

Annual report 2022



Scandiatransplant office

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Introduction

The post Covid year 2022 did not bring the transplantation activity quite back to the level the years just before Covid, but for Scandiatransplant as a whole, the number of deceased donors is close to the same. There are, however, quite big differences from country to country. The Covid period taught us the advantages and certainly also the disadvantages of working online and from home. The organization is finding a new balance in the way we work.

Organisation

Scandiatransplant 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 2022 the Council had 35 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.

The Board members have been Johan Nilsson (Sweden), Jóhann Jónsson (Iceland), Allan Rasmussen (Denmark), Morten Hagness (Norway), Arno Nordin (Finland), Virge Pall (Estonia) and Bo-Göran Ericzon was the chairman. Kaj Anker Jørgensen (Medical Director) participated in all Board meetings as observer. At the Council meeting in Reykjavik in August, Allan Rasmussen was elected chairman after Bo-Göran Ericzon had served for 6 years. Arno Nordin had also served for 6 years and was replaced by Marko Lempinen as Board member from Finland. Michael Perch replaced Allan Rasmussen as Board member from Denmark. 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. The IT-system also has follow-up registries for recipients and living donors. 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. The office also complies with demands from owners, researchers, authorities and the public, and participate in meetings with local health competent authorities and the EU-commission.

At the end of 2022, the staff consisted of eight people. Working full time are one Office and Clinical Data Manager, one Clinical Data Manager and four programmers. The Medical Director and the secretary are working part-time. The total expenses during the year (6 mill. DKK ~ 800.000 EUR) were within the budget. 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 2022

The Working Group formed to investigate the membership possibilities for the transplant hospitals in Latvia and Lithuania finalized its report. The group reported only on the transplant center in Latvia, Riga, because it was reported from Lithuania, that they were not ready to engage in the work. The report resulted in the following decision by the Council of Representatives:

“The Council finds that Pauls Stradiņš Clinical University Hospital, Riga is currently not ready to be included as a full or associated member of Scandiatransplant. However, the Board will assist Riga in the further development, and the Board will define a specific plan for this development. The aim is to develop Riga to become an associate, then a full member of Scandiatransplant. Criteria for progression will be defined by the Board.”

The main activities in Scandiatransplant have returned to the level before the Covid pandemic. While several meetings have been “face to face”, quite a number have been virtually or “hybrid” meetings. We have learned to keep on doing some of the work as “home work”. The main part of the work done at the Office is customizing the IT-system to the users’ wishes and optimizing security and functionality of the system. More comprehensive work has been done in Scandiatransplant living kidney donor Exchange Program (STEP) and new functionalities to make the IT-system a useful tool in the donation process. The Office has also supported resources to education and guidance in relation to the usage of the IT-system. In the continuing work for data security, an external company was hired to do vulnerability tests of the Scandiatransplant IT-system. The result was satisfactory and above average for comparable IT-systems.

Transplantation and organ procurement activity

In this report we have as usual chosen to present some key figures and compare some of them with data from 2013 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. This year we also present data related to STEP, DBD and cDCD donors, waiting time and 3-year-outcome.

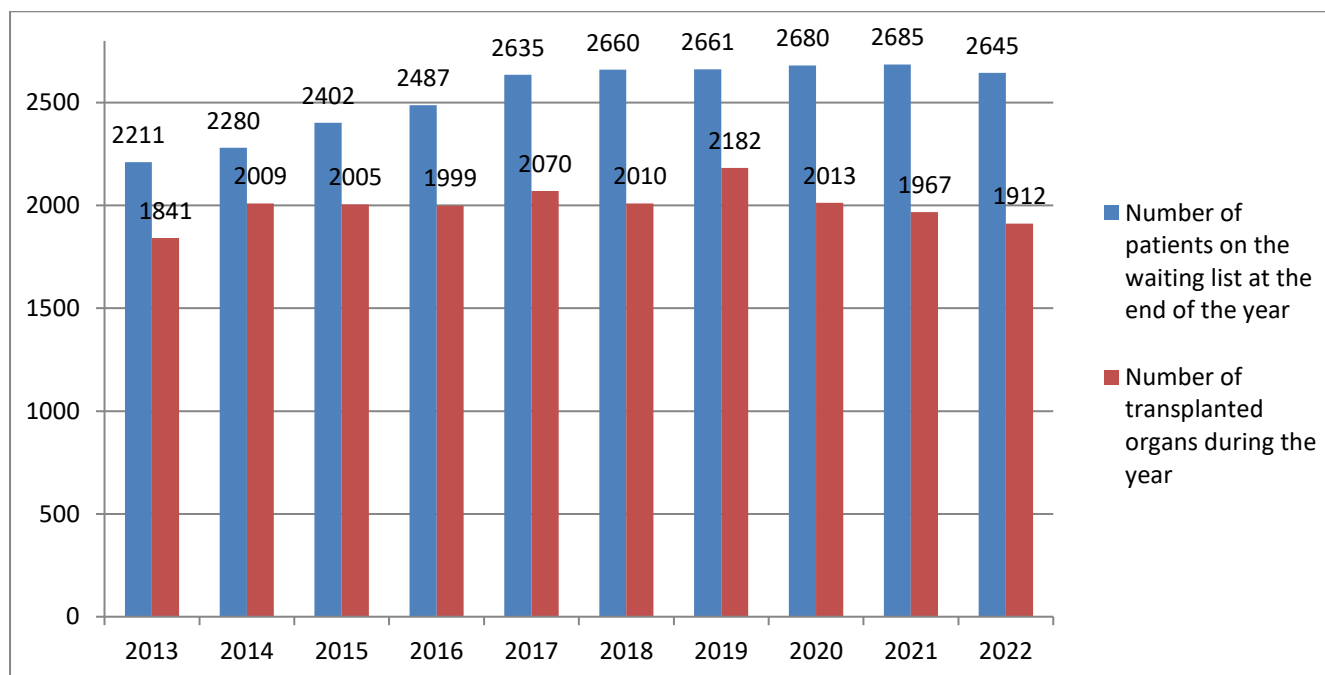
Further presentation of Scandiatransplant data is available in the annual slideshow:

[Scandiatransplant annual slideshow 2022](#)

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

Year	Number of waiting patients ¹	Number of transplanted organs ²
2013	2211	1841
2014	2280	2009
2015	2402	2005
2016	2487	1999
2017	2635	2070
2018	2660	2010
2019	2661	2182
2020	2680	2013
2021	2685	1967
2022	2645	1912

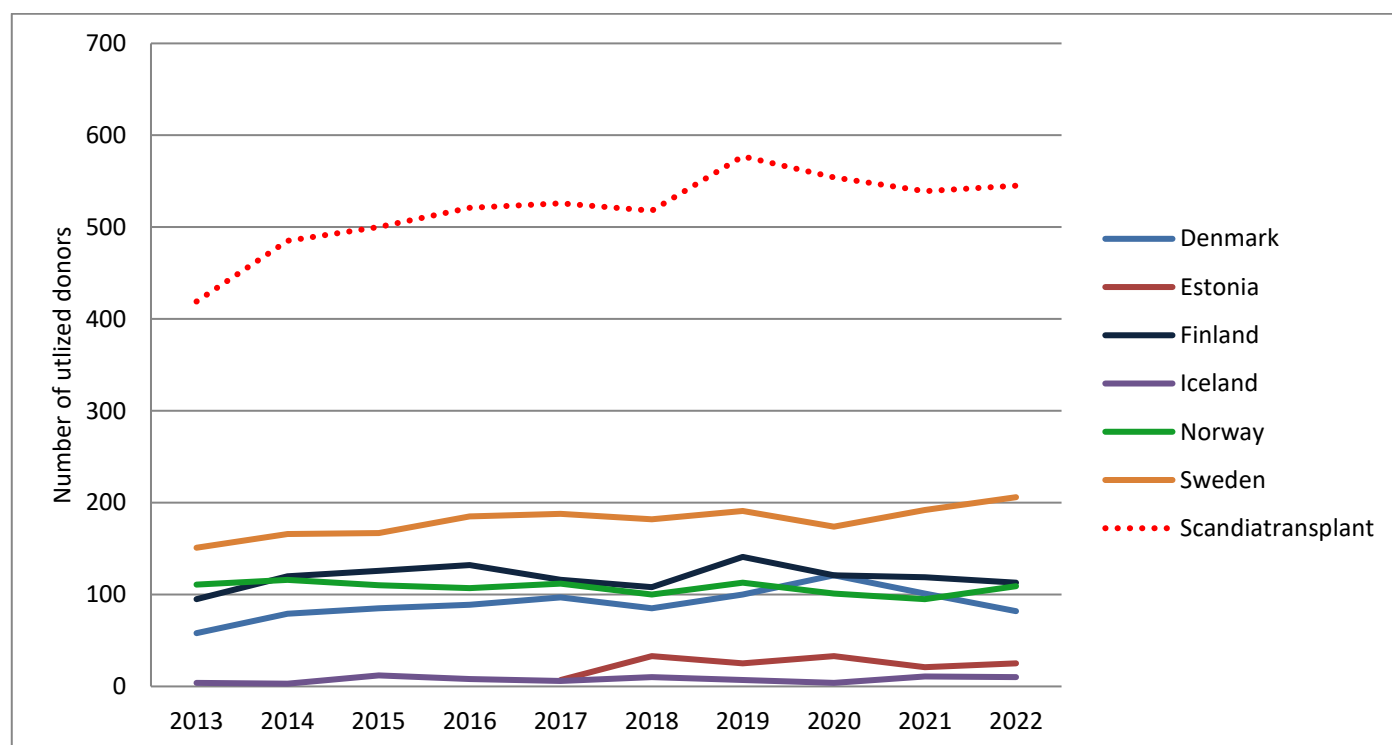


¹ Including patients (active/temp. on hold) waiting for kidney, liver, liver-kidney, heart, heart-lung, single lung, double lung, kidney-pancreas, pancreas and pancreatic islets

² Including kidney, liver, heart, lung, pancreas and pancreatic islet

Utilized deceased donors³ in numbers

Year	Denmark	Estonia ⁴	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013	58		95	4	111	151	419
2014	79		120	3	116	166	484
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
2019	100	25	141	7	113	191	577
2020	121	33	121	4	101	174	554
2021	101	21	119	11	95	192	539
2022	82	25	113	10	109	206	545

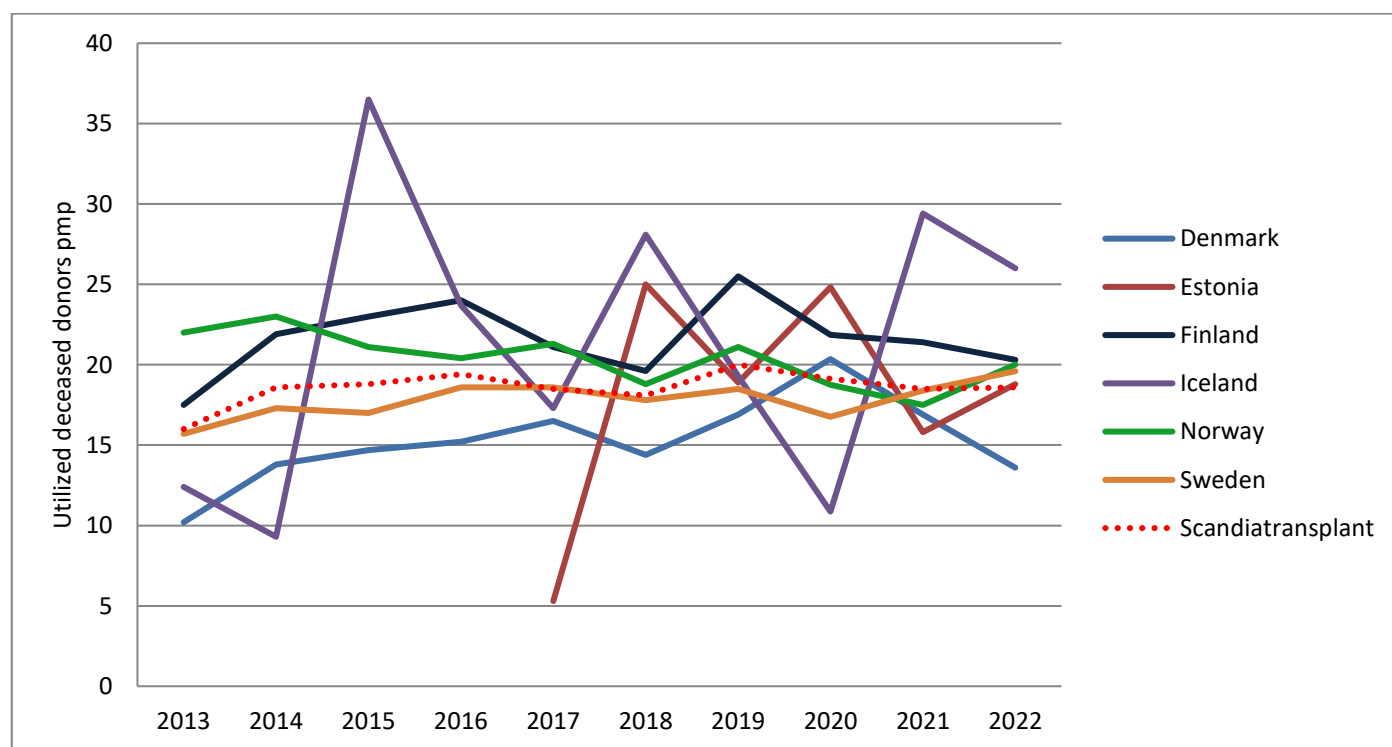


³ Utilized donor: An actual donor from whom at least one solid organ was transplanted.
http://www.scandiatransplant.org/data/Deceaseddonordefv_3.pdf

⁴ Figures included from Estonia year 2017 starts from October 1st 2017

Utilized deceased donors pmp⁵

Year	Denmark	Estonia ⁶	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2019	16,9	18,9	25,5	19,3	21,1	18,5	20,0
2020	20,4	24,8	21,9	10,9	18,8	16,8	19,1
2021	16,9	15,8	21,4	29,4	17,5	18,4	18,5
2022	13,6	18,8	20,3	26,0	20,0	19,6	18,6



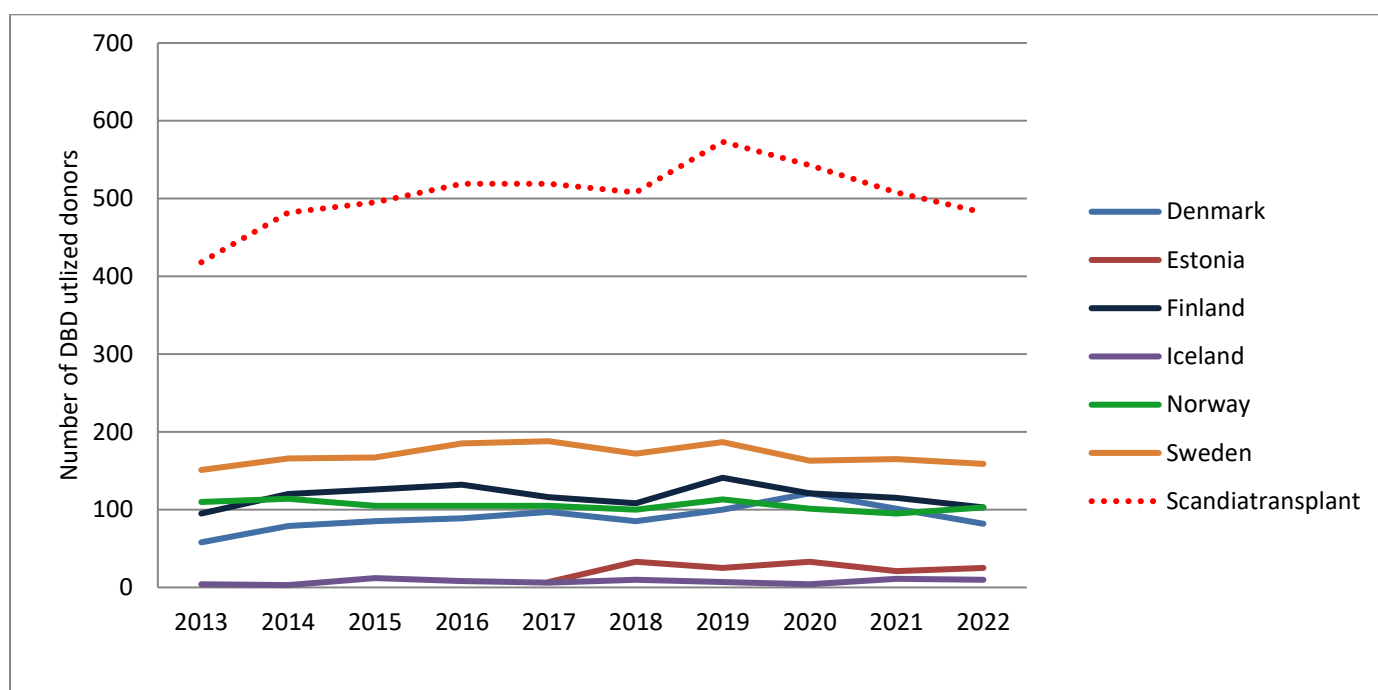
⁵ pmp: per million population

⁶ Figures included from Estonia year 2017 starts from October 1st 2017

Deceased donors in numbers divided into DBD and cDCD⁷

Utilized DBD donors⁸

Year	Denmark	Estonia ⁹	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013	58		95	4	110	151	418
2014	79		120	3	114	166	482
2015	85		126	12	105	167	495
2016	89		132	8	105	185	519
2017	97	7	116	6	105	188	519
2018	85	33	108	10	100	172	508
2019	100	25	141	7	113	187	573
2020	121	33	121	4	101	163	543
2021	101	21	115	11	95	165	508
2022	82	25	103	10	103	159	482



Actual DBD donors¹⁰

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2018	15	1	9	0	4	9	38
2019	2	0	4	0	2	7	15
2020	2	0	5	0	1	7	15
2021	4	0	3	0	1	5	13
2022	2	0	1	0	1	7	11

⁷ DBD: Donation after Brain Death, DCD: Donation after circulatory death

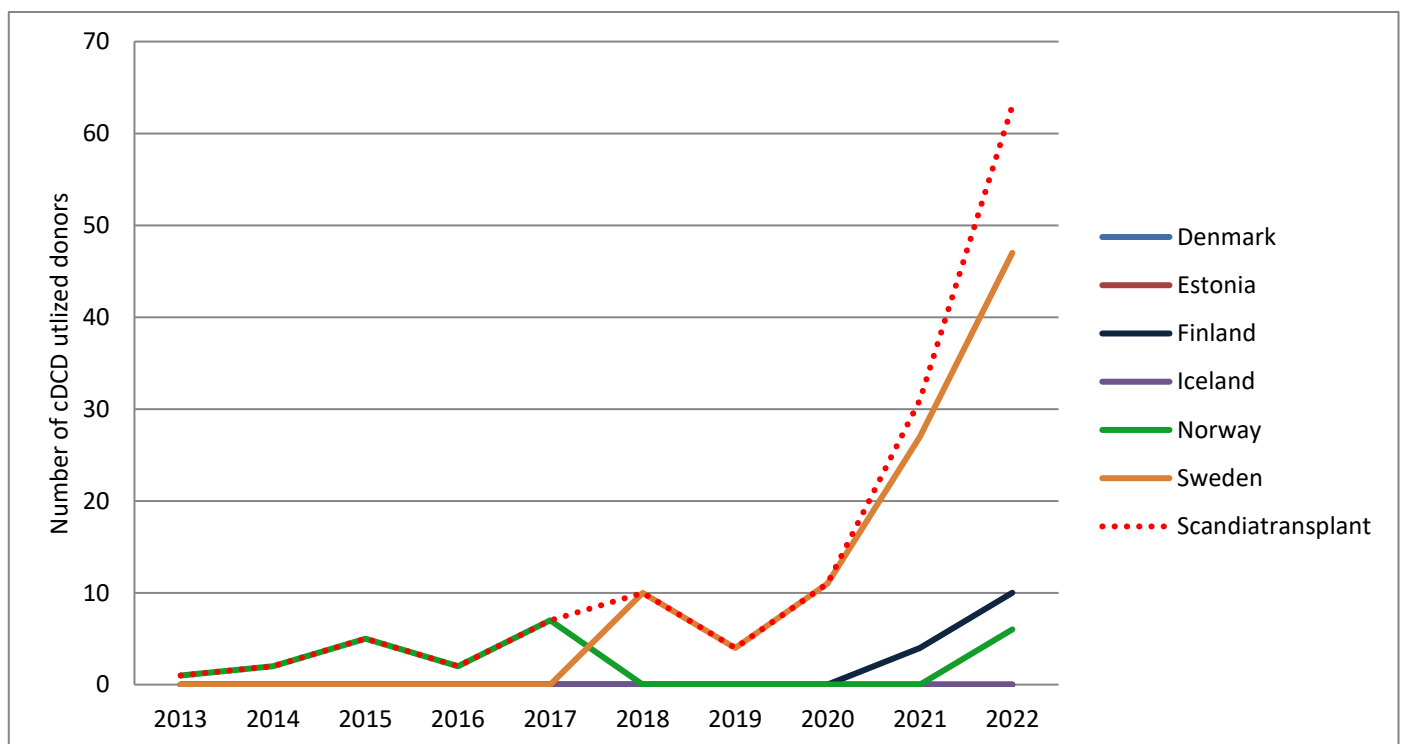
⁸ Utilized donor: An actual donor from whom at least one solid organ was transplanted

⁹ Figures included from Estonia year 2017 starts from October 1st 2017

¹⁰ Actual donor: Operative incision was made with the intent of organ recovery for the purpose of transplantation or at least one organ was retrieved for the purpose of transplantation. The table only includes actual donors and not utilized donors.

Utilized cDCD donors

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2012	0		0	0	0	0	0
2013	0		0	0	1	0	1
2014	0		0	0	2	0	2
2015	0		0	0	5	0	5
2016	0		0	0	2	0	2
2017	0	0	0	0	7	0	7
2018	0	0	0	0	0	10	10
2019	0	0	0	0	0	4	4
2020	0	0	0	0	0	11	11
2021	0	0	4	0	0	27	31
2022	0	0	10	0	6	47	63



Actual cDCD donors¹¹

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2017	0	0	0	0	1	1	2
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0
2022	0	0	0	0	1	0	1

'Stand down' cDCD donors¹²

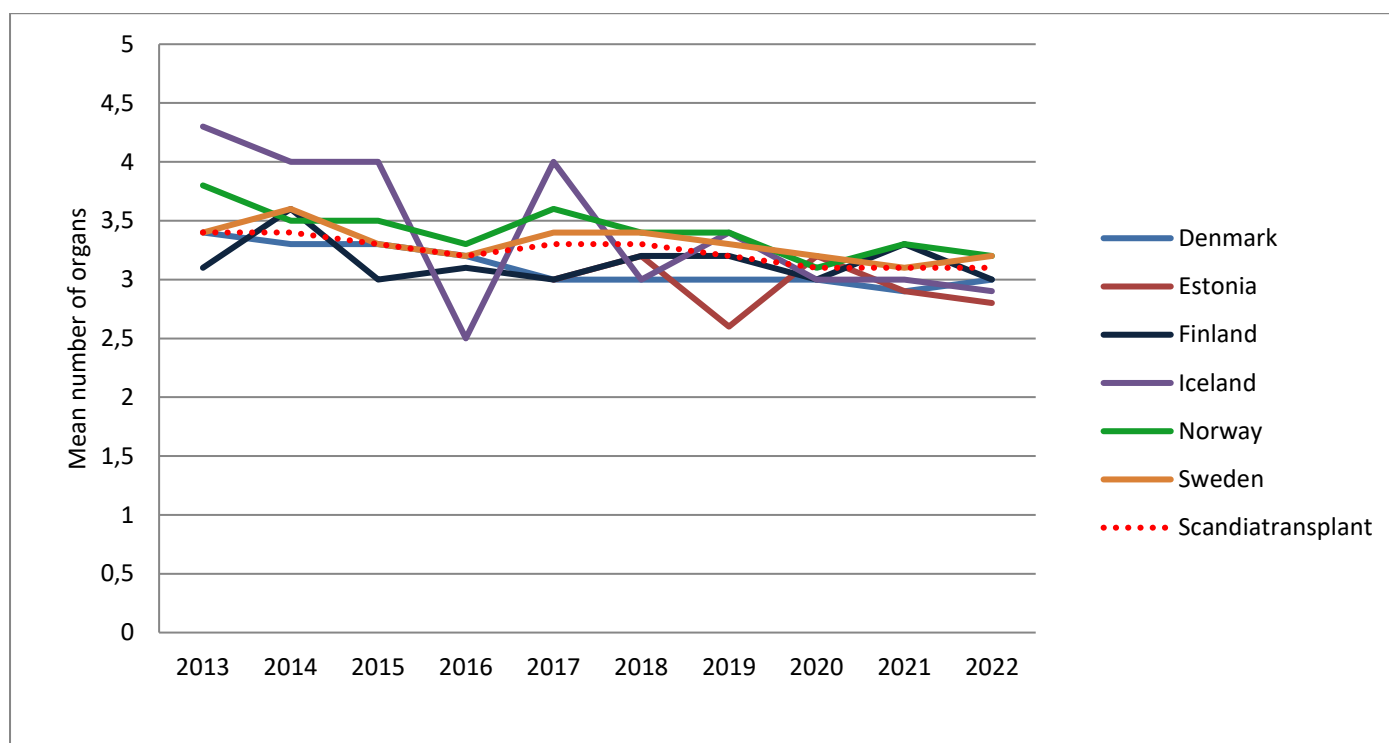
Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	1	1
2020	0	0	0	0	0	1	1
2021	0	0	1	0	0	3	4
2022	0	0	0	0	2	3	5

¹¹ Actual donor: Operative incision was made with the intent of organ recovery for the purpose of transplantation or at least one organ was retrieved for the purpose of transplantation. The table only includes actual donors and not utilized donors.

¹² Stand down: After treatment withdrawal all organ-specific stand-down times have exceeded and no organs were procured.

Mean number of organs per DBD donor used for transplantation¹³

Year	Denmark	Estonia ¹⁴	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013	3,4		3,1	4,3	3,8	3,4	3,4
2014	3,3		3,6	4,0	3,5	3,6	3,4
2015	3,3		3,0	4,0	3,5	3,3	3,3
2016	3,2		3,1	2,5	3,3	3,2	3,2
2017	3,0	3,0	3,0	4,0	3,6	3,4	3,3
2018	3,0	3,2	3,2	3,0	3,4	3,4	3,3
2019	3,0	2,6	3,2	3,4	3,4	3,3	3,2
2020	3,0	3,2	3,0	3,0	3,1	3,2	3,1
2021	2,9	2,9	3,3	3,0	3,3	3,1	3,1
2022	3,0	2,8	3,0	2,9	3,2	3,2	3,1



Mean number of organs per cDCD donor used for transplantation

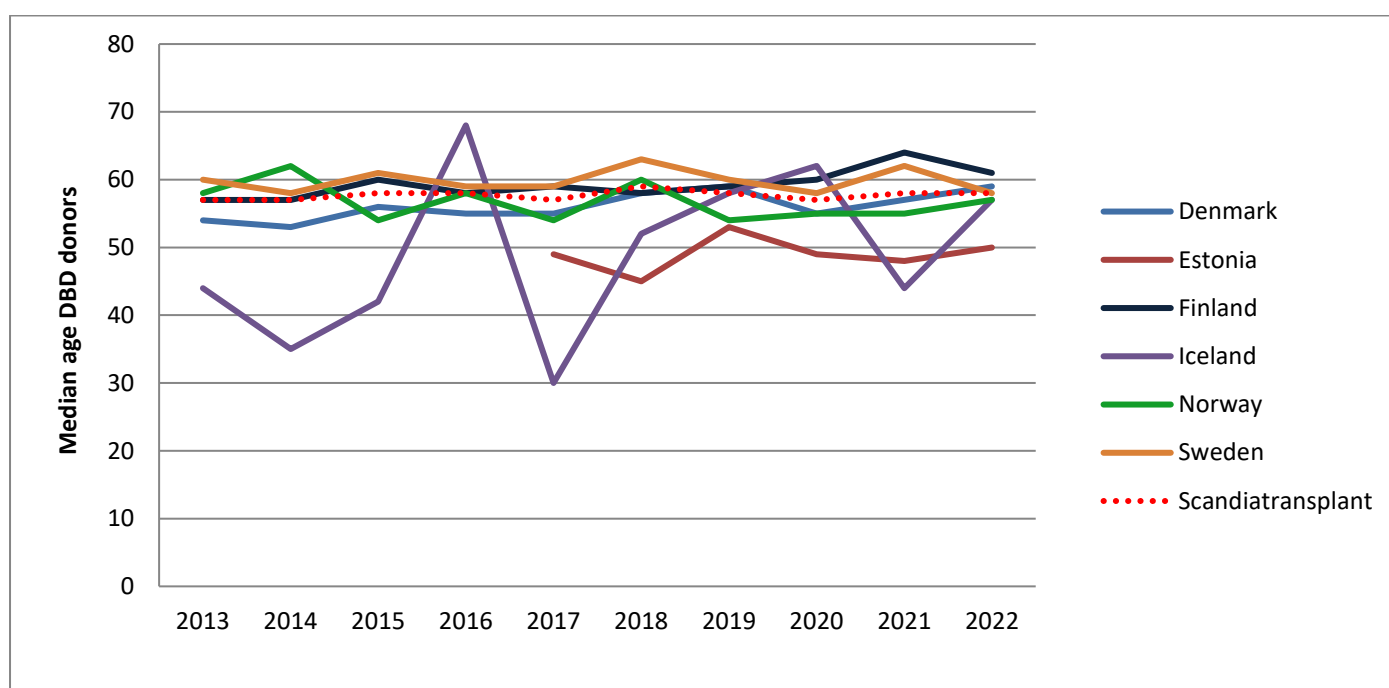
Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013					3,0		3,0
2014					2,0		2,0
2015					2,4		2,4
2016					3,0		3,0
2017					2,7		2,7
2018						1,8	1,8
2019						1,5	1,5
2020						2,1	2,1
2021			2,0			2,2	2,2
2022			2,0		2,3	2,2	2,2

¹³ Split liver transplantations from same donor is counted as one organ. Single lung transplantations from same donor is counted as one organ. Pancreatic islet transplanted is counted as one organ.

¹⁴ Figures included from Estonia year 2017 starts from October 1st 2017

Median age of DBD donors

Year	Denmark	Estonia ¹⁵	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013	54		57	44	58	60	57
2014	53		57	35	62	58	57
2015	56		60	42	54	61	58
2016	55		58	68	58	59	58
2017	55	49	59	30	54	59	57
2018	58	45	58	52	60	63	59
2019	59	53	59	58	54	60	58
2020	55	49	60	62	55	58	57
2021	57	48	64	44	55	62	58
2022	59	50	61	57	57	58	58



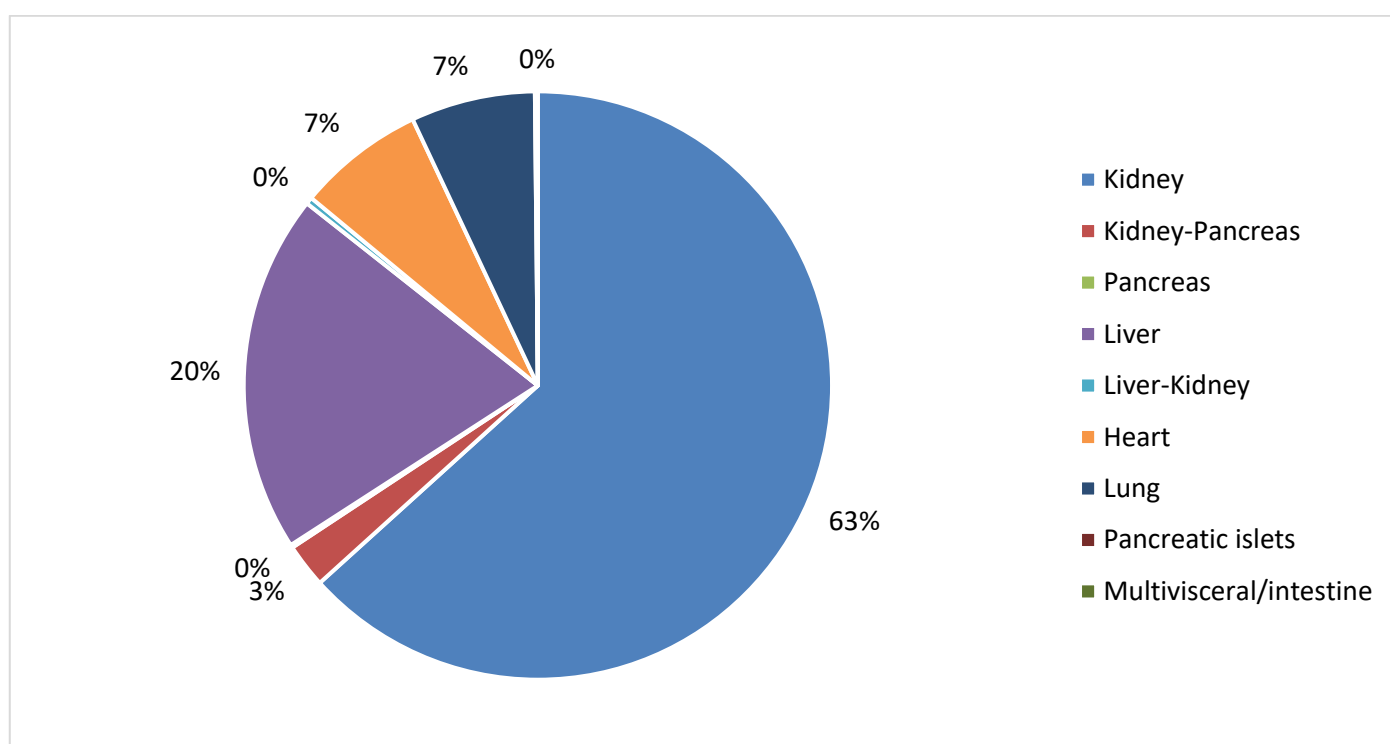
Median age of cDCD donors

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2013					81		81
2014					48		48
2015					47		47
2016					25		25
2017					52		52
2018						54	54
2019						64	64
2020						61	61
2021			57			62	62
2022			57		53	66	63

¹⁵ Figures included from Estonia year 2017 starts from October 1st 2017

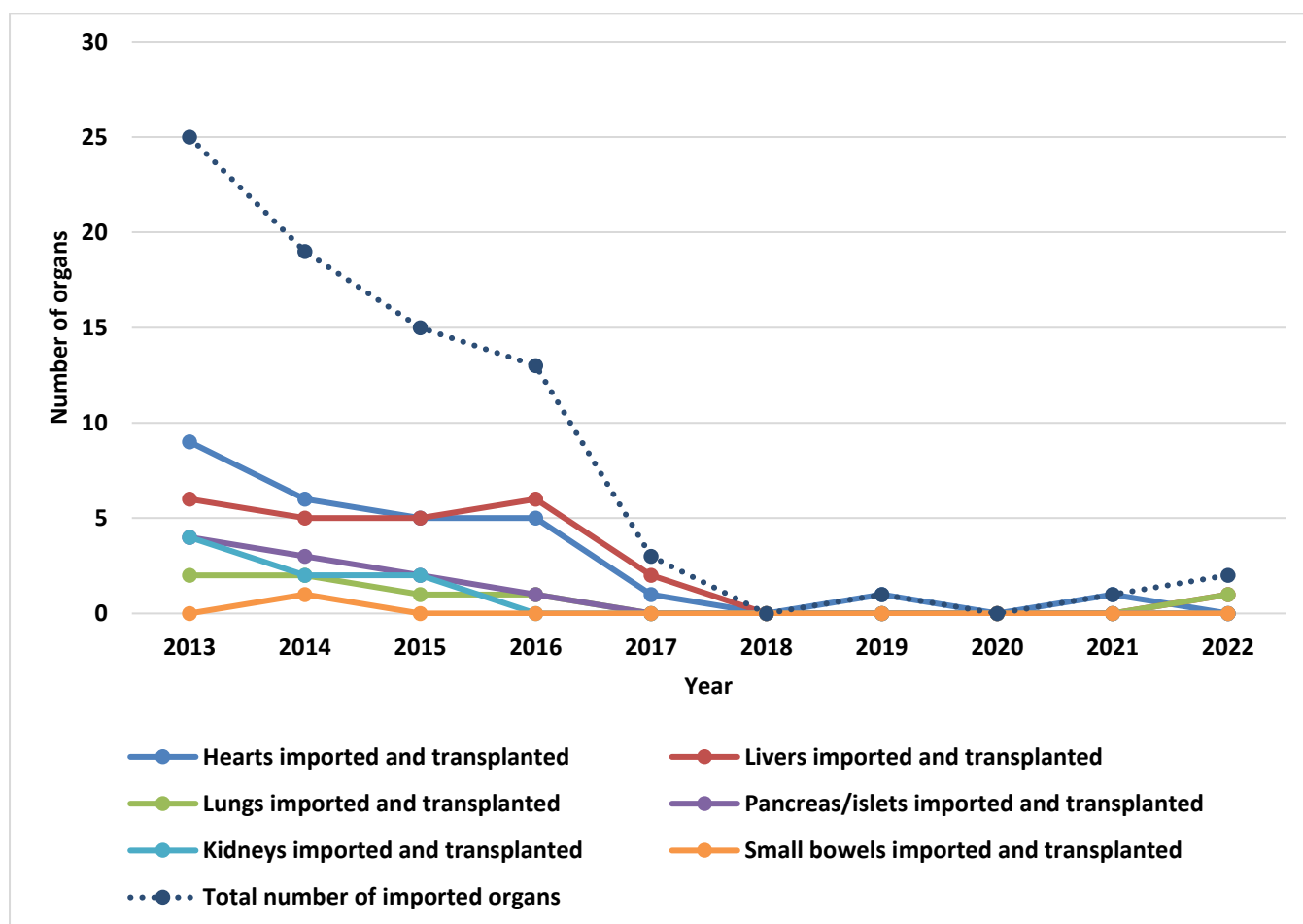
Transplanted patients in Scandiatriplant 2022

Organ(s) transplanted	Number of transplantations
Kidney	1176
Kidney-Pancreas	45
Pancreas	3
Liver	367
Liver-Kidney	7
Heart	130
Lung	127
Pancreatic islets	2
Multivisceral/intestine	1
Total transplanted patients	1858



Organs imported and exported between EOEO's¹⁶ and Scandiatransplant¹⁷

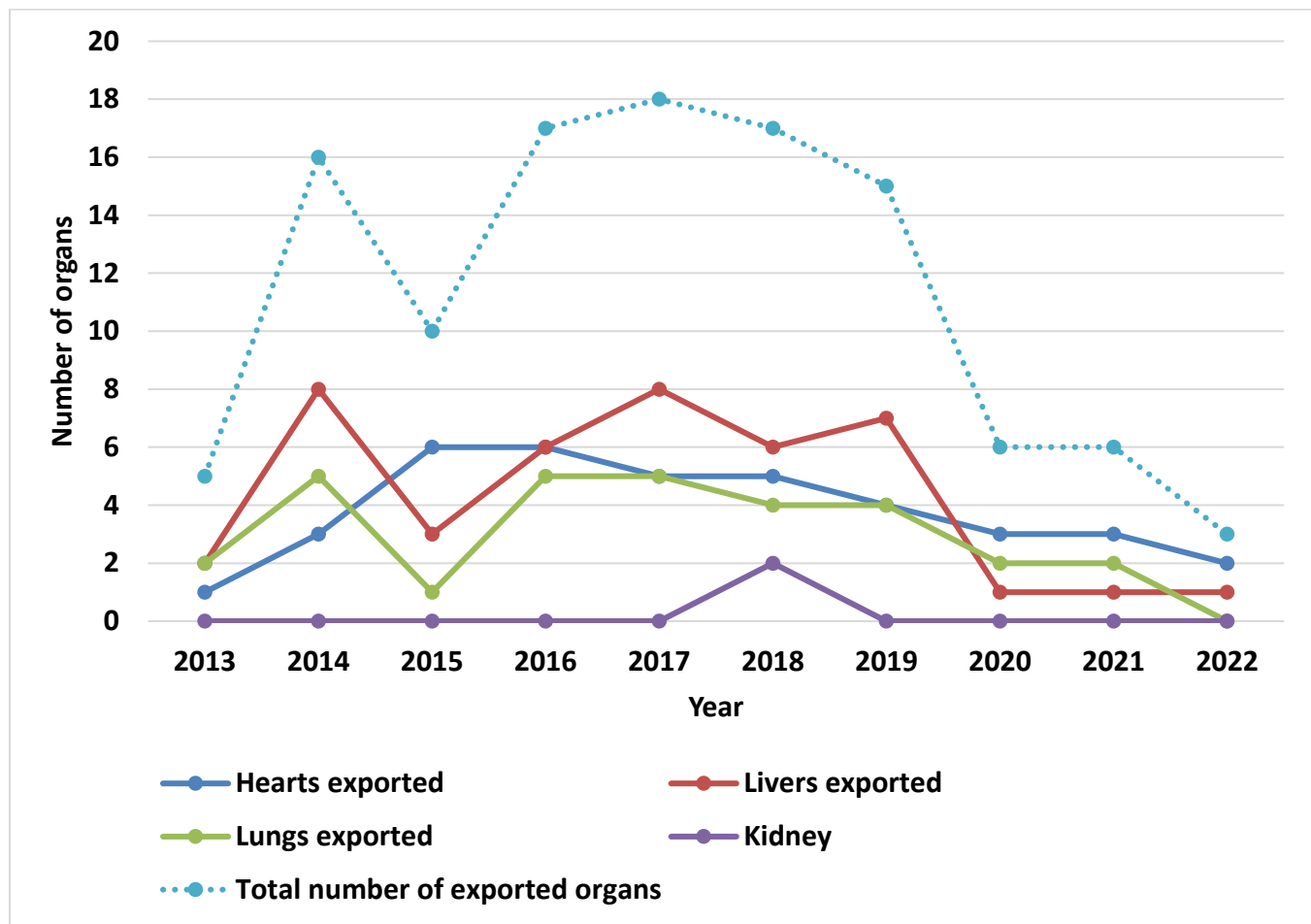
Organs imported from other EOEO's to Scandiatransplant



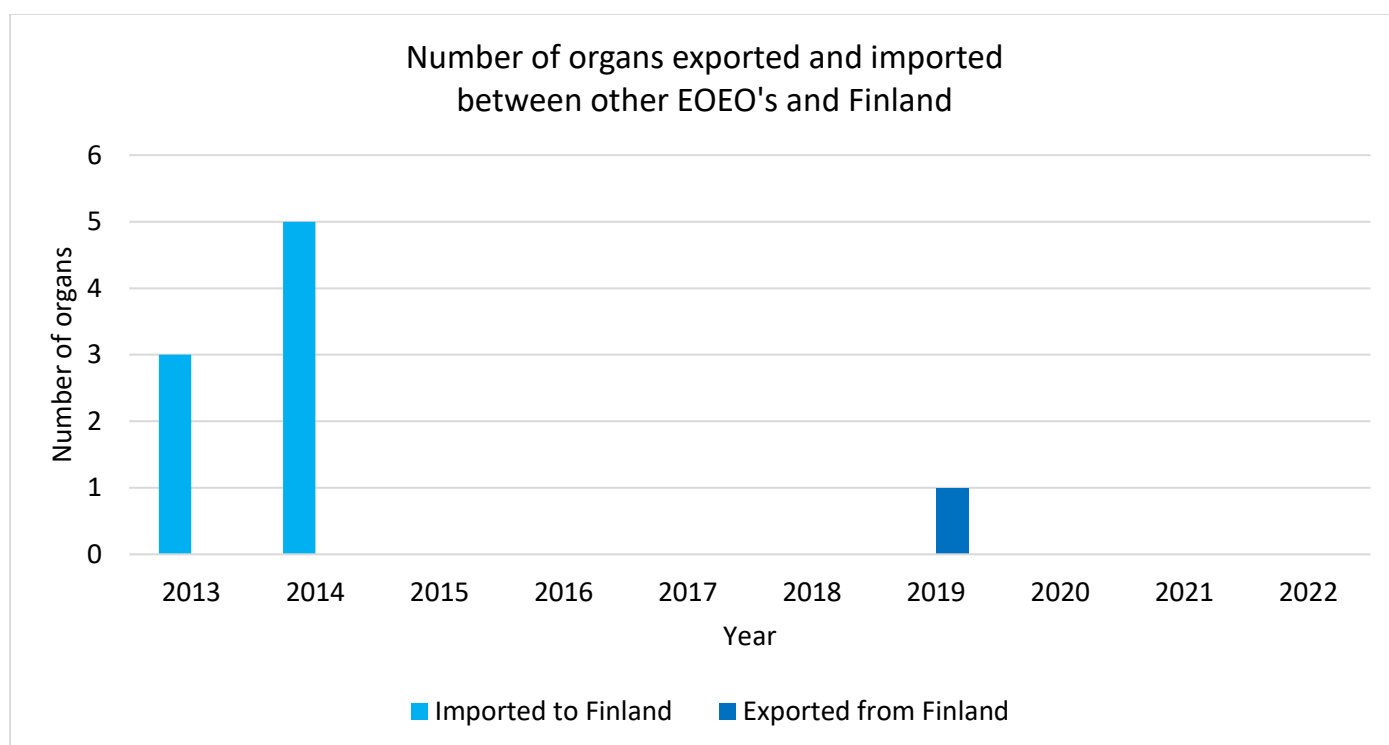
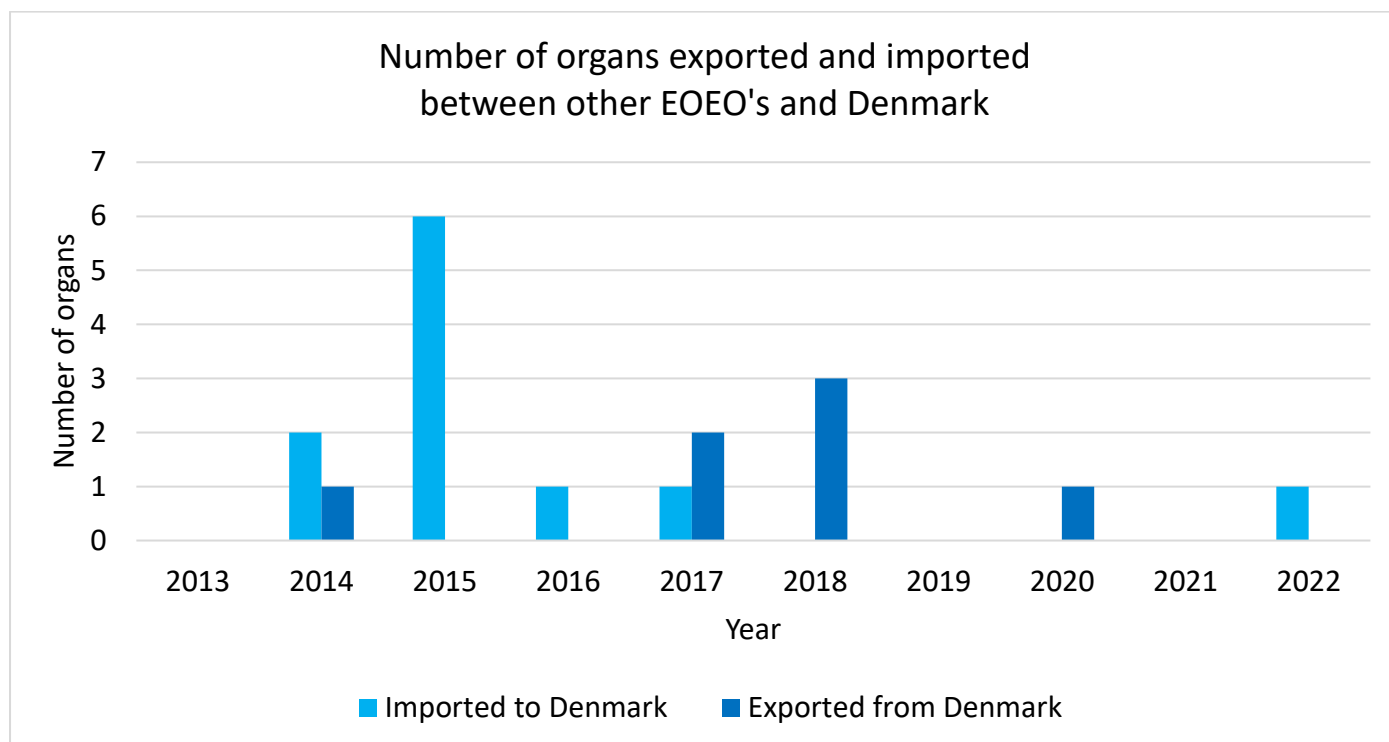
¹⁶ EOEO: European Organ Exchange Organisations (In 2019 a double lung was imported from Switzerland to Denmark, however optimization was not successful)

¹⁷ From October 1st 2017 Estonia is regarded as part of Scandiatransplant

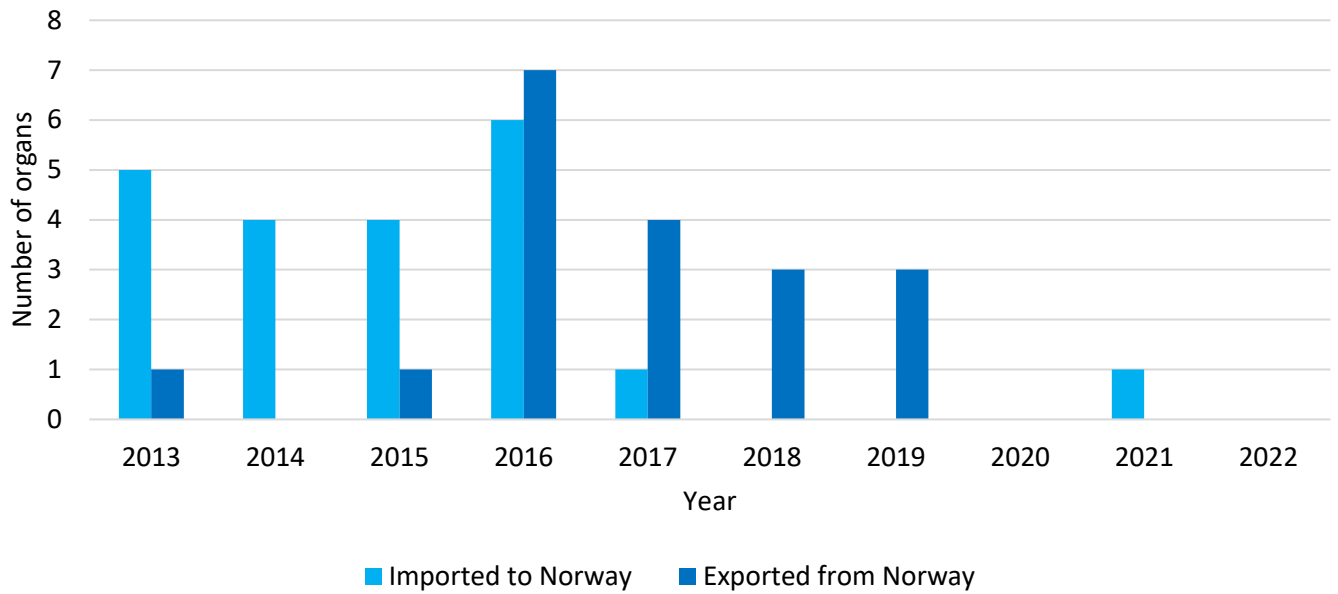
Organs exported to other EOEO's from Scandiatransplant



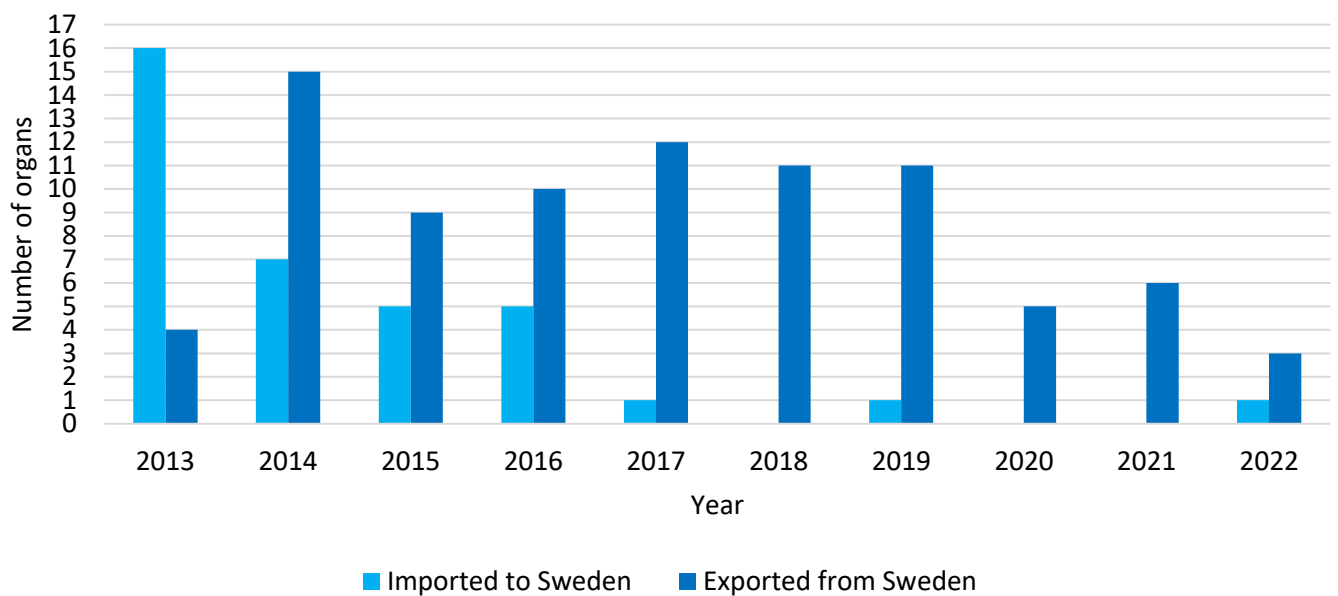
Organs exported and imported between Scandiatransplant countries and other EOEO's



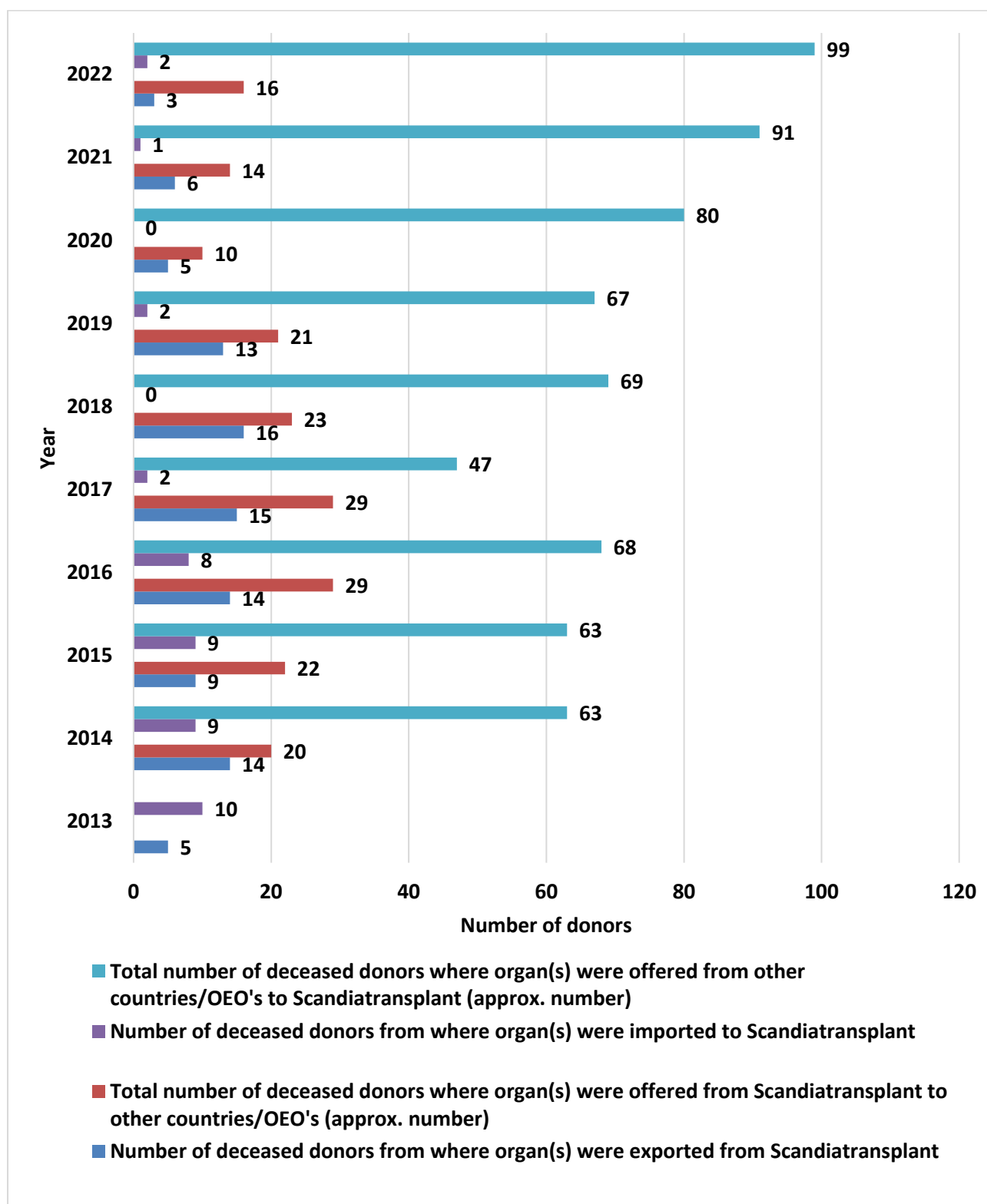
Number of organs exported and imported
between other EOEO's and Norway



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



Number of deceased donors where organ(s) were offered^{18,19}



¹⁸ The web-based organ offer form and related communication systems for organ offers were introduced in year 2013

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

Kidneys from living donors exported and imported through STEP between the Scandiatransplant countries²⁰

Denmark

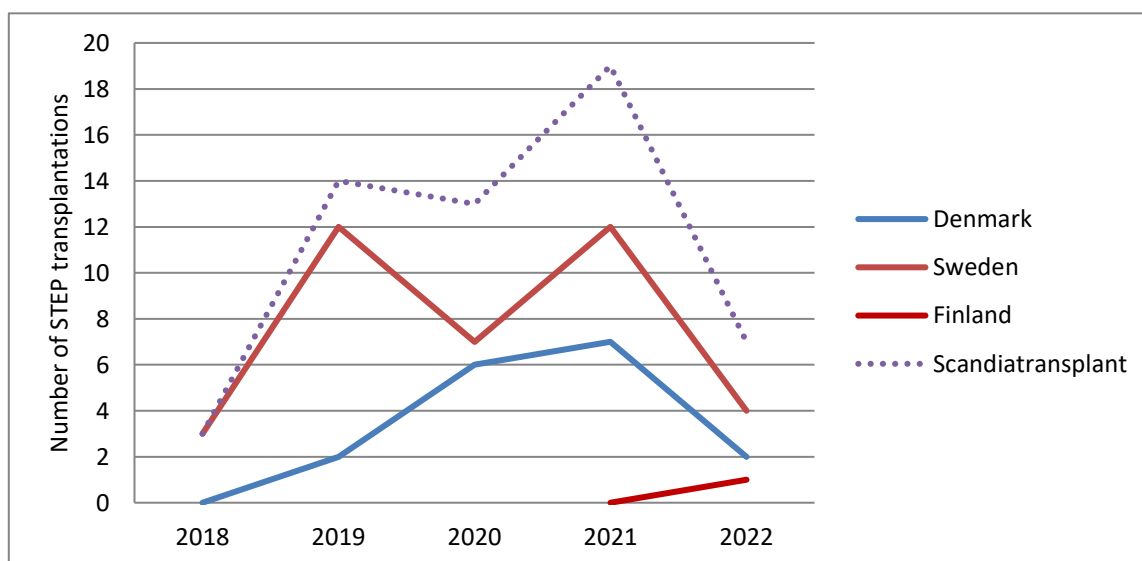
	Kidneys transplanted	Import	Export
2019	2	2	2
2020	6	1	1
2021	7	5	5
2022	2	2	2

Sweden

	Kidneys transplanted	Import	Export
2018	3	0	0
2019	12	2	2
2020	7	1	1
2021	12	5	5
2022	4	1	1

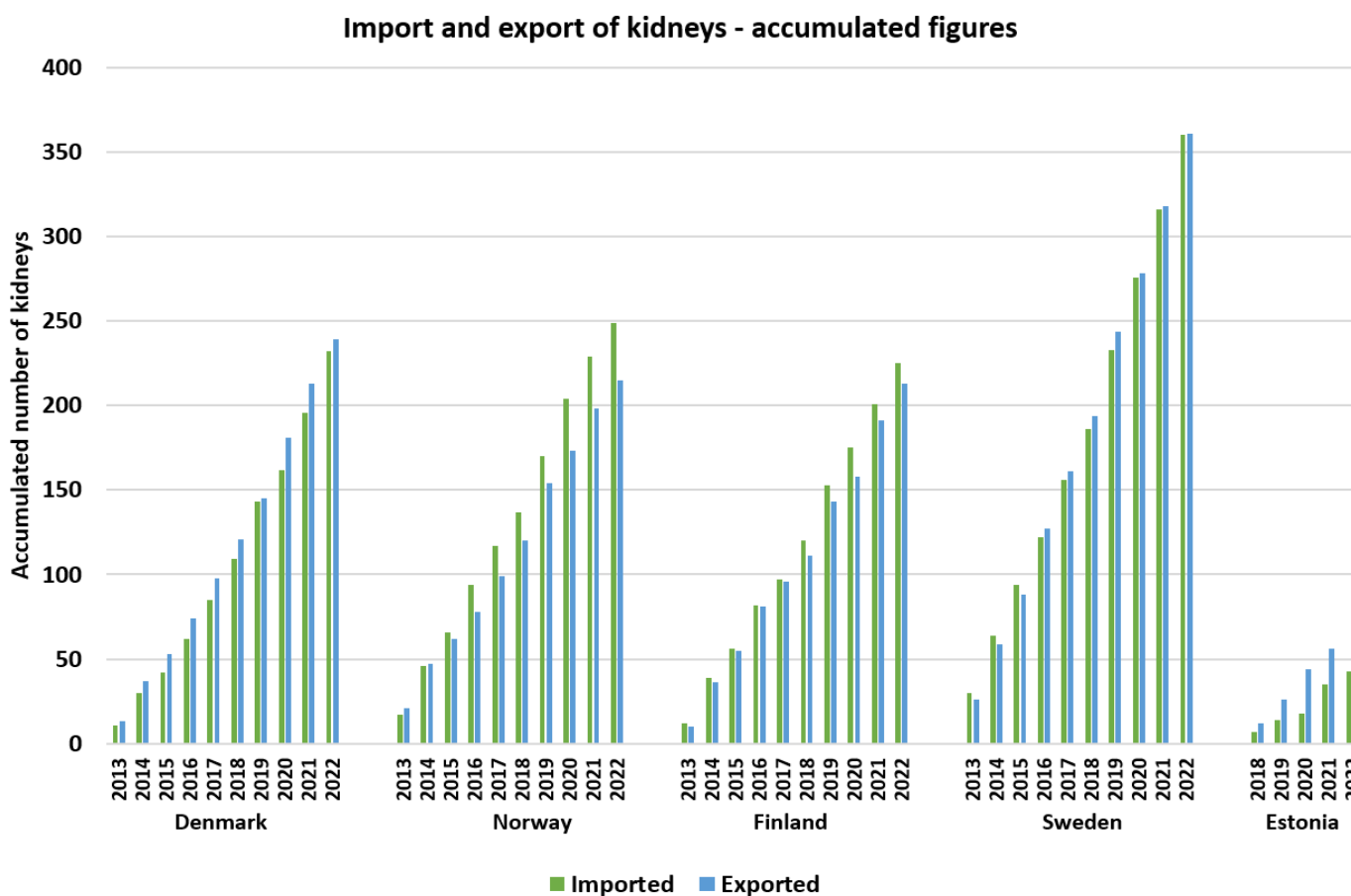
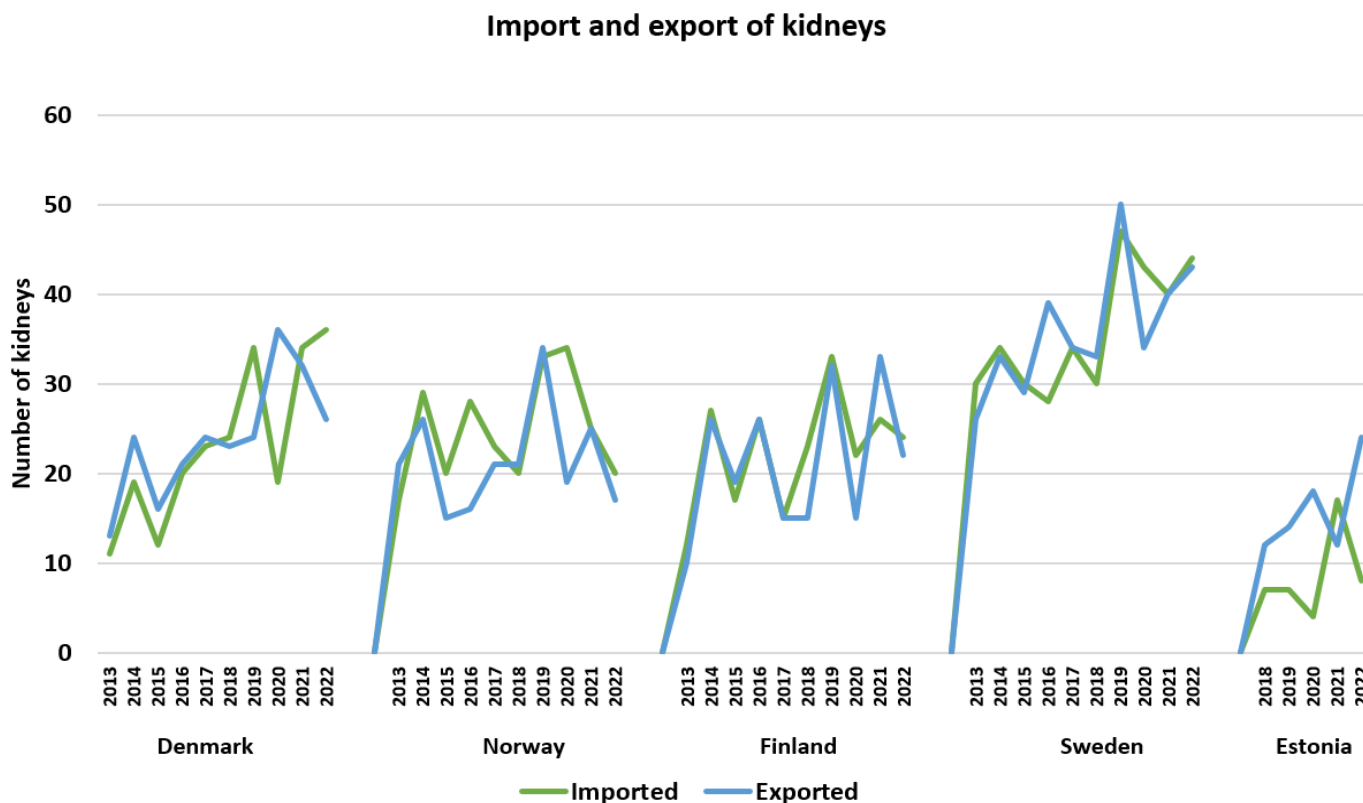
Finland

	Kidneys transplanted	Import	Export
2020	0	0	0
2021	0	0	0
2022	1	1	1



²⁰ STEP is the ScandiaTransplant Paired Living Kidney Donor Exchange Program, introduced in Sweden in 2018 and in Scandiatransplant in 2019. Finland joined the program late 2020 and Norway in year 2022.

Kidneys from deceased donors exported and imported between the Scandiatriplant countries²¹



²¹ Only kidneys from deceased donors and kidneys used for transplantation are included

Kidneys from deceased donors exported and imported²² between the Scandiatransplant countries in numbers²³ (including import and export to other EOEO's)

Denmark

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	189	34	24	0	0
2020	200	19	36	0	0
2021	184	34	32	0	0
2022	164	36	26	0	0

Norway

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	191	33	34	0	0
2020	181	34	19	0	0
2021	164	25	25	0	0
2022	186	20	17	0	0

²² Only kidneys from deceased donors and kidneys used for transplantation are included

²³ Kidney double transplantations are counted as 1

Finland

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	268	33	32	0	0
2020	232	22	15	0	0
2021	222	26	33	0	0
2022	208	24	22	0	0

Sweden

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	329	47	50	0	0
2020	313	43	34	0	0
2021	327	40	40	0	0
2022	366	44	43	0	0

Estonia²⁴

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2017	10	0	1	0	0
2018	54	7	12	0	0
2019	39	7	14	0	0
2020	43	4	18	0	0
2021	45	17	12	0	0
2022	30	8	24	0	0

Iceland²⁵

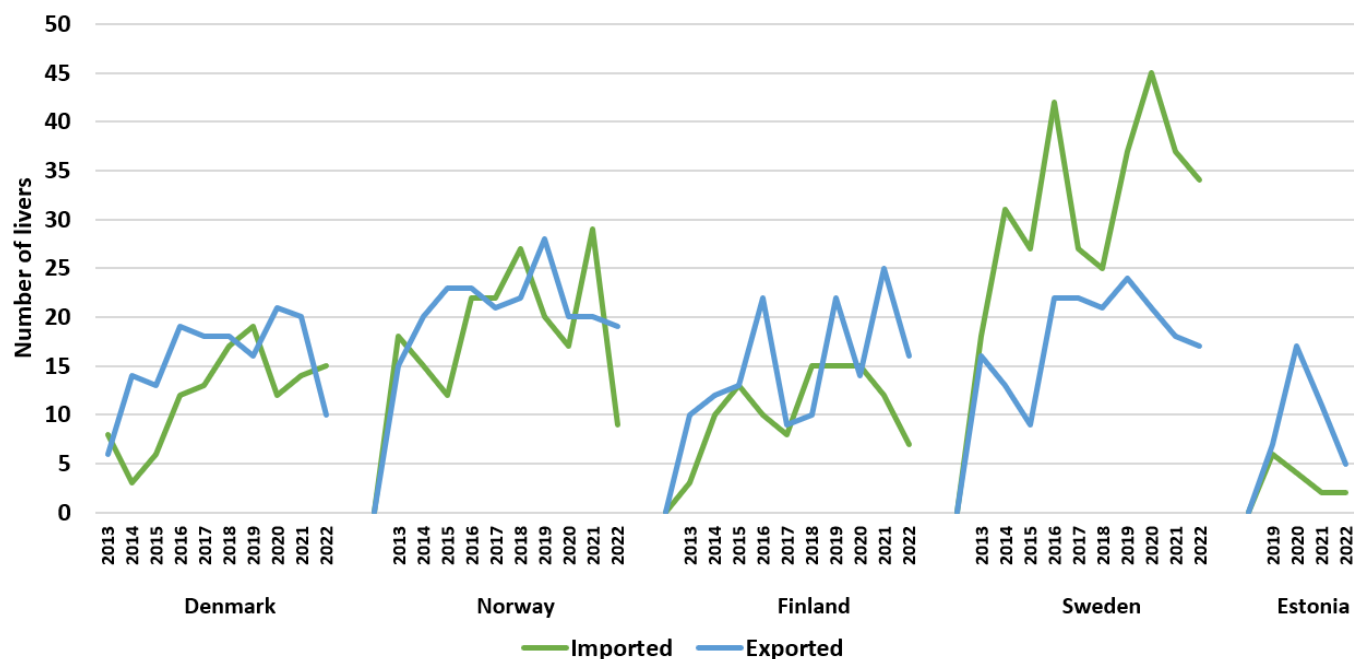
	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2019	2				
2020	3				
2021	7				
2022	5				

²⁴ From October 1st 2017 Estonia is regarded as part of ScandiTransplant

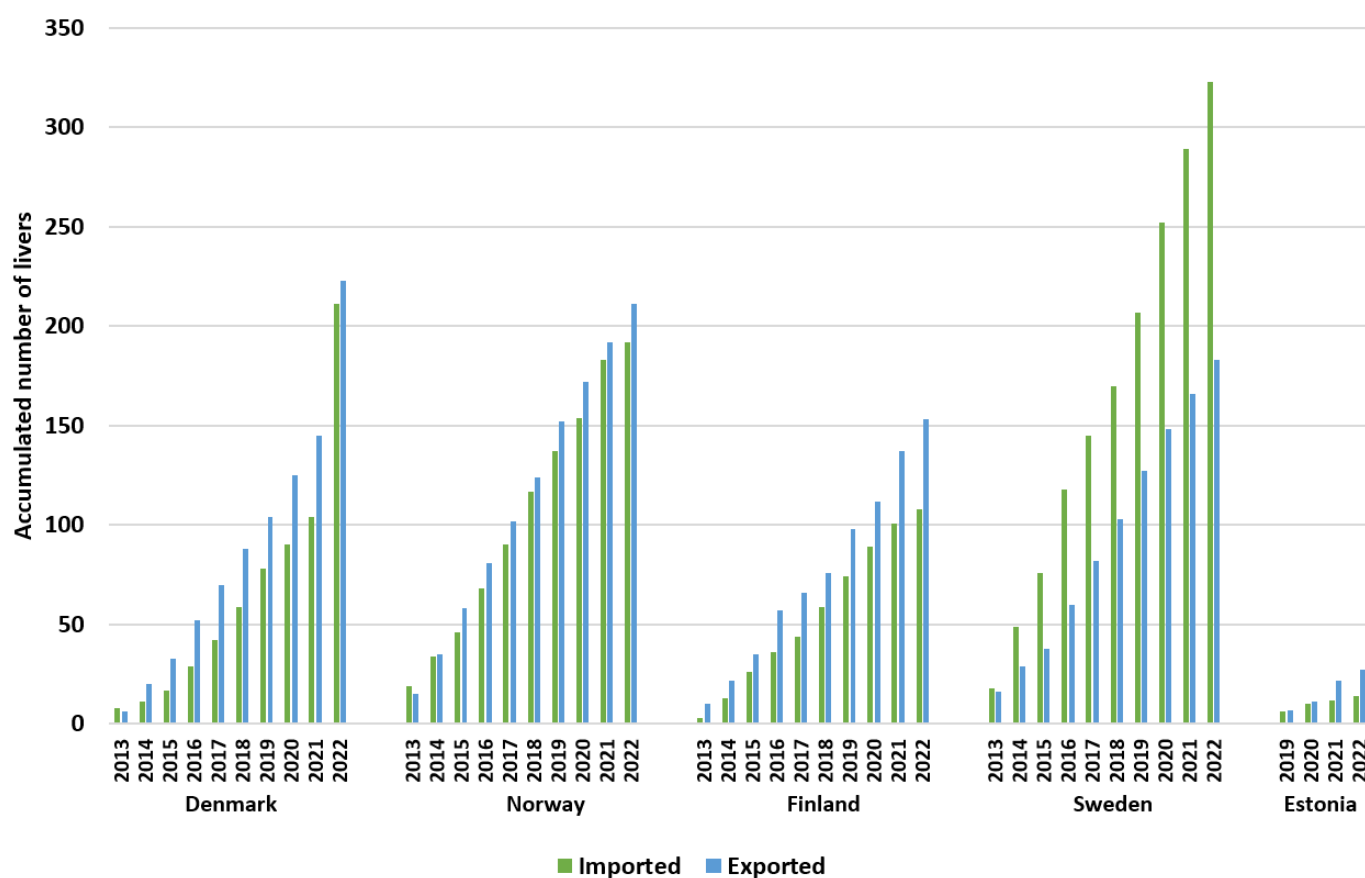
²⁵ From 2019 some of the Icelandic recipients will be transplanted with deceased donor kidneys in Iceland. Import/export numbers are included in the Swedish figures.

Livers exported and imported between the ScandiTransplant countries²⁶

Import and export of livers



Import and export of livers - accumulated figures



²⁶ Only livers used for transplantation are included

Livers exported and imported²⁷ between the Scandiatransplant countries in numbers²⁸ (including import and export to other EOEO's)

Denmark

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	64	19	16	0	0
2020	63	12	21	0	0
2021	49	14	20	0	0
2022	46	15	10	0	0

Norway

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	94	20	28	0	2
2020	88	17	20	0	0
2021	97	29	20	0	0
2022	91	9	19	0	0

²⁷ Only livers used for transplantation are included

²⁸ If the liver is transplanted as split liver, each split is counted as 1

Finland

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	64	15	22	0	0
2020	74	15	14	0	0
2021	75	12	25	0	0
2022	62	7	16	0	0

Sweden

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	183	37	24	0	5
2020	171	45	21	0	1
2021	169	37	18	0	1
2022	166	34	17	1	1

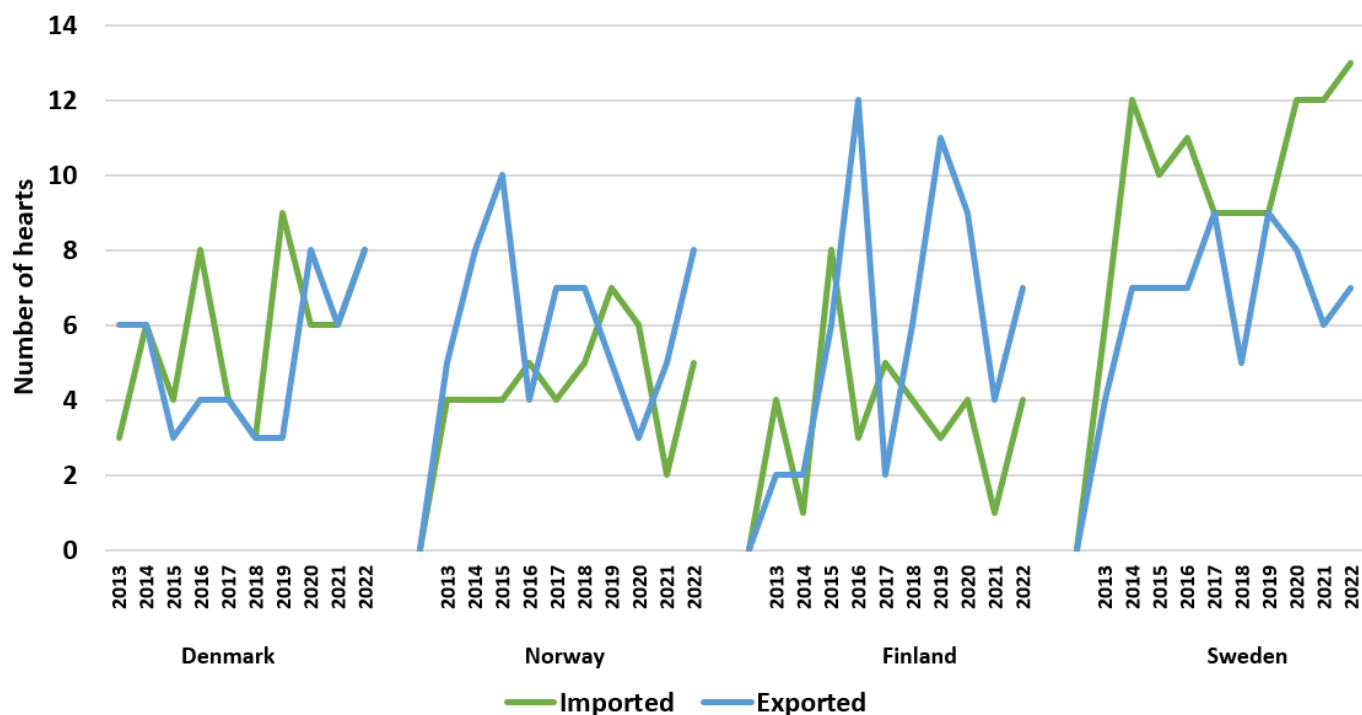
Estonia²⁹

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
2017	6	2	2	0	0
2018	10	2	15	0	0
2019	10	6	7	0	0
2020	12	4	17	0	0
2021	4	2	11	0	0
2022	9	2	5	0	0

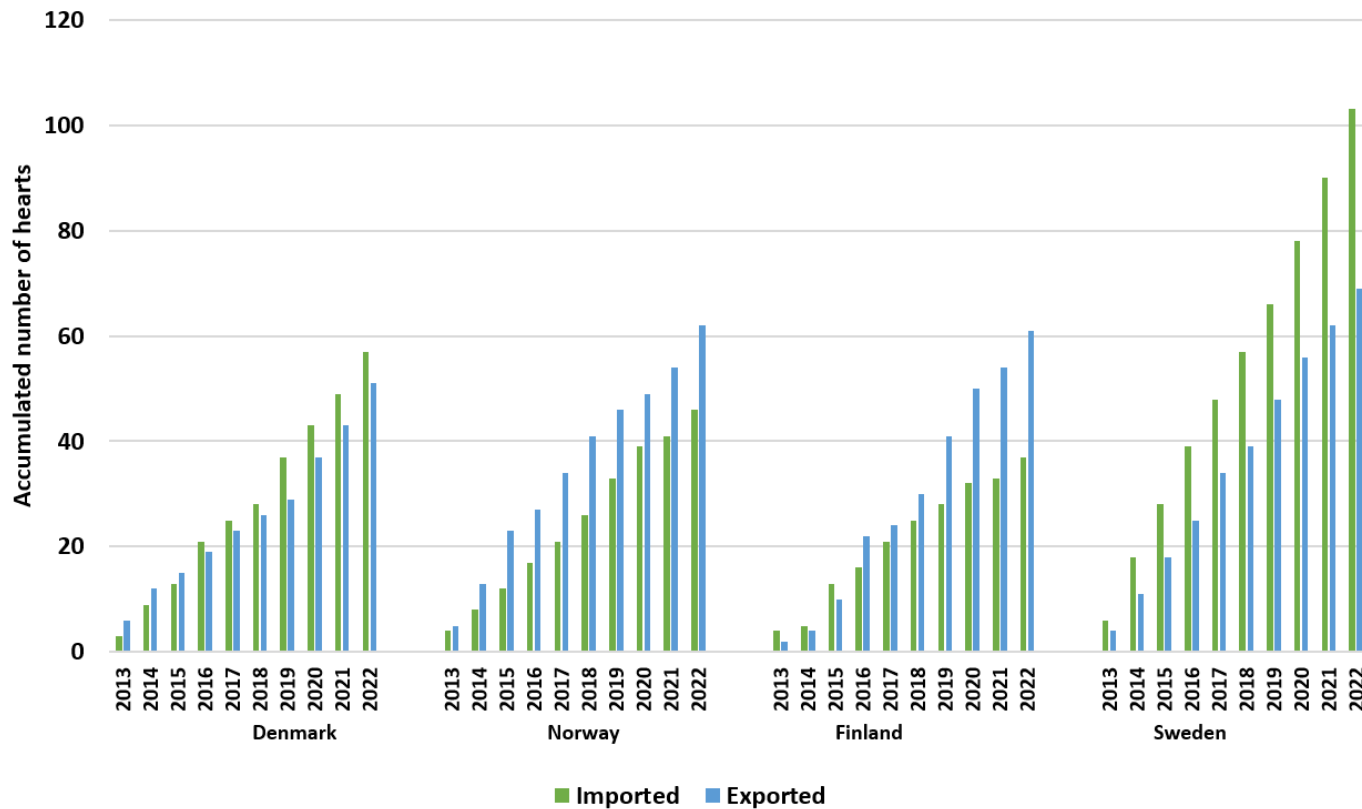
²⁹ From October 1st 2017 Estonia is regarded as part of Scandiatransplant

Hearts exported and imported between the Scandiatransplant countries³⁰

Import and export of hearts



Import and export of hearts - accumulated figures



³⁰ Only hearts used for transplantation are included

Hearts exported and imported³¹ between the Scandiatransplant countries in numbers (including import and export to other EOEO's)

Denmark

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	30	9	3	0	0
2020	32	6	8	0	1
2021	24	6	6	0	0
2022	27	8	8	0	0

Norway

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	43	7	5	0	1
2020	30	6	3	0	0
2021	23	2	5	1	0
2022	30	5	8	0	0

³¹ Only hearts used for transplantation are included

Finland³²

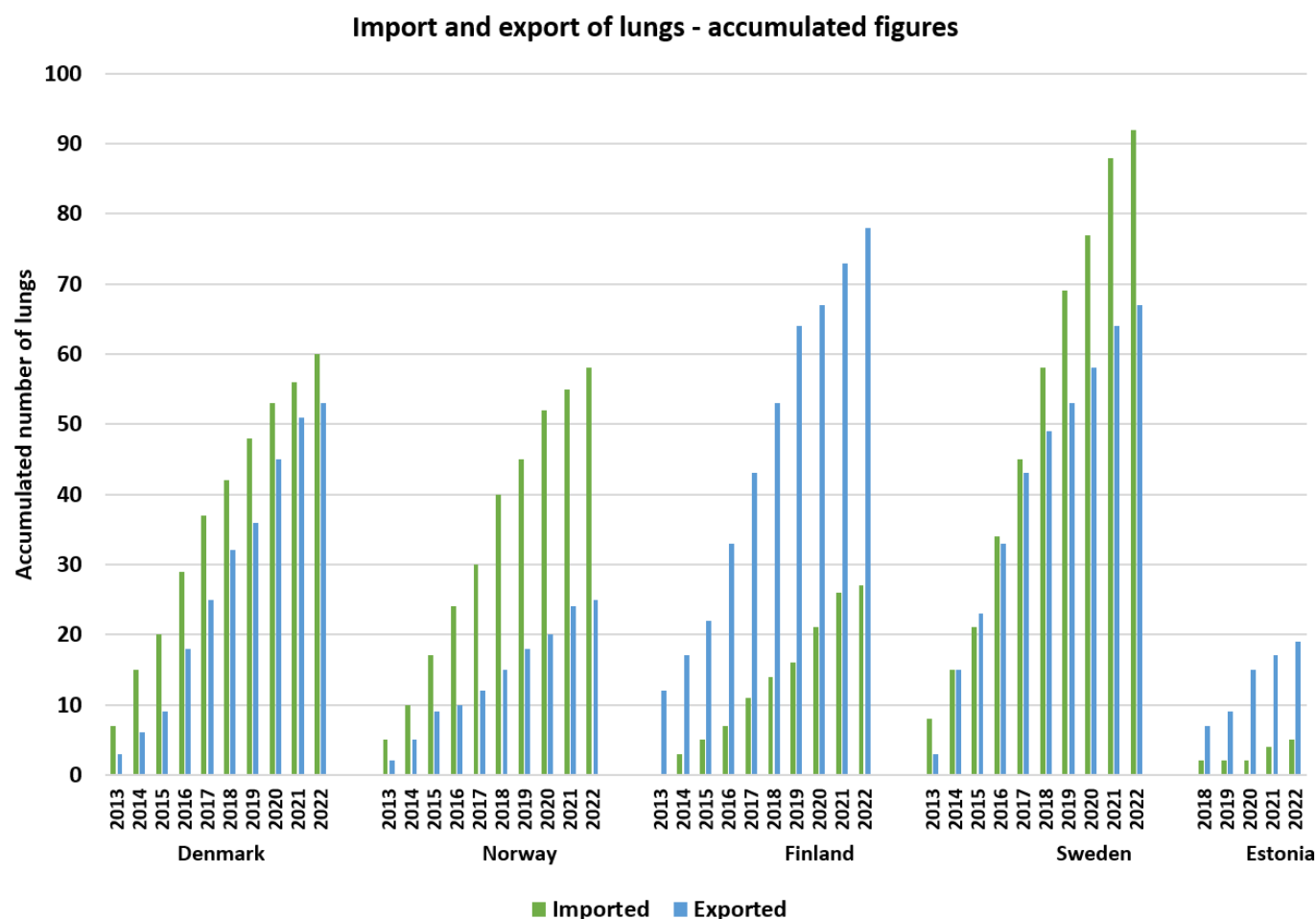
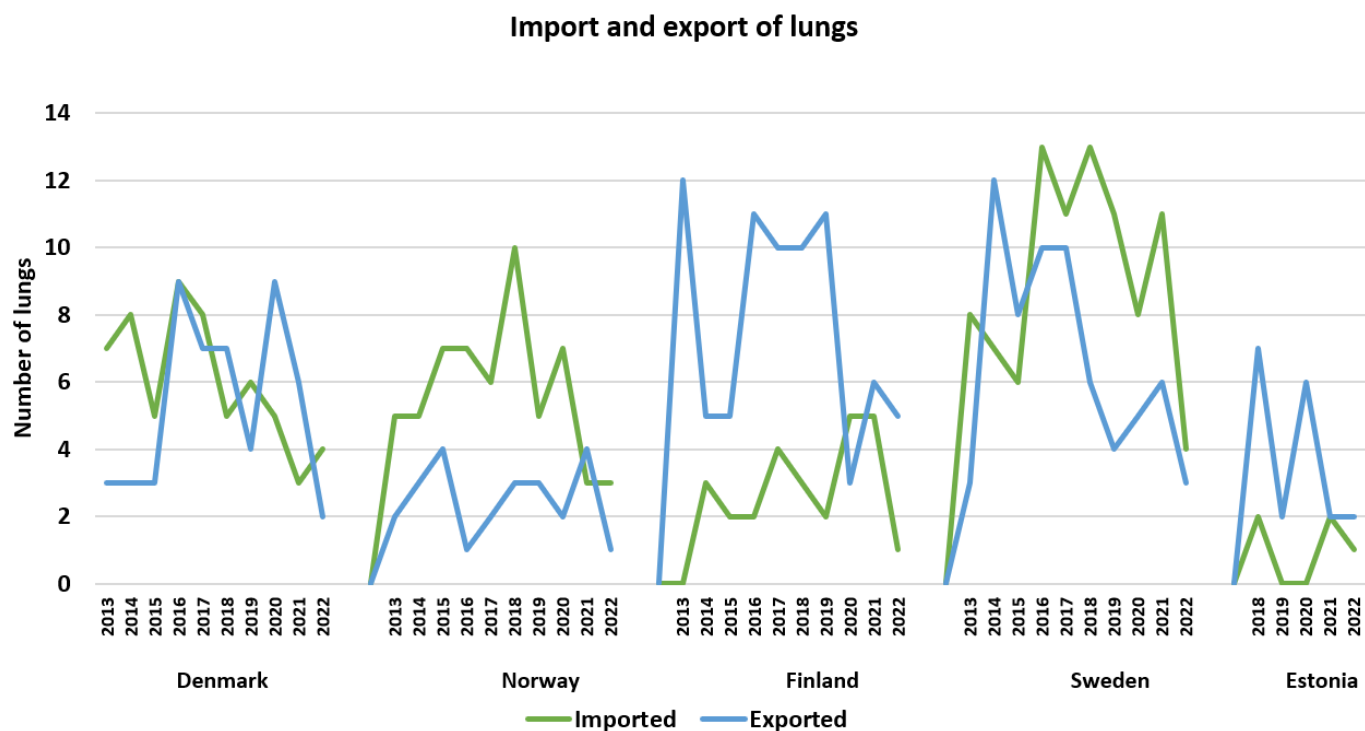
	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
2013	21	4	2	3	0
2014	24	1	2	4	0
2015	27	8	6	0	0
2016	31	3	12	0	0
2017	26	5	2	0	0
2018	47	4	6	0	0
2019	30	3	11	0	1
2020	22	4	9	0	0
2021	22	1	4	0	0
2022	19	4	7	0	0

Sweden

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	60	9	9	1	2
2020	54	12	8	0	2
2021	66	12	6	0	3
2022	54	13	7	0	2

³² 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 ScandiTransplant countries³³



³³ Only lungs used for transplantation are included

Lungs exported and imported³⁴ between the Scandiatransplant countries in numbers³⁵ (including import and export to other EOEO's)

Denmark

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	30	6	4	0	0
2020	29	5	9	0	0
2021	22	3	6	0	0
2022	23	4	2	1	0

Norway

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	33	5	3	0	0
2020	28	7	2	0	0
2021	24	3	4	0	0
2022	31	3	1	0	0

³⁴ Only lungs used for transplantation are included

³⁵ Single lung, double lung and heart-lung transplantations are all counted as 1

Finland

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	27	2	11	0	0
2020	21	5	3	0	0
2021	24	5	6	0	0
2022	20	1	5	0	0

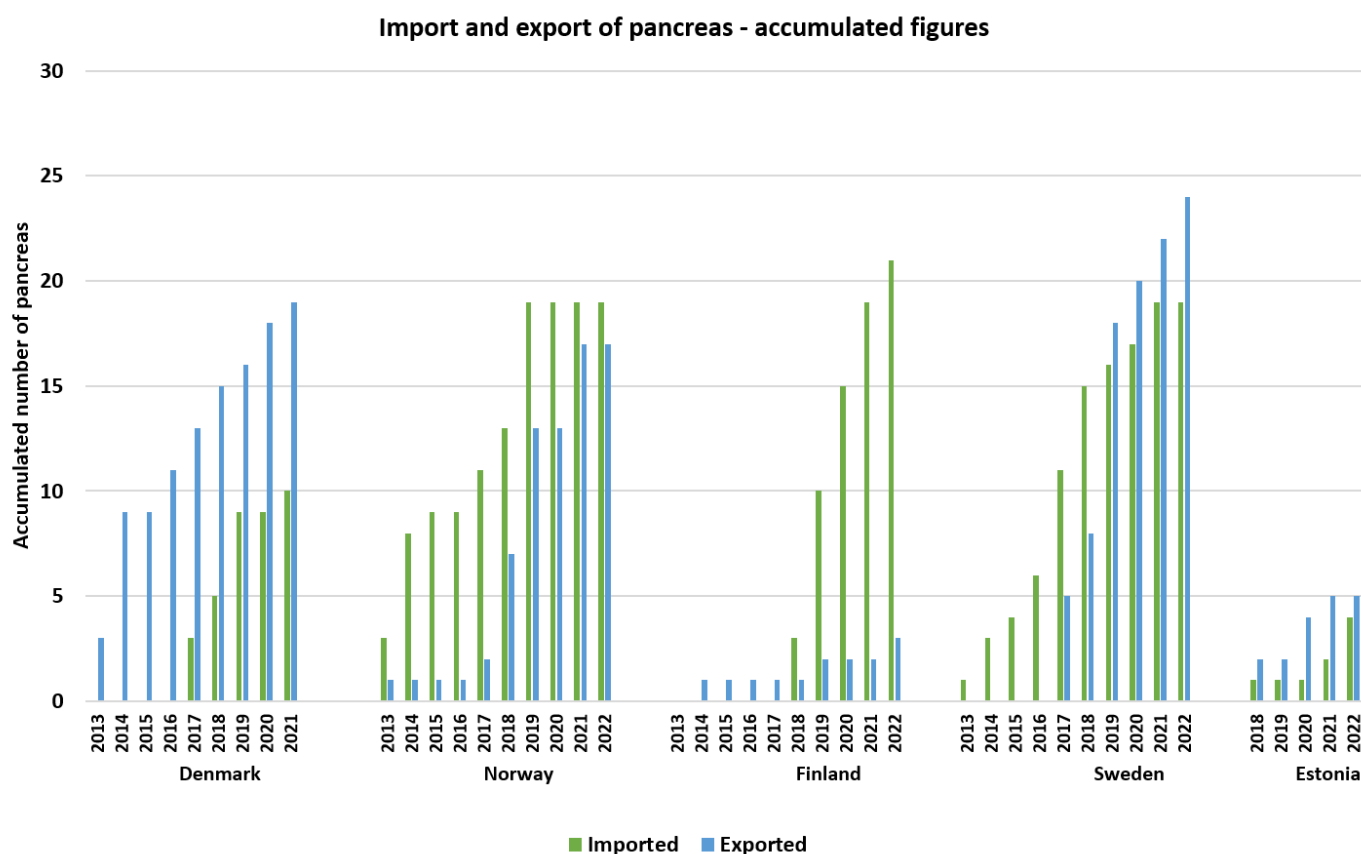
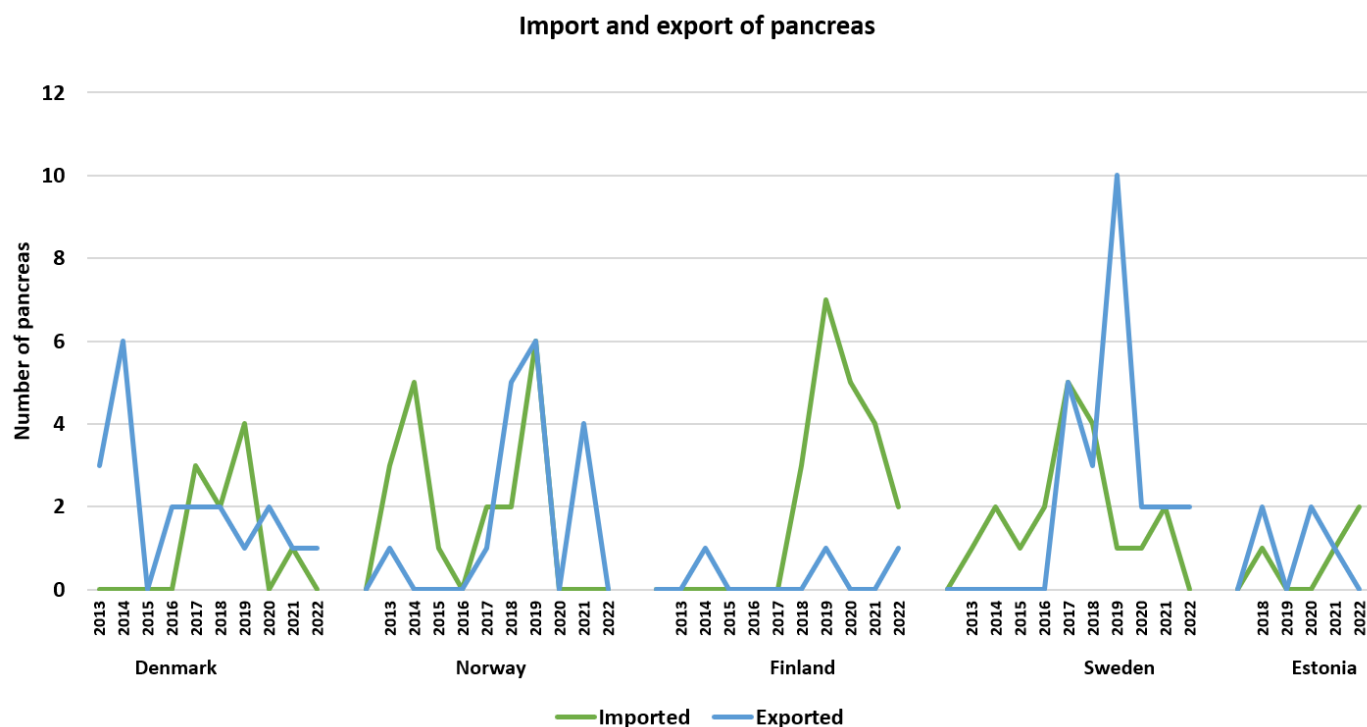
Sweden

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	56	11	4	0	4
2020	51	8	5	0	2
2021	51	11	6	0	2
2022	50	4	3	0	0

Estonia

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2018	4	2	7	0	0
2019	3	0	2	0	0
2020	0	0	6	0	0
2021	2	2	2	0	0
2022	3	1	2	0	0

Pancreas exported and imported between the Scandiatriplant countries^{36,37}



³⁶ Only pancreas used for whole pancreas transplantation are included

³⁷ 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 imported³⁸ between the Scandiatransplant countries in numbers (including import and export to other EOEO's)

Denmark

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	6	4	1	0	0
2020	7	0	2	0	0
2021	4	1	1	0	0
2022	3	0	1	0	0

Norway

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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 ³⁹	0	0
2018	15	2	5	0	0
2019	15	6	6	0	0
2020	6	0	0	0	0
2021	5	0	4	0	0
2022	4	0	0	0	0

³⁸ Only pancreas used for whole pancreas transplantation are included

³⁹ +1 for a Norwegian recipient transplanted in Sweden

Finland

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	39	7	1	0	0
2020	26	5	0	0	0
2021	31	4	0	0	0
2022	20	2	1	0	0

Sweden

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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
2019	23	1	10	0	0
2020	13	1	2	0	0
2021	13	2	2	0	0
2022	18	0	2	0	0

Estonia

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
2017	1	0	0	0	0
2018	2	1	2	0	0
2019	2	0	0	0	0
2020	6	0	2	0	0
2021	1	1	1	0	0
2022	4	2	0	0	0

Intestine exported and imported⁴⁰ between the Scandiatransplant countries and other EOEO's

	Import/export	Import/export EOEO
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
2019	0	0
2020	0	0
2021	0	0
2022	0	0

⁴⁰ Only intestine used for transplantation is included

SAEs and SARs reported through the Scandiatransplant system in 2022

Between January 1st and December 31st, 2022, there has been 12 SAE/SARs reported through the Scandiatransplant IT-system. In 2018 there were 15 reports, in 2019 12 reports, in 2020 5 reports, and in 2021 13 reports.

In 2022 there were 5 reports from Norway, 4 from Sweden, two from Finland, and one from Denmark. In 6 reports the event involved donor or recipients from another country.

The tables below give a short summary of each reported SAE.

An * indicates another country involved. OIC = Other involved country.

Reports from transplantation centers in Sweden

ID	Center	OIC	Short description of SAE/SAR
988	Stockholm*	DK	Mistake in kidney labeling. Transplantation went well.
1028	Skåne		Insufficient perfusion and preservation of allocated kidney due to anatomical abnormalities. The kidney was not transplanted.
1068	Stockholm*	DK	Liver graft not transplanted after discussion between donor and recipient center. Large hematoma could possibly be due to dissection with a risk for recipient.
1128	Stockholm		Liver recipient died with metastasis in transplanted liver. Metastasis were genetically of donor origin.

Reports from transplantation center in Norway

ID	Center	OIC	Short description of SAE/SAR
1048	Oslo*	F	Donor had Covid 6 months earlier. RNA one and two days before donation neg., but pos. at donation time. Only liver used.
1090	Oslo*	S	Kidney recipient died of acute HSV-1 hepatitis. Recipient HSV IgG and IgM neg., donor HSV IgM pos.
1168	Oslo		Short period of bradycardia and hypotension after reperfusion in a living donor kidney recipient where donor kidney had been perfused with IGL-1.
1169	Oslo		Short period of bradycardia and hypotension after reperfusion in a living donor kidney recipient where donor kidney had been perfused with IGL-1.
1170	Oslo		Short period of bradycardia and hypotension after reperfusion in a living donor kidney recipient where donor kidney had been perfused with IGL-1.

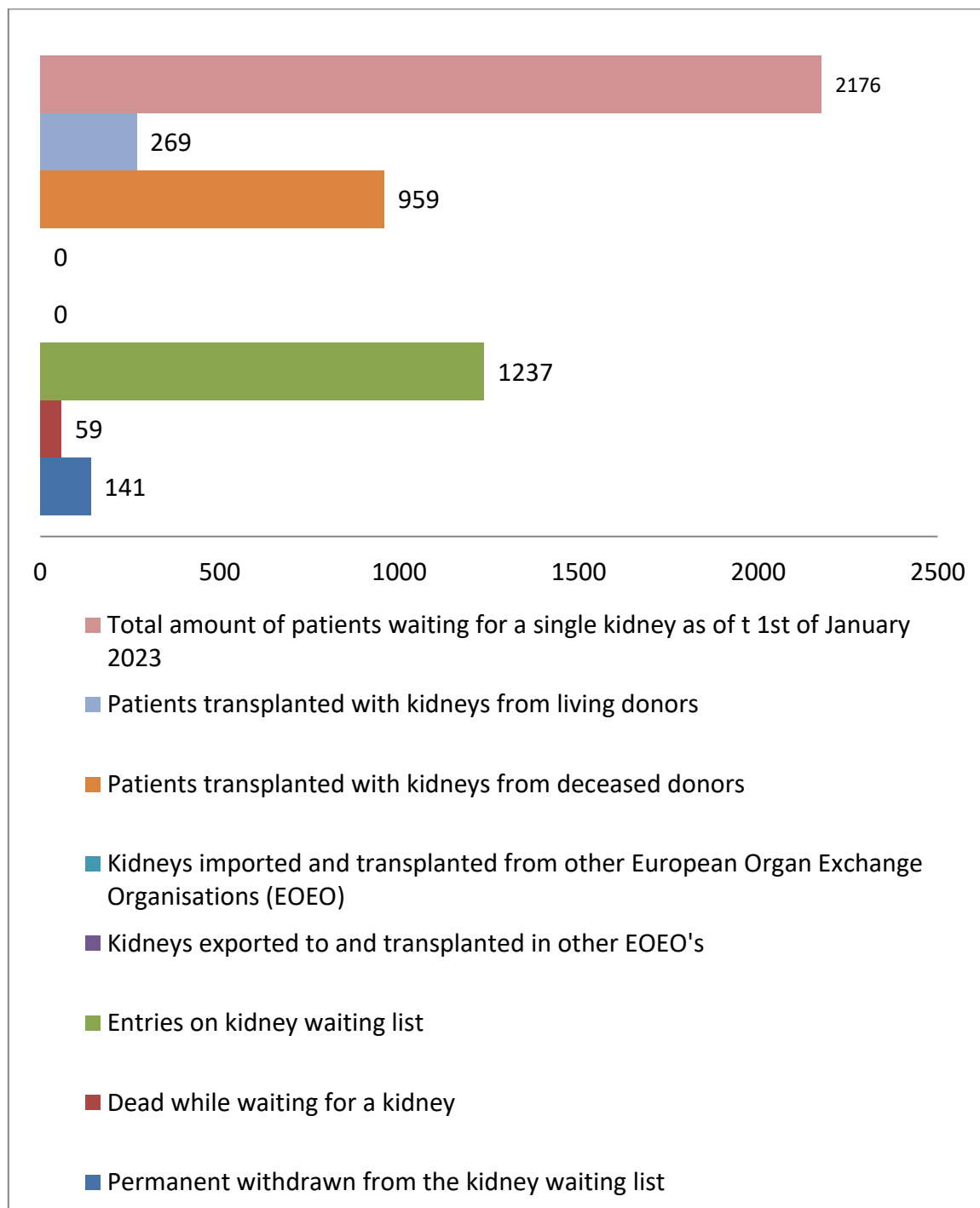
Report from transplantation center in Denmark

ID	Center	OIC	Short description of SAE/SAR
1148	Aarhus		Sample from donor later shown to be DNA pos. for TB. TB surveillance initiated in recipients.

Report from transplantation center in Finland

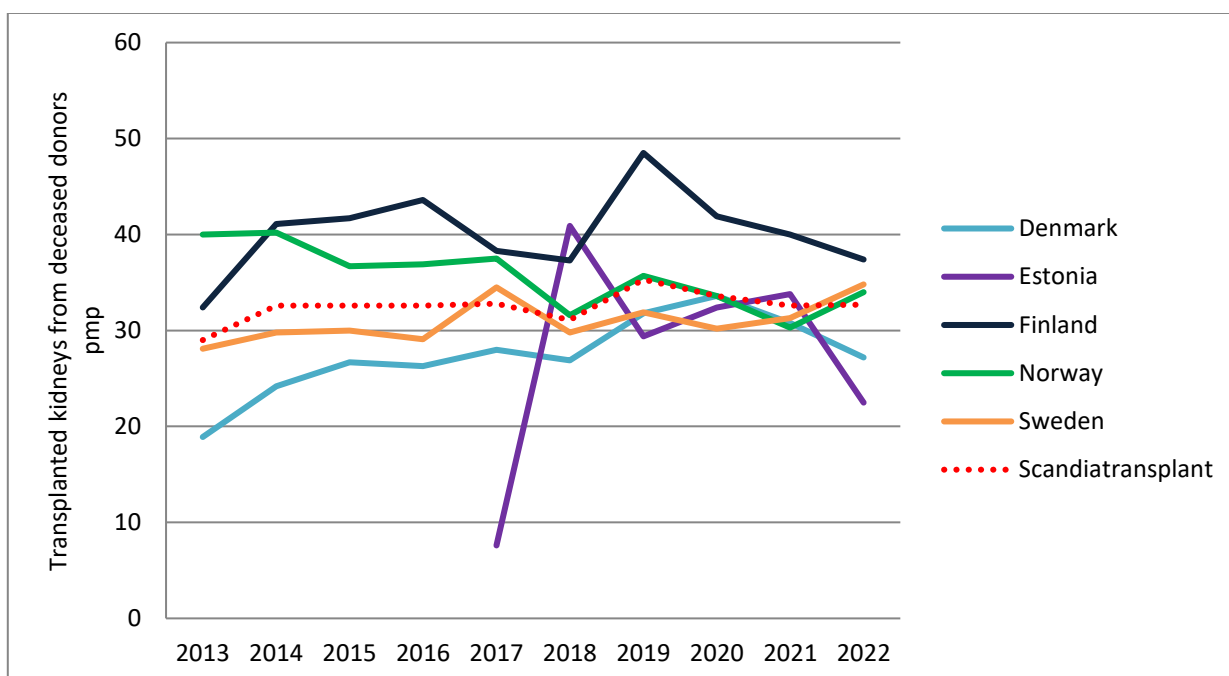
ID	Center	OIC	Short description of SAE/SAR
1008	Helsinki*	DK	Duodenal perforation during donor operation sutured immediately. Recipients given 2 days of antibiotic prophylaxis
1108	Helsinki*	S	Donor proved to have had syphilis. Recipient centers notified.

Kidneys 2022



Transplanted kidneys pmp⁴¹ from deceased donors per year

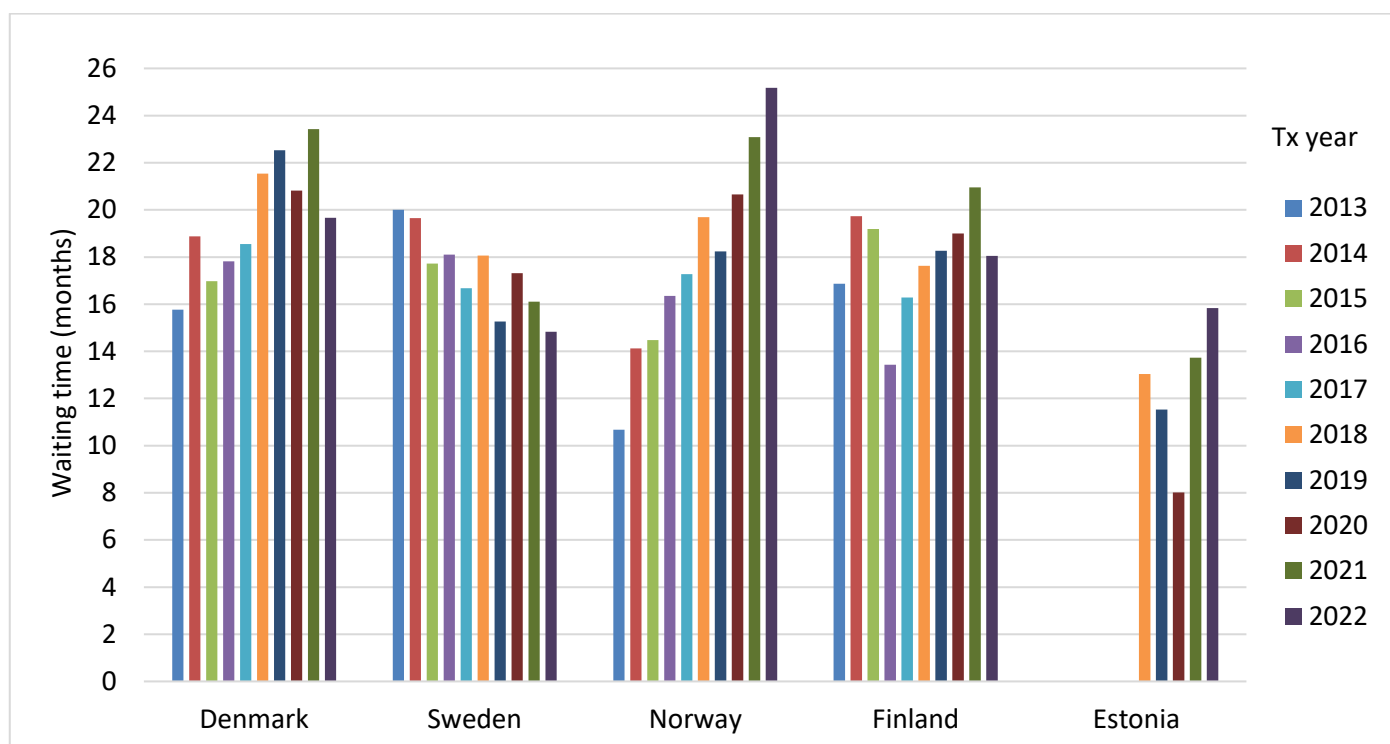
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2013	18,9		32,4	40,0	28,1	29
2014	24,2		41,1	40,2	29,8	32,6
2015	26,7		41,7	36,7	30,0	32,6
2016	26,3		43,6	36,9	29,1	32,6
2017	28,0	7,6 ⁴²	38,3	37,5	34,5	32,8
2018	26,9	40,9	37,3	31,6	29,8	31,1
2019	31,8	29,4	48,5	35,7	31,9	35,3
2020	33,6	32,4	41,9	33,6	30,2	33,6
2021	30,8	33,8	40,0	30,3	31,3	32,6
2022	27,2	22,5	37,4	34,0	34,8	32,7



⁴¹ pmp: per million population

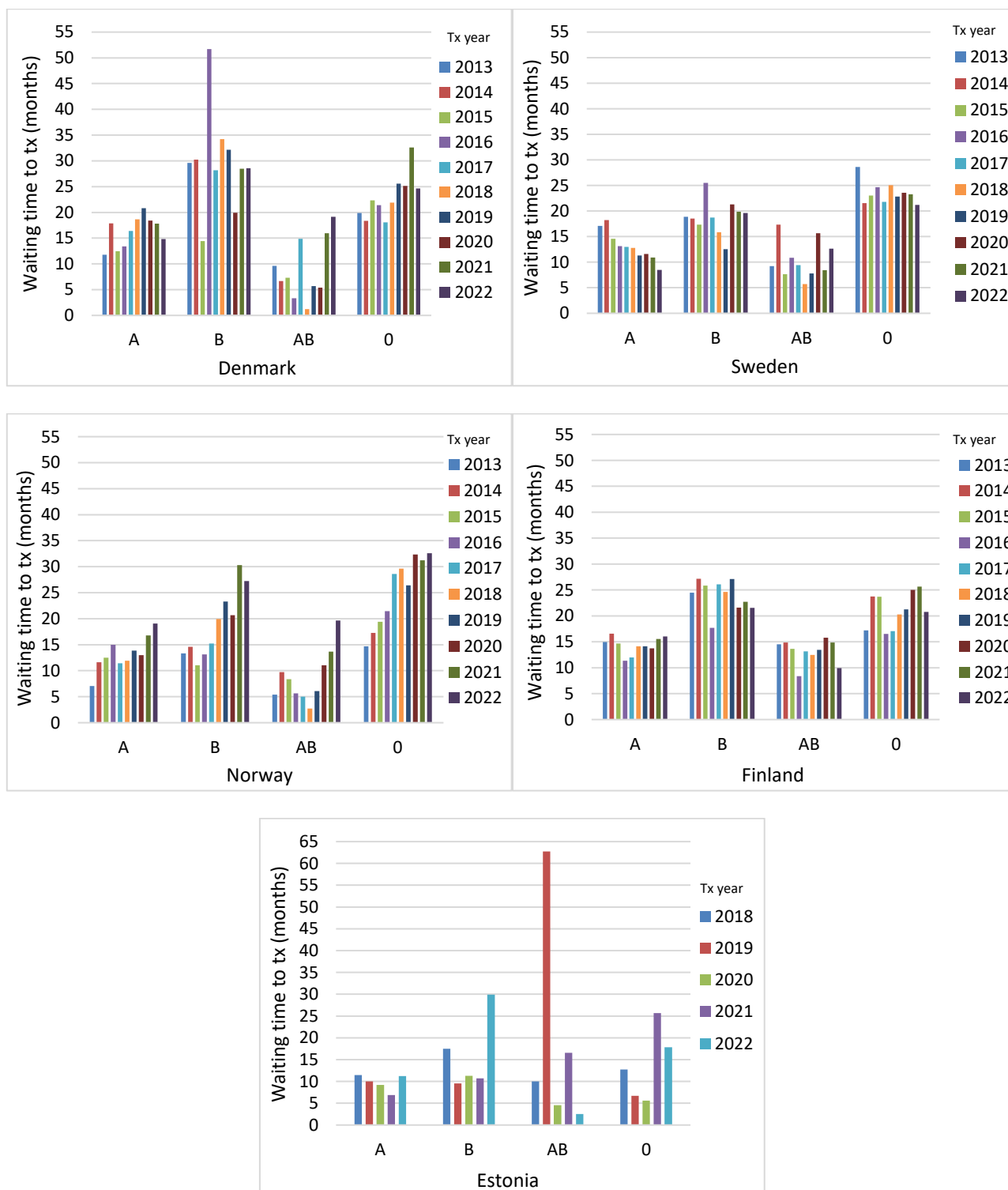
⁴² Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant this year

Average waiting time on the waiting list until transplantation with deceased donor kidney⁴³



⁴³ Icelandic patients are counted as part of Sweden.

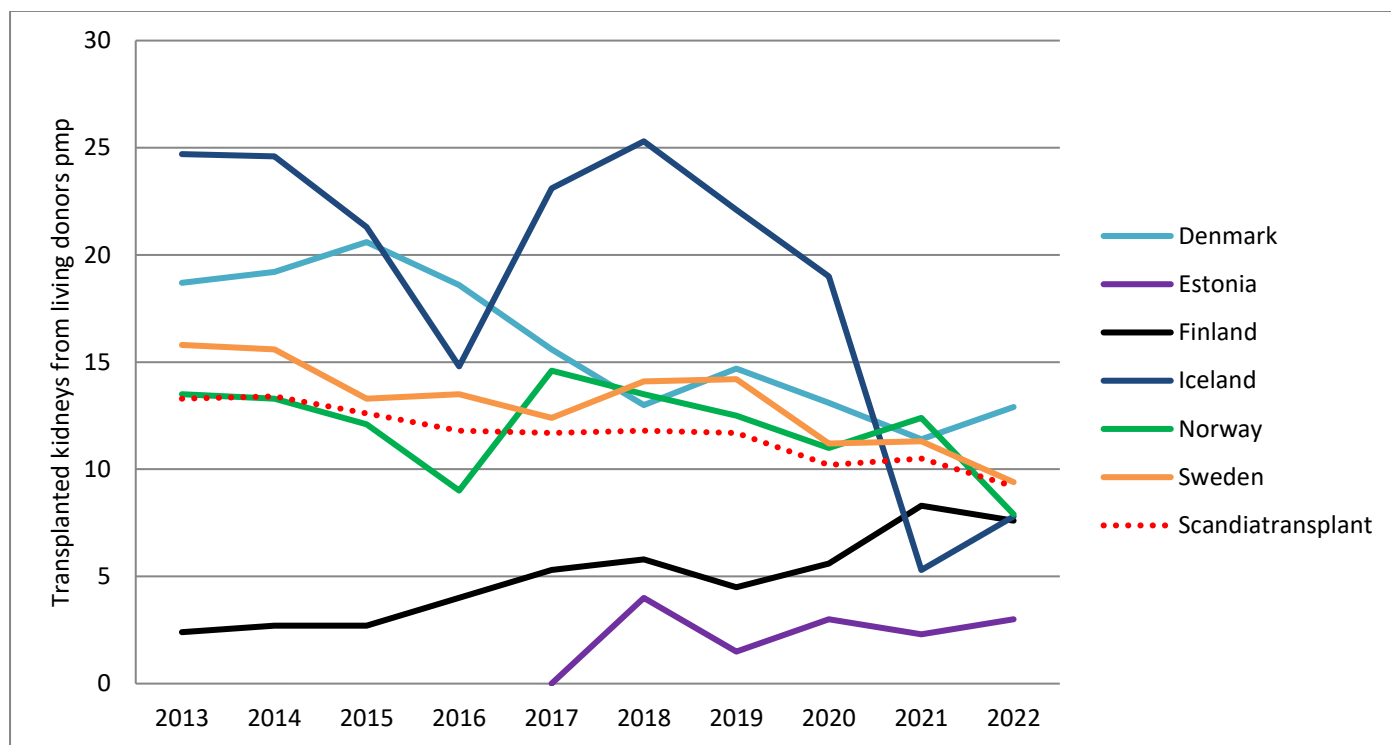
Average waiting time on the waiting list until transplantation with deceased donor kidney by blood group for each country⁴⁴



⁴⁴ Icelandic patients are counted as part of Sweden

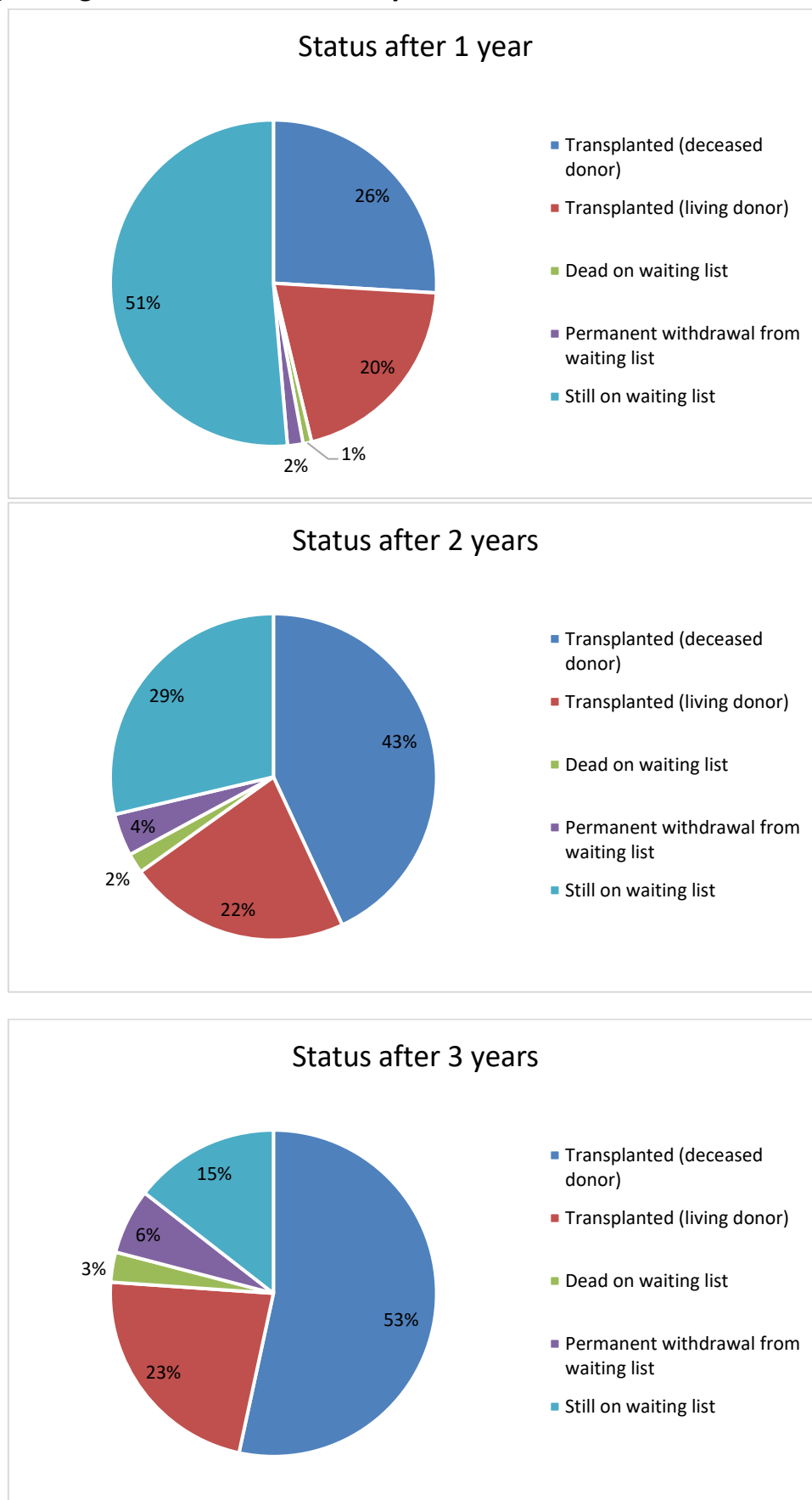
Transplanted kidneys pmp⁴⁵ from living donors per year

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2019	14,7	1,5	4,5	22,1	12,5	14,2	11,7
2020	13,1	3,0	5,6	19,0	11,0	11,2	10,2
2021	11,4	2,3	8,3	5,3	11,3	12,4	10,5
2022	12,9	3,0	7,6	7,8	7,9	9,4	9,2



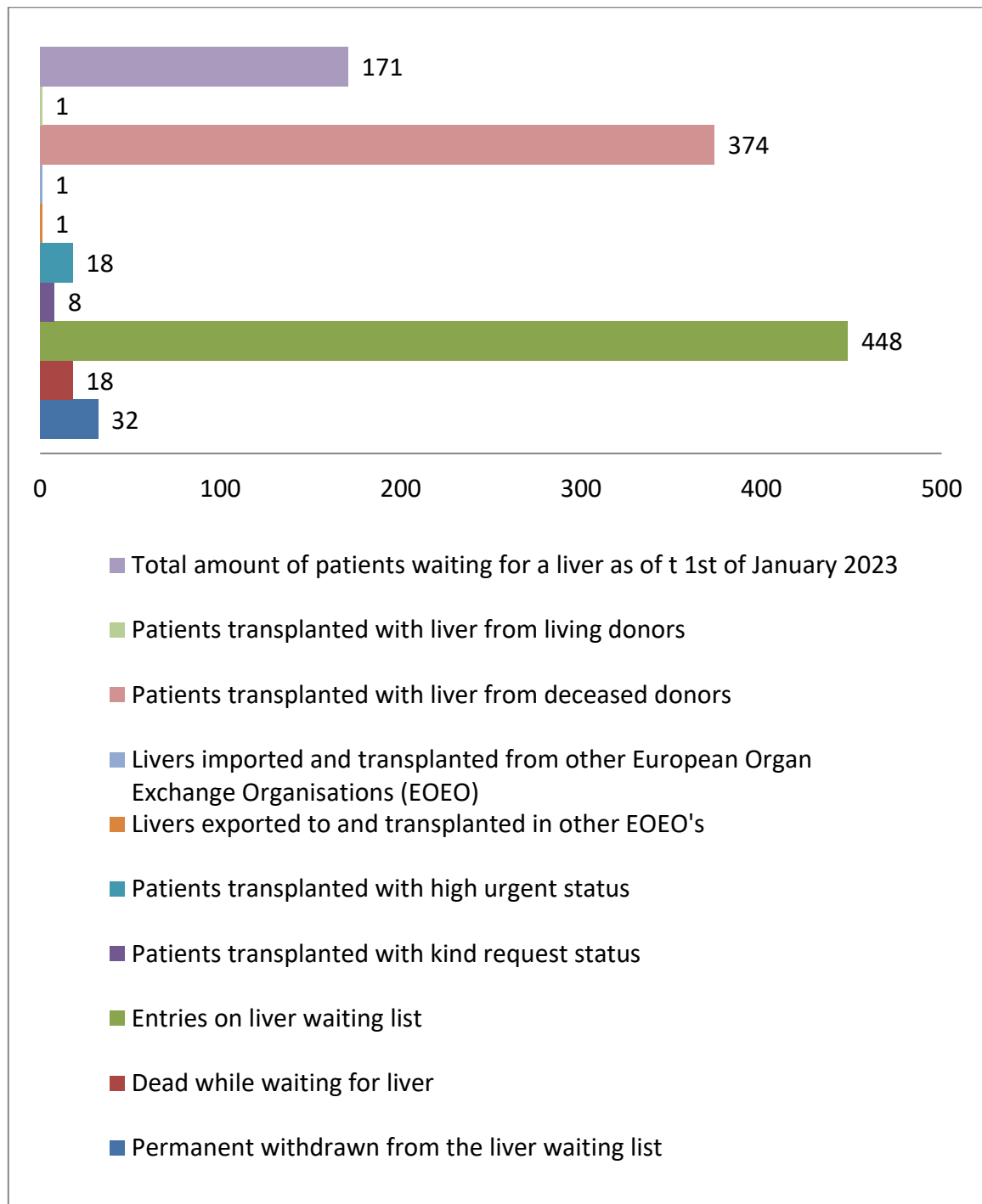
⁴⁵ pmp: per million population

Kidney waiting list registrations 2015-2019 - 3-year outcome⁴⁶



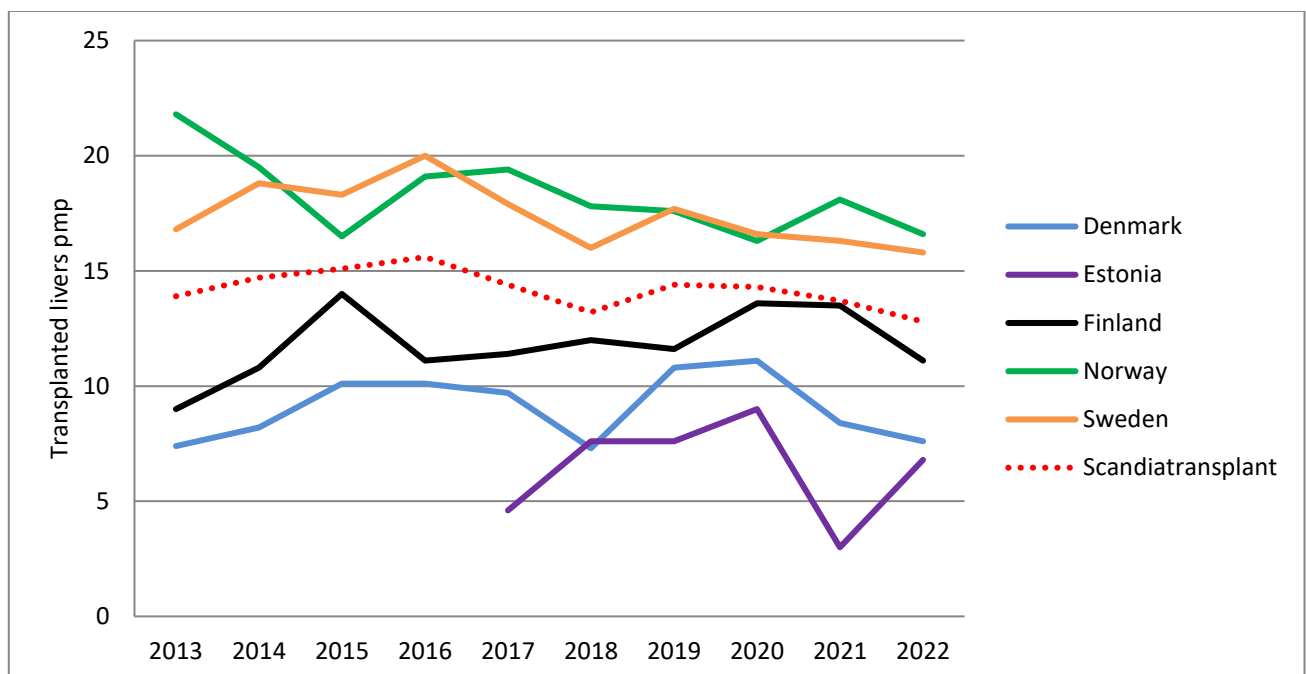
⁴⁶ Combined kidney+liver and kidney+pancreas waiting list registrations are not included in these charts.

Livers 2022



Transplanted livers (Deceased and living donors) pmp⁴⁷ per year

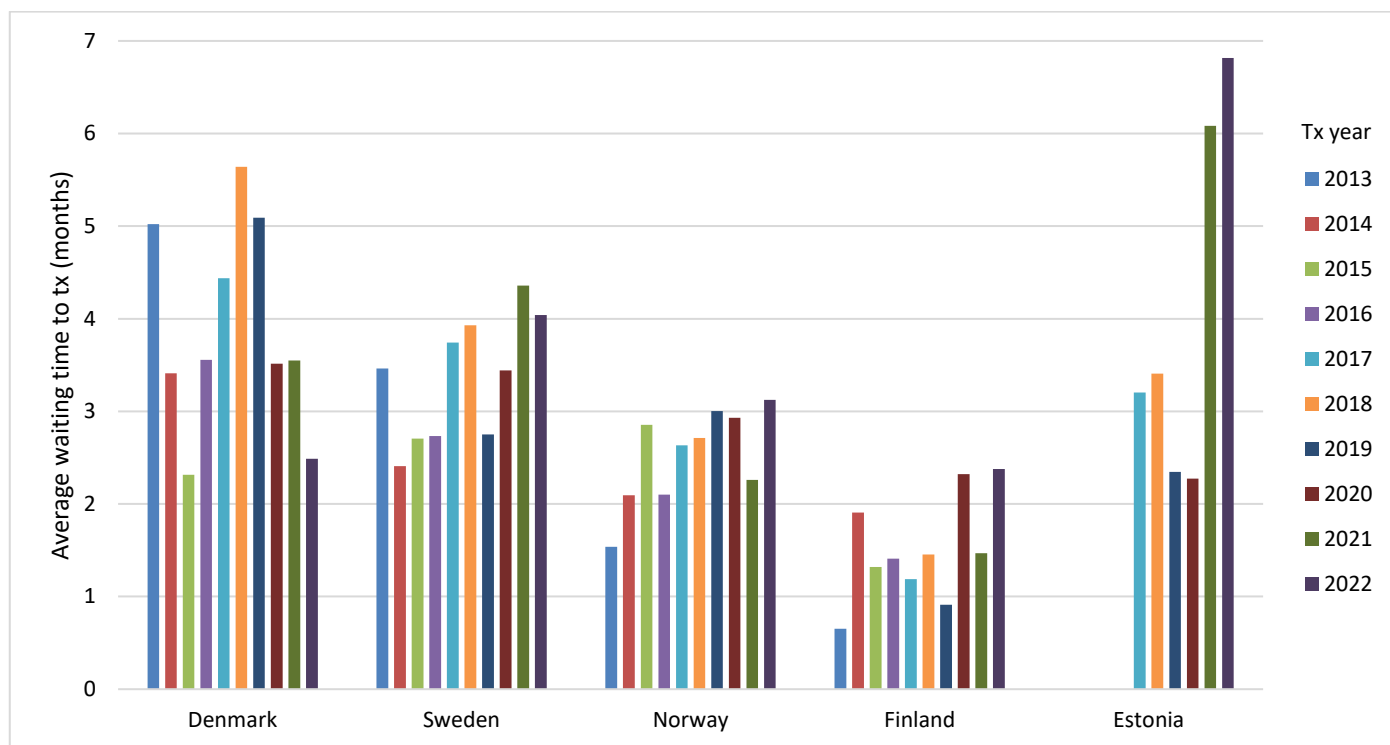
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2013	7,4		9,0	21,8	16,8	13,9
2014	8,2		10,8	19,5	18,8	14,7
2015	10,1		14,0	16,5	18,3	15,1
2016	10,1		11,1	19,1	20,0	15,6
2017	9,7	4,6 ⁴⁸	11,4	19,4	17,9	14,4
2018	7,3	7,6	12,0	17,8	16,0	13,2
2019	10,8	7,6	11,6	17,6	17,7	14,4
2020	11,1	9,0	13,6	16,3	16,5	14,3
2021	8,4	3,0	13,5	18,1	16,3	13,7
2022	7,6	6,8	11,1	16,8	15,8	12,8



⁴⁷ pmp: per million population

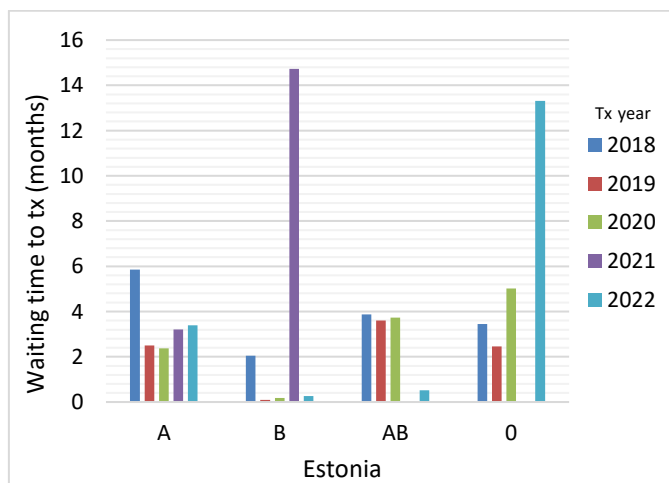
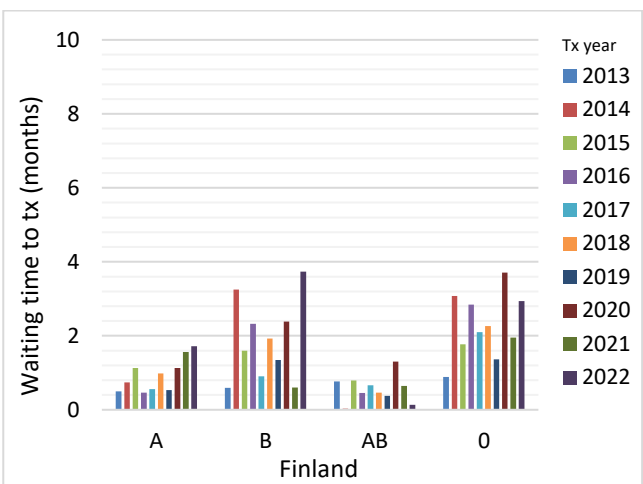
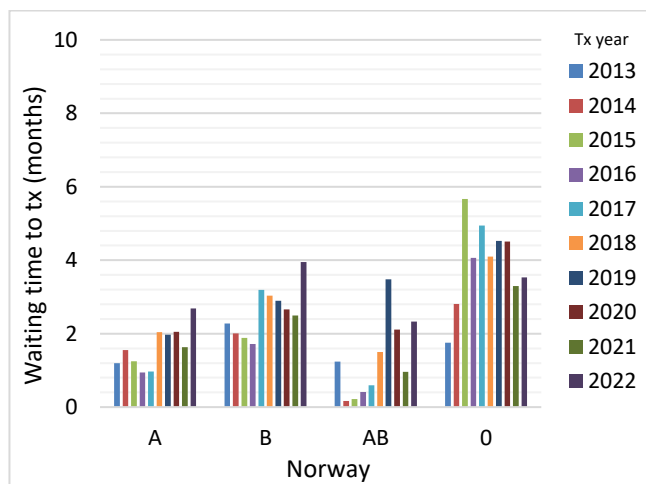
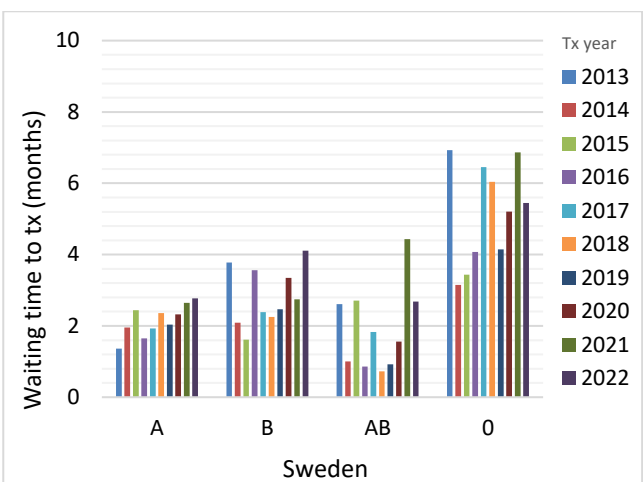
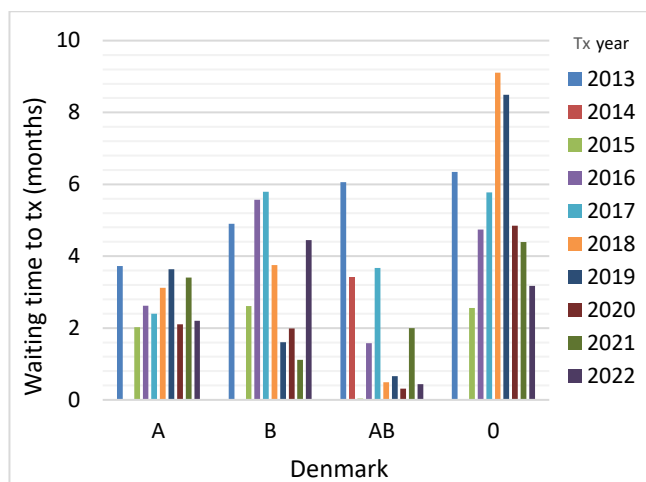
⁴⁸ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Average waiting time on the waiting list until transplantation with deceased donor liver⁴⁹



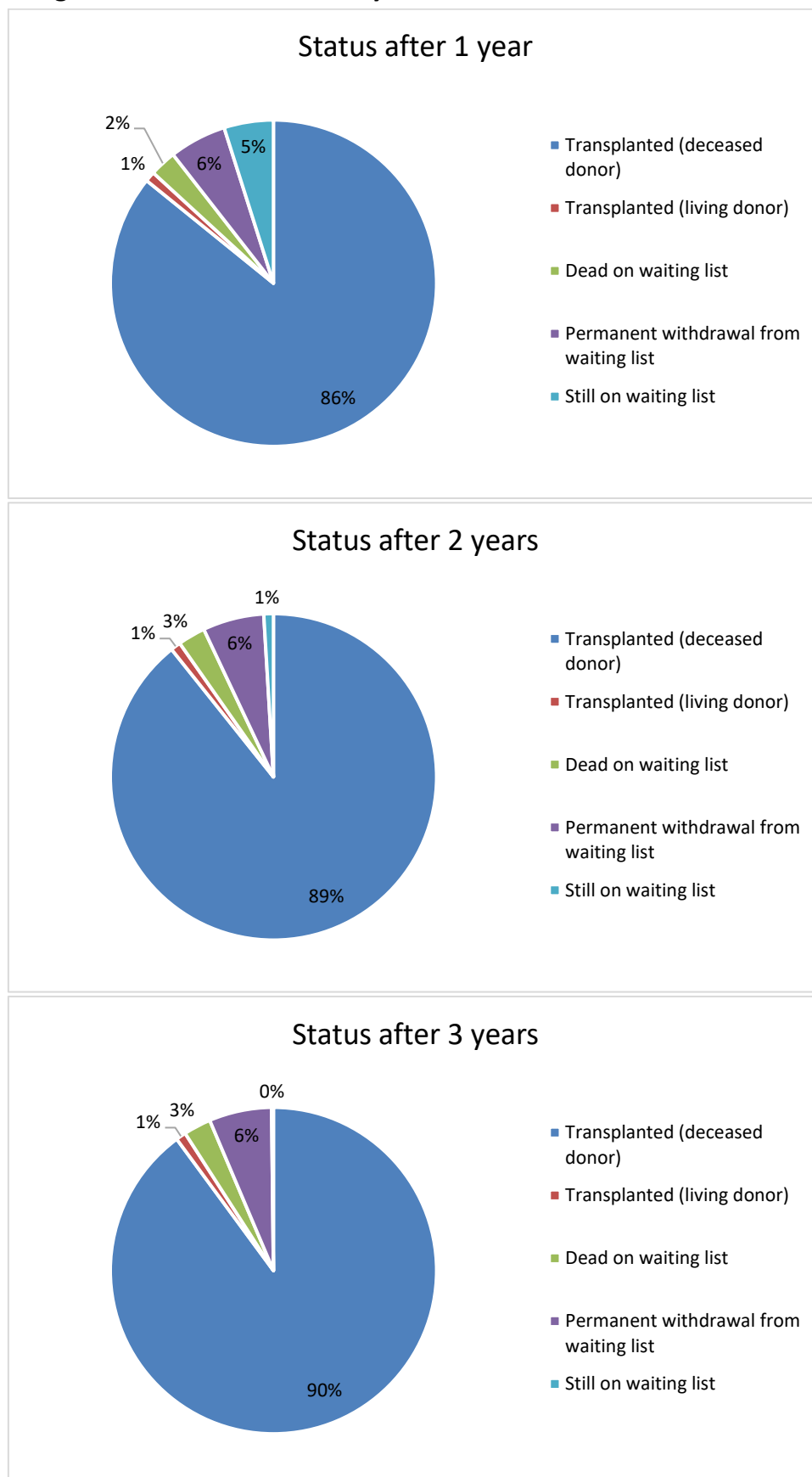
⁴⁹ Icelandic patients are counted as part of Sweden.

Average waiting time on the waiting list until transplantation with deceased donor liver by blood group for each country⁵⁰



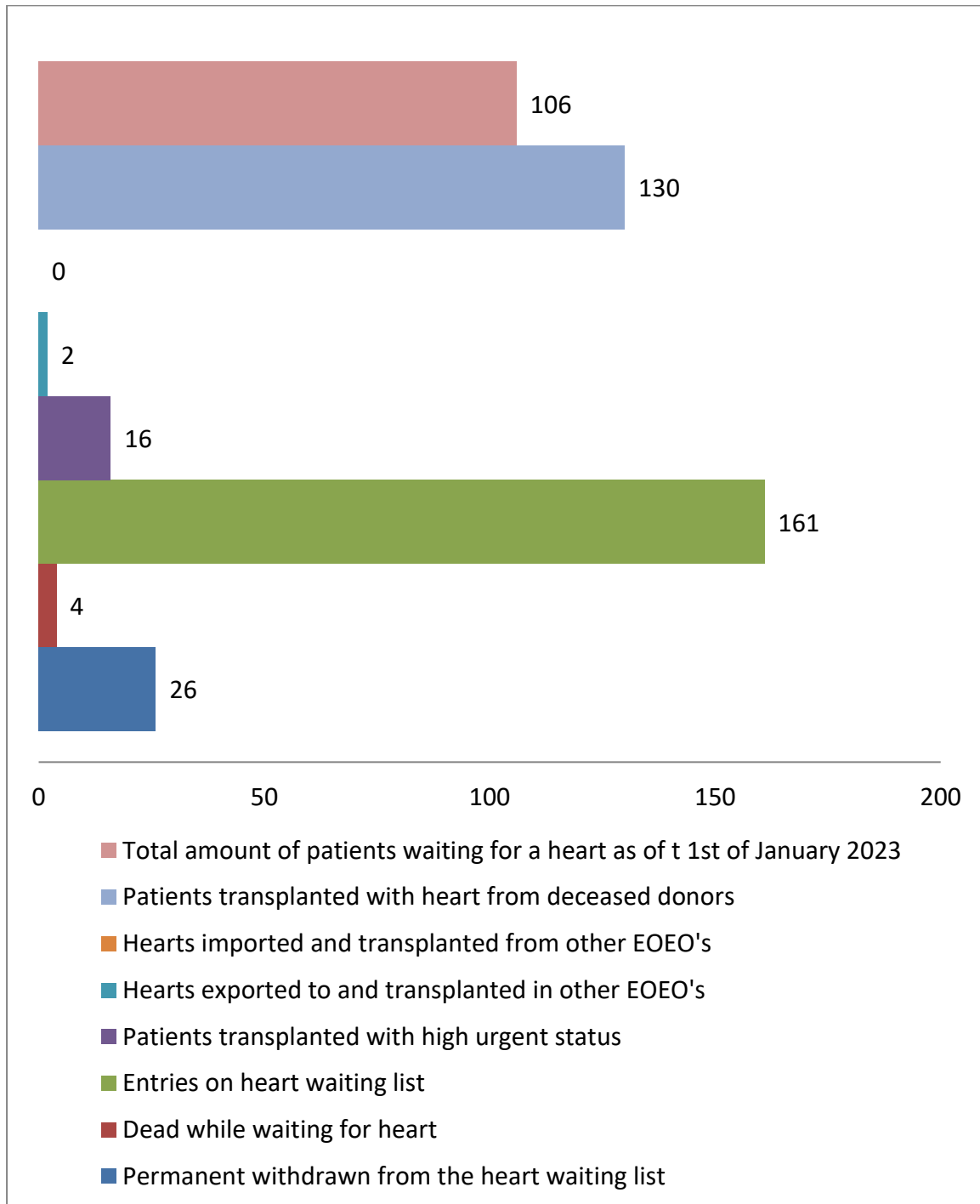
⁵⁰ Icelandic patients are counted as part of Sweden

Liver waiting list registrations 2015-2019 – 3-year outcome⁵¹



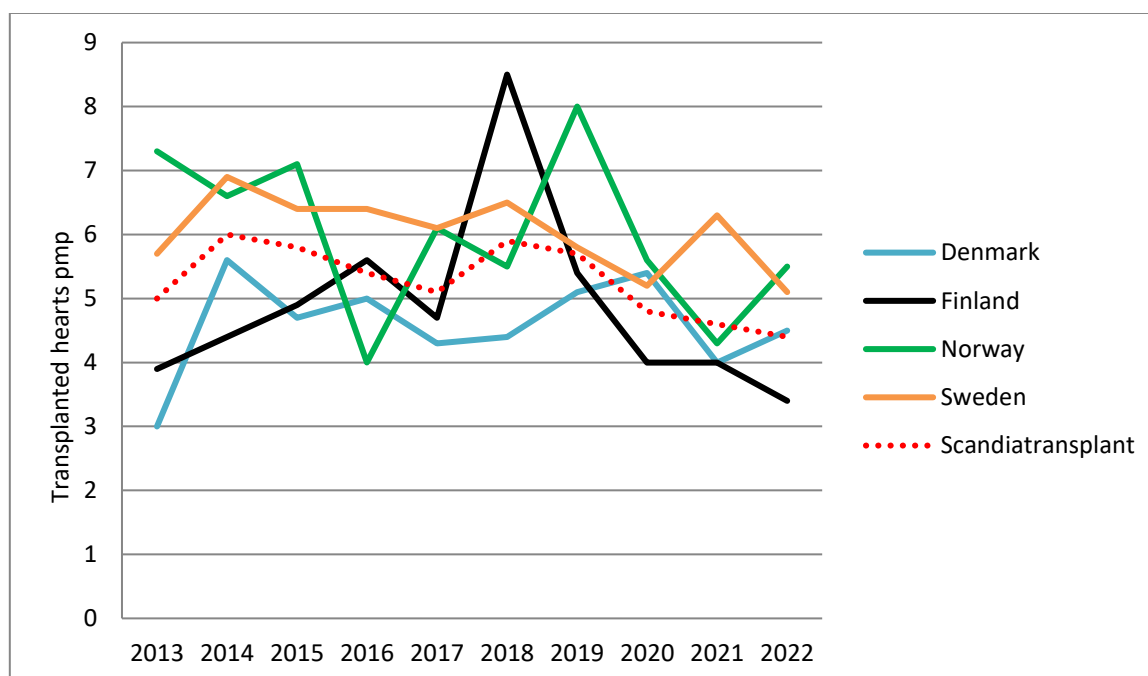
⁵¹ Combined kidney+liver waiting list registrations are not included in these charts.

Hearts 2022



Transplanted hearts pmp⁵² per year⁵³

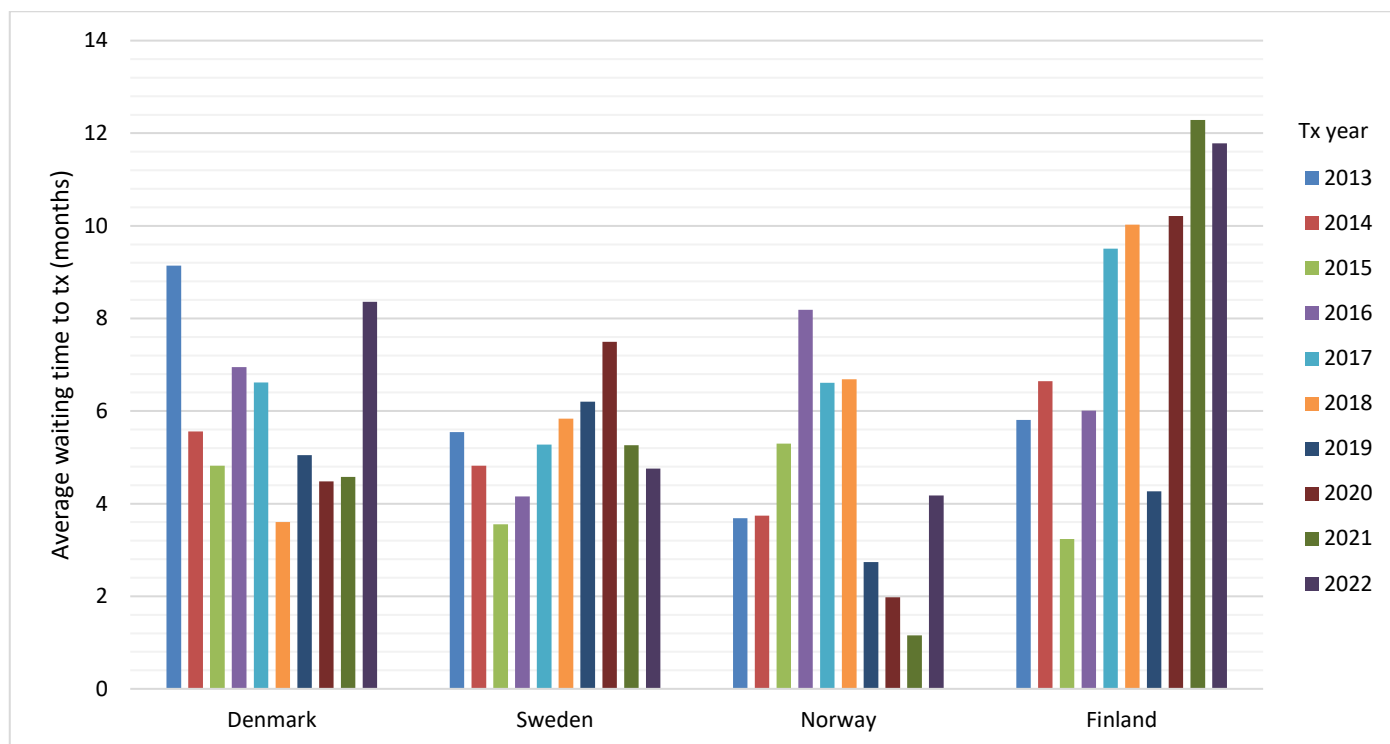
Year	Denmark	Finland	Norway	Sweden	Scandiatransplant
2013	3,0	3,9	7,3	5,7	5,0
2014	5,6	4,4	6,6	6,9	6,0
2015	4,7	4,9	7,1	6,4	5,8
2016	5,0	5,6	4,0	6,4	5,4
2017	4,3	4,7	6,1	6,1	5,1
2018	4,4	8,5	5,5	6,5	5,9
2019	5,1	5,4	8,0	5,8	5,7
2020	5,4	4,0	5,6	5,2	4,8
2021	4,0	4,0	4,3	6,3	4,6
2022	4,5	3,4	5,5	5,1	4,4



⁵² pmp: per million population

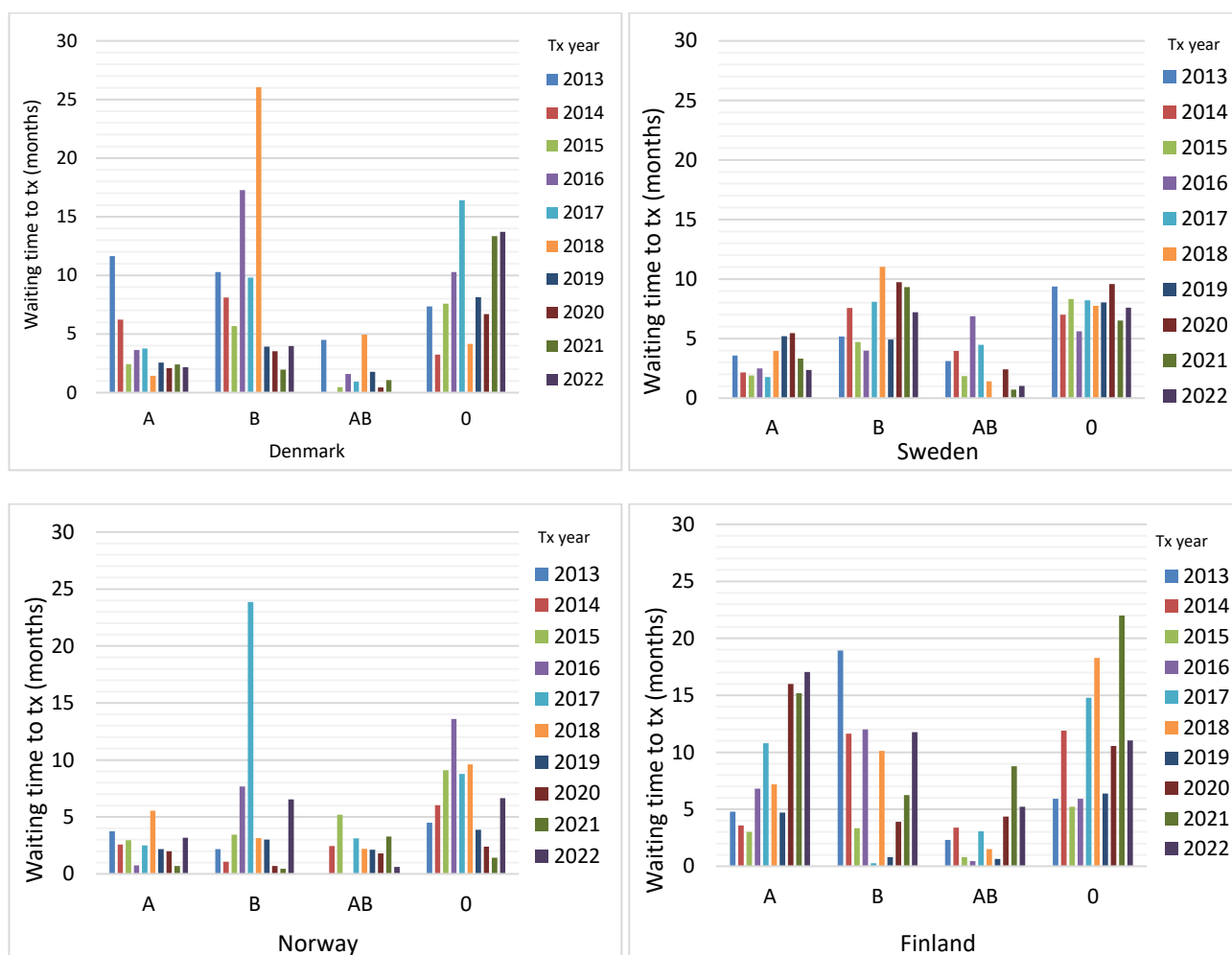
⁵³ Estonian deceased donor heart transplantations are performed in Helsinki.

Average waiting time on the waiting list until transplantation with deceased donor heart⁵⁴



⁵⁴ Icelandic patients are counted as part of Sweden.

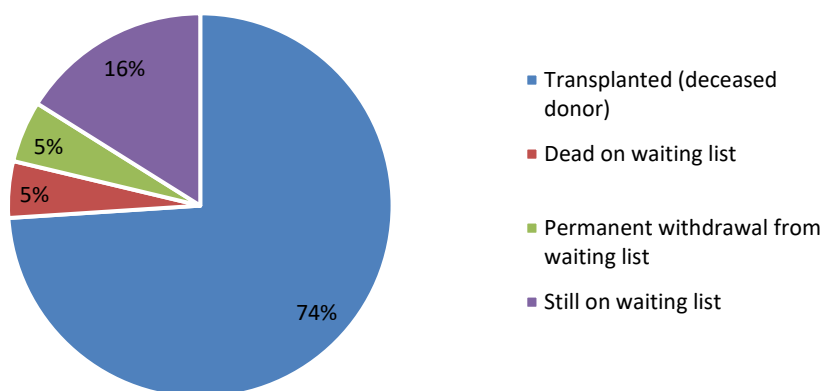
Average waiting time on the waiting list until transplantation with deceased donor heart by blood group for each country⁵⁵



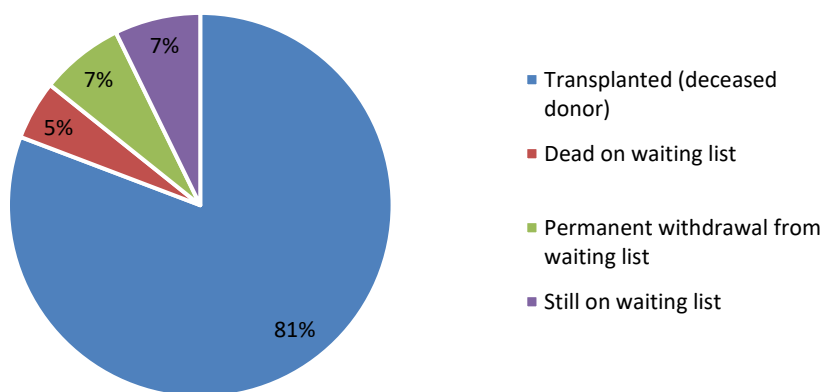
⁵⁵ Icelandic patients are counted as part of Sweden.

Heart waiting list registrations 2015-2019 – 3-year outcome

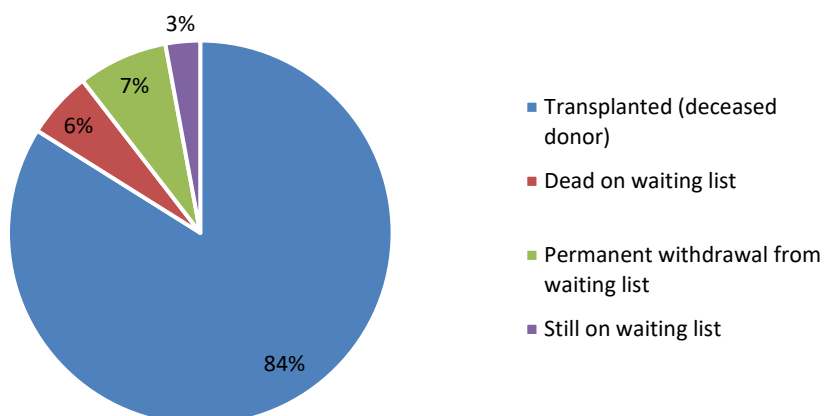
Status after 1 year



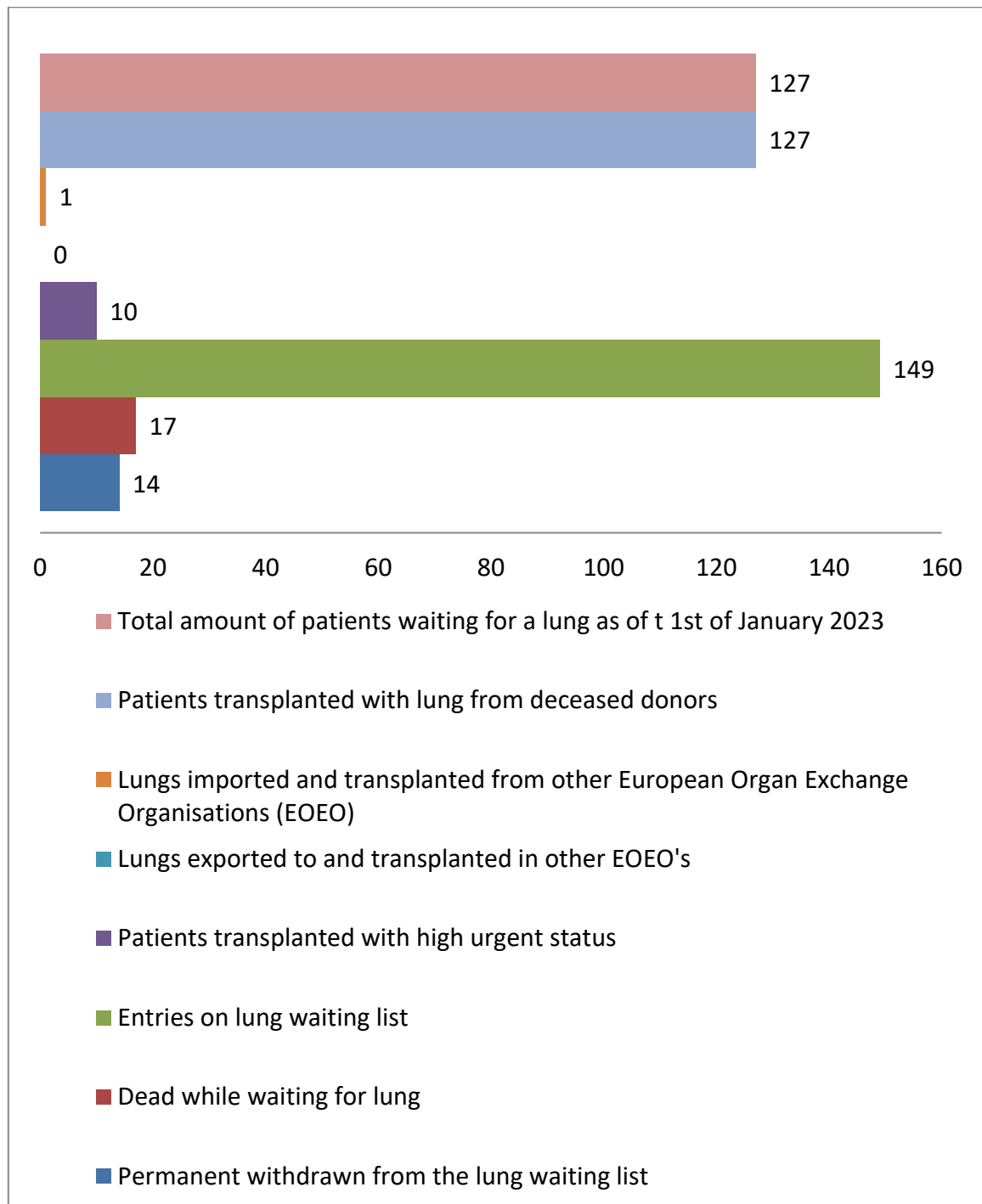
Status after 2 years



Status after 3 years

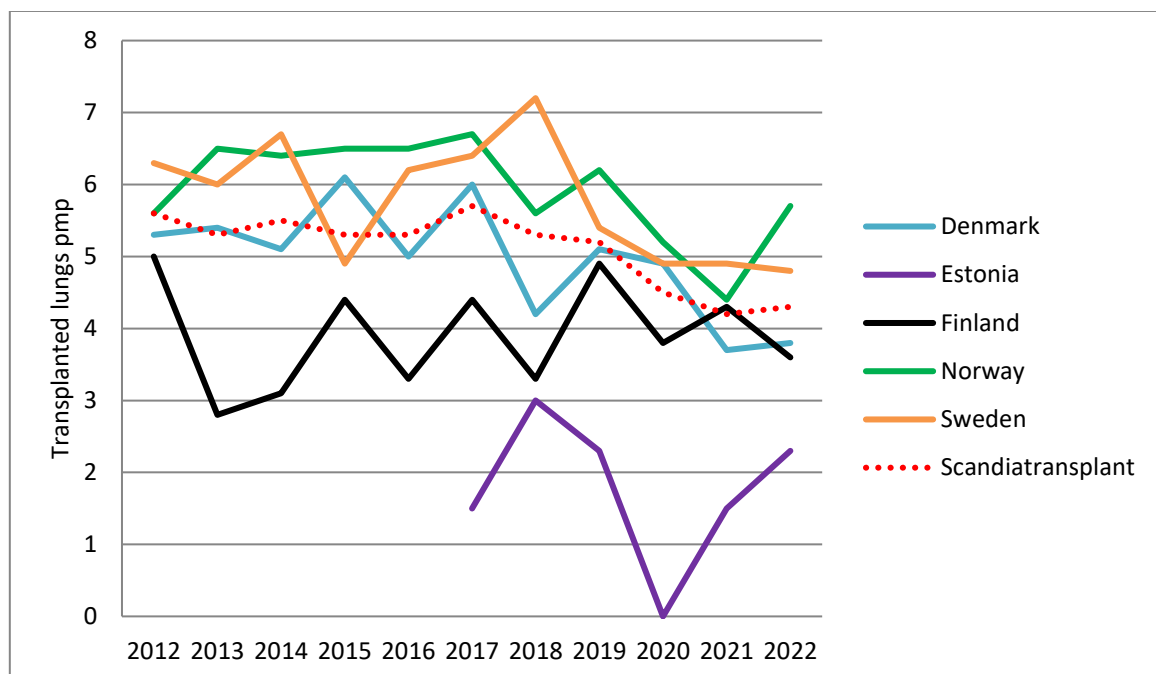


Lungs 2022



Transplanted lungs (Double, single and heart-lung) pmp⁵⁶ per year

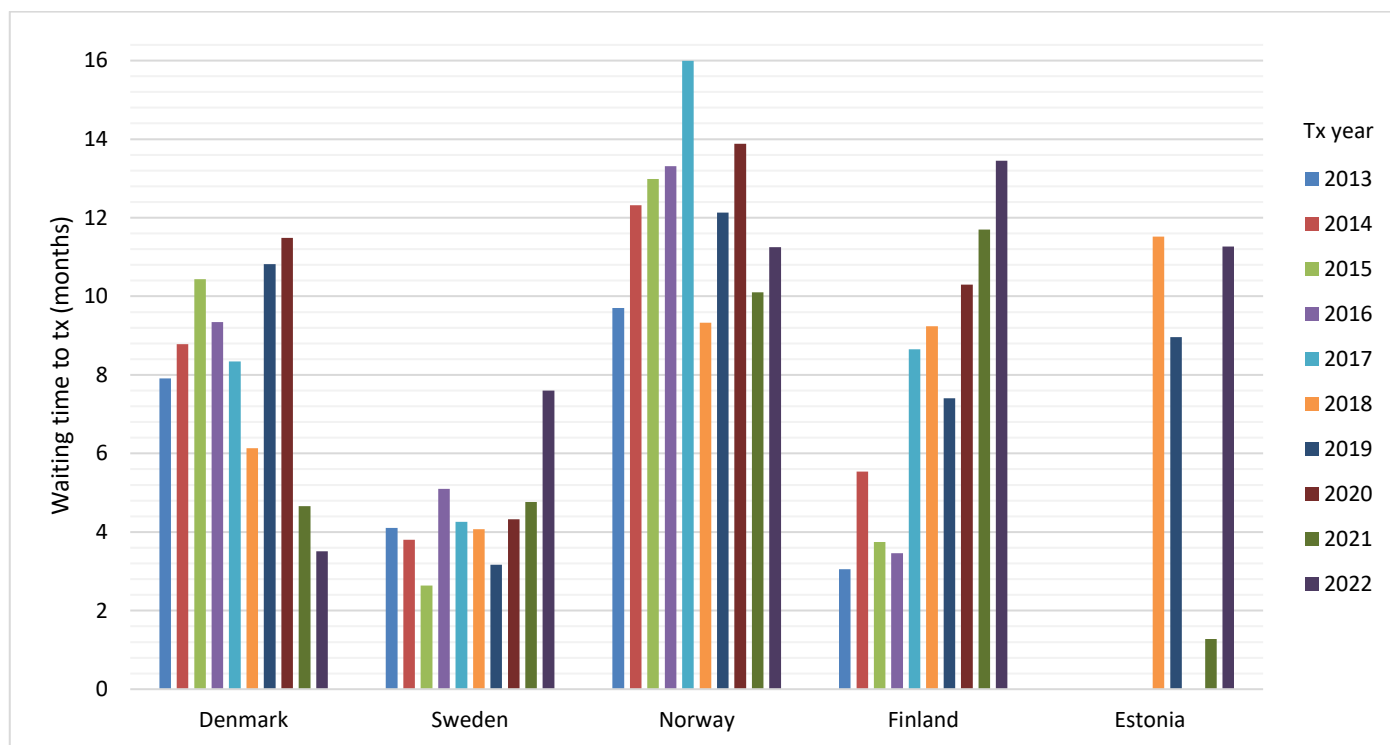
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2013	5,4		2,8	6,5	6,0	5,3
2014	5,1		3,1	6,4	6,7	5,5
2015	6,1		4,4	6,5	4,9	5,3
2016	5,0		3,3	6,5	6,2	5,3
2017	6,0	1,5 ⁵⁷	4,4	6,7	6,4	5,7
2018	4,2	3,0	3,3	5,6	7,2	5,3
2019	5,1	2,3	4,9	6,2	5,4	5,2
2020	4,9	0	3,8	5,2	4,9	4,7
2021	3,7	1,5	4,3	4,4	4,9	4,2
2022	3,8	2,3	3,6	5,7	4,8	4,3



⁵⁶ pmp: per million population

⁵⁷ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

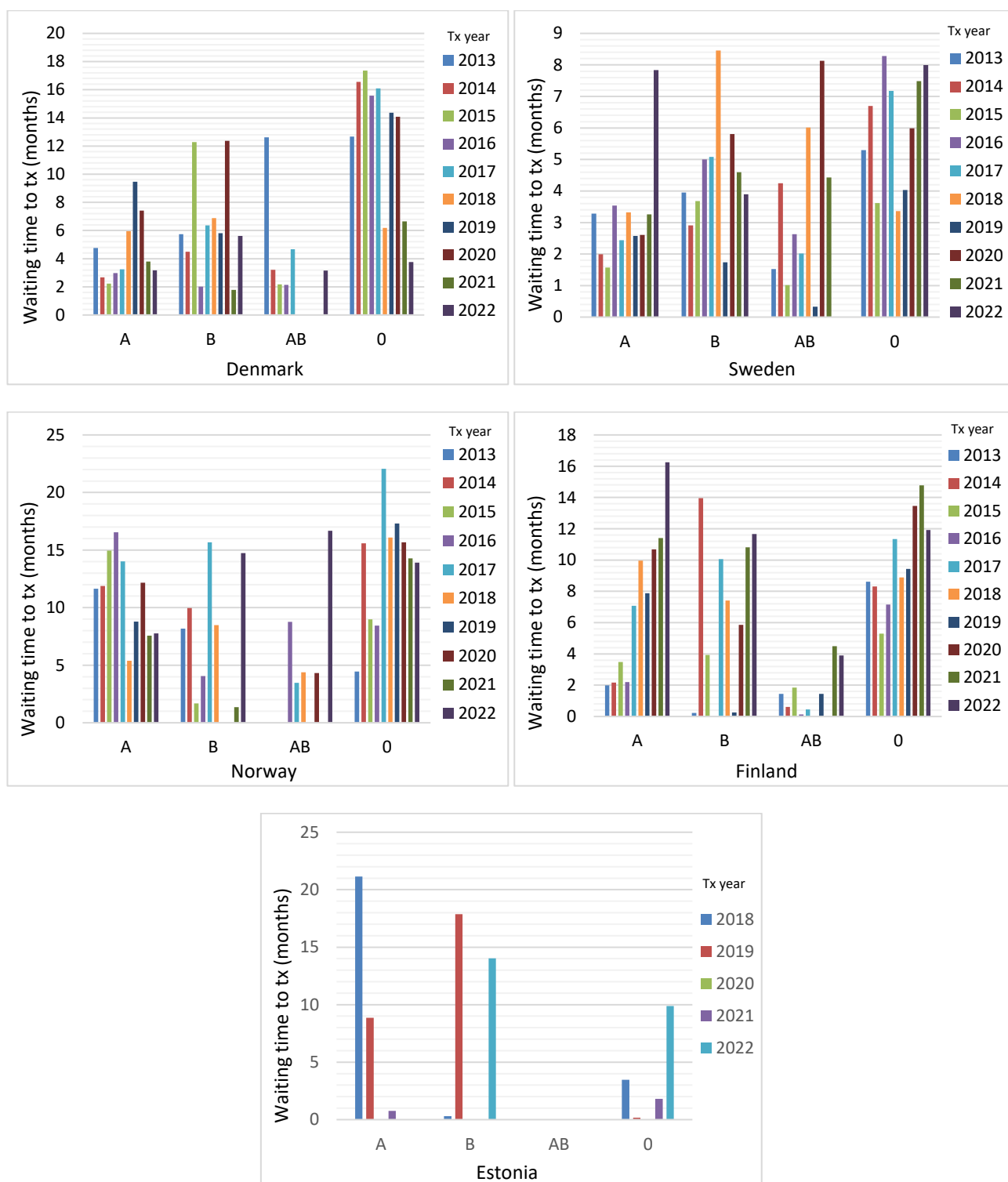
Average waiting time on the waiting list until transplantation with deceased donor lungs^{58,59}



⁵⁸ Icelandic patients are counted as part of Sweden.

⁵⁹ Includes double lung, single lung and heart-lung block.

Average waiting time on the waiting list until transplantation with deceased donor lungs by blood group for each country^{60,61}

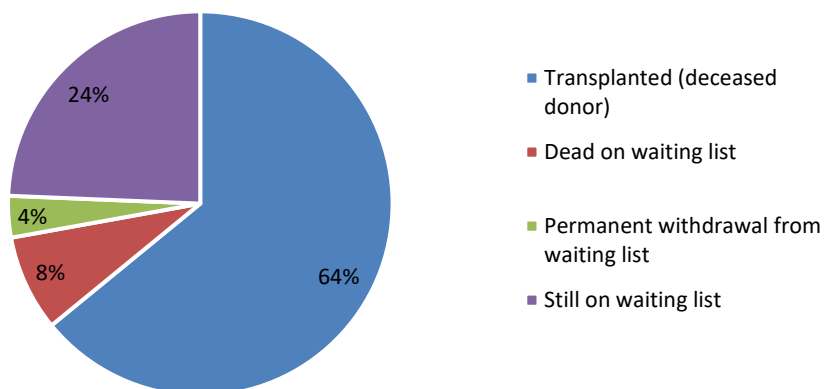


⁶⁰ Icelandic patients are counted as part of Sweden.

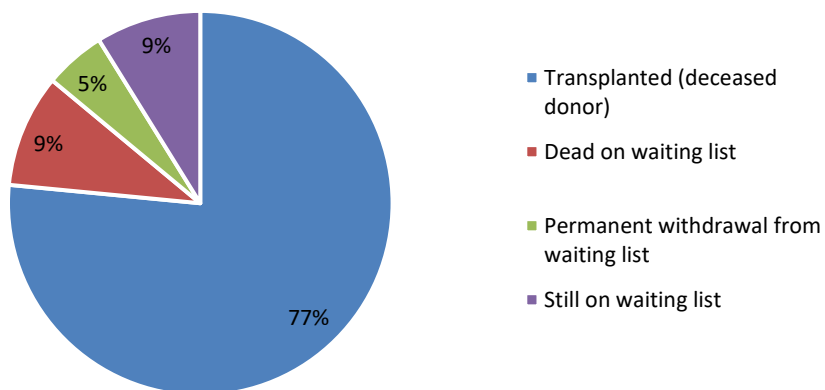
⁶¹ Includes double lung, single lung and heart-lung block.

Lung waiting list registrations 2015-2019 – 3-year outcome

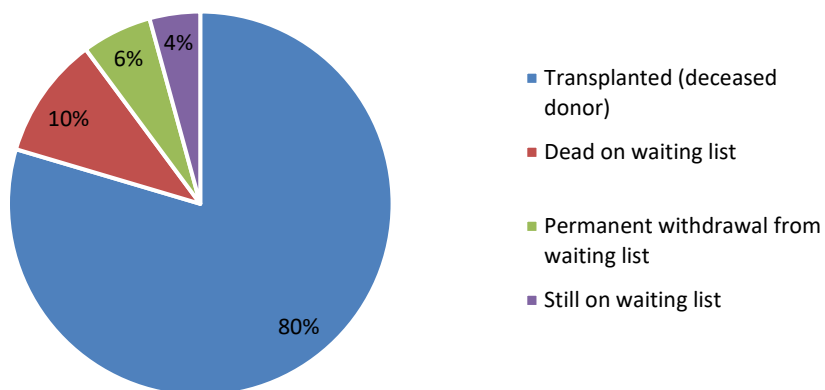
Status after 1 year



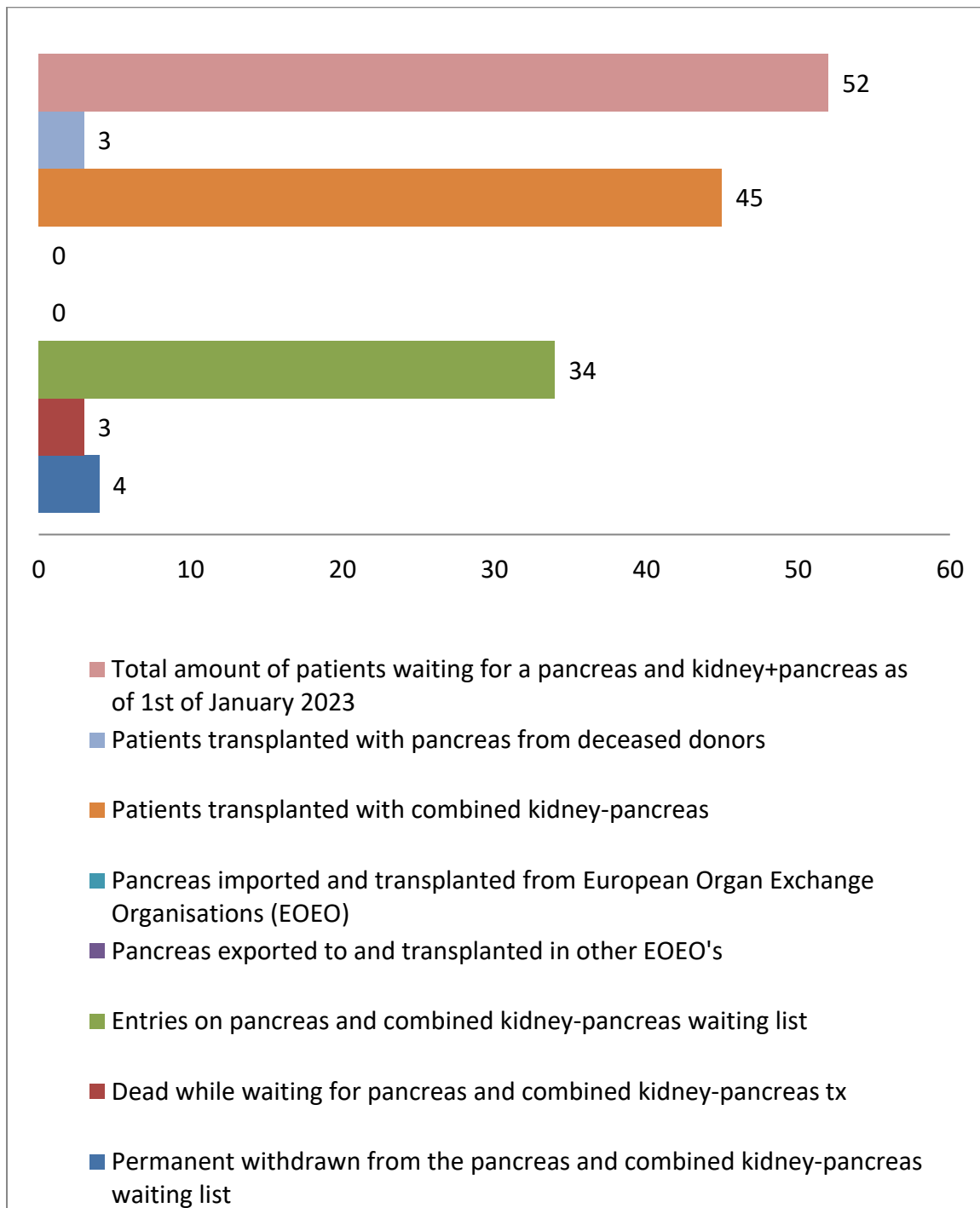
Status after 2 years



Status after 3 years

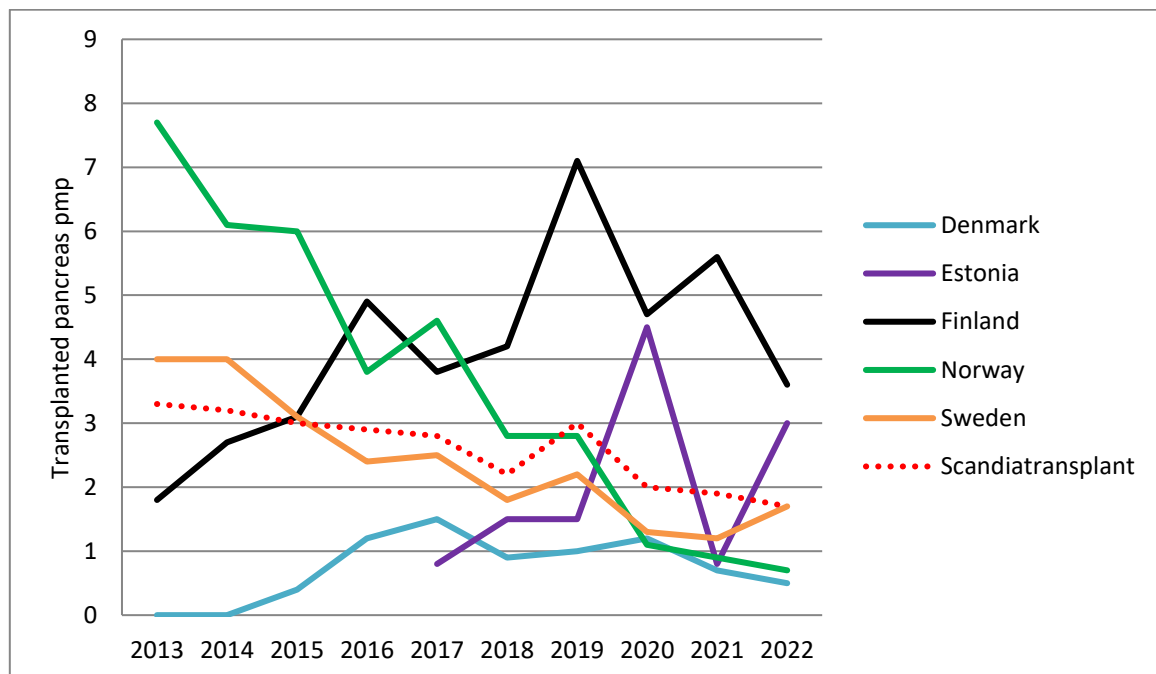


Pancreas 2022



Transplanted pancreas (incl. combined kidney-pancreas) pmp⁶² per year

Year	Denmark ⁶³	Estonia	Finland	Norway	Sweden	Scandiatransplant
2013			1,8	7,7	4,0	3,3
2014			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 ⁶⁴	3,8	4,6	2,5	2,8
2018	0,9	1,5	4,2	2,8	1,8	2,2
2019	1,0	1,5	7,1	2,8	2,2	3,0
2020	1,2	4,5	4,7	1,1	1,3	2,0
2021	0,7	0,8	5,6	0,9	1,2	1,9
2022	0,5	3,0	3,6	0,7	1,7	1,7



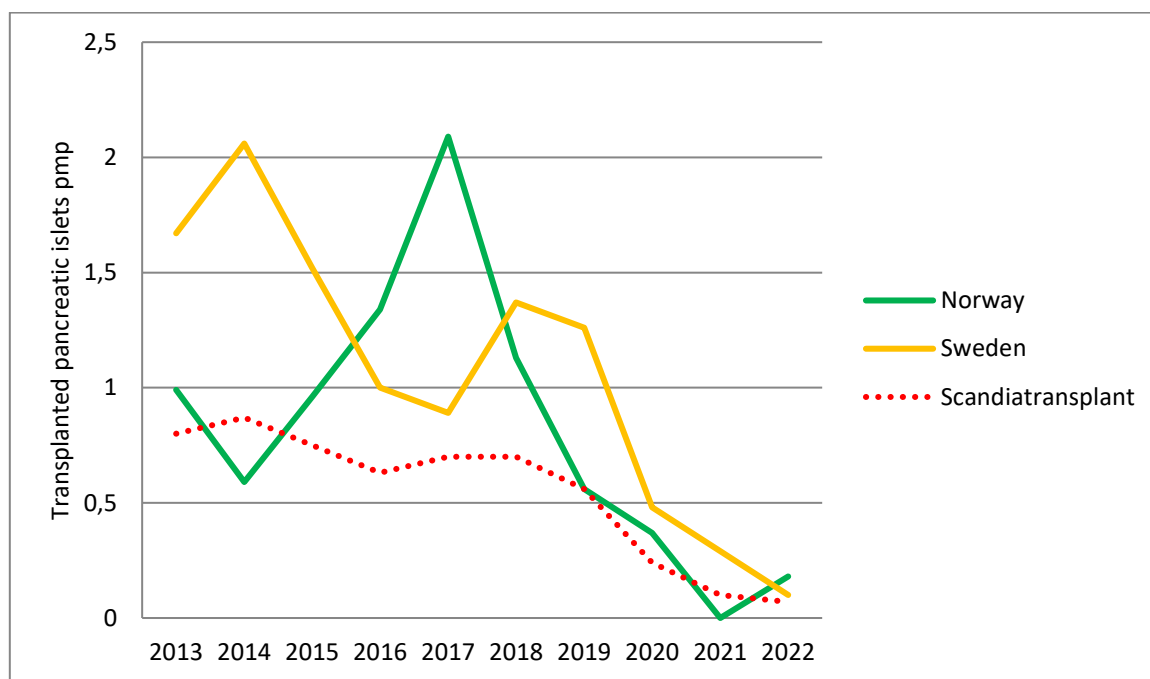
⁶² pmp: per million population

⁶³ Pancreas program started in Denmark in 2015.

⁶⁴ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Transplanted pancreatic islets⁶⁵ pmp⁶⁶ per year

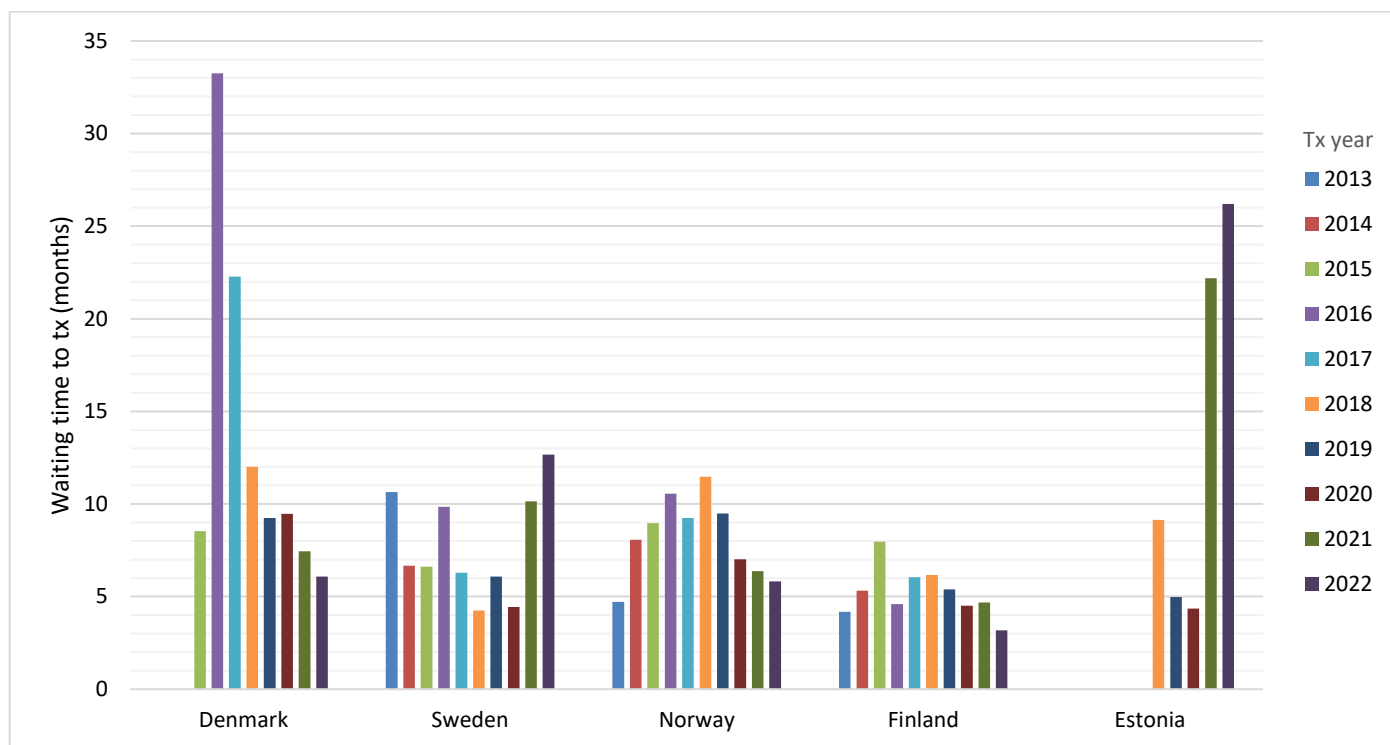
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2013	0		0	0,99	1,67	0,80
2014	0		0	0,59	2,06	0,87
2015	0		0	0,96	1,52	0,75
2016	0		0	1,34	1,00	0,63
2017	0	0	0	2,09	0,89	0,70
2018	0	0	0	1,13	1,37	0,70
2019	0	0	0	0,56	1,26	0,56
2020	0	0	0	0,37	0,48	0,24
2021	0	0	0	0,00	0,29	0,10
2022	0	0	0	0,18	0,10	0,07



⁶⁵ Each portion is counted as one transplantation

⁶⁶ pmp: per million population

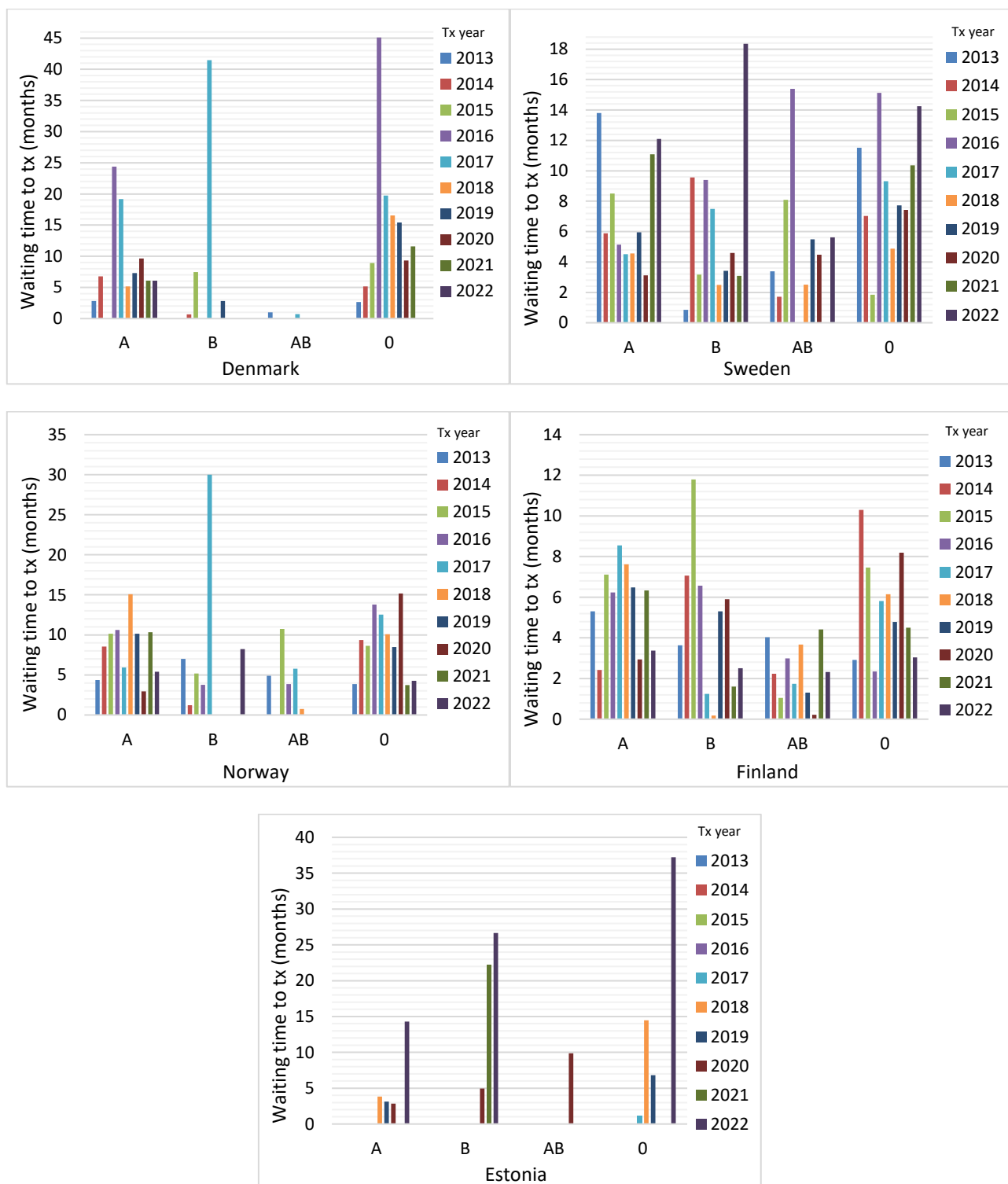
Average waiting time on the waiting list until transplantation with deceased donor pancreas^{67,68}



⁶⁷ Icelandic patients are counted as part of Sweden.

⁶⁸ Pancreas program started in Denmark in 2015.

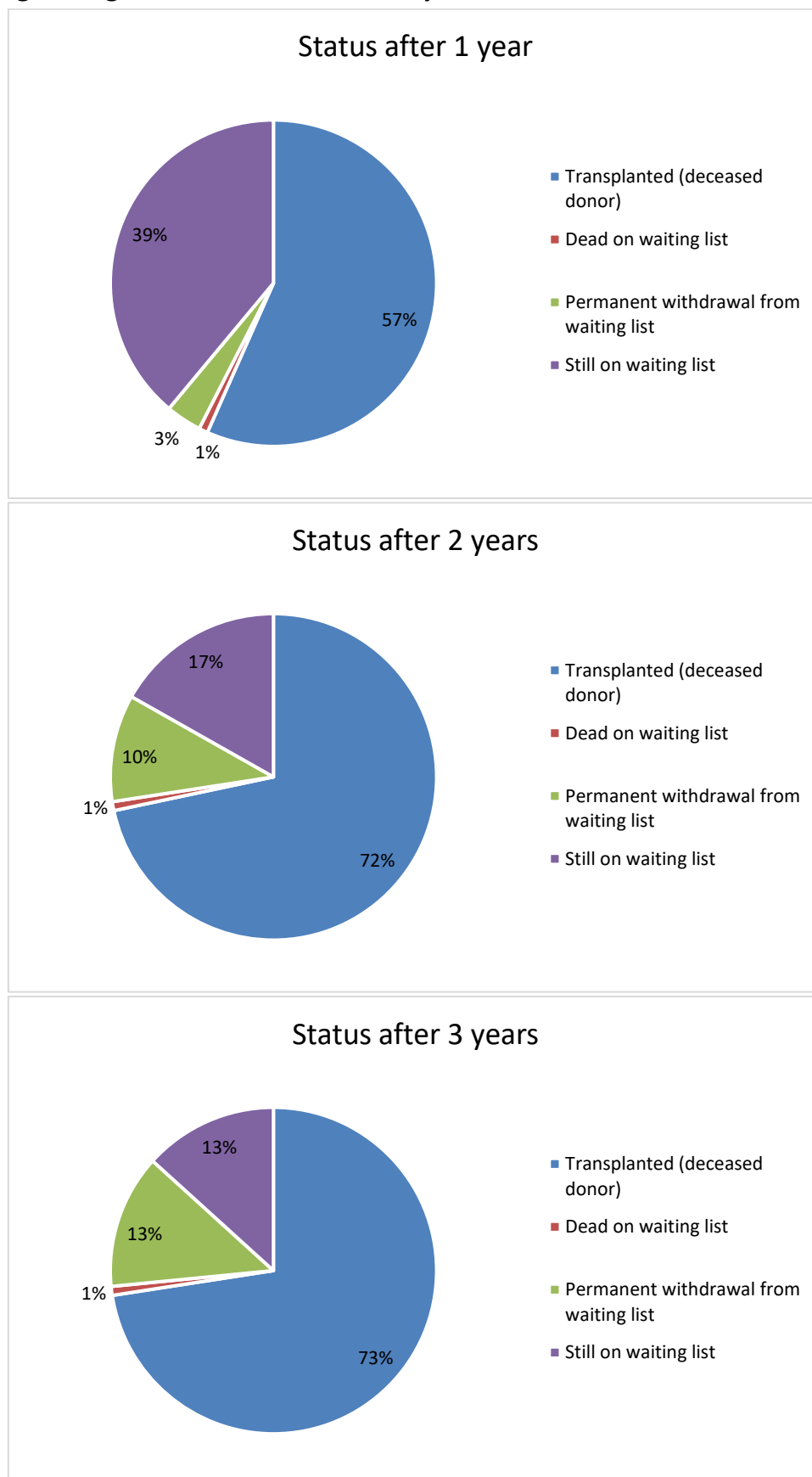
Average waiting time on the waiting list until transplantation with deceased donor pancreas by blood group for each country^{69,70}



⁶⁹ Icelandic patients are counted as part of Sweden.

⁷⁰ Pancreas program started in Denmark in 2015.

Pancreas waiting list registrations 2015-2019 – 3-year outcome⁷¹



⁷¹ Combined kidney+liver and kidney+pancreas waiting list registrations are not included in this chart.

On behalf of Scandiatransplant

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