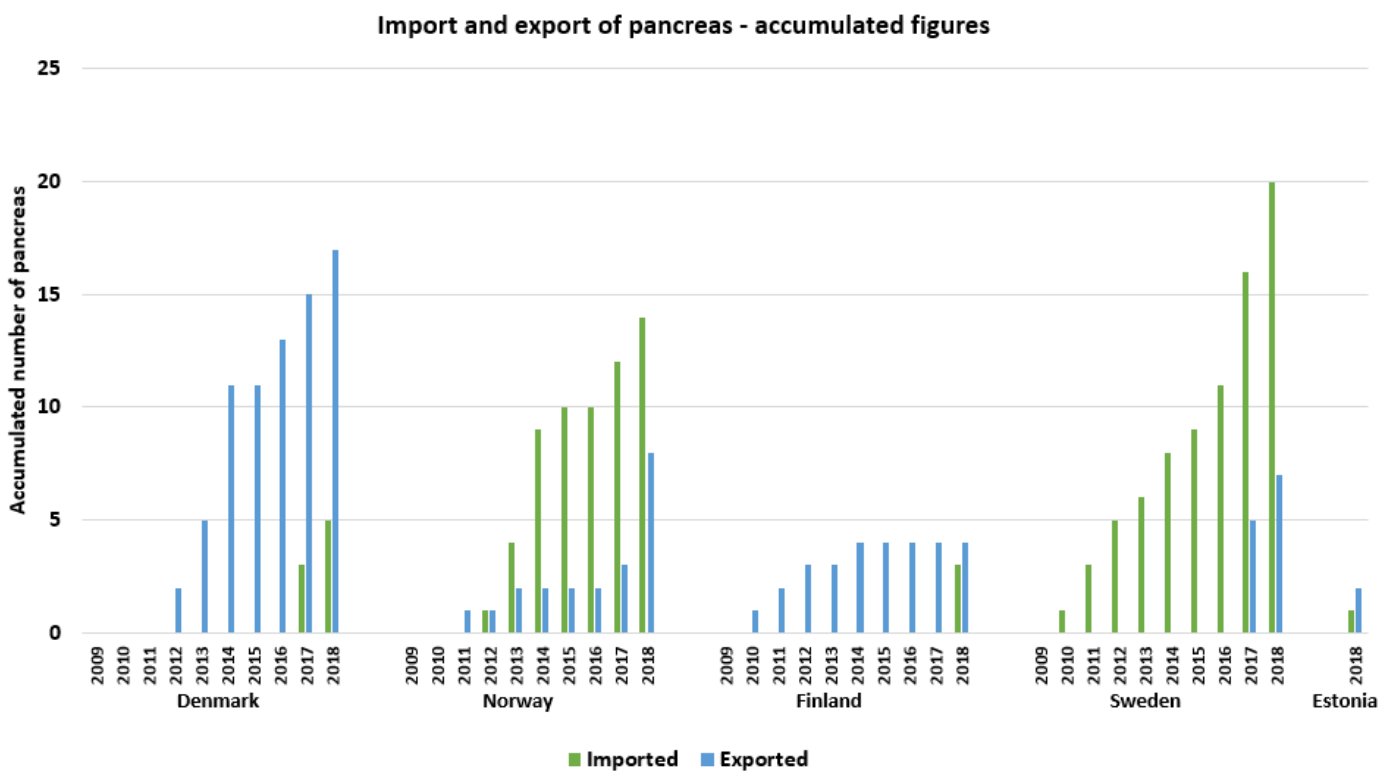
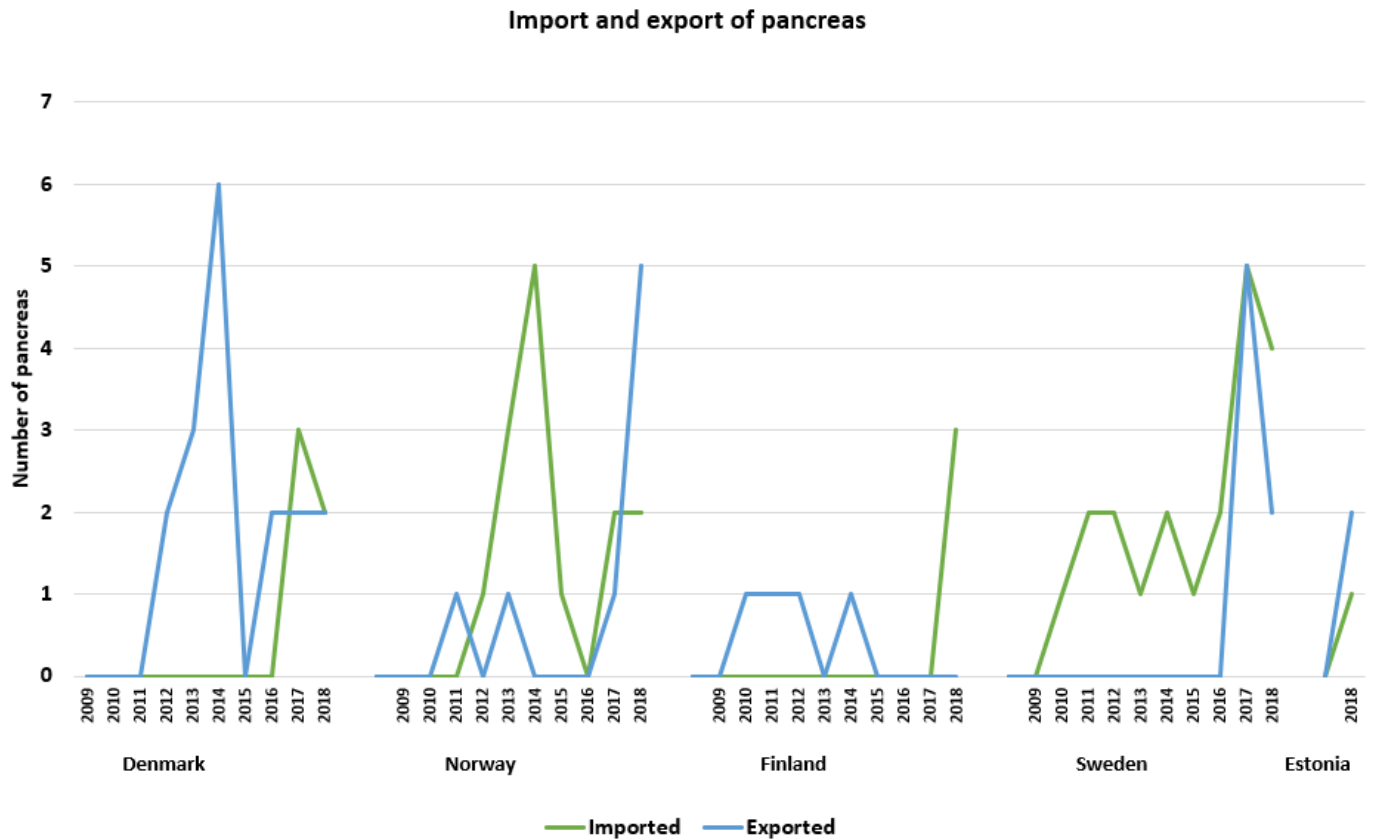
Sweden

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2009	51	7	4	0	2
2010	51	3	2	2	3
2011	60	7	8	0	3
2012	60	12	6	0	3
2013	58	8	3	1	2
2014	65	7	12	1	8
2015	48	6	8	0	3
2016	62	13	10	0	4
2017	65	11	10	0	5
2018	74	13	6	0	4

Estonia

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2017	2	0	0	0	0
2018	4	2	7	0	0

Pancreas exported and imported between the Scandiatransplant countries^{26,27}



²⁶ Only pancreas used for whole pancreas transplantation are included

²⁷ In the years 2012-2015 14 Danish patients were transplanted with kidney-pancreas/pancreas in Norway, which explains the increase in exports and imports of pancreas for these two countries.

Pancreas exported and imported²⁸ between the Scandi transplant countries in numbers (including import and export to other EOEO's)

Denmark

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2009	0	0	0	0	0
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	0	0	2	0	0
2013	0	0	3	0	0
2014	0	0	6	0	0
2015	2	0	0	0	0
2016	7	0	2	0	0
2017	9	3	2	0	0
2018	5	2	2	0	0

Norway

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2009	16	0	0	0	0
2010	15	0	0	0	0
2011	20	0	1	0	0
2012	28	1	0	0	0
2013	39	3	1	2	0
2014	31	5	0	2	0
2015	31	1	0	2	0
2016	20	0	0	0	0
2017	24	2	1 ²⁹	0	0
2018	15	2	5	0	0

²⁸ Only pancreas used for whole pancreas transplantation are included

²⁹ +1 for a Norwegian recipient transplanted in Sweden

Finland

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2009	0	0	0	0	0
2010	2	0	1	0	0
2011	1	0	1	0	0
2012	8	0	1	0	0
2013	10	0	0	0	0
2014	15	0	1	0	0
2015	17	0	0	0	0
2016	27	0	0	0	0
2017	21	0	0	0	0
2018	23	3	0	0	0

Sweden

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2009	20	0	0	0	0
2010	26	1	0	0	0
2011	35	2	0	0	0
2012	28	2	0	0	0
2013	38	1	0	1	0
2014	38	2	0	1	0
2015	30	1	0	0	0
2016	24	2	0	1	0
2017	25	3	5	0	0
2018	18	4	3	0	0

Estonia

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2017	1	0	0	0	0
2018	2	1	2	0	0

Intestine exported and imported³⁰ between the Scandiatransplant countries and other EOEO's

	Import/export	Import/export EOEO
2009	0	0
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	0	1 from EOEO to Sweden
2015	0	0
2016	1 from Denmark to Sweden	0
2017	1 from Norway to Sweden (Norwegian recipient)	0
2018	1 from Denmark to Sweden	0

³⁰ Only intestine used for transplantation is included

Summary: SAEs and SARs reported through the Scandiatransplant IT system in 2018

Between January 1st, 2018 and December 31st, 2018 there has been 7 SARs and 8 SAEs reported to the competent authorities utilizing the reporting option in the Scandia-transplant IT-system. There were 8 SAE/SARs reported from Sweden, four from Denmark, two from Norway and one from Estonia. There were no SAE/SARs reported from Iceland and Finland. However, one report (ID 90) from Sweden concerned a renal cell carcinoma found in the kidney of an Icelandic donor shipped to Norway. A kidney was transplanted to an Icelandic recipient, where MRSA was cultured from the Swedish donor (ID 156). A donor from Finland, who presumably had lung cancer with metastasis to the liver, gave organs to recipients from Norway and Sweden (ID 45). The SAE/SAR affected or could potentially affect 9 recipients treated in another country than the donor. The tables below give a short summary of each reported SAE/SAR. If the reporting center is from a different country than the donor from which the SAE/SAR originated, this is marked with an *. Finally, all reports are listed by their ID.

The system uses well known functionalities in the IT-system sending acute SMS and e-mail to all transplant coordinators on duty at centers involved and then e-mail to all transplant centers and to all competent authorities. The conclusion of the experience this first year is that it works effectively and securely. The variation in the degree of severity seems to indicate, that there is room for improvement of what should be reported.

Reports from transplantation centers in Sweden

ID	Center		Other involved countries	Short description of SAE/SAR	Follow-up	Case closed
111	Uppsala	SAR		Clear cell carcinoma in kidney one month after transplantation	Other center informed	?
156	Göteborg	SAE	IS	MRSA culture in lungs from donor	All recipients MRSA negative	Yes
169	Uppsala	SAE		Donor post mortem suspicious of tuberos sclerosi	Ultrasound normal in kidney recipients	?
188	Stockholm	SAE		Refusal of first accepted pay-back could have increased cold ischemia		Yes
209	Göteborg	SAE		Donor operation started 26 hours after brain death due to lack of aircraft		Yes
288	Skåne	SAE	DK	Container of right kidney marked left and left kidney marked right	Centers informed, no problem	Yes
248	Stockholm	SAE	N	Branch artery in right liver lobe cut off with ligature during retrieval	Liver transplanted	Yes
90	Göteborg	SAE	DK, N, IS	Renal cell carcinoma in one kidney pretransplant, other organs used	Other center informed	?

Report from transplantation center in Denmark

ID	Center	Other involved countries	Short description of SAE/SAR	Follow-up	Case closed	
48	Copenhagen	SAR		Developed AMI and died shortly after kidney transplantation		yes
49	Copenhagen	SAR		Kidney recipient with BMI 56 died of influenza pneumonia after renal transplantation		yes
128	Copenhagen	SAR		Diabetic recipient dies of AMI 6 days after renal transplantation		yes
229	Copenhagen	SAR	S*	Kidney remained blue after reperfusion, had parenchymal bleeding and was discarded	Donor center informed	yes

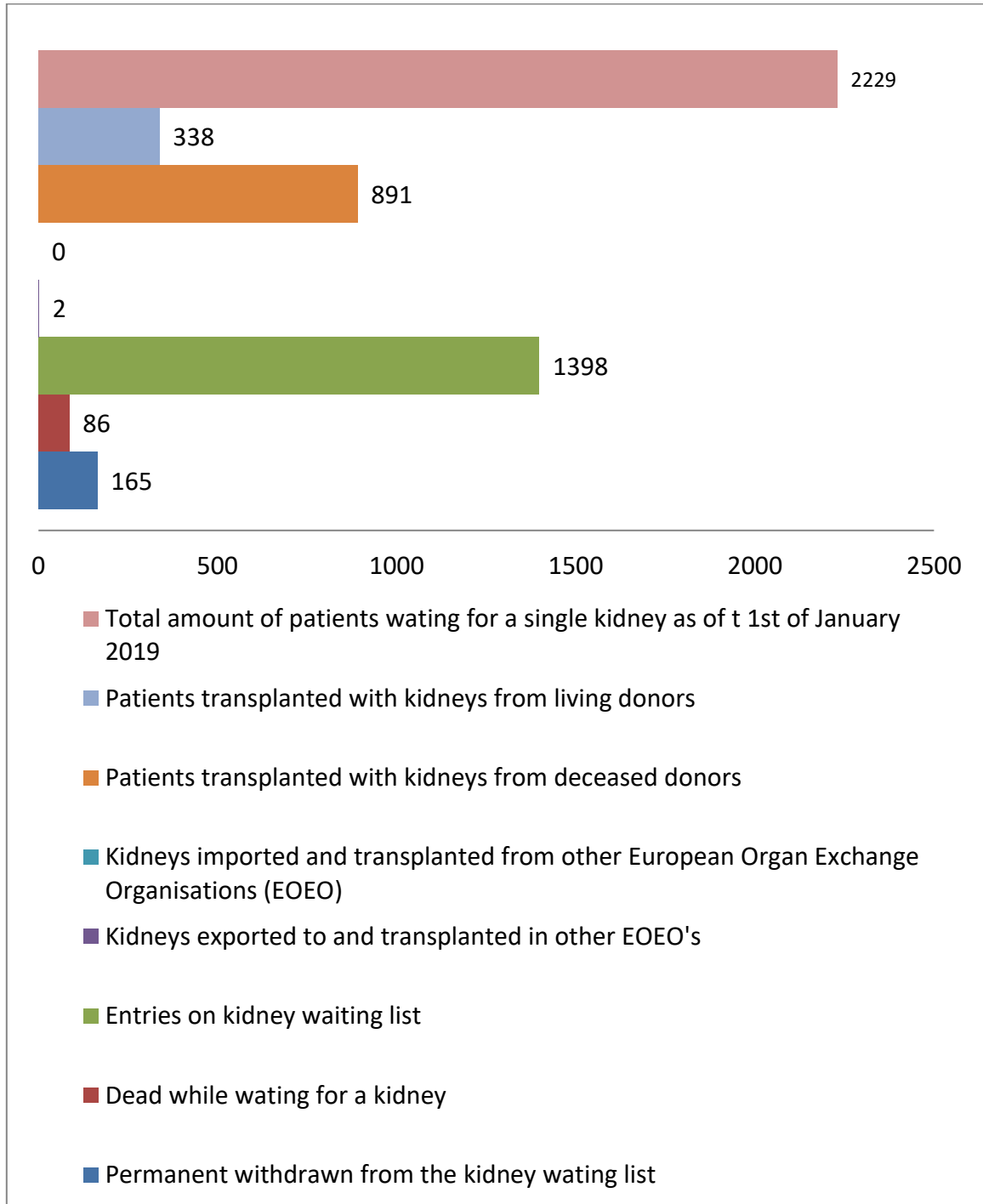
Reports from transplantation centers in Norway

ID	Center	Other involved countries	Short description of SAE/SAR	Follow-up	Case closed	
45	Oslo	SAR	S, SF*	Transplanted liver later found to have small cell lung cancer metastasis	All centers informed	?
110	Oslo	SAR	S*	Renal cell carcinoma in kidney one year after transplantation	Other center informed	?

Report from transplantation center in Estonia

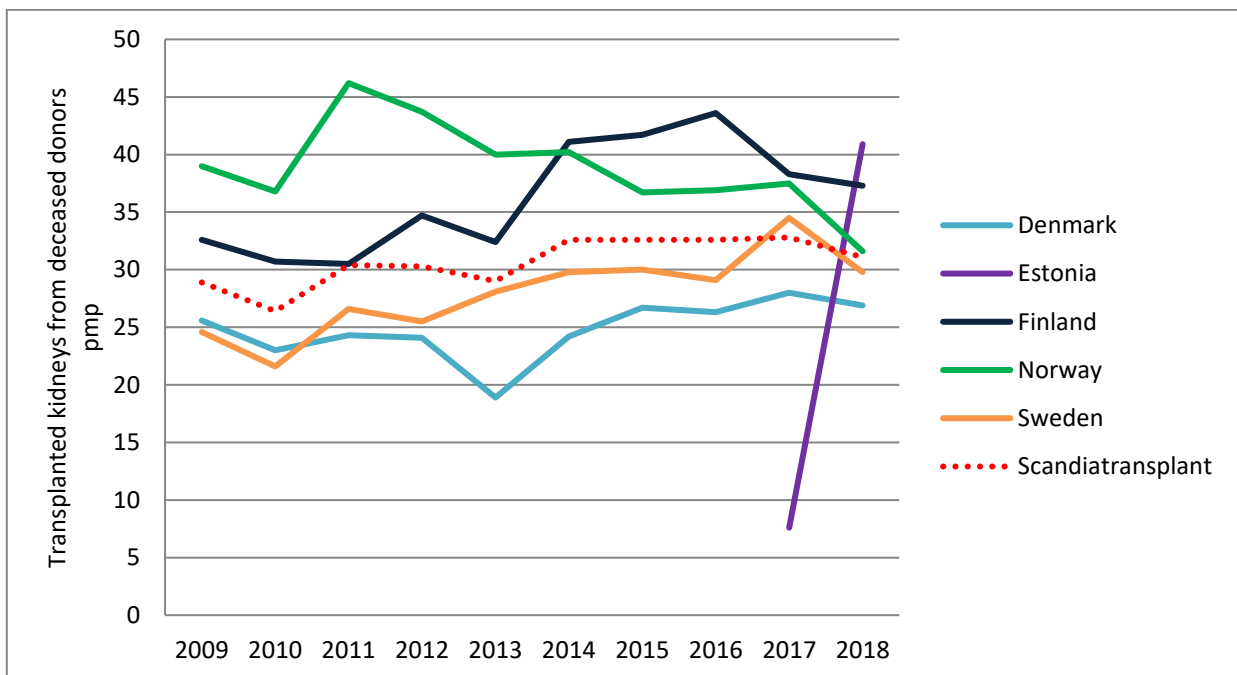
ID	Center	Other involved country	Short description of SAE/SAR	Follow-up	Case closed	
206	Tartu	SAE		Intraabdominal tumour found during procurement	Donor not used	yes

Kidneys 2018



Transplanted kidneys pmp³¹ from deceased donors per year

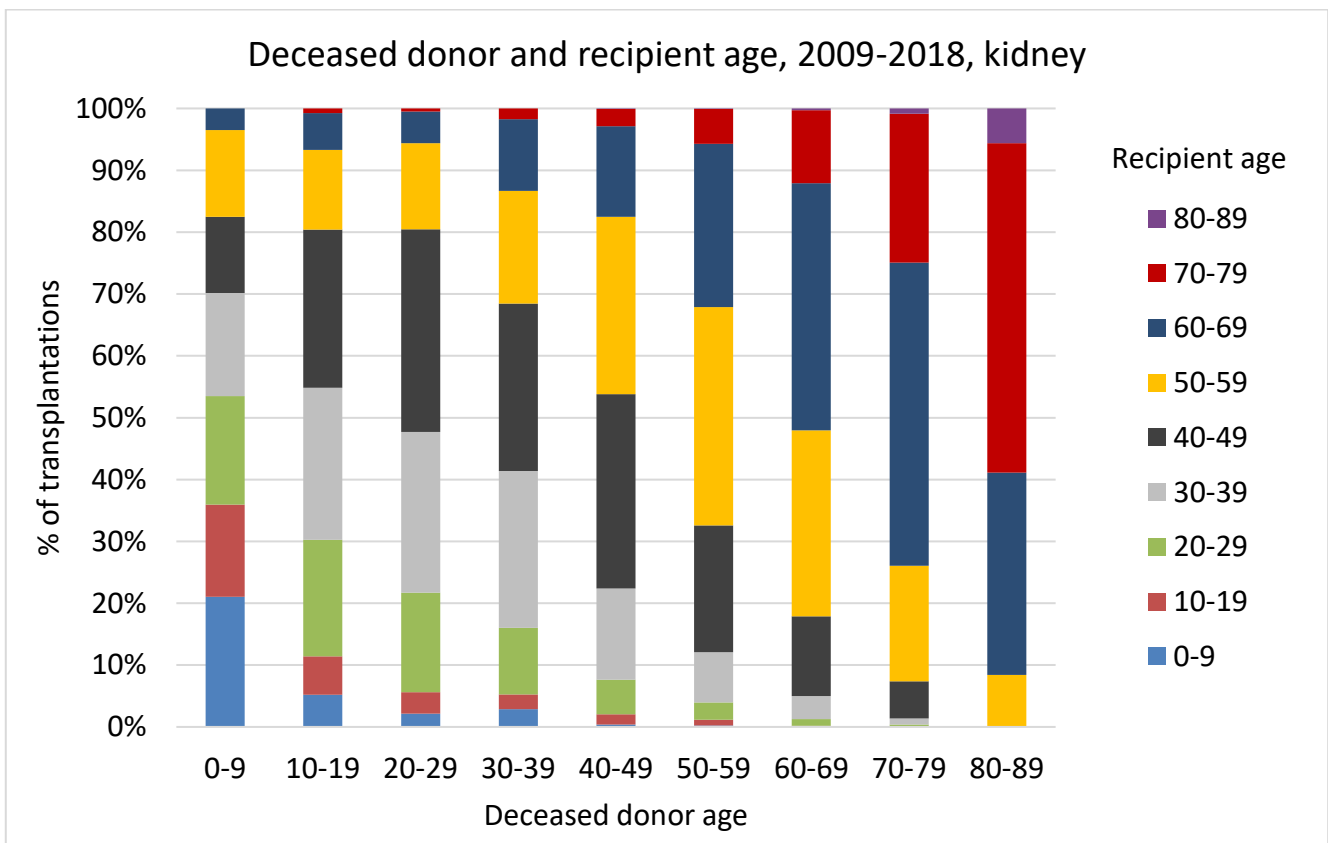
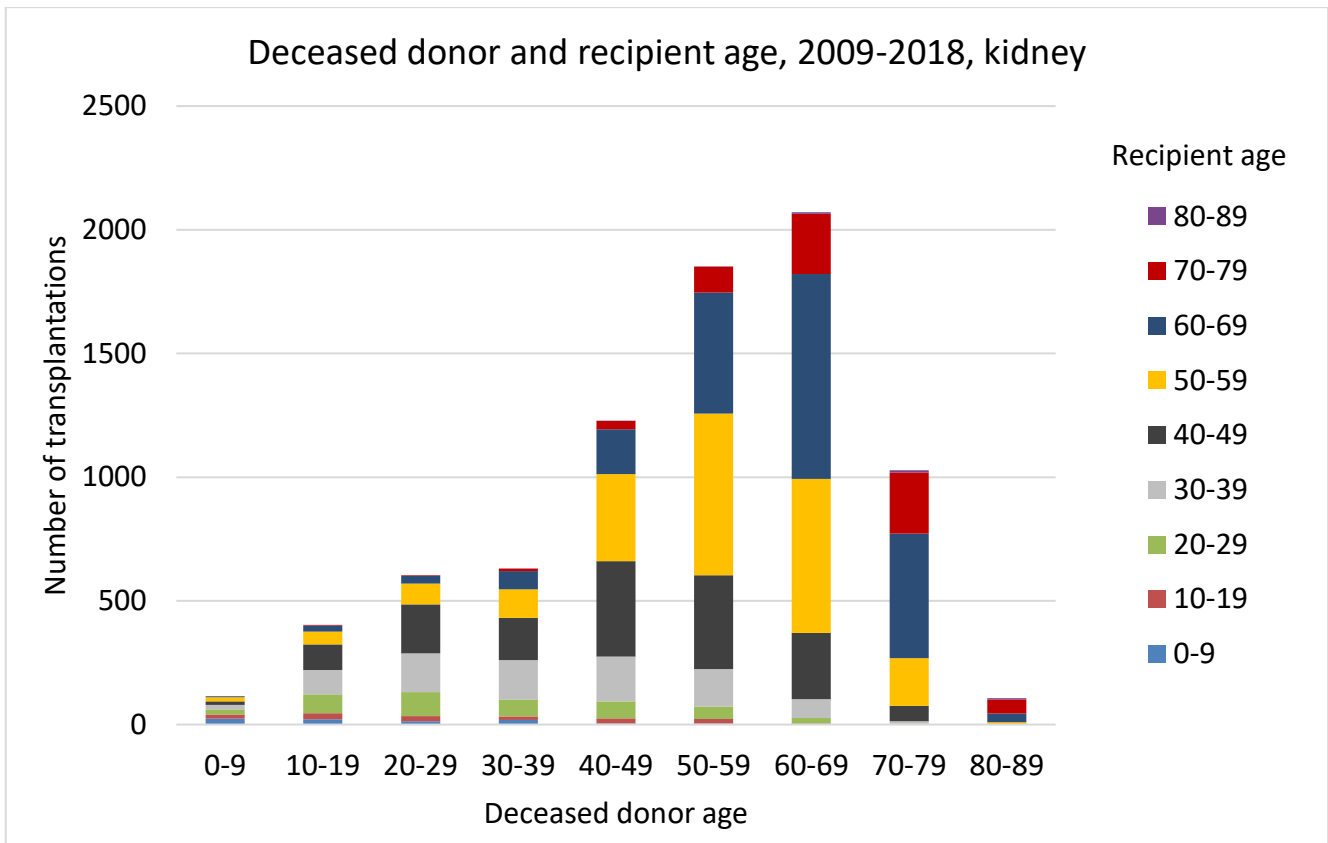
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2009	25,6		32,6	39,0	24,6	28,9
2010	23,0		30,7	36,8	21,6	26,4
2011	24,3		30,5	46,2	26,6	30,4
2012	24,1		34,7	43,7	25,5	30,3
2013	18,9		32,4	40,0	28,1	29
2014	24,2		41,1	40,2	29,8	32,6
2015	26,7		41,7	36,7	30,0	32,6
2016	26,3		43,6	36,9	29,1	32,6
2017	28,0	7,6 ³²	38,3	37,5	34,5	32,8
2018	26,9	40,9	37,3	31,6	29,8	31,1



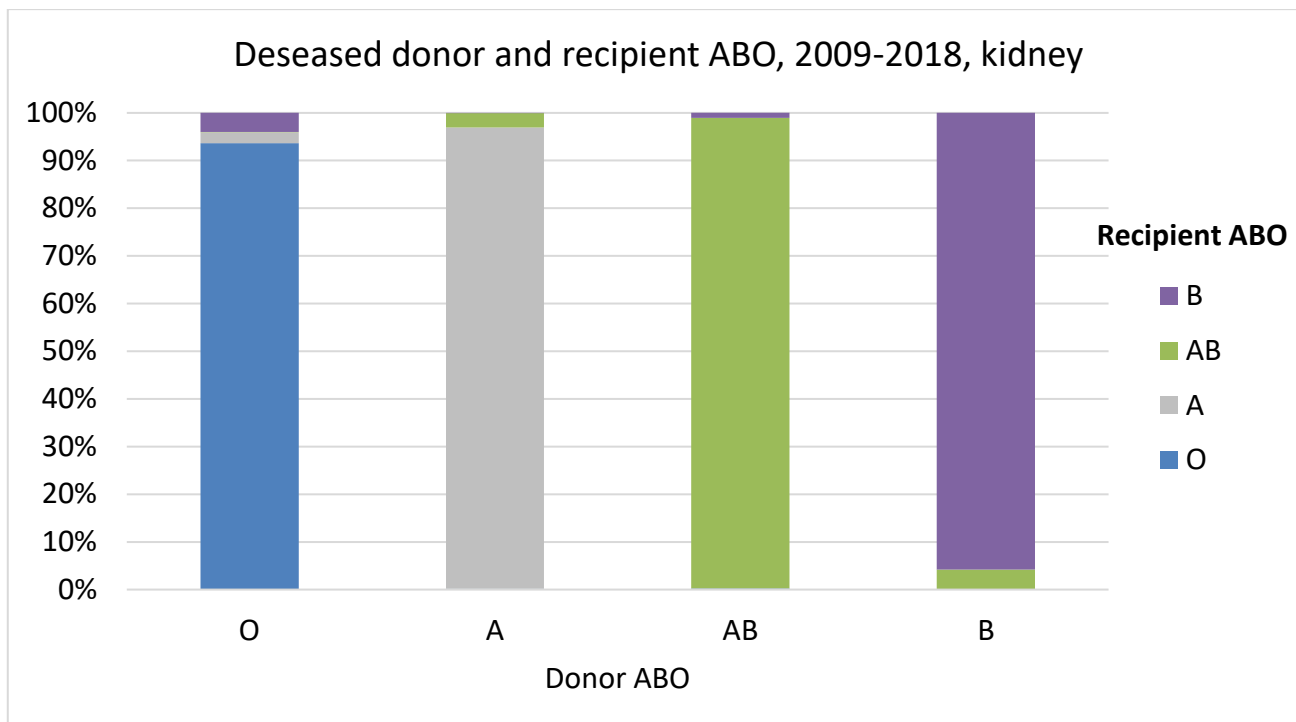
³¹ pmp: per million population

³² Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant this year

Deceased donor and recipient age



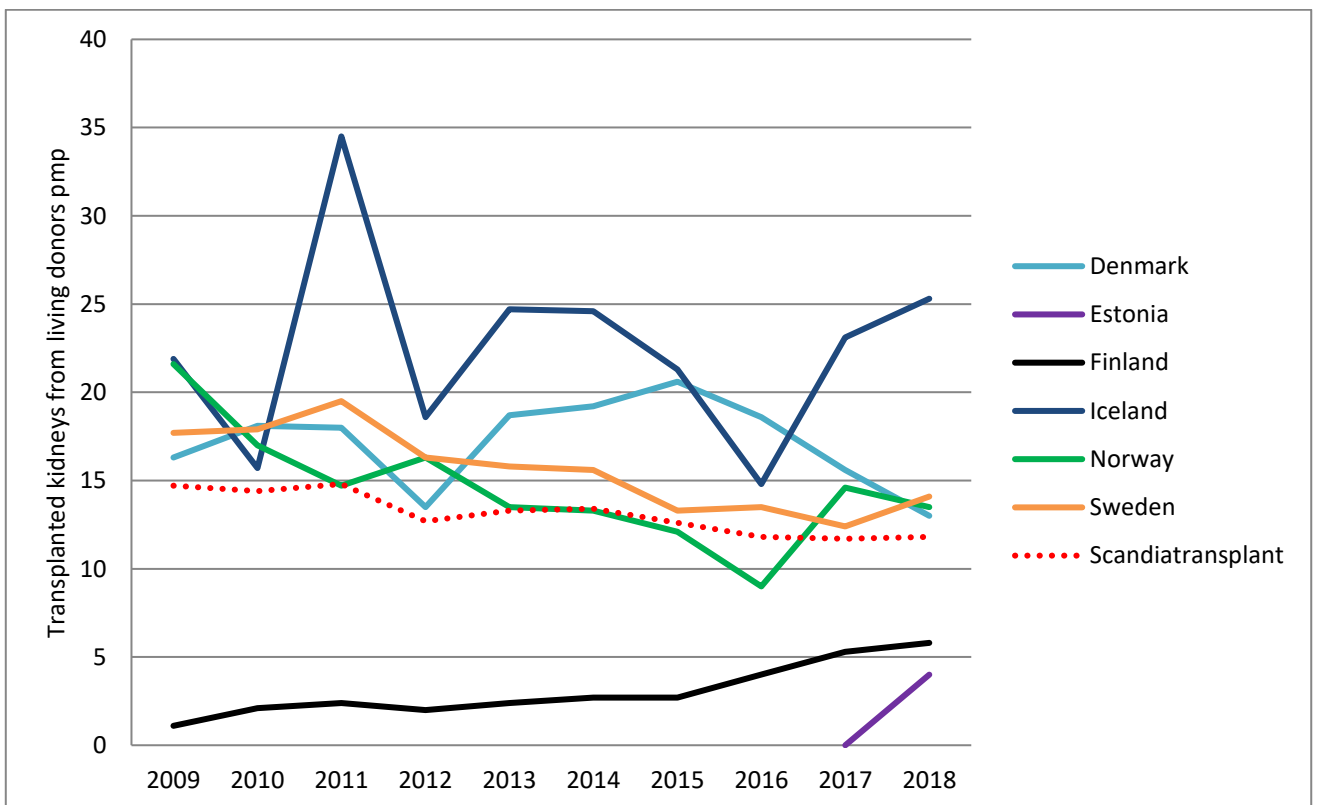
Deceased donor and recipient ABO, distribution in %



Donor → ↓Recipient	O	A	AB	B
O	35,5	0,1	0,0	0,0
A	0,9	44,0	0,0	0,0
AB	0,0	1,4	4,8	0,5
B	1,5	0,0	0,0	11,2

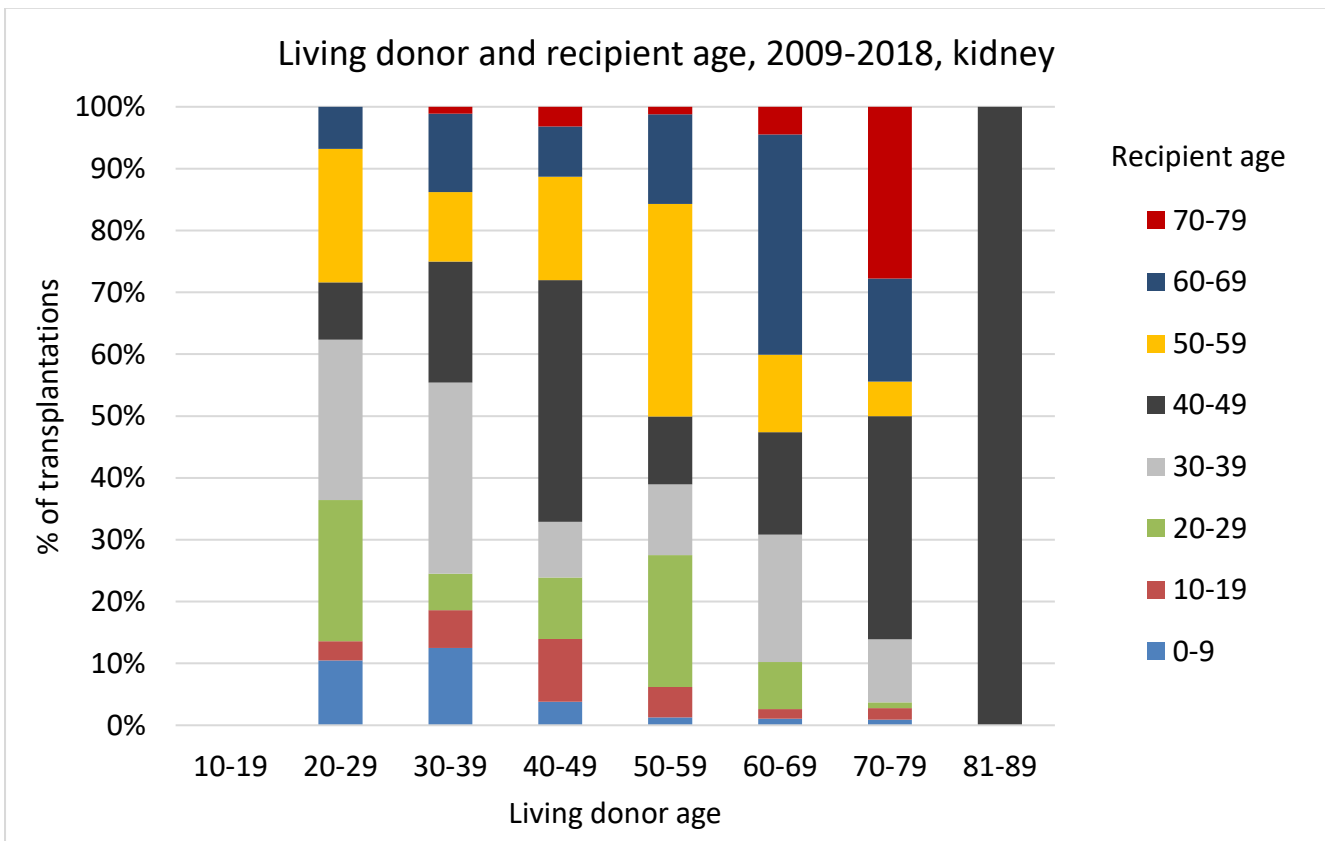
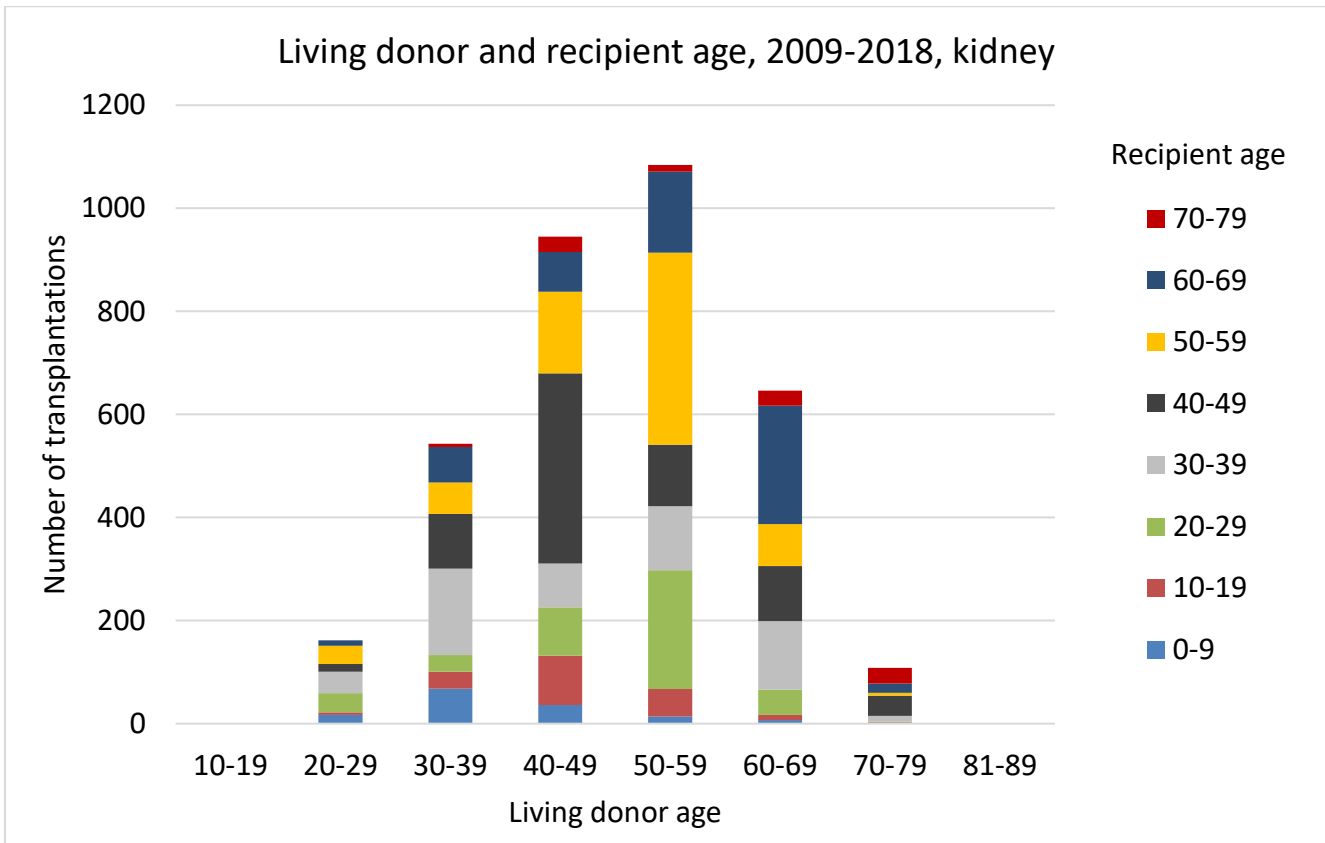
Transplanted kidneys pmp³³ from living donors per year

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2009	16,3		1,1	21,9	21,6	17,7	14,7
2010	18,1		2,1	15,7	17,0	17,9	14,4
2011	18,0		2,4	34,5	14,7	19,5	14,8
2012	13,5		2,0	18,6	16,3	16,3	12,7
2013	18,7		2,4	24,7	13,5	15,8	13,3
2014	19,2		2,7	24,6	13,3	15,6	13,4
2015	20,6		2,7	21,3	12,1	13,3	12,6
2016	18,6		4,0	14,8	9,0	13,5	11,8
2017	15,6		5,3	23,1	14,6	12,4	11,7
2018	13,0	3,0	5,8	25,3	13,5	14,1	11,8

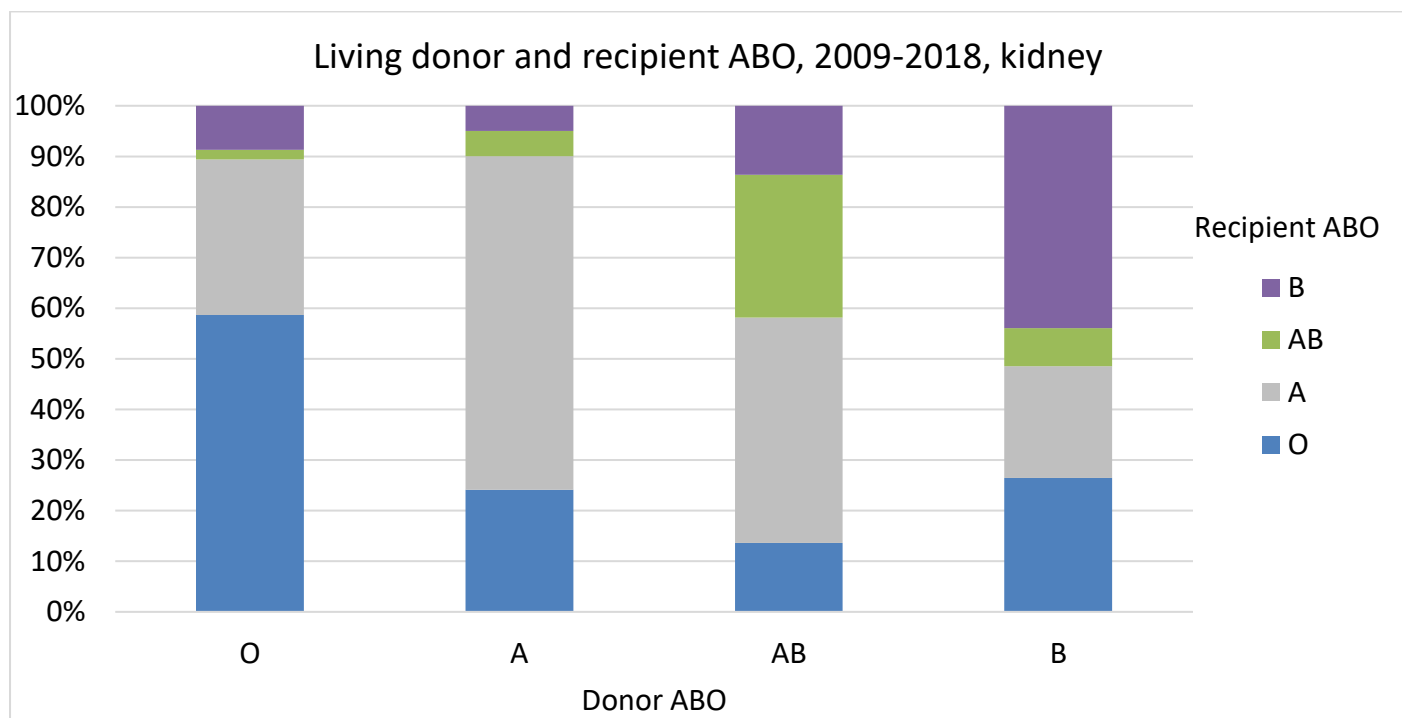


³³ pmp: per million population

Living donor and recipient age

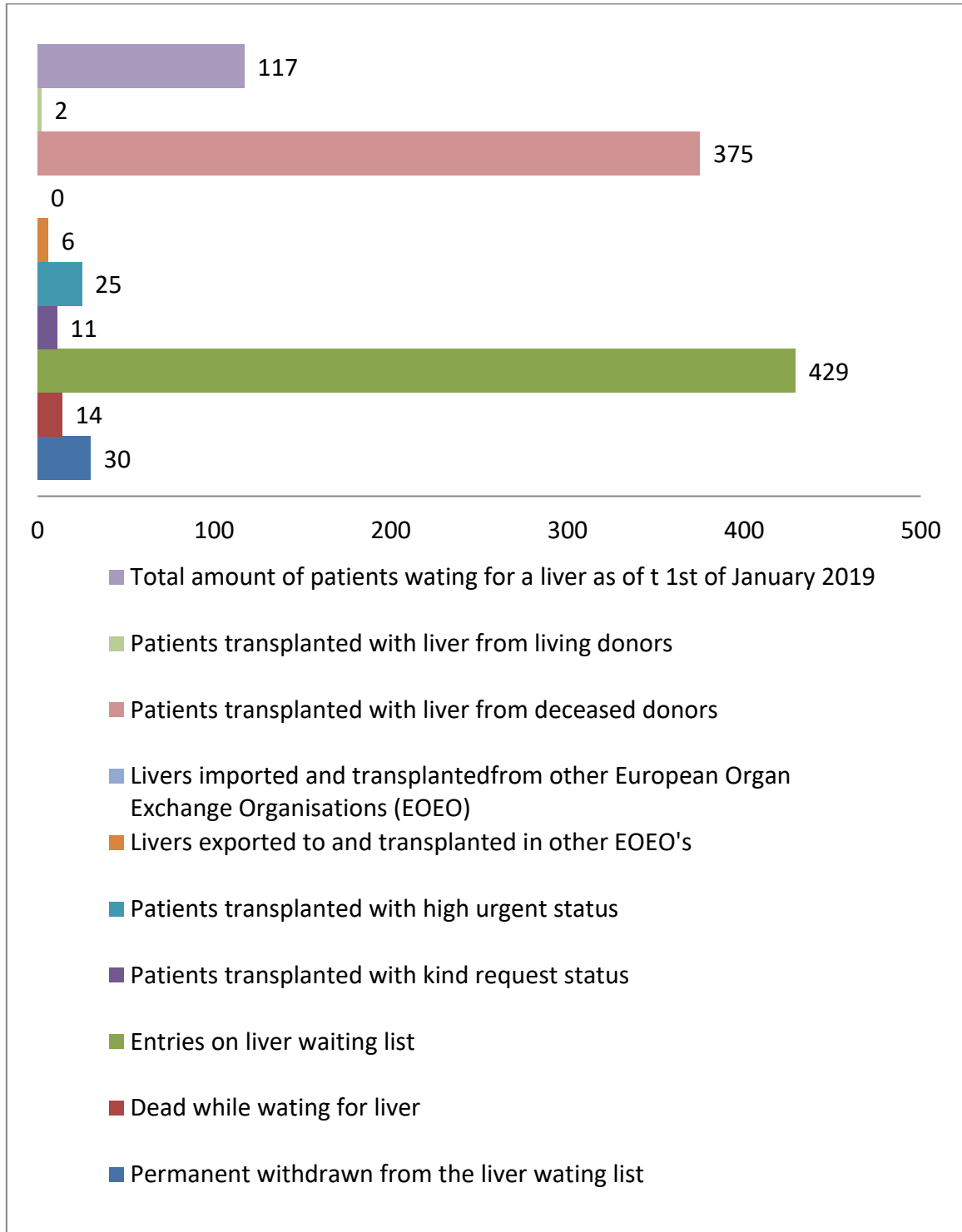


Living donor and recipient ABO, distribution in %



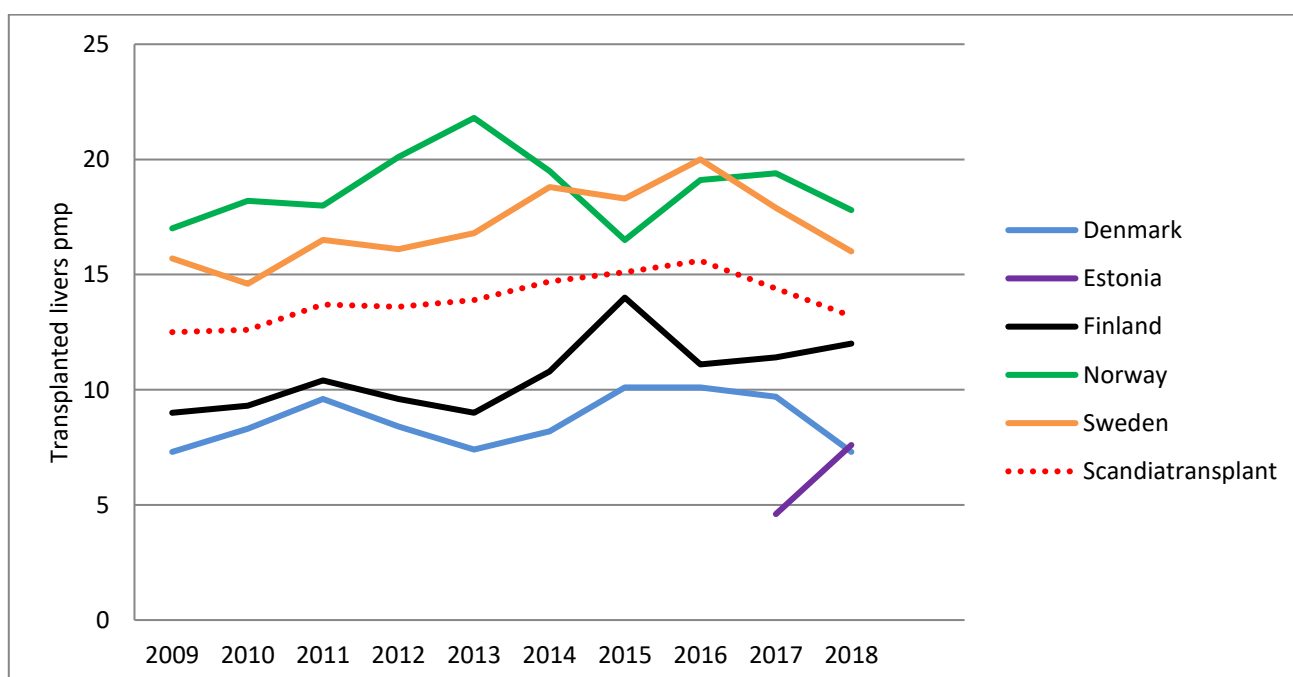
Donor →	O	A	AB	B
↓Recipient				
O	25,9	10,3	0,4	2,7
A	13,6	28,1	1,4	2,2
AB	0,8	2,1	0,9	0,7
B	3,9	2,1	0,4	4,4

Livers 2018



Transplanted livers (Deceased and living donors) pmp³⁴ per year

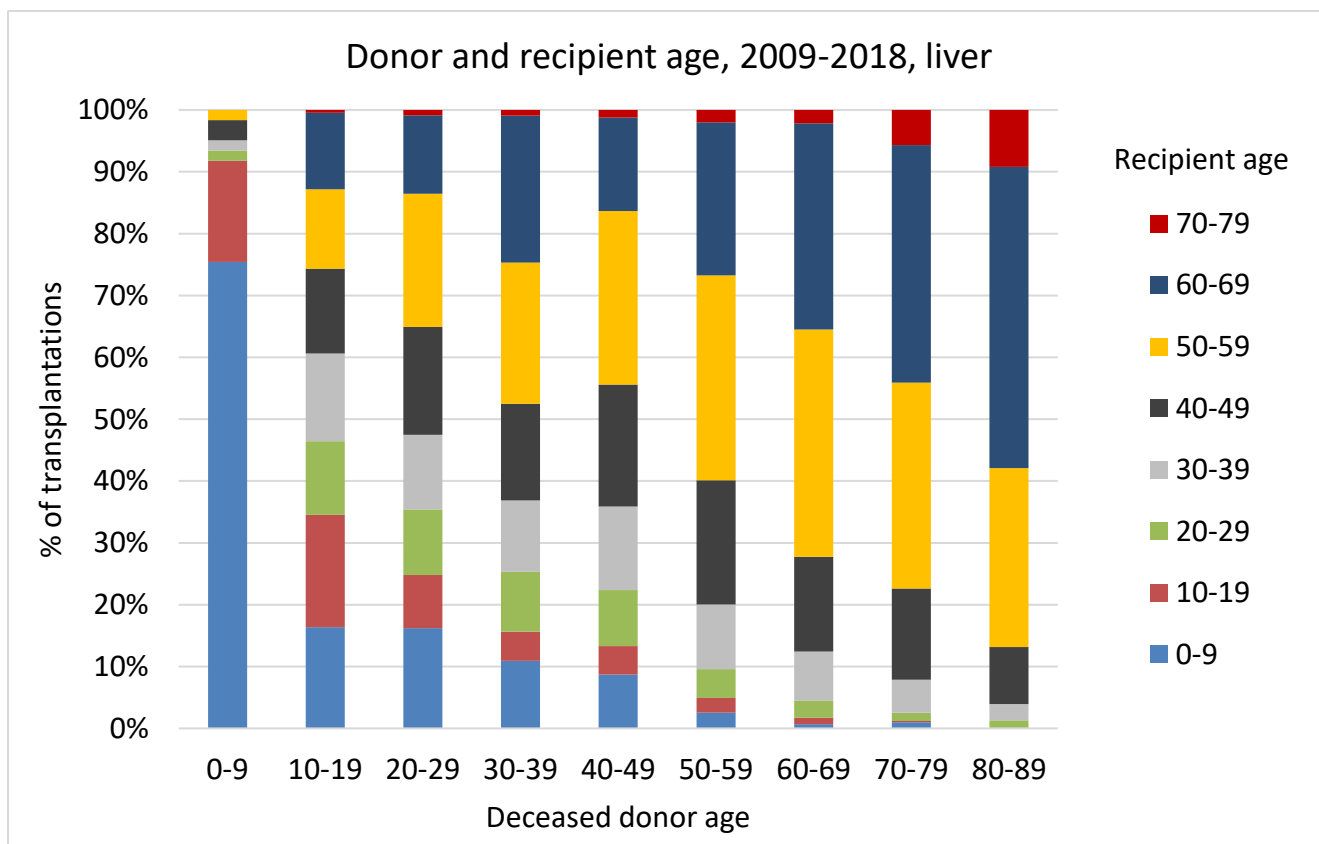
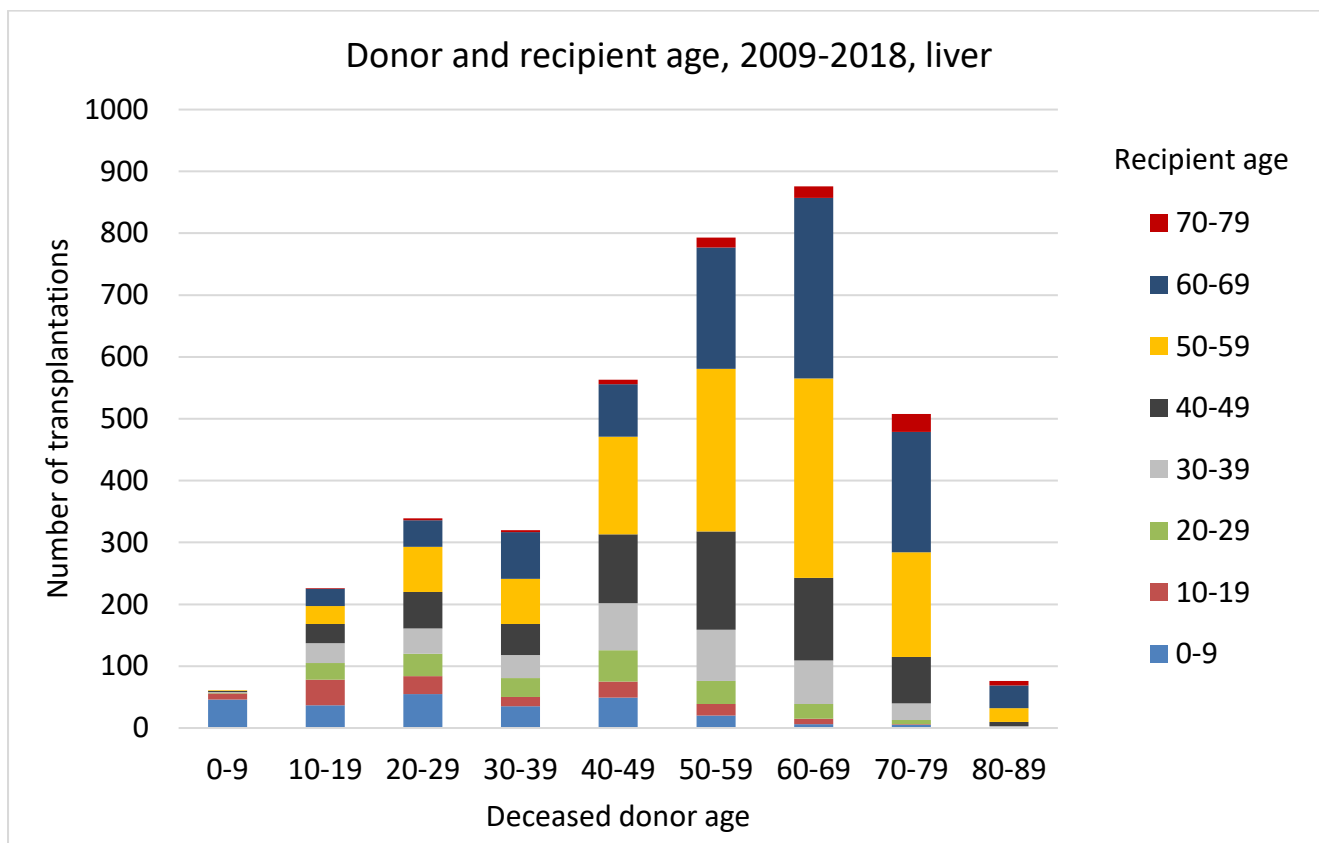
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2009	7,3		9,0	17,0	15,7	12,5
2010	8,3		9,3	18,2	14,6	12,6
2011	9,6		10,4	18,0	16,5	13,7
2012	8,4		9,6	20,1	16,1	13,6
2013	7,4		9,0	21,8	16,8	13,9
2014	8,2		10,8	19,5	18,8	14,7
2015	10,1		14,0	16,5	18,3	15,1
2016	10,1		11,1	19,1	20,0	15,6
2017	9,7	4,6 ³⁵	11,4	19,4	17,9	14,4
2018	7,3	7,6	12,0	17,8	16,0	13,2



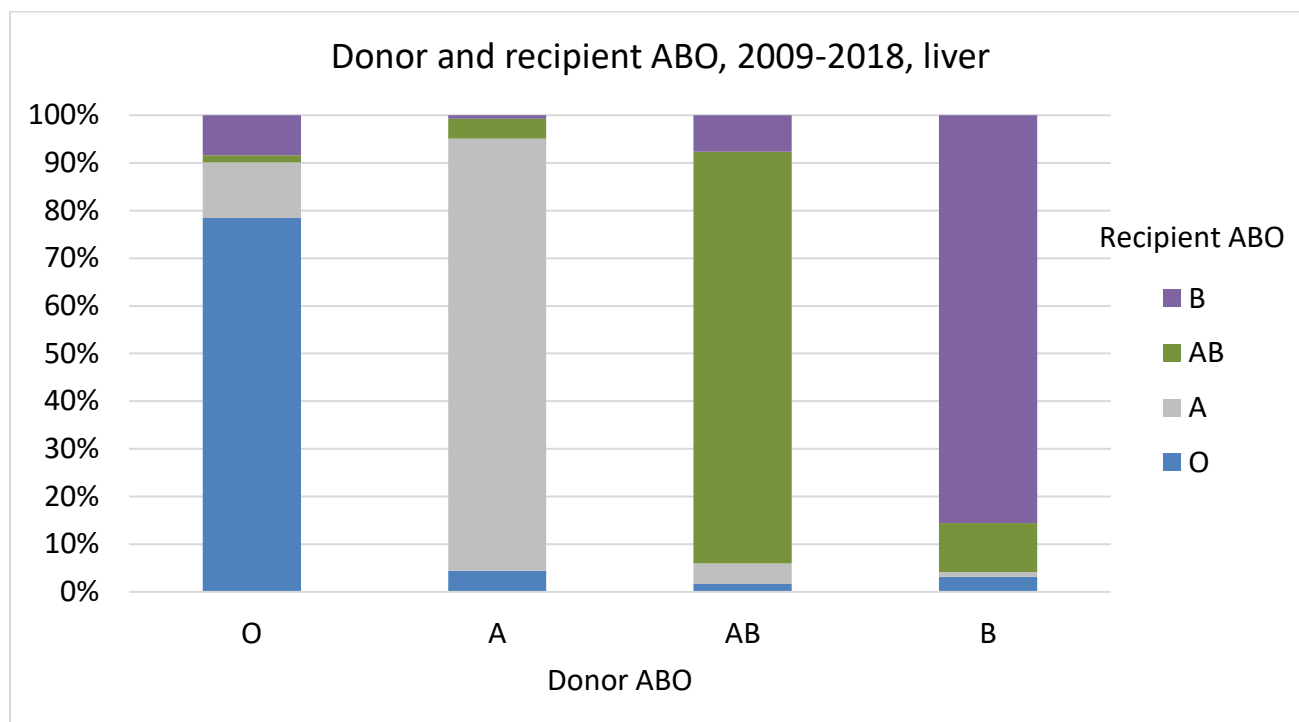
³⁴ pmp: per million population

³⁵ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Deceased donor and recipient age

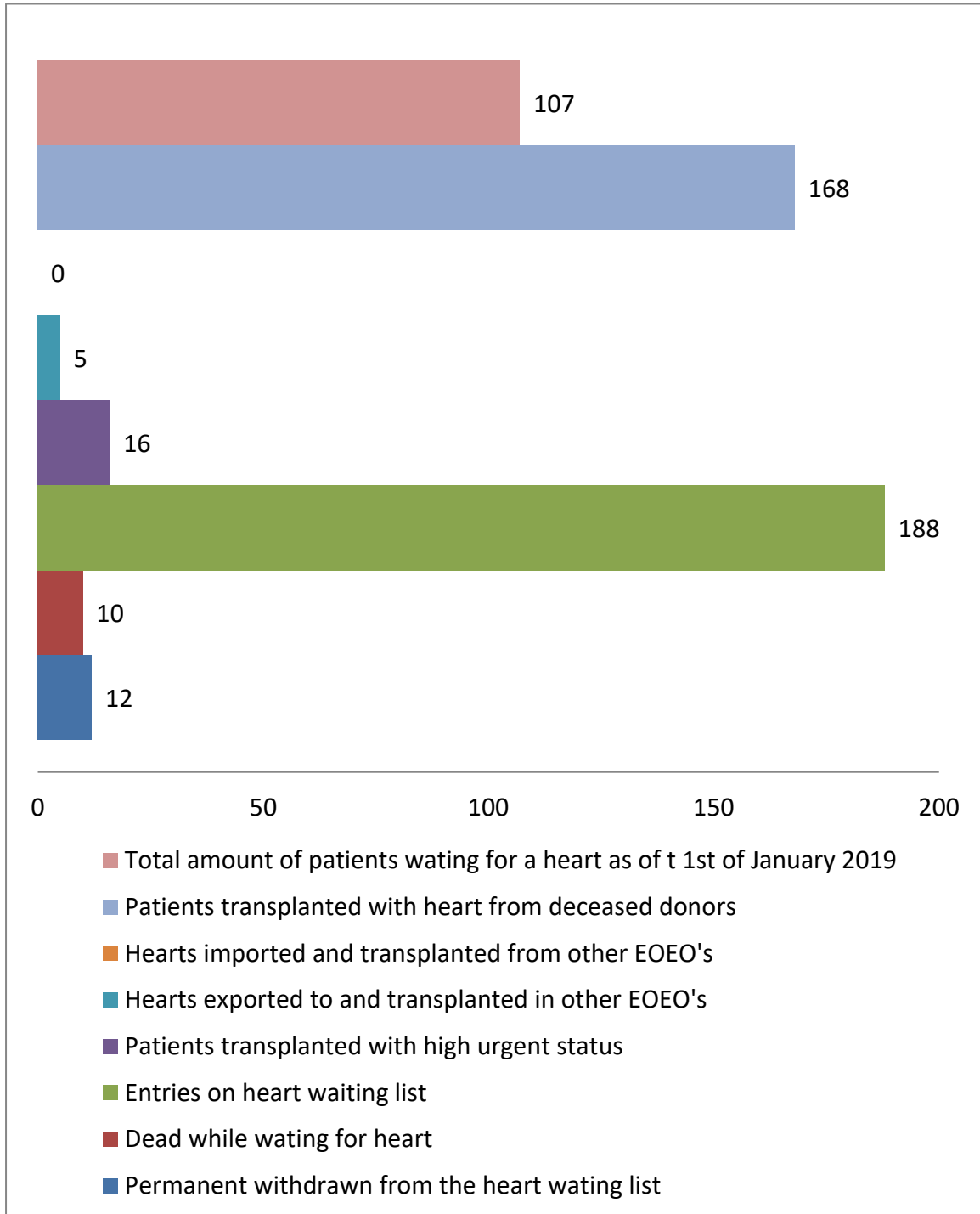


Deceased donor and recipient ABO, distribution in %



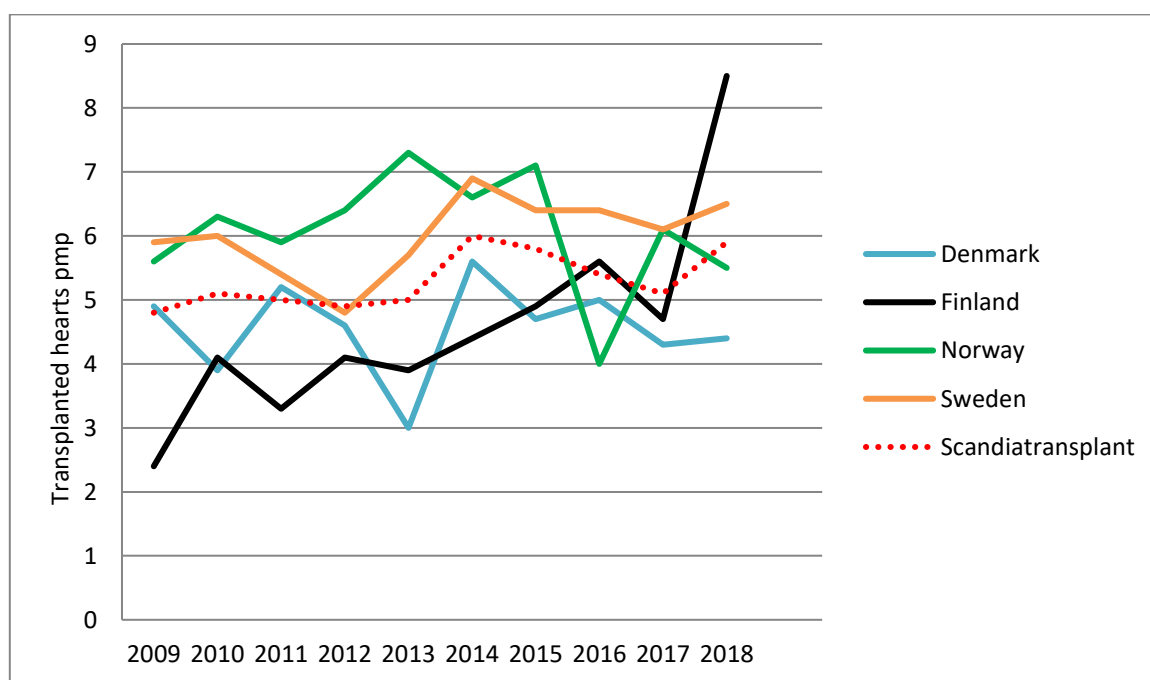
Donor → ↓Recipient	O	A	AB	B
O	33,4	1,9	0,1	0,3
A	5,0	39,4	0,1	0,1
AB	0,6	1,8	2,7	1,1
B	3,6	0,3	0,2	9,3

Hearts 2018



Transplanted hearts pmp³⁶ per year³⁷

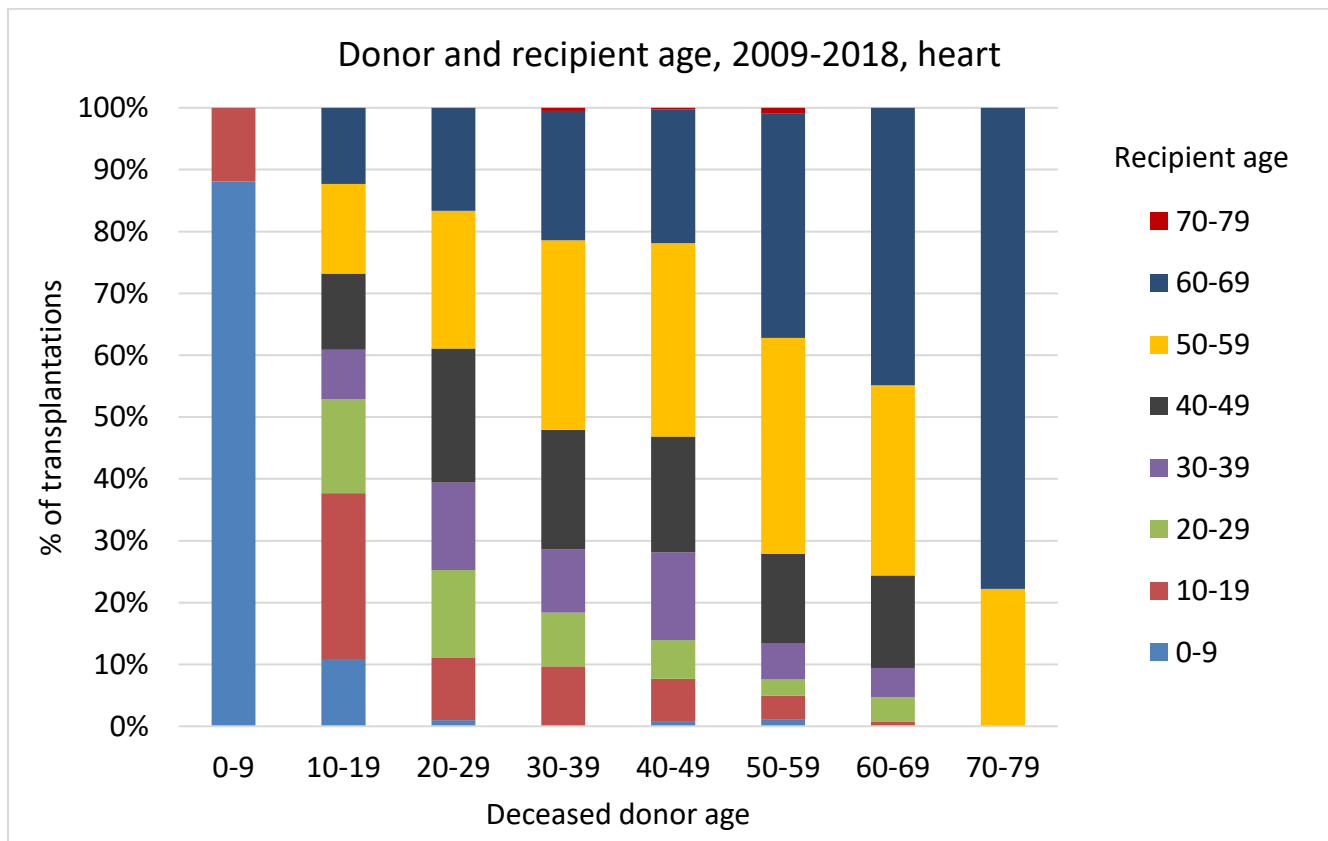
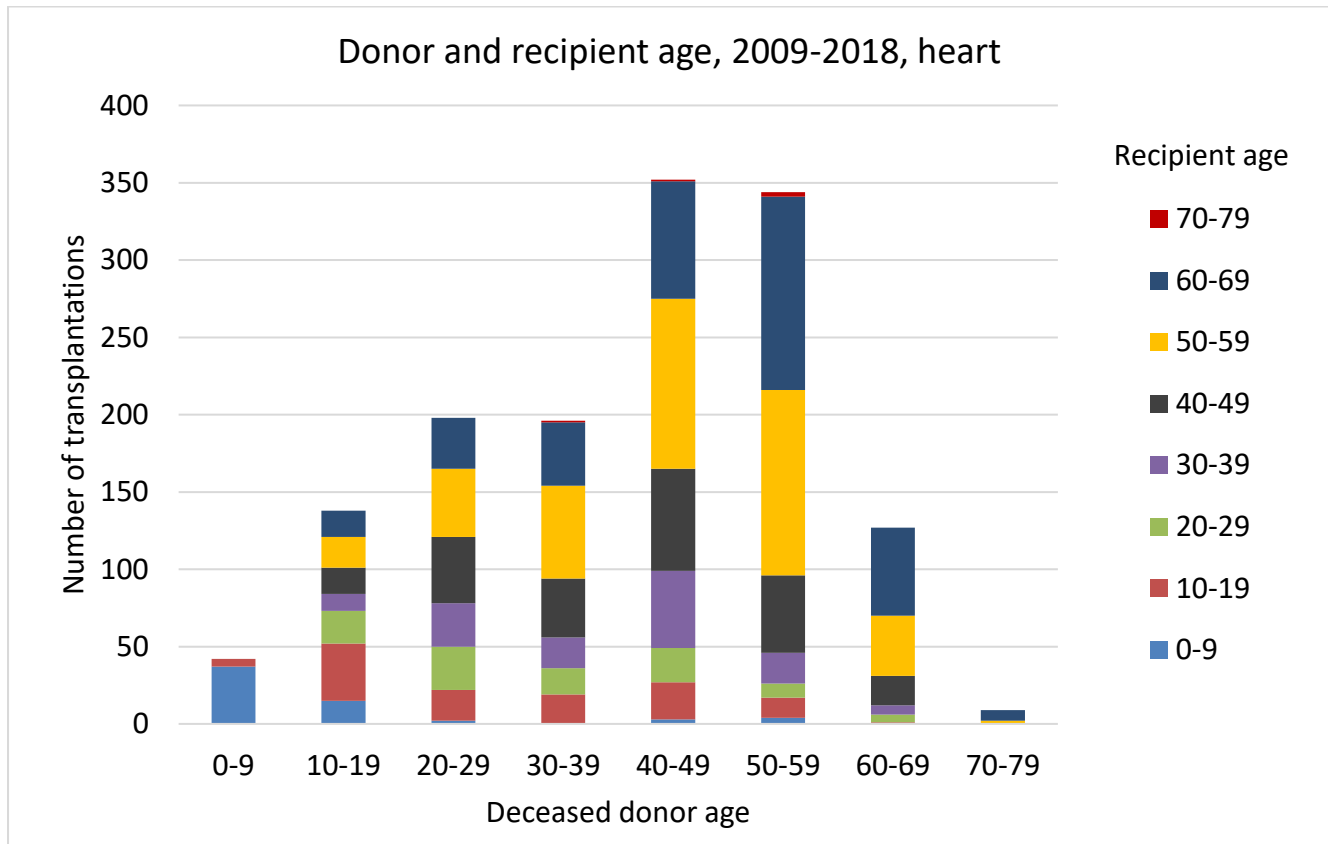
Year	Denmark	Finland	Norway	Sweden	Scandiatransplant
2009	4,9	2,4	5,6	5,9	4,8
2010	3,9	4,1	6,3	6,0	5,1
2011	5,2	3,3	5,9	5,4	5,0
2012	4,6	4,1	6,4	4,8	4,9
2013	3,0	3,9	7,3	5,7	5,0
2014	5,6	4,4	6,6	6,9	6,0
2015	4,7	4,9	7,1	6,4	5,8
2016	5,0	5,6	4,0	6,4	5,4
2017	4,3	4,7	6,1	6,1	5,1
2018	4,4	8,5	5,5	6,5	5,9



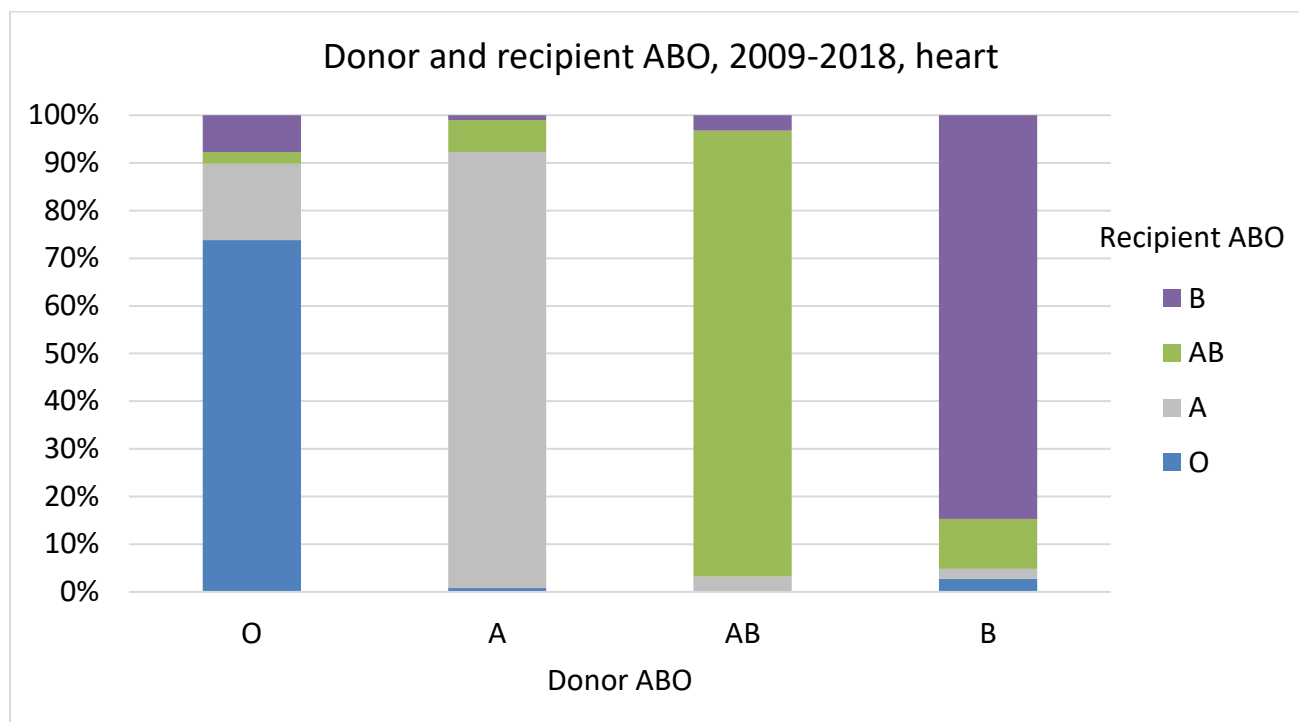
³⁶ pmp: per million population

³⁷ Estonian deceased donor heart transplantations are performed in Helsinki.

Deceased donor and recipient age

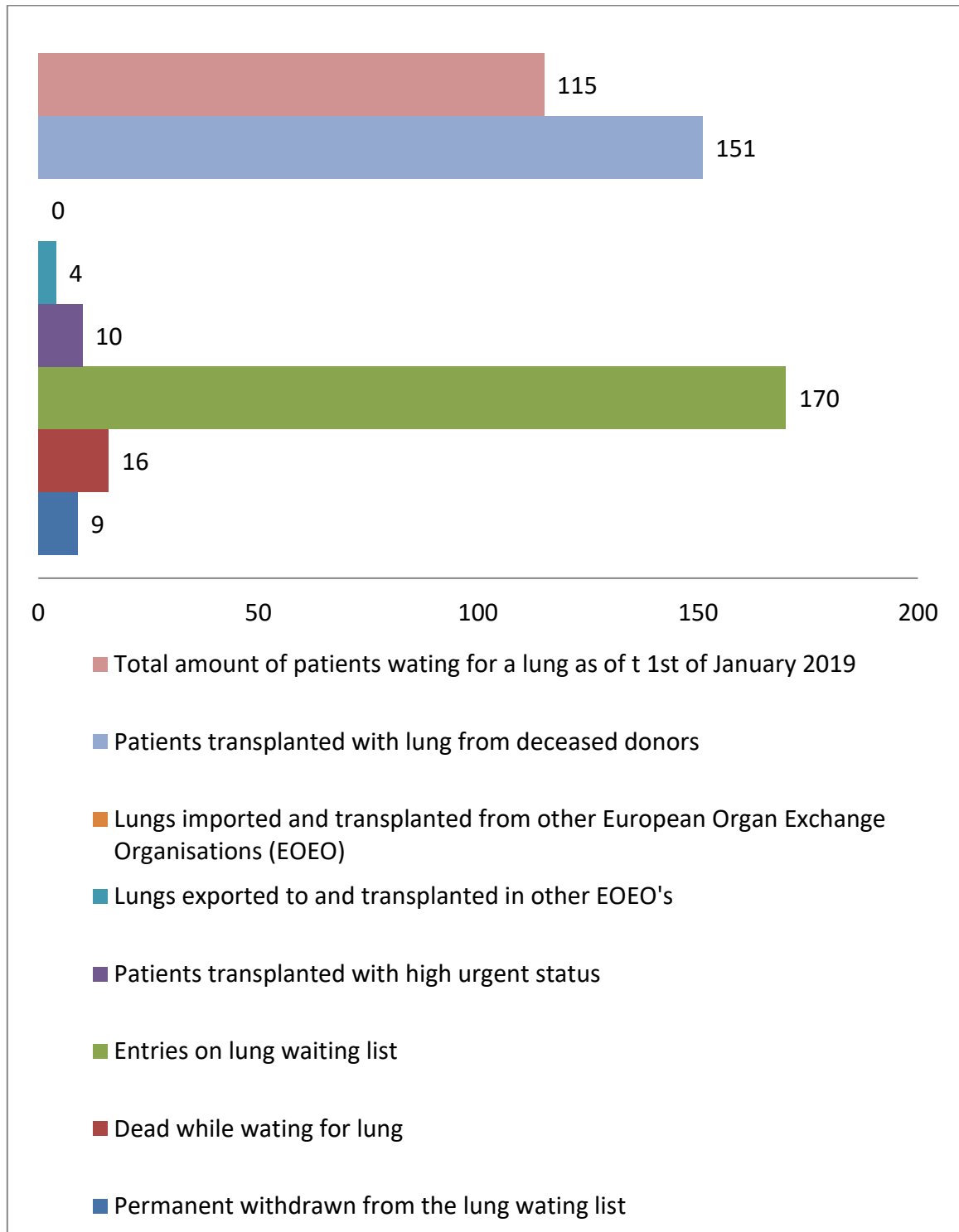


Deceased donor and recipient ABO, distribution in %



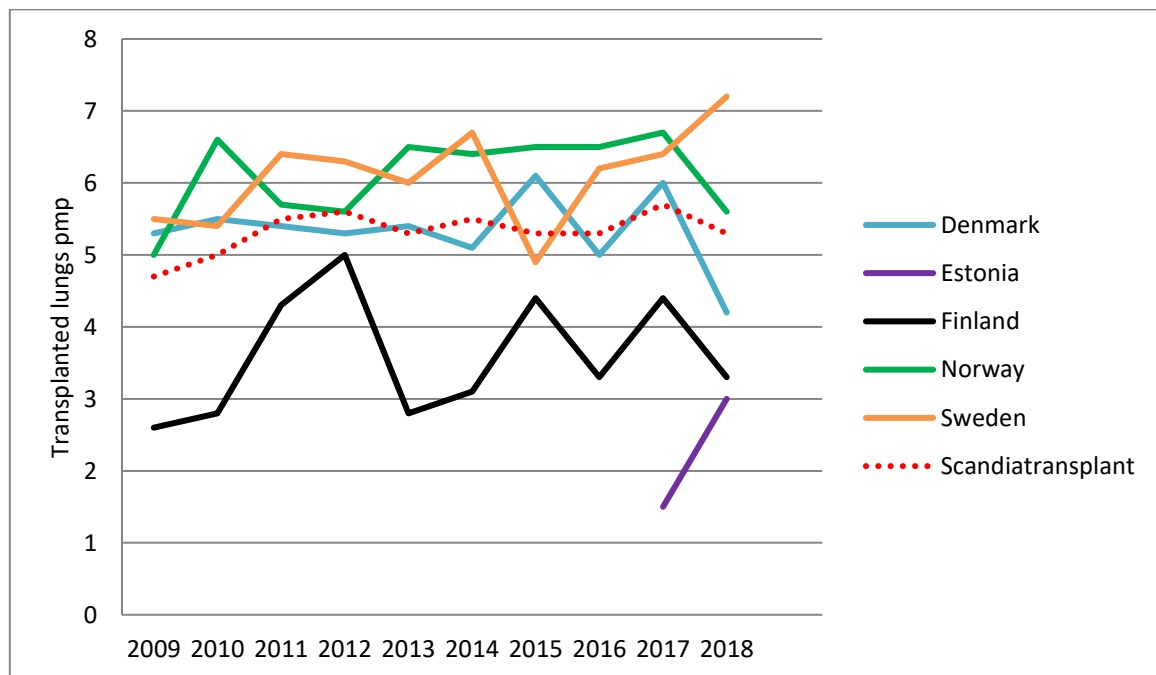
Donor → ↓Recipient	O	A	AB	B
O	32,7	0,4	0,0	0,3
A	7,1	39,5	0,1	0,2
AB	1,1	2,9	2,1	1,1
B	3,4	0,4	0,1	8,7

Lungs 2018



Transplanted lungs (Double, single and heart-lung) pmp³⁸ per year

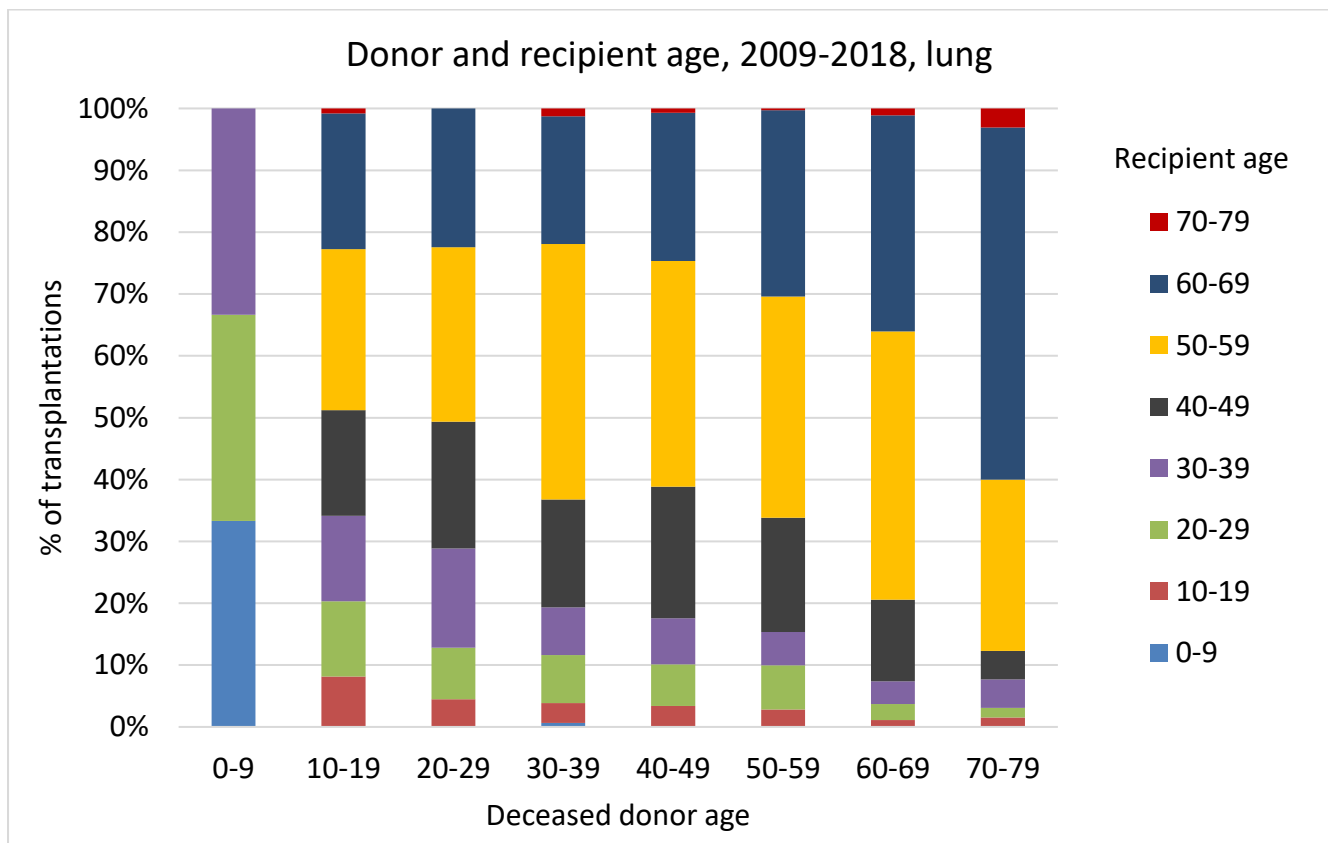
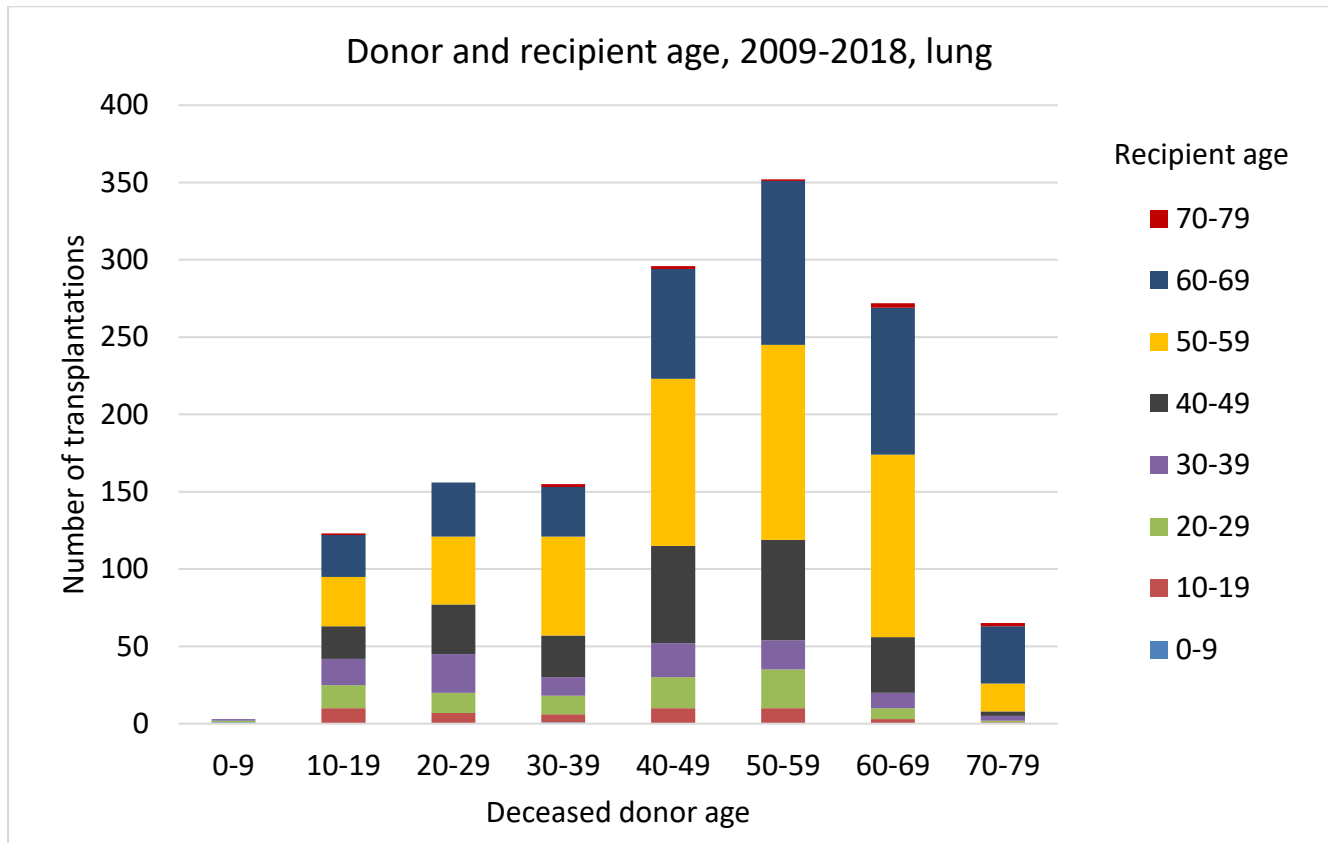
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2009	5,3		2,6	5,0	5,5	4,7
2010	5,5		2,8	6,6	5,4	5,0
2011	5,4		4,3	5,7	6,4	5,5
2012	5,3		5,0	5,6	6,3	5,6
2013	5,4		2,8	6,5	6,0	5,3
2014	5,1		3,1	6,4	6,7	5,5
2015	6,1		4,4	6,5	4,9	5,3
2016	5,0		3,3	6,5	6,2	5,3
2017	6,0	1,5 ³⁹	4,4	6,7	6,4	5,7
2018	4,2	3,0	3,3	5,6	7,2	5,3



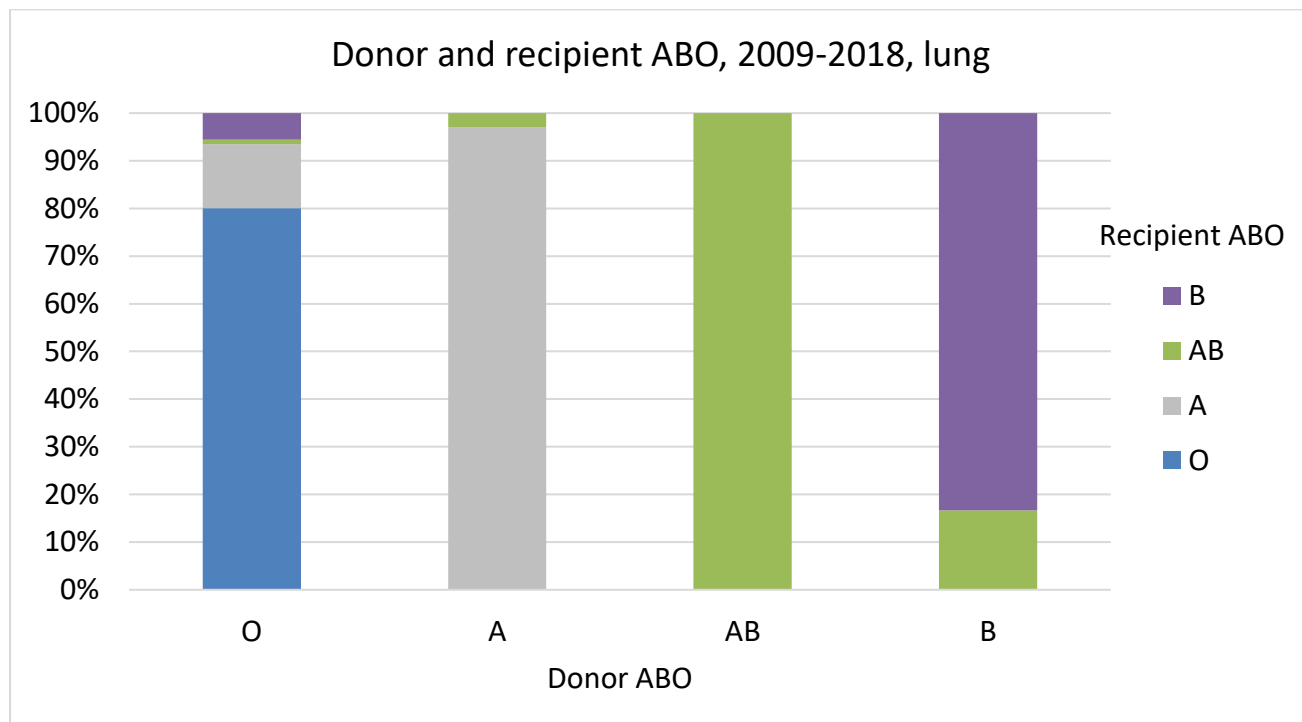
³⁸ pmp: per million population

³⁹ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Deceased donor and recipient age

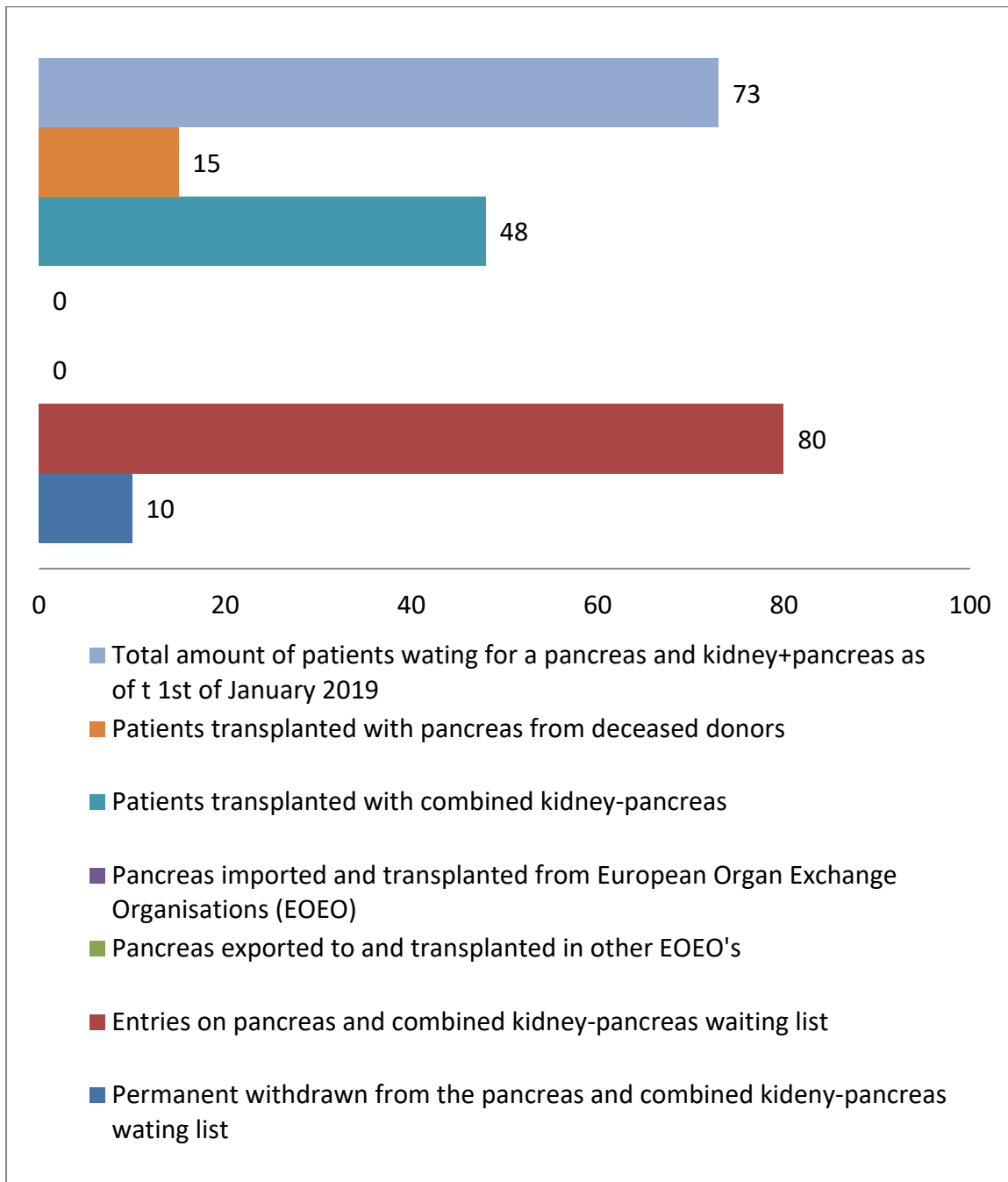


Deceased donor and recipient ABO, distribution in %



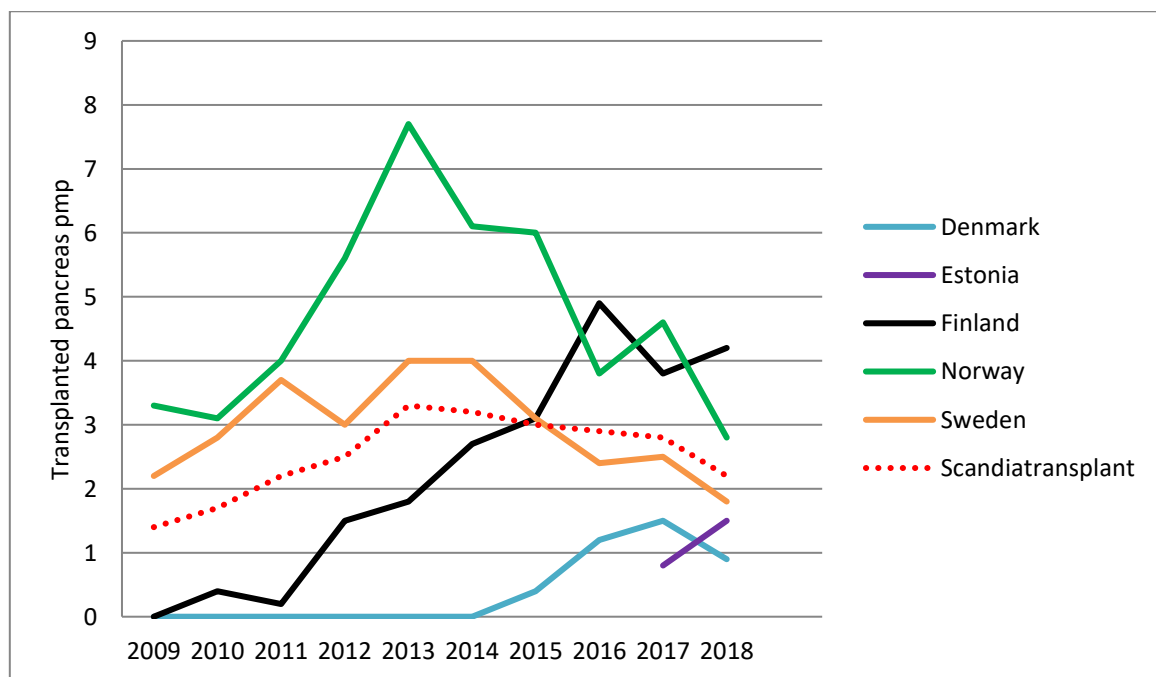
Donor → ↓Recipient	O	A	AB	B
O	34,5	0,1	0,0	0,0
A	5,8	42,9	0,0	0,0
AB	0,4	1,3	2,5	1,7
B	2,4	0,0	0,0	8,4

Pancreas 2018



Transplanted pancreas (incl. combined kidney-pancreas) pmp⁴⁰ per year

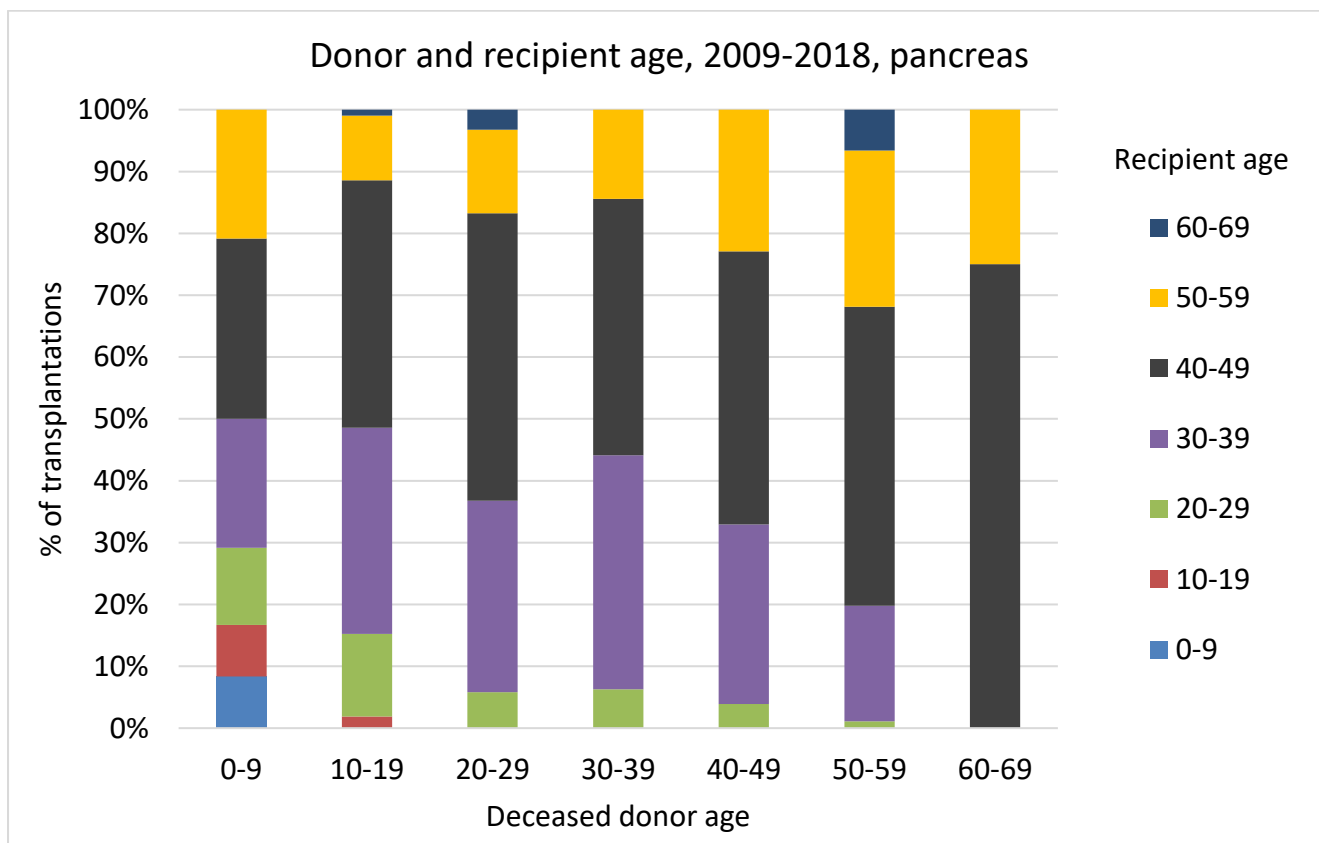
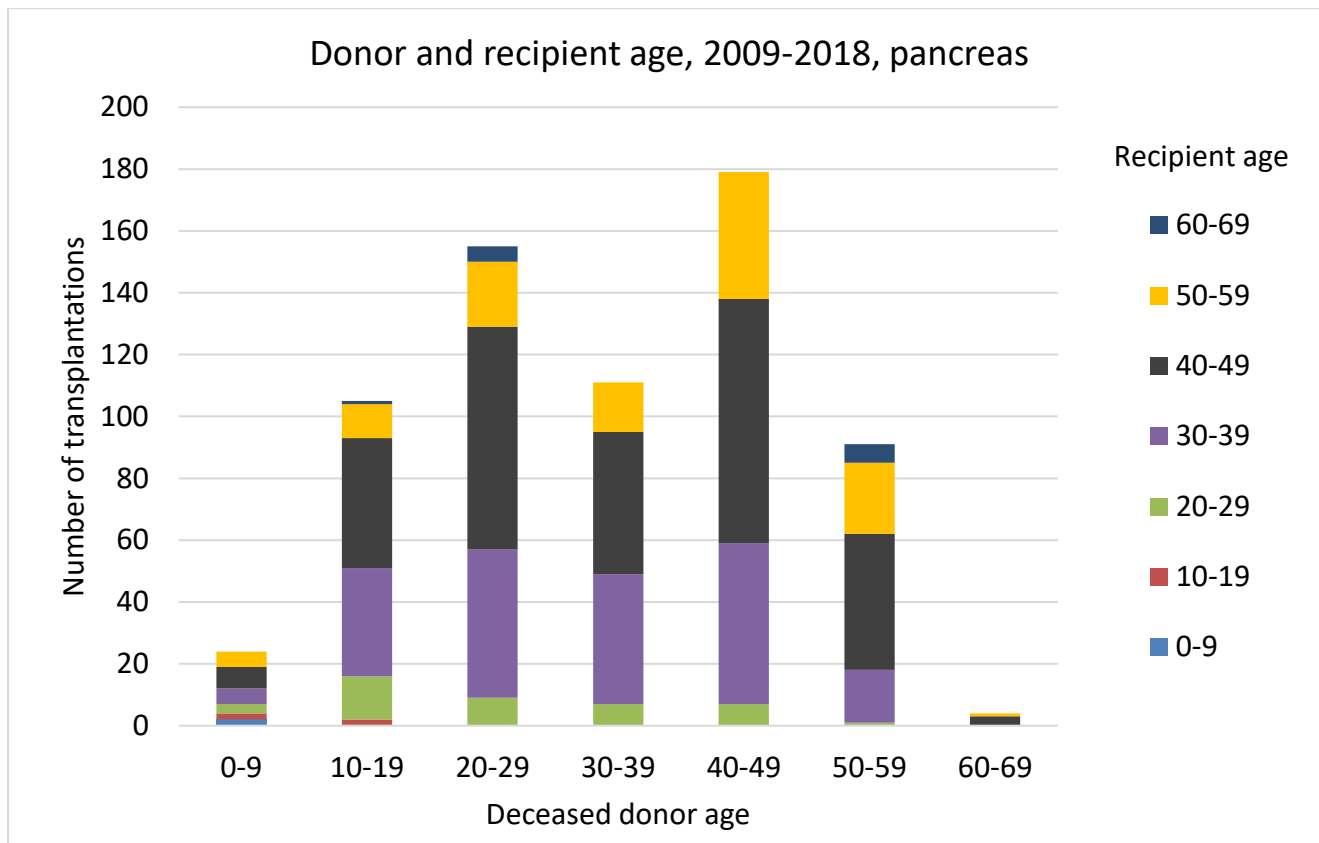
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2009	0		0	3,3	2,2	1,4
2010	0		0,4	3,1	2,8	1,7
2011	0		0,2	4,0	3,7	2,2
2012	0		1,5	5,6	3,0	2,5
2013	0		1,8	7,7	4,0	3,3
2014	0		2,7	6,1	4,0	3,2
2015	0,4		3,1	6,0	3,1	3,0
2016	1,2		4,9	3,8	2,4	2,9
2017	1,5	0,8 ⁴¹	3,8	4,6	2,5	2,8
2018	0,9	1,5	4,2	2,8	1,8	2,2



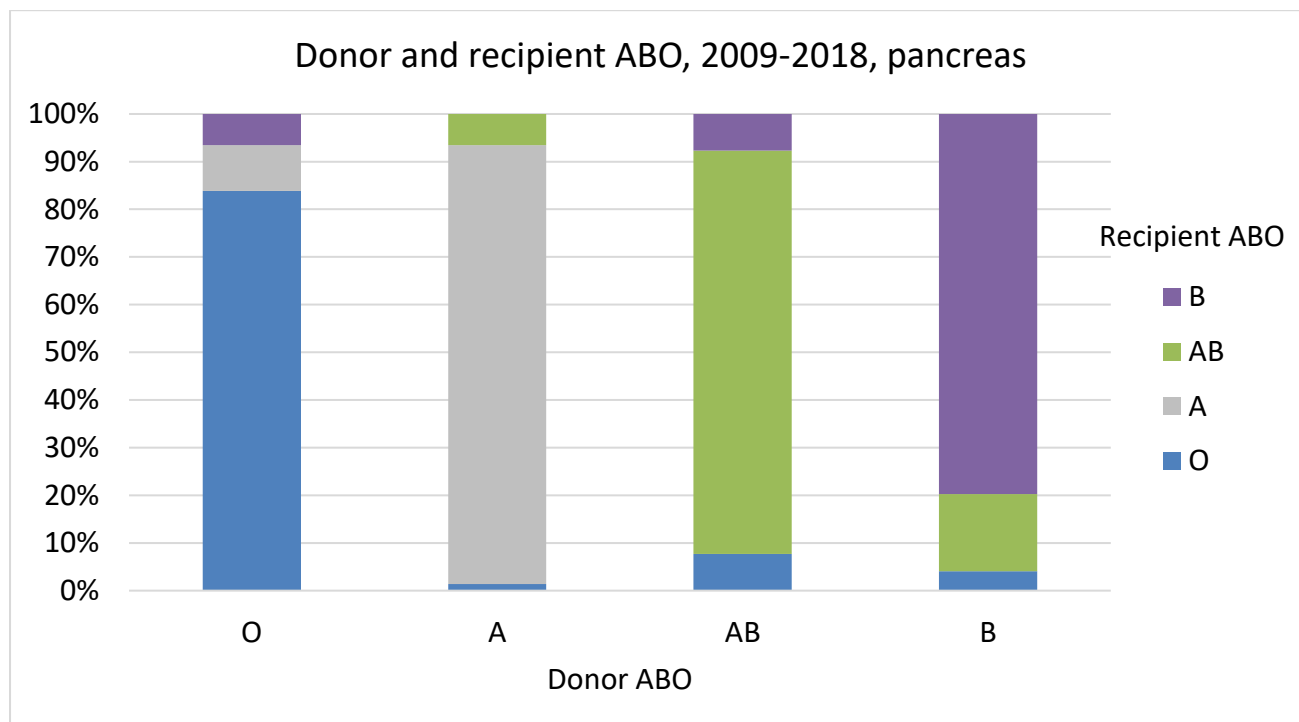
⁴⁰ pmp: per million population

⁴¹ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Deceased donor and recipient age



Deceased donor and recipient ABO, distribution in %



Donor → ↓Recipient	O	A	AB	B
O	36,5	0,6	0,1	0,4
A	4,2	40,1	0,0	0,0
AB	0,0	2,8	1,6	1,8
B	2,8	0,0	0,1	8,8

On behalf of ScandiTransplant

Bo-Göran Ericzon
(Chairman)

Kaj Anker Jørgensen
(Medical Director)

Ilse D. Weinreich
(Clinical Data Manager)