

Annual report 2023



Scandiatransplant office

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Introduction

The number of utilized deceased donors in 2023 was the highest ever in Scandiatransplant as was the number of transplanted patients. The number of patients waiting for an organ transplant has decreased after being relatively stable the preceding 6 years.

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 2023 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. This year the Council meeting was held in Estonia for the first time.

The Board members have been Johan Nilsson (Sweden), Jóhann Jónsson (Iceland), Michael Perch (Denmark), Morten Hagness (Norway), Marko Lempinen (Finland), Virge Pall (Estonia) and Allan Rasmussen was the chairman. At the Council meeting in Tallinn in May, Are Martin Holm replaced Morten Hagness who had served for 6 years as Board member from Norway. Kaj Anker Jørgensen (Medical Director) participated in all Board meetings as observer.

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 the council, the board, groups and committees, comply 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 2023, 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 (5.5 mill. DKK ~ 740.000 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 2023

Many member hospitals experienced record high donation and transplantation numbers. The different groups and the Board have resumed to normal activity, but after Covid several meetings have been held on-line. The Scandiatransplant Infectious Disease Group has been formalized and the articles of the association revised accordingly. The investigations of Riga membership are continuing and people from Riga are participating in group meetings.

The data have finally been moved from the Oracle based database to the open source database PostgreSQL and the IT-system is continuously being changed according to the users request and to improve security and functionality.

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 2014 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 increasing number of DCD donors have led us to look deeper into DCD versus DBD. As last year we present data on STEP, waiting time, and 3-year outcome.

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.

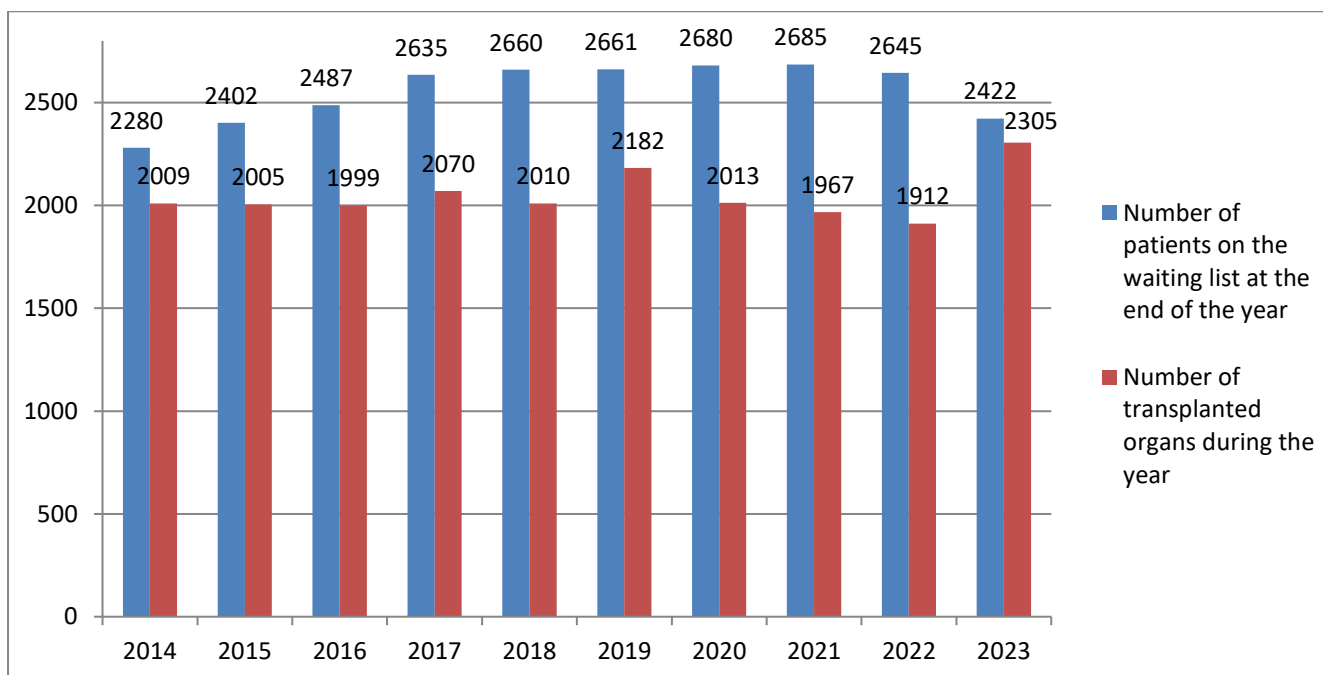
Further presentation of Scandiatransplant data is available in the annual slideshow:

http://www.scandiatransplant.org/resources/sctp_slideshow_2023.pptx

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
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
2023	2422	2305

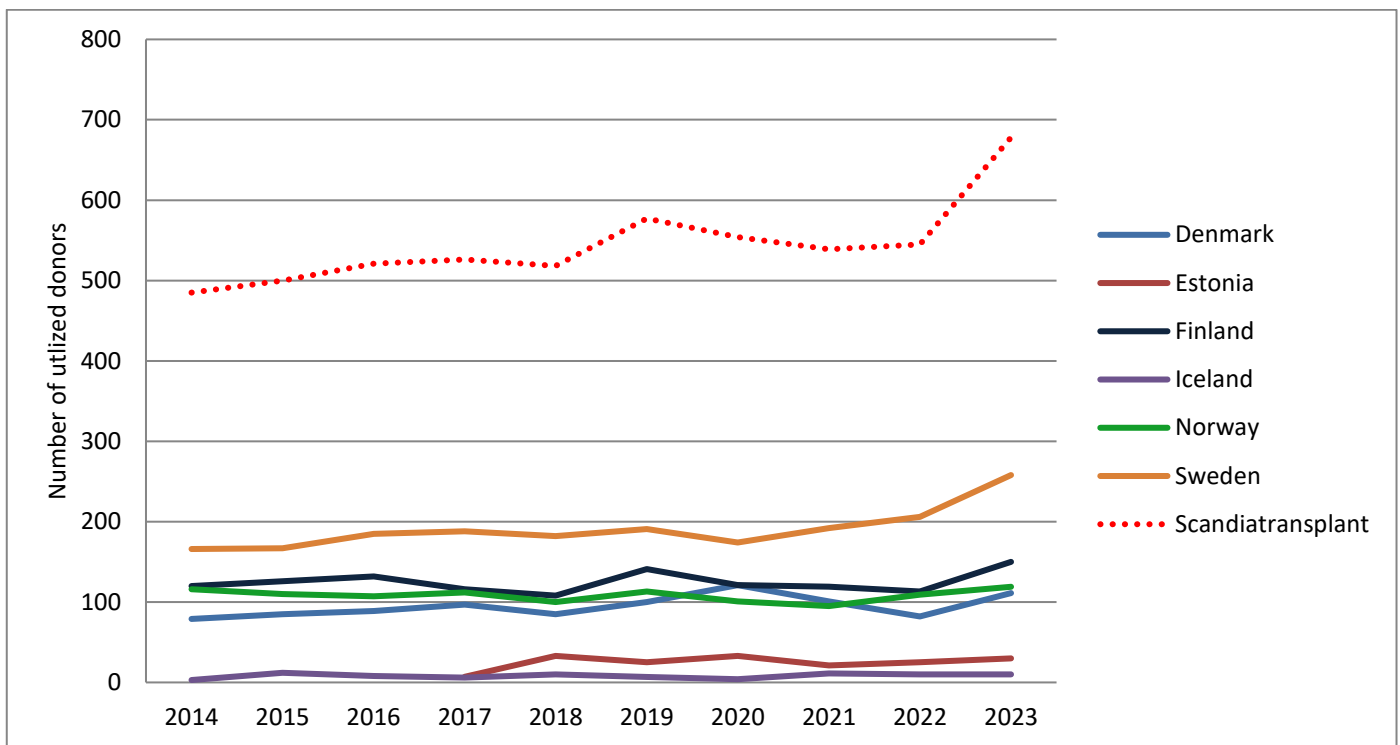


¹ Including patients (active/temp. on hold) waiting for kidney, liver, liver-kidney, heart, heart-lung, single lung, double lung, kidney-pancreas, pancreas and pancreatic islets

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

Utilized deceased donors³ in numbers

Year	Denmark	Estonia ⁴	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	111	30	150	10	119	258	678

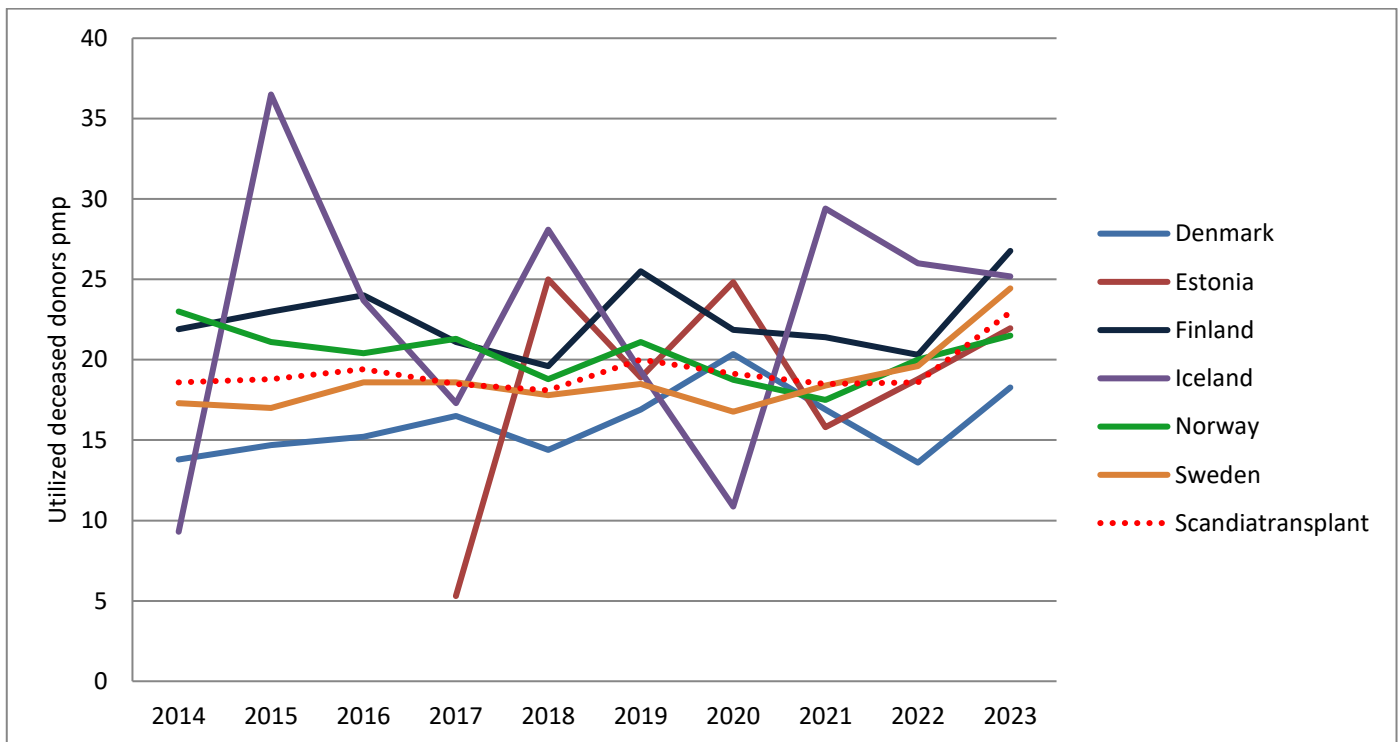


³ Utilized donor: An actual donor from whom at least one solid organ was transplanted.
http://www.scandiatransplant.org/data/Deceaseddonordefv_3.pdf

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
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
2023	18,3	22,0	26,8	25,2	21,5	24,4	23,0



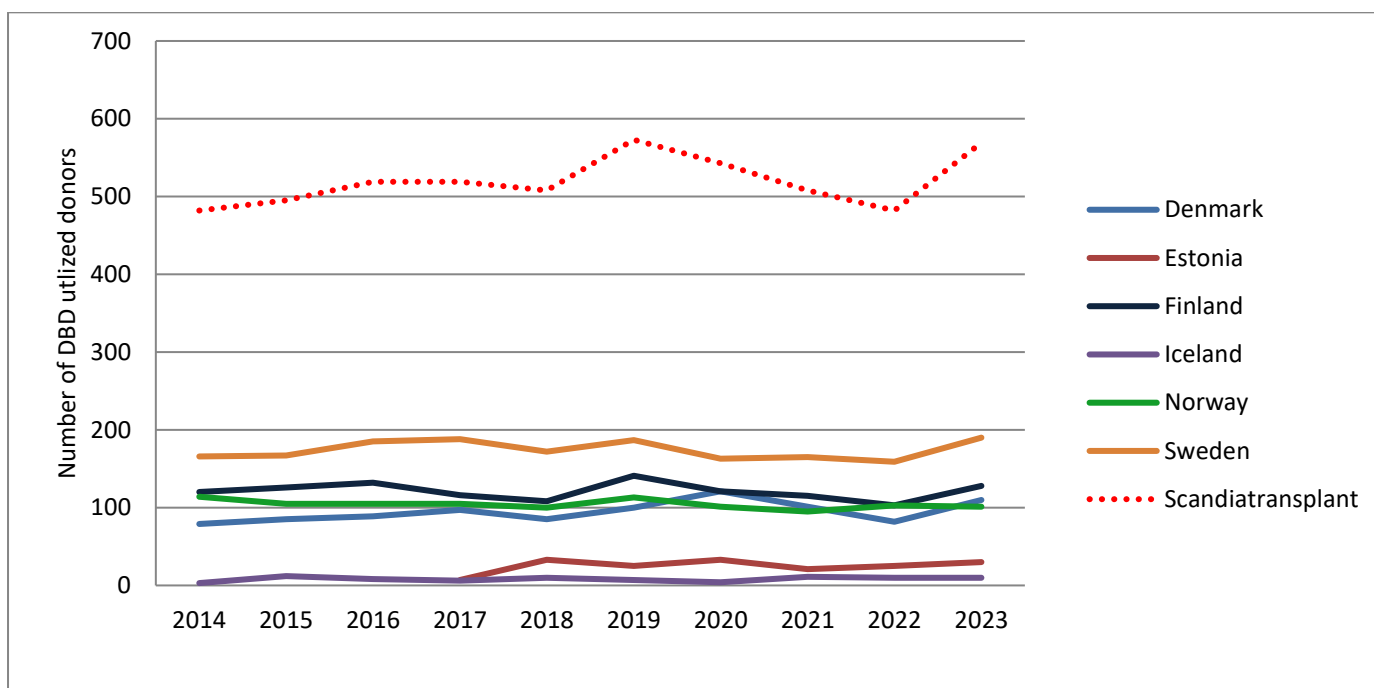
⁵ pmp: per million population

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
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
2023	110	30	128	10	101	190	569



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

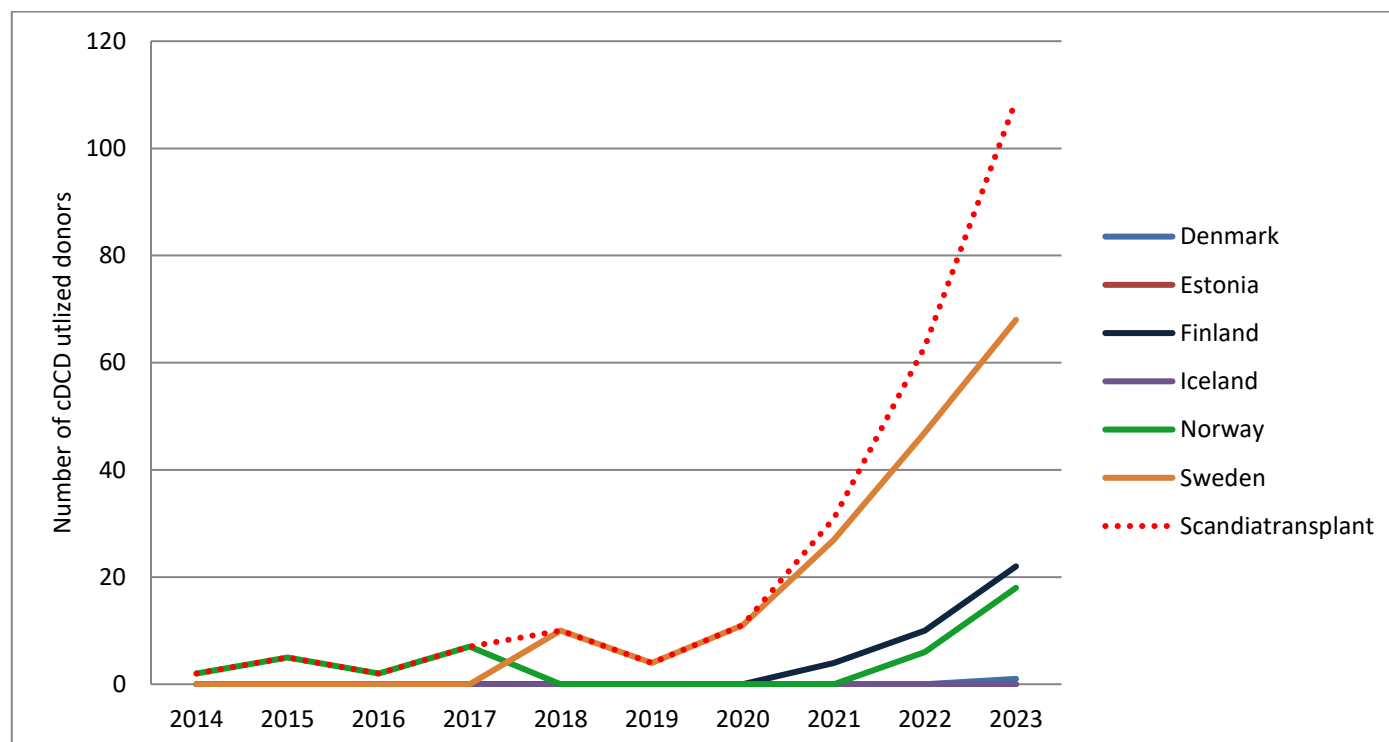
⁹ Figures included from Estonia year 2017 starts from October 1st 2017

Actual DBD donors¹⁰

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2017	6	0	2	0	3	3	14
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
2023	2	0	5	0	2	5	14

Utilized cDCD donors

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	1	0	22	0	18	68	109



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.

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
2023	0	0	0	0	1	4	5

'Stand down' cDCD donors¹²

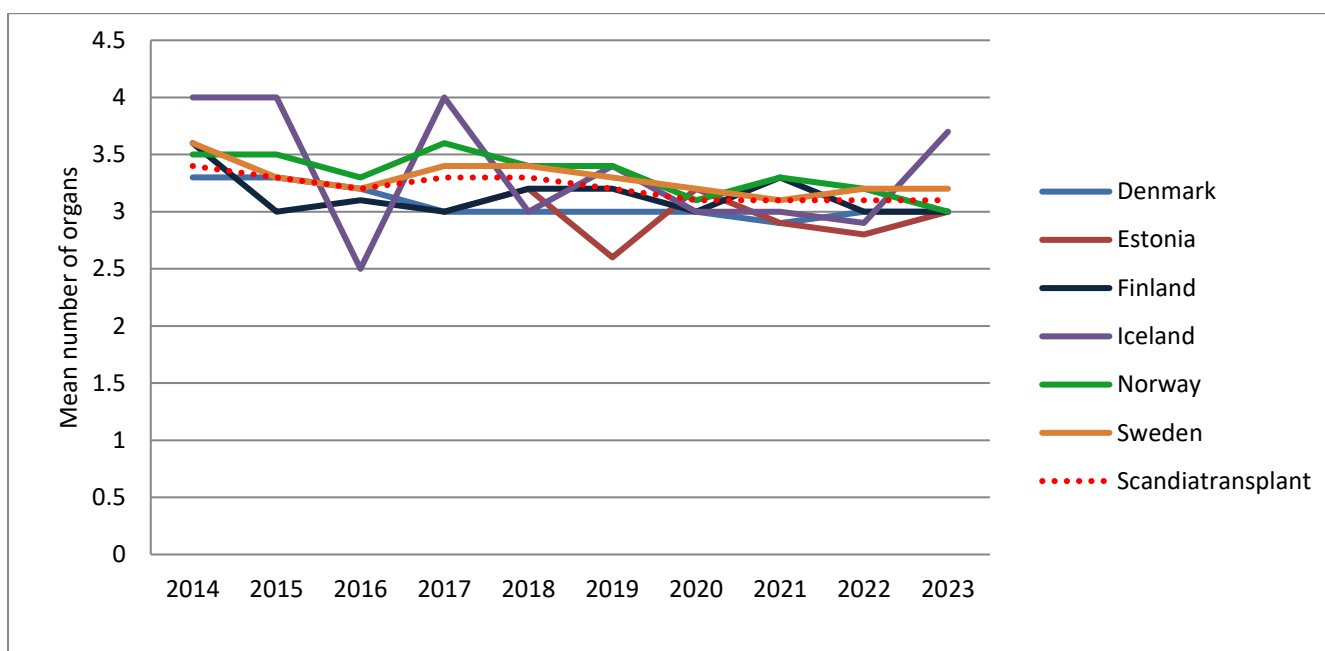
Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	1	1
2020	0	0	0	0	0	1	1
2021	0	0	1	0	0	3	4
2022	0	0	0	0	2	3	5
2023	0	0	2	0	4	12	18

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
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
2023	3,0	3,0	3,0	3,7	3,0	3,2	3,1



Mean number of organs per cDCD donor used for transplantation

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	2,0 ¹⁵		1,9		2,7	2,4	2,3

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

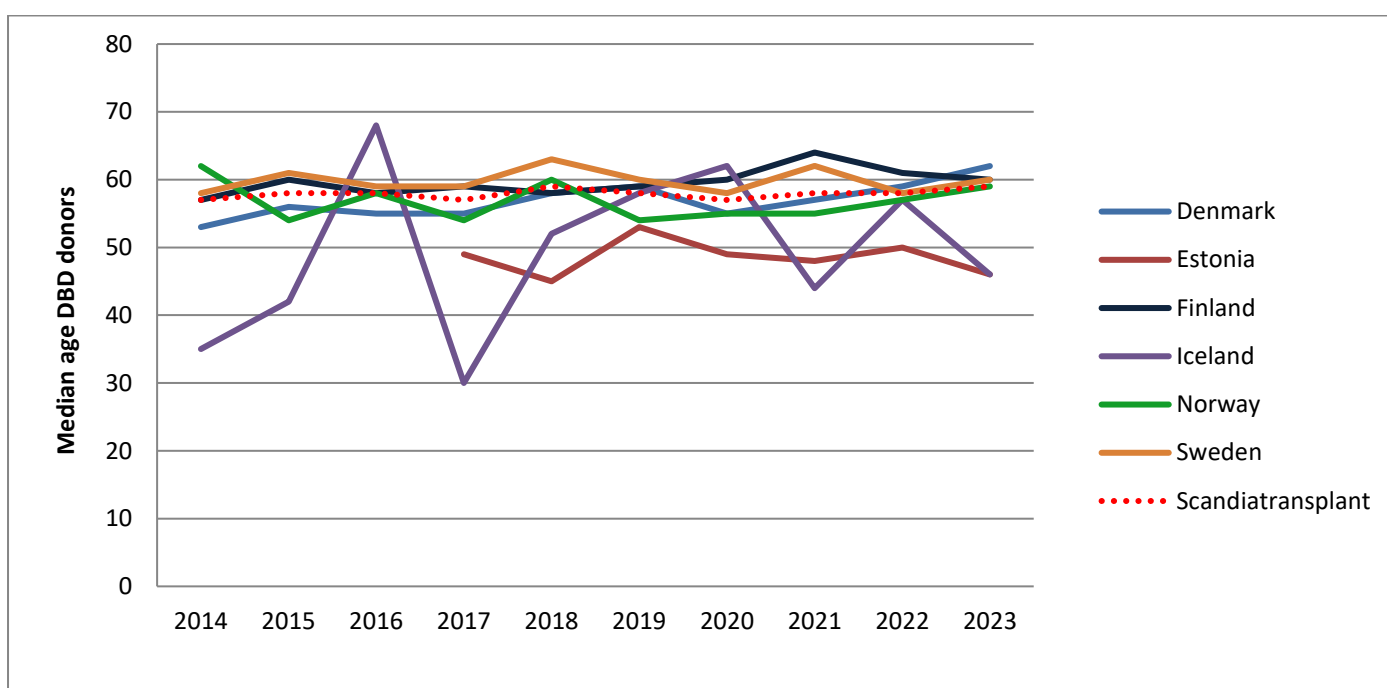
¹⁵ Only based on one donor

Organ types transplanted by donor type in 2023

	Number of DBD donors	% of all DBD donors	Number of cDCD donors	% of all cDCD donors
Only kidney	112	20	64	58
Kidney + liver or pancreas	155	27	26	24
Kidney + heart and/or lung	33	6	8	7
Kidney + liver + heart or lung	94	16	6	5
Kidney + liver + pancreas/islet/intestine	17	3	1	1
Kidney + \geq 3 other organs	93	16	1	1
Liver and/or heart and/or lung	66	12	4	4
Total	570	100	110	100

Median age of DBD donors

Year	Denmark	Estonia ¹⁶	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	62	46	60	46	59	59	58



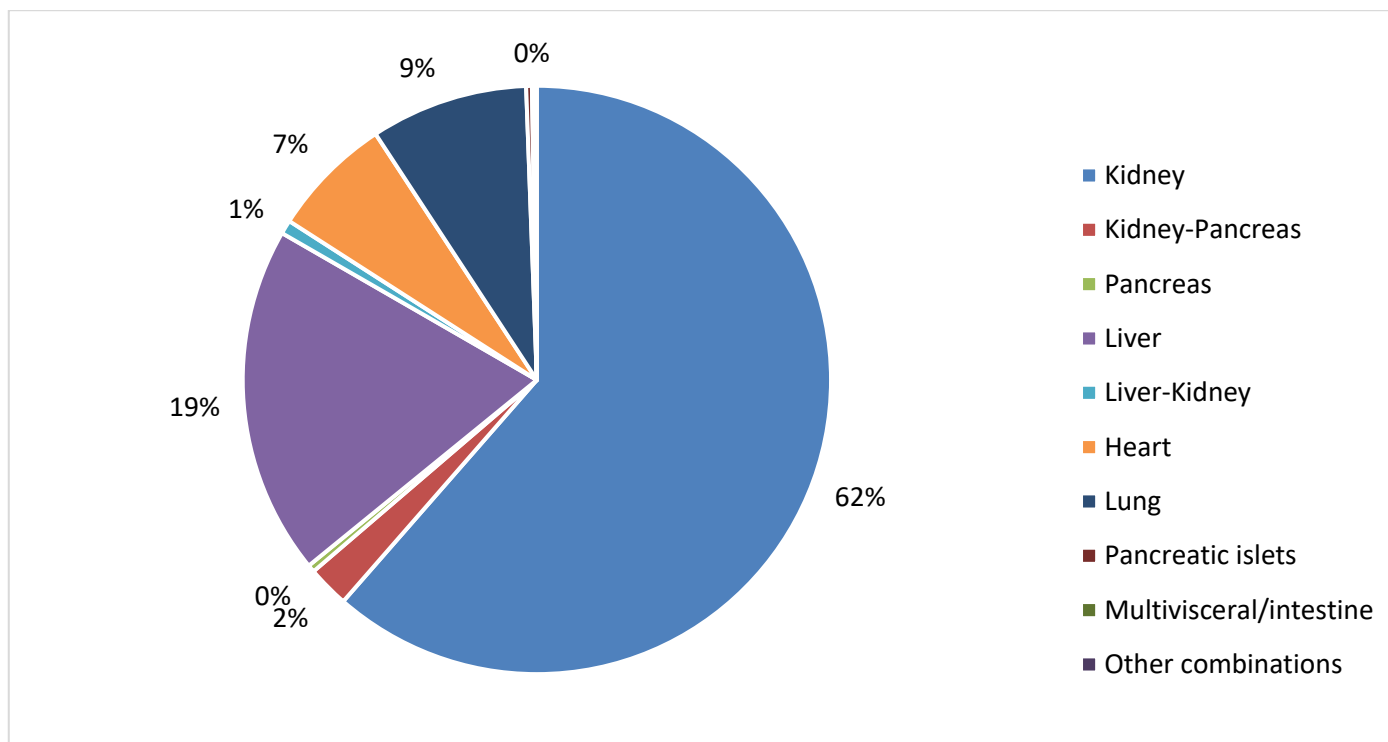
Median age of cDCD donors

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	59		59		57	63	59

¹⁶ Figures included from Estonia year 2017 starts from October 1st 2017

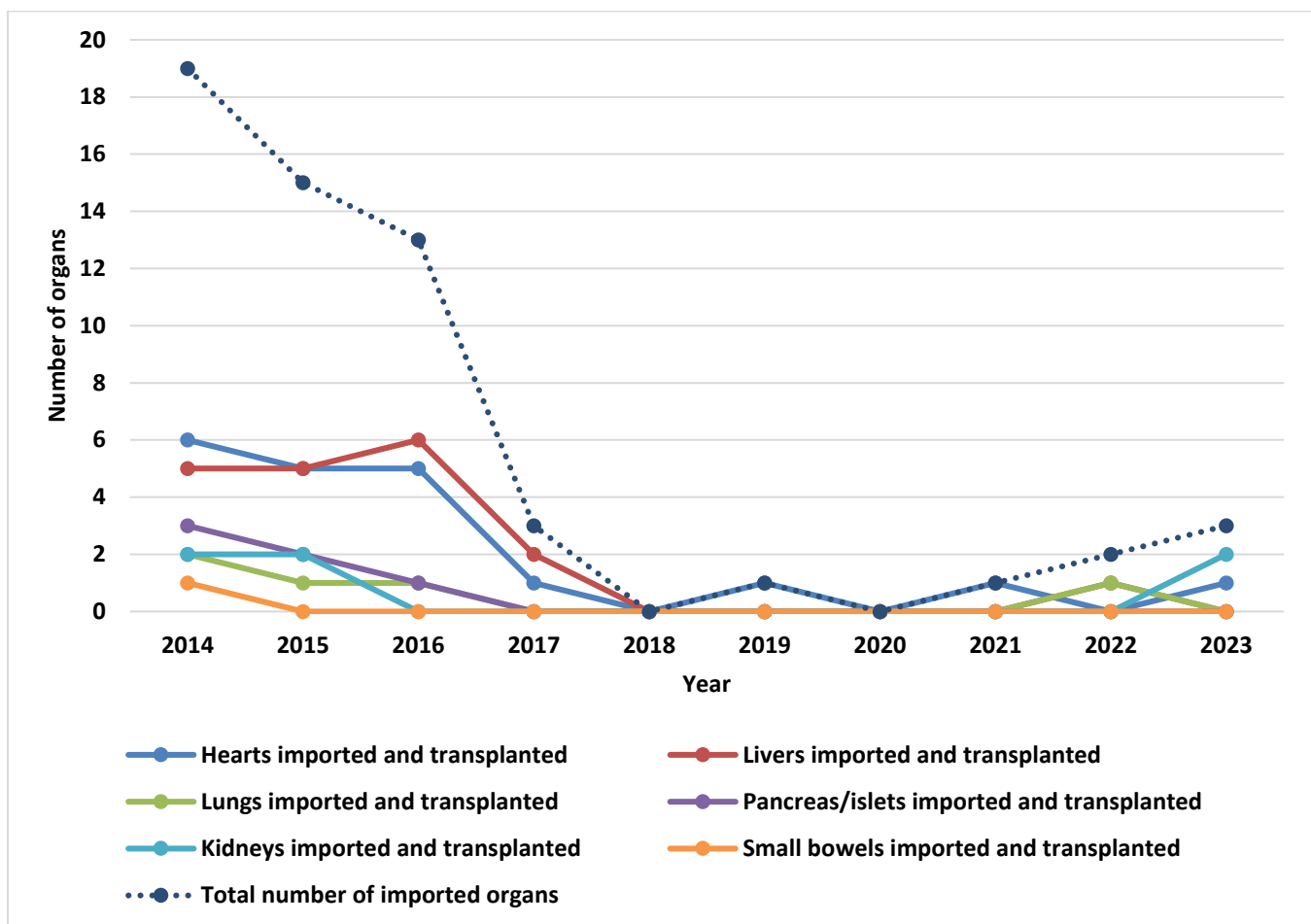
Transplanted patients in Scandiatriplant 2023

Organ(s) transplanted	Number of transplantations
Kidney	1370
Kidney-Pancreas	51
Pancreas	9
Liver	428
Liver-Kidney	17
Heart	149
Lung	193
Pancreatic islets	7
Multivisceral/intestine	3
Other combinations	3
Total transplanted patients	2230



Organs imported and exported between EOEO's¹⁷ and Scandiatransplant¹⁸

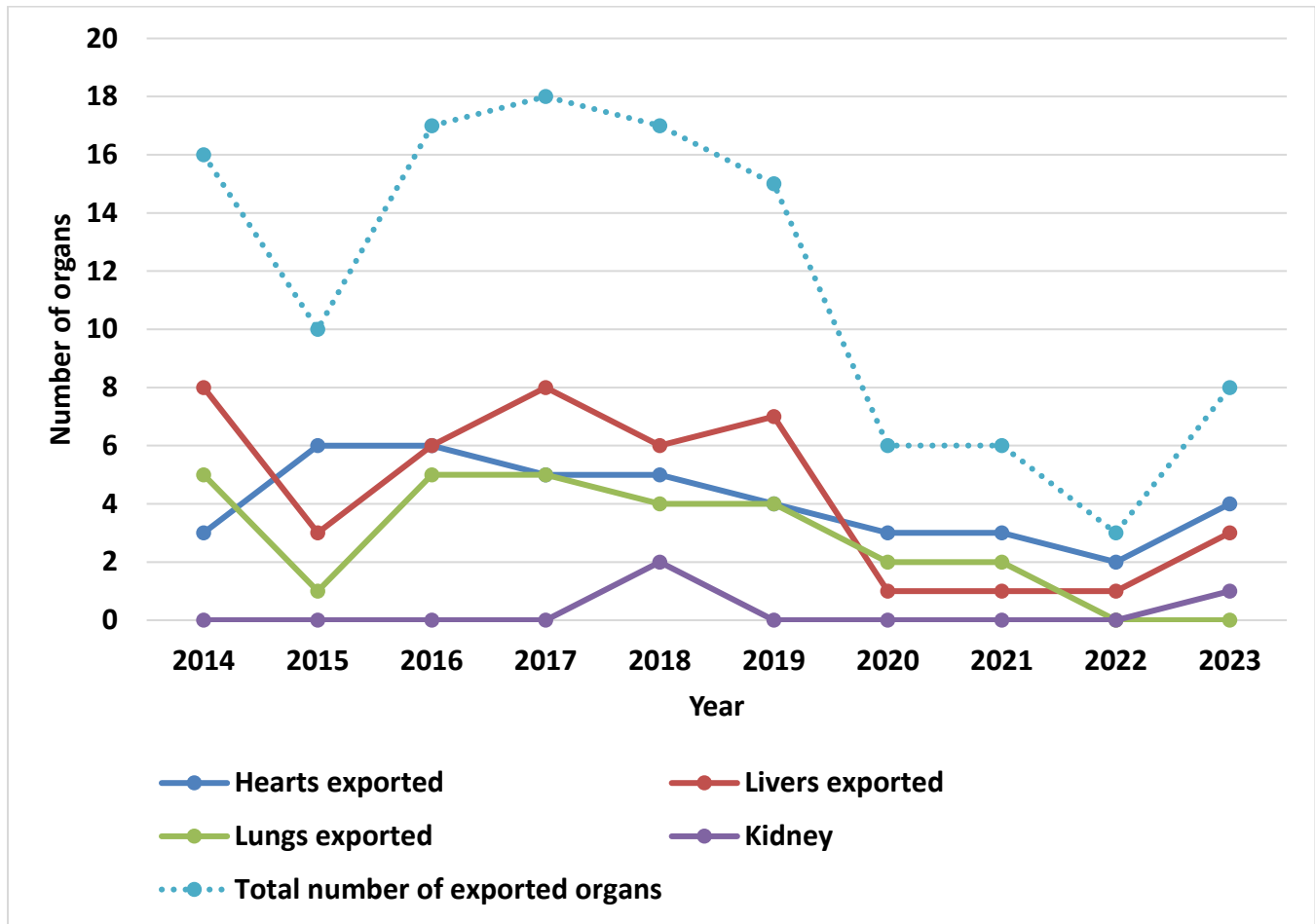
Organs imported from other EOEO's to Scandiatransplant



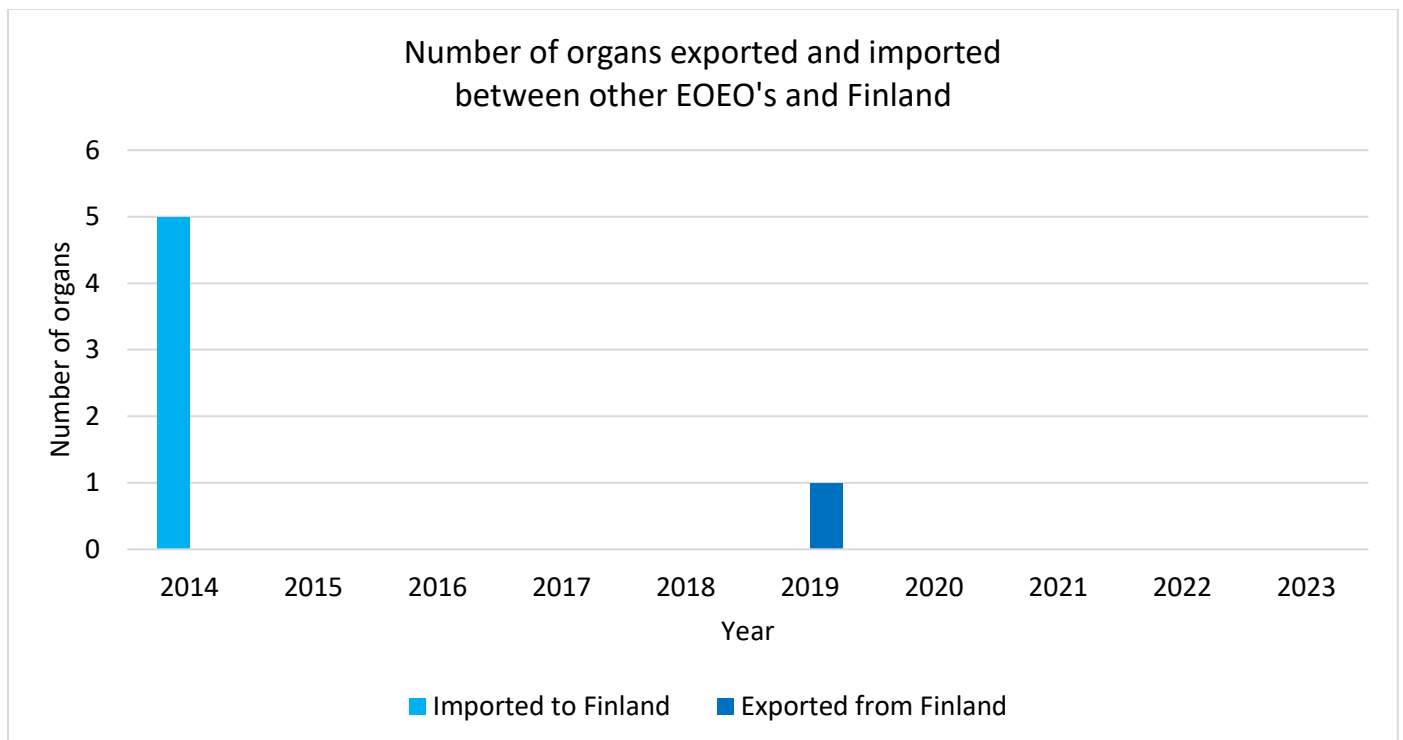
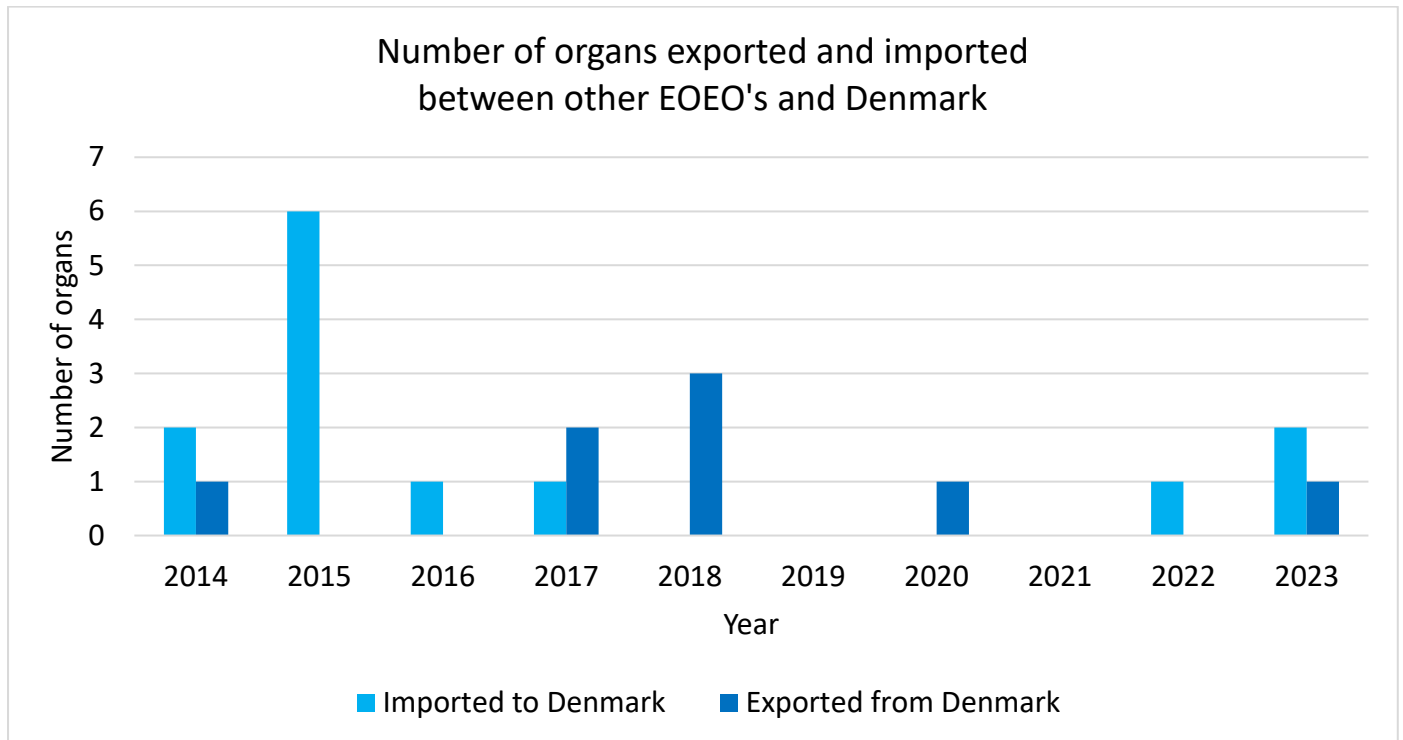
¹⁷ EOEO: European Organ Exchange Organisations (In 2019 a double lung was imported from Switzerland to Denmark, however optimization was not successful)

¹⁸ From October 1st 2017 Estonia is regarded as part of Scandiatransplant

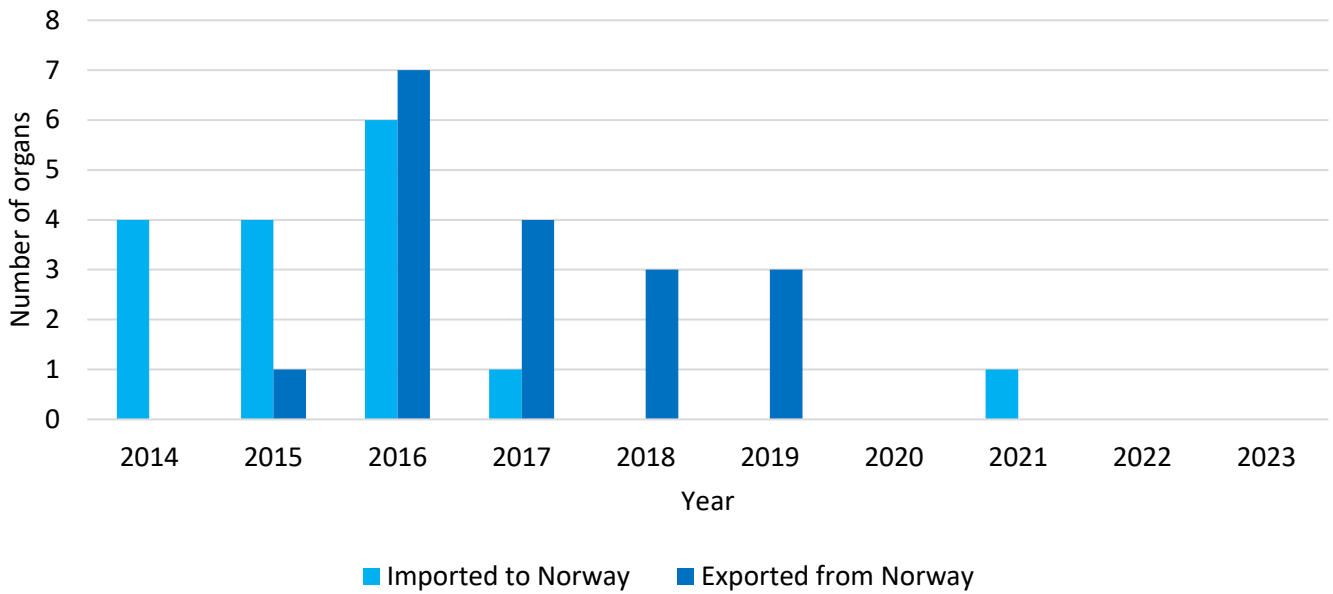
Organs exported to other EOEO's from Scandiatriplant



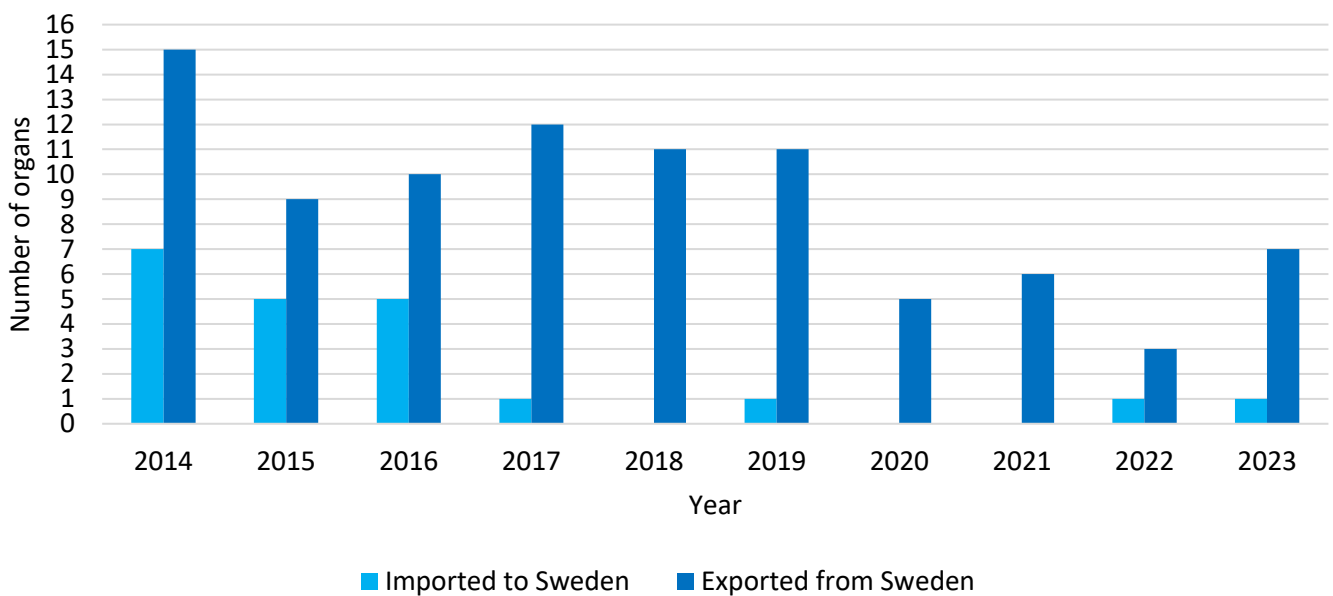
Organs exported and imported between ScandiTransplant countries and other EOEO's



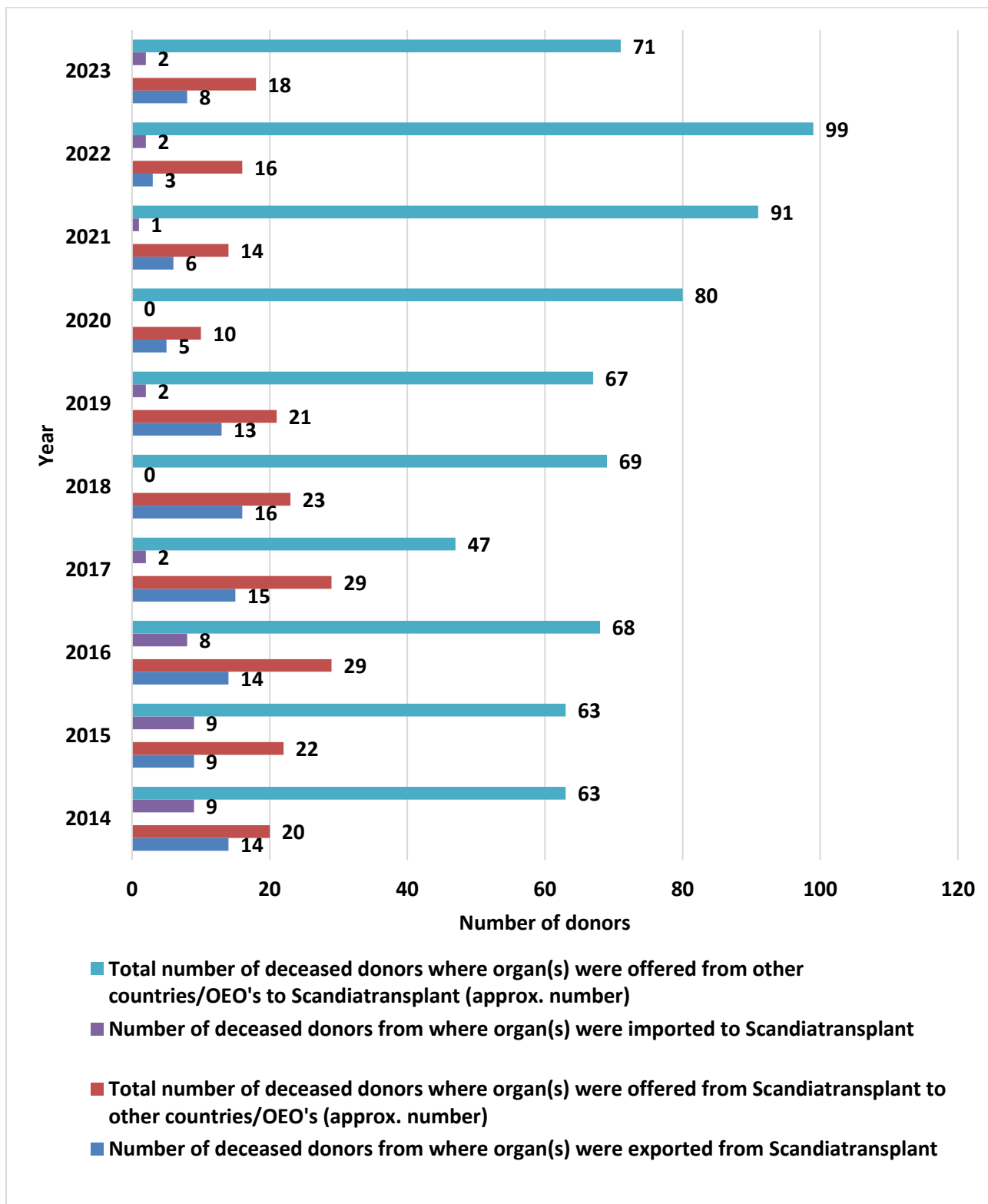
Number of organs exported and imported between other EOEO's and Norway



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



Number of deceased donors where organ(s) were offered¹⁹



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
2023	9	5	5

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
2023	6	5	5

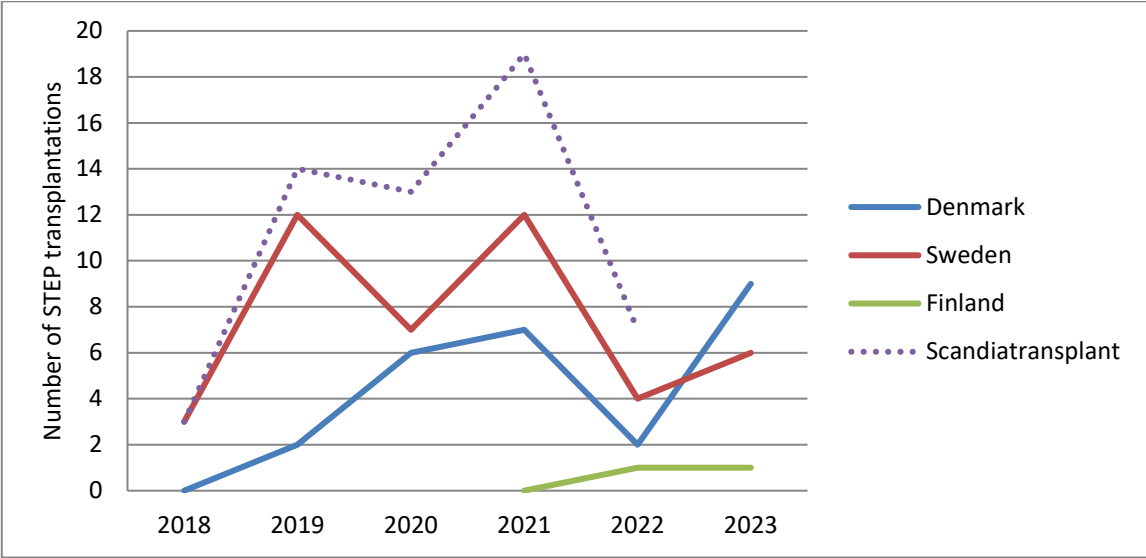
Finland

	Kidneys transplanted	Import	Export
2020	0	0	0
2021	0	0	0
2022	1	1	1
2023	1	1	1

Norway

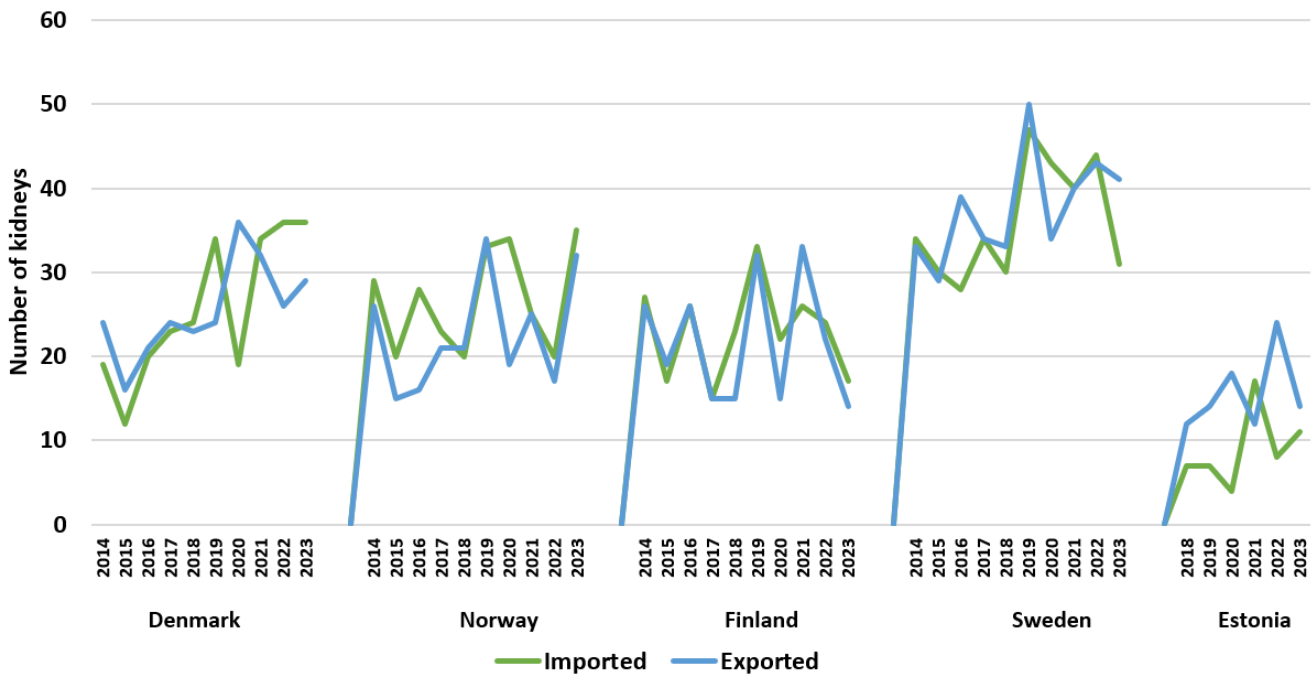
	Kidneys transplanted	Import	Export
2023	1	1	1

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.

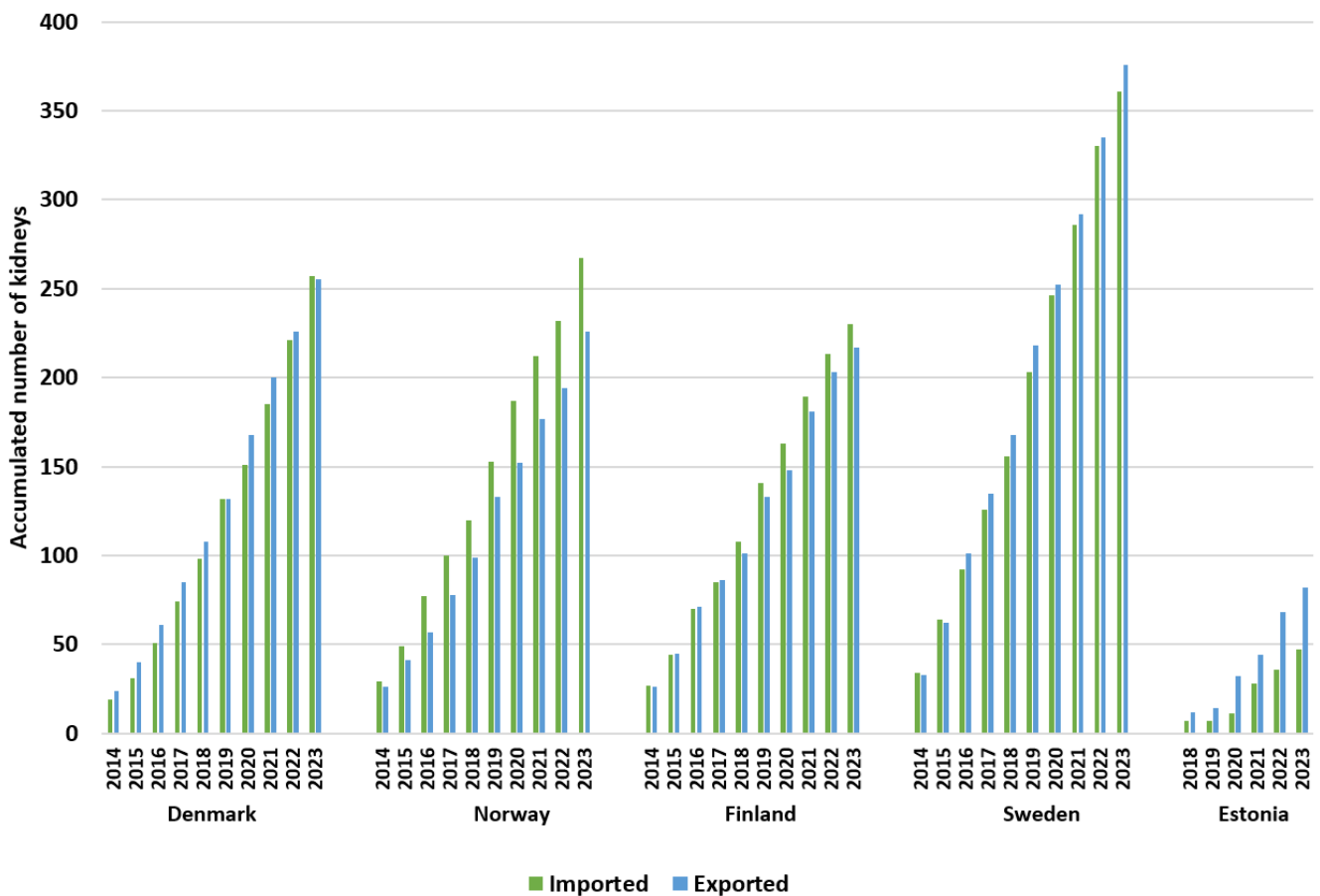


Kidneys from deceased donors exported and imported between the Scandiatriplant countries²¹

Import and export of kidneys



Import and export of kidneys - accumulated figures



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
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
2023	209	36	29	2	1

Norway

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	194	35	32	0	0

Finland

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	276	17	14	0	0

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

²³ Kidney double transplantations are counted as 1

Sweden

	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	423	31	41	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
2023	46	11	14	0	0

Iceland²⁵

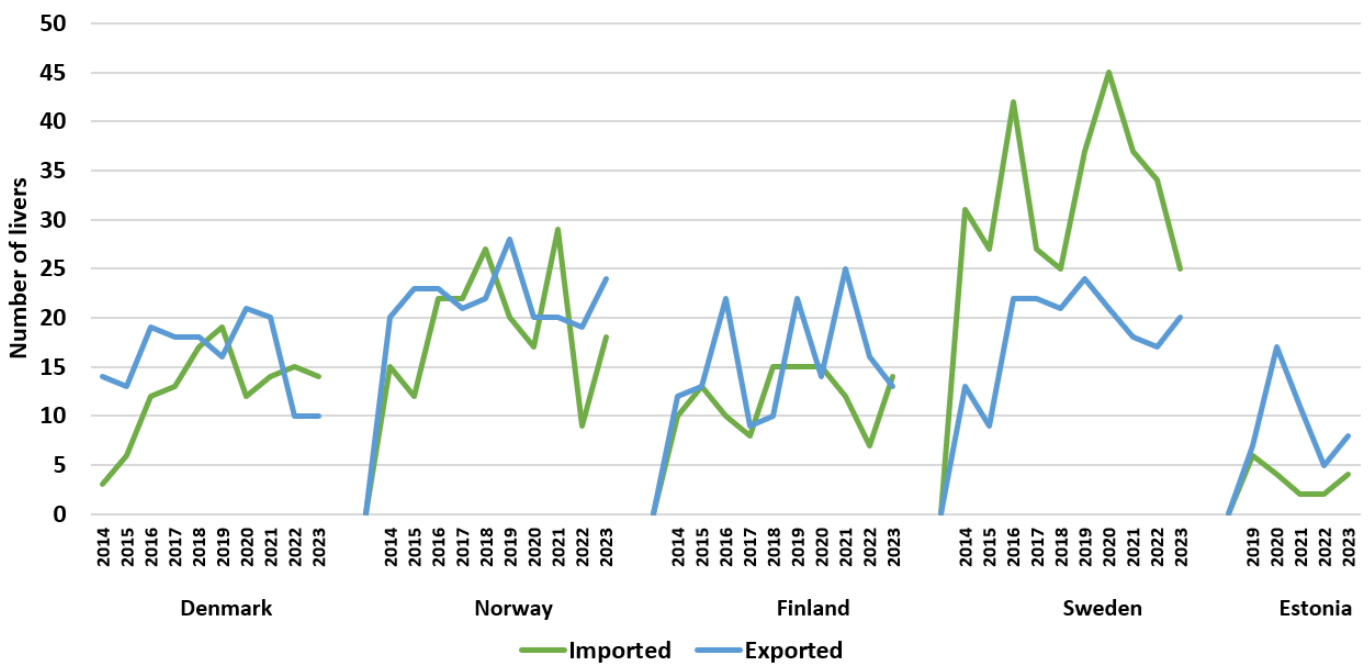
	Kidneys transplanted	Import	Export	Import EOEO	Export EOEO
2019	2				
2020	3				
2021	7				
2022	5				
2023	8				

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

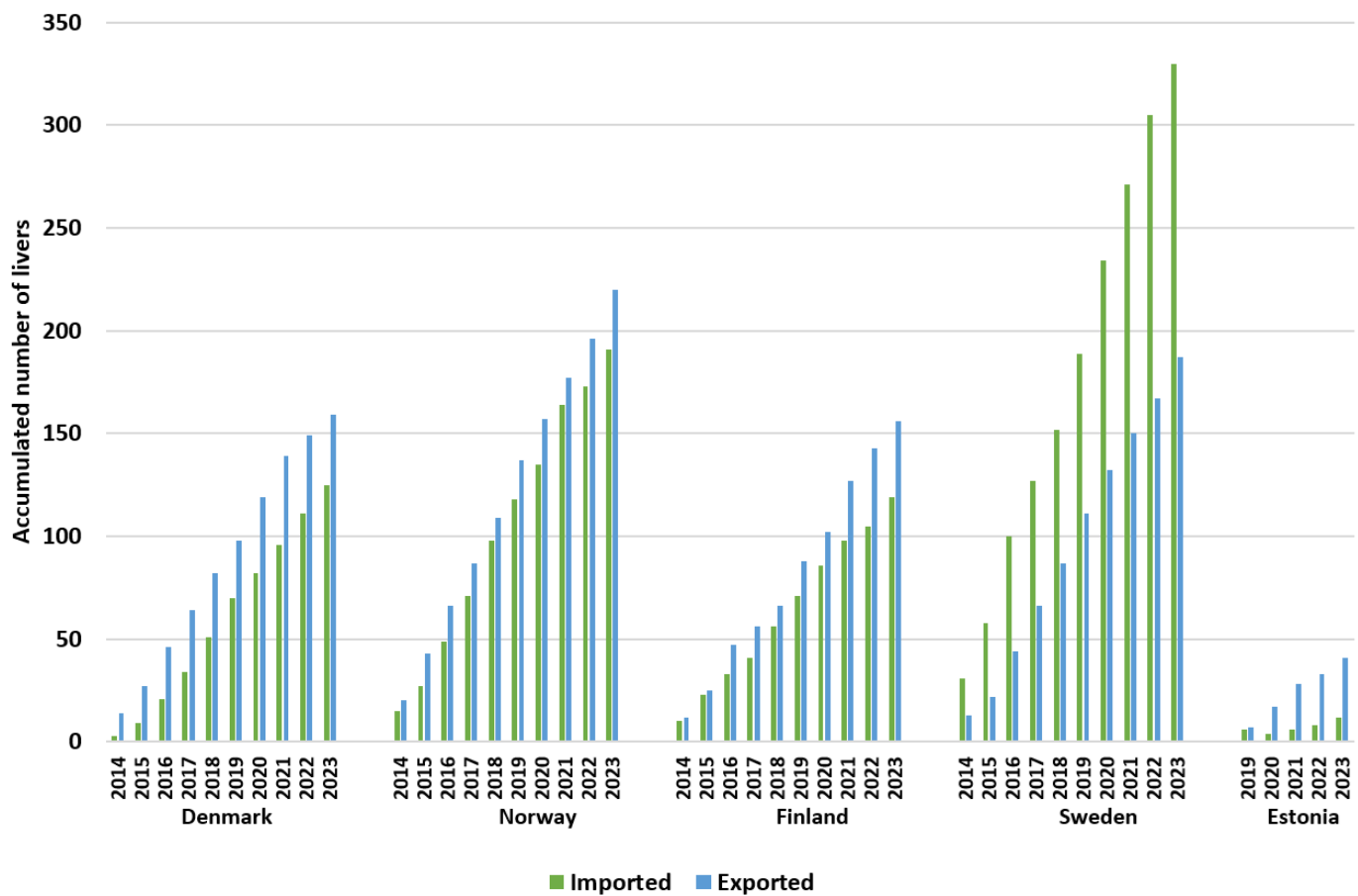
²⁵ From 2019 some of the Icelandic recipients will be transplanted with deceased donor kidneys in Iceland. Import/export numbers are included in the Swedish figures.

Livers exported and imported between the Scandi transplant 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 Scandi transplant countries in numbers²⁸ (including import and export to other EOEO's)

Denmark

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	63	14	10	0	0

Norway

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	92	18	24	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
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
2023	78	14	13	0	0

Sweden

	Livers transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	198	25	20	0	3

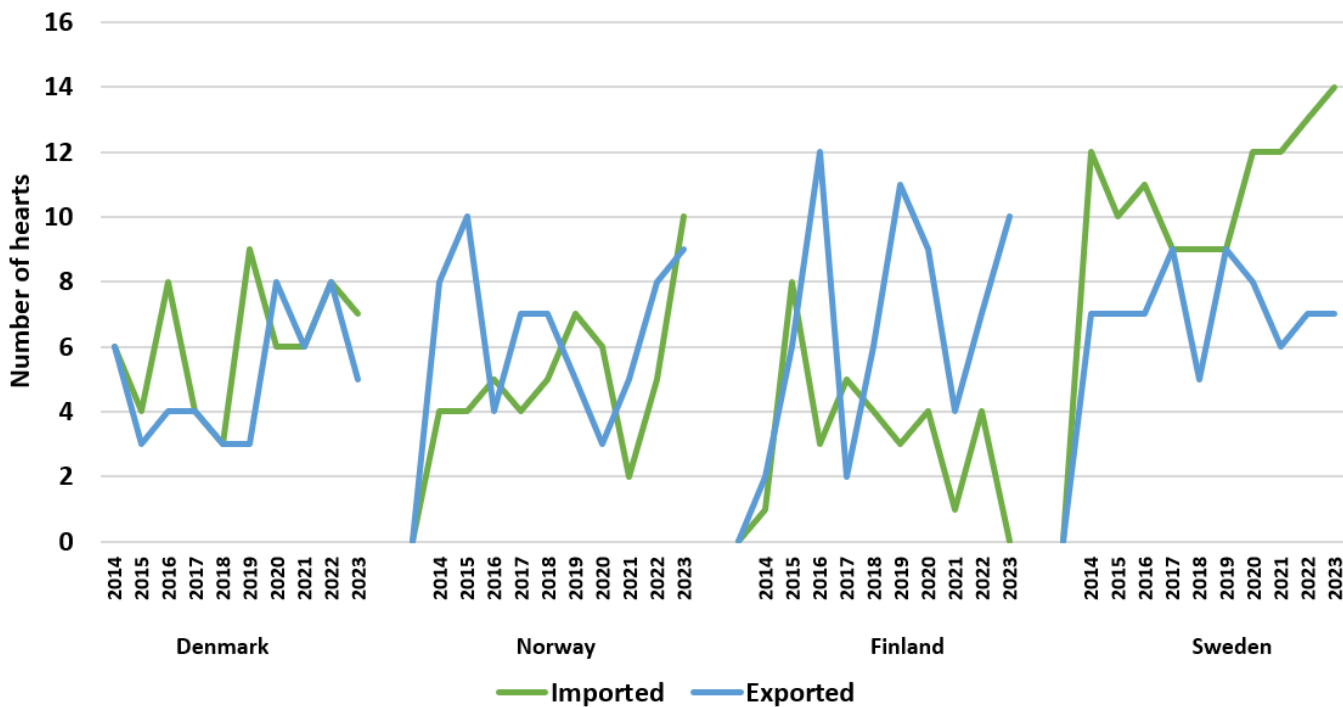
Estonia²⁹

	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
2023	17	4	8	0	0

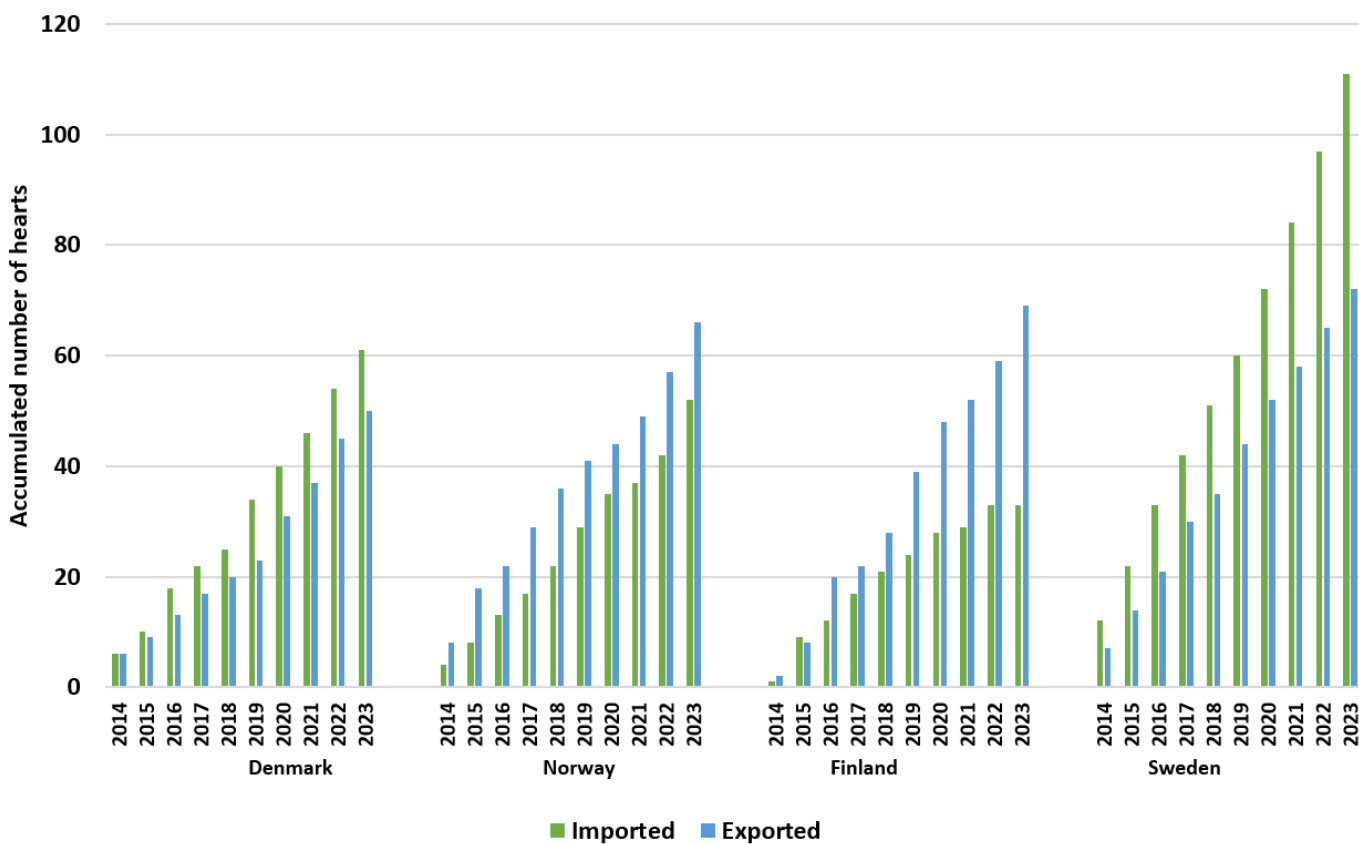
²⁹ From October 1st 2017 Estonia is regarded as part of ScandiTransplant

Hearts exported and imported between the Scandi transplant 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
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
2023	32	7	5	0	0

Norway

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	32	10	9	0	0

³¹ Only hearts used for transplantation are included

Finland³²

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	19	0	10	0	0

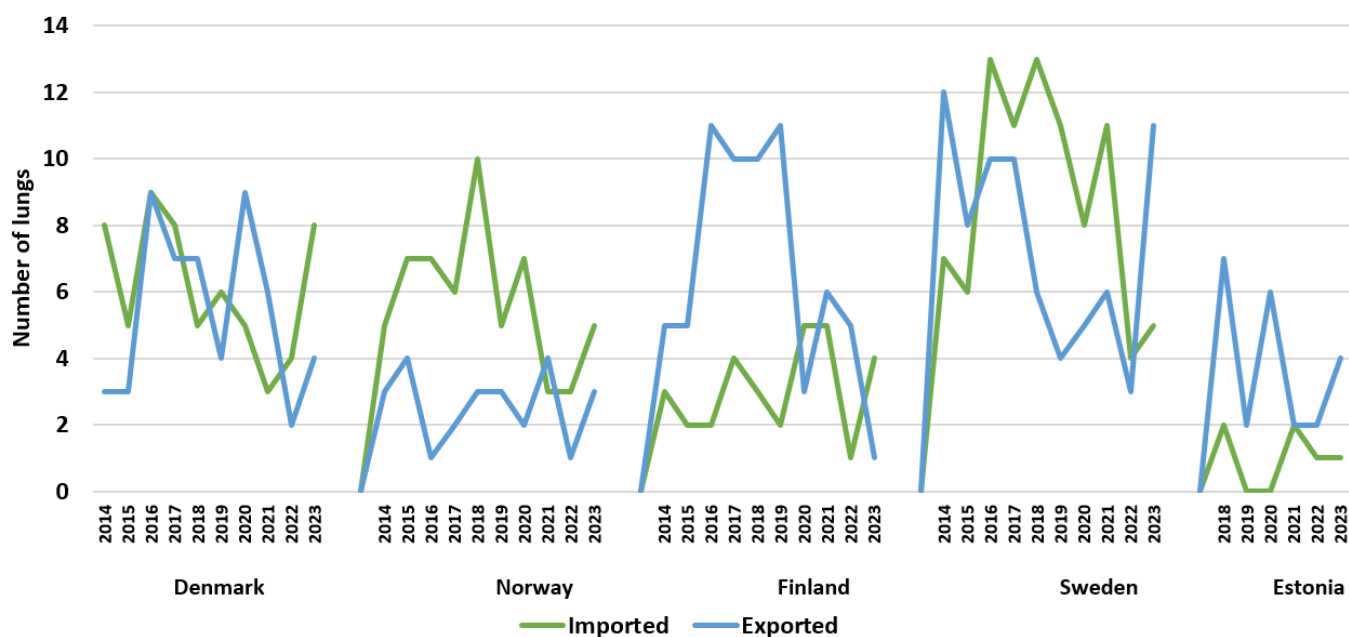
Sweden

	Hearts transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	68	14	7	1	4

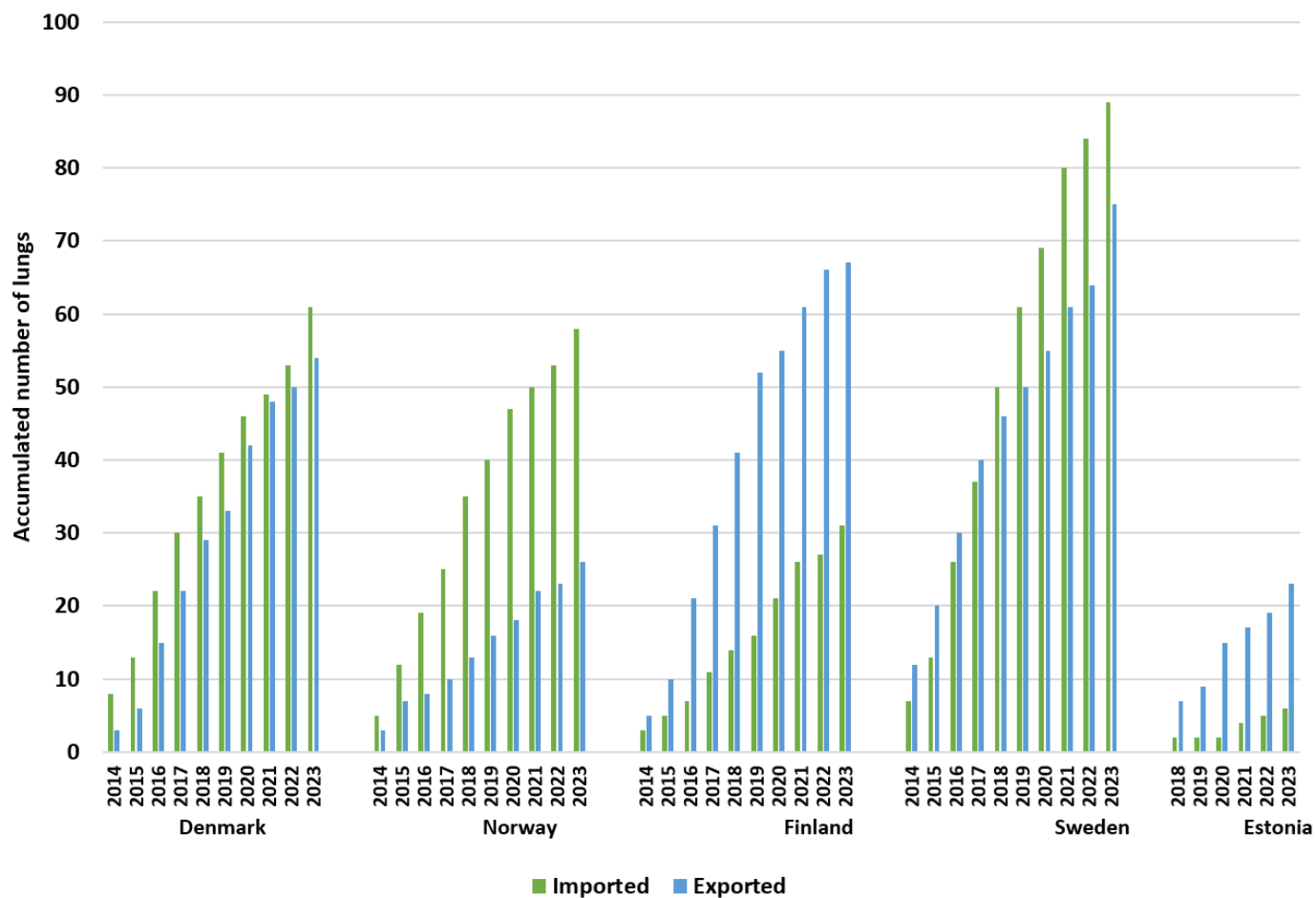
³² Estonian heart transplantations are performed in Finland and included in the number of heart transplantation. Furthermore, Estonian heart donors are not calculated as import/export when used for transplantation in Finland.

Lungs exported and imported between the Scandi transplant countries³³

Import and export of lungs



Import and export of lungs - accumulated figures



³³ Only lungs used for transplantation are included

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

Denmark

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	40	8	4	0	0

Norway

	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	37	5	3	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
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
2023	28	4	1	0	0

Sweden

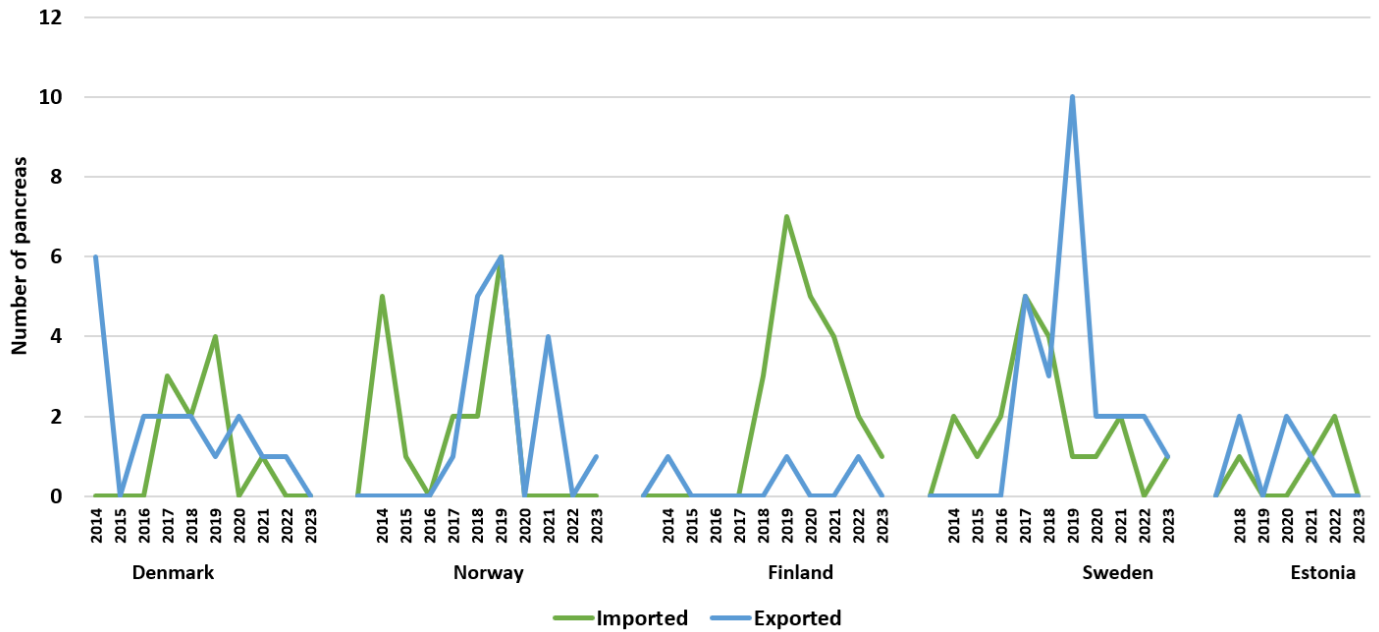
	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2014	65	7	12	1	8
2015	48	6	8	0	3
2016	62	13	10	0	4
2017	65	11	10	0	5
2018	74	13	6	0	4
2019	56	11	4	0	4
2020	51	8	5	0	2
2021	51	11	6	0	2
2022	50	4	3	0	0
2023	86	5	11	0	0

Estonia

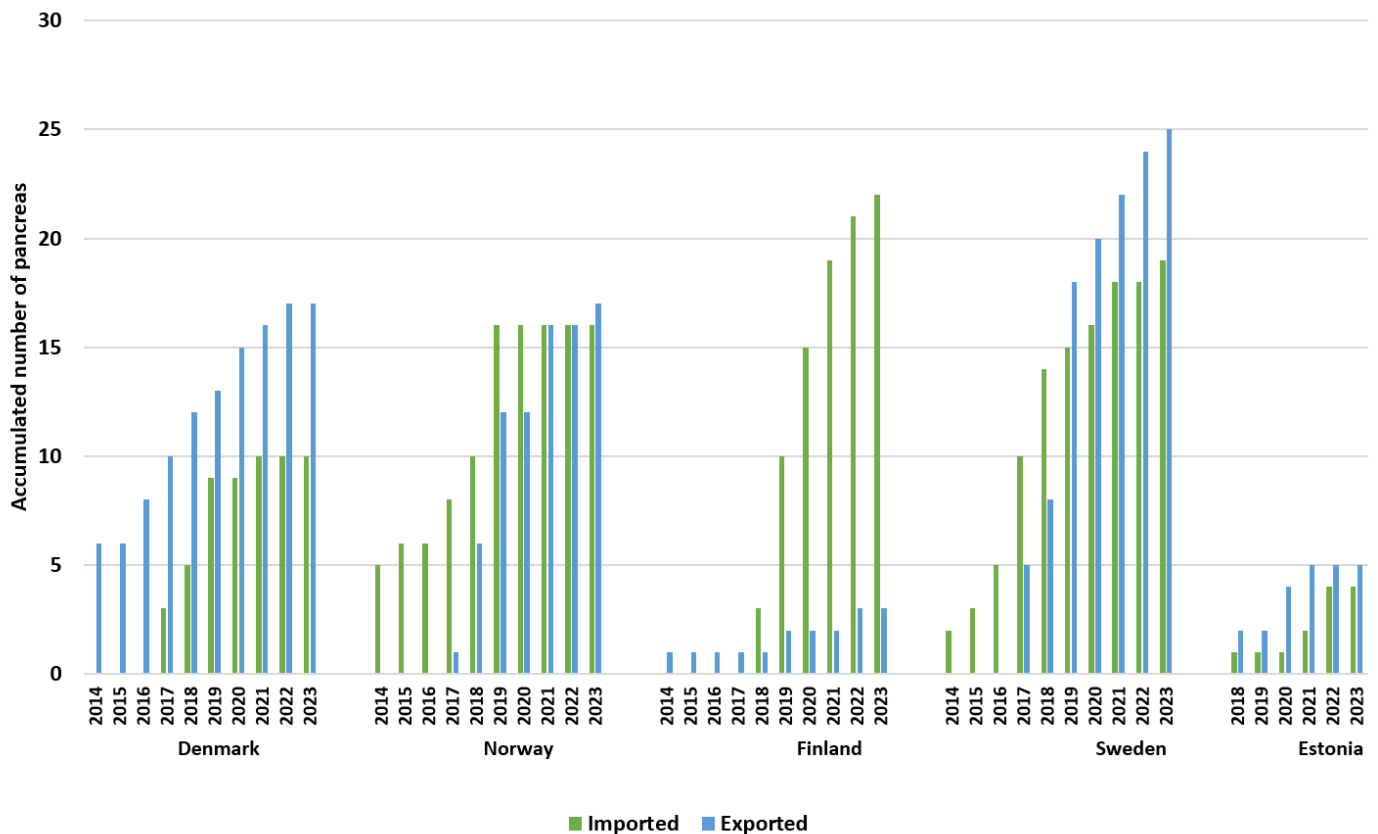
	Lungs transplanted	Import	Export	Import EOEO	Export EOEO
2018	4	2	7	0	0
2019	3	0	2	0	0
2020	0	0	6	0	0
2021	2	2	2	0	0
2022	3	1	2	0	0
2023	2	1	4	0	0

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

Import and export of pancreas



Import and export of pancreas - accumulated figures



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
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
2023	3	0	0	0	0

Norway

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	4	0	1	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
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
2023	28	1	0	0	0

Sweden

	Pancreas transplanted	Import	Export	Import EOEO	Export EOEO
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
2023	23	1	1	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
2023	4	0	0	0	0

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

	Import/export	Import/export EOEO
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
2023	0	0

⁴⁰ Only intestine used for transplantation is included

SAEs and SARs reported through the Scandiatransplant system in 2023

Between January 1st and December 31st, 2023, there has been 7 SAE/SARs reported through the Scandiatransplant IT-system. In 2018 there were 15 reports, in 2019 12 reports, in 2020 5 reports, in 2021 13 reports and in 2022 12 reports.

In 2023 there were 4 reports from Norway, 2 from Denmark and one from Sweden.

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

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

Reports from transplantation center in Norway

ID	Center	OIC	Short description of SAE/SAR
1188	Oslo		After transplantation of 2 kidneys and liver possible malignancy was found in donor lung. Recipients informed and will be examined one year later. Risk of transmission of malignancy considered low.
1211	Oslo*	S	Routine reexamination of donor CT found suspicious lesion in pancreas. Proved not be malignant.
1214	Oslo*	S	Autopsy of donor revealed generalized sarcoidosis. Direct contact to recipient centers (2 kidneys + liver used).
1216	Oslo*	DK, SF	Severe fibrosis in transplanted liver. Patient retransplanted within one day. Heart, lung, both kidneys and pancreas transplanted.

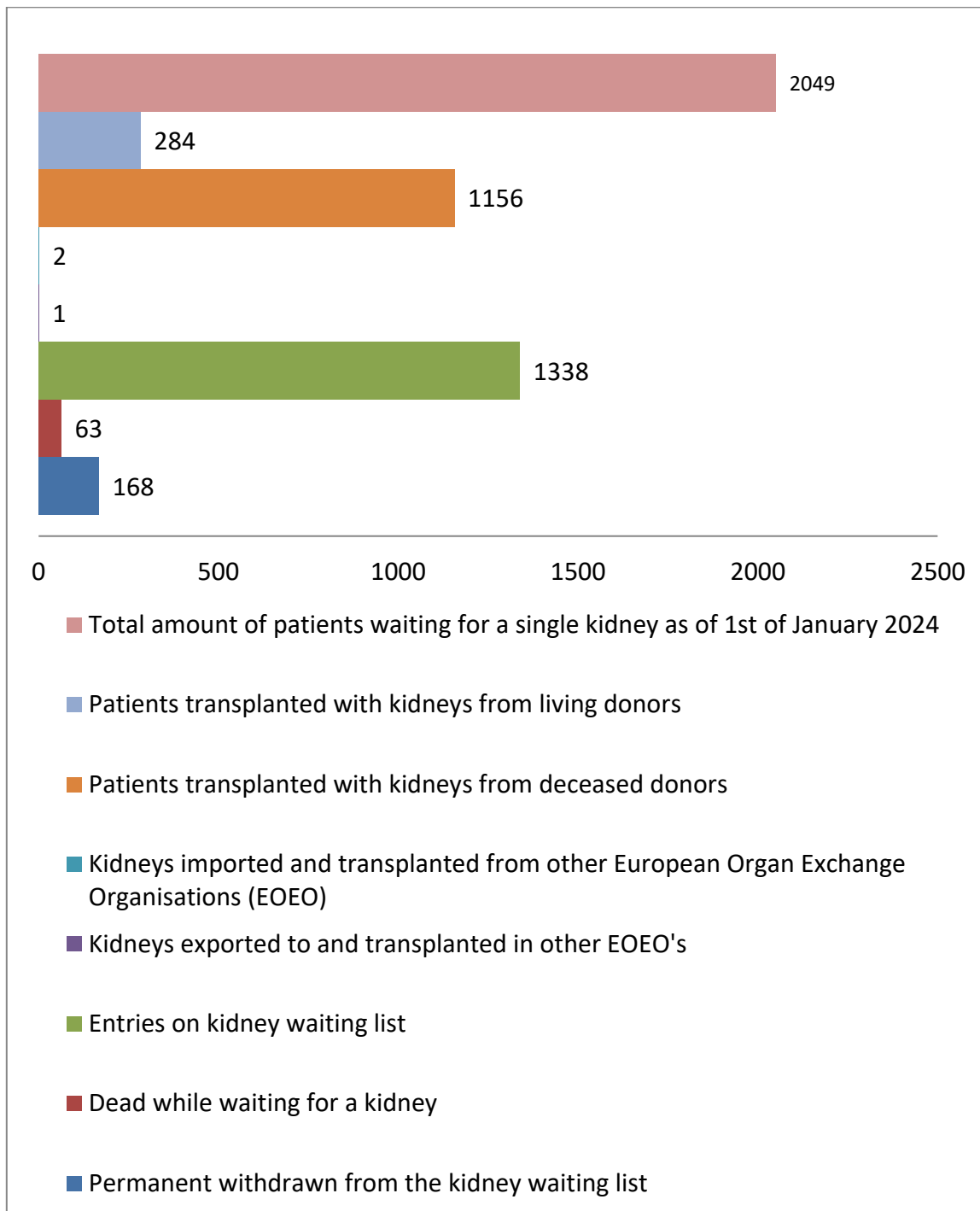
Report from transplantation center in Denmark

ID	Center	OIC	Short description of SAE/SAR
1208	Copenhagen		Malignancy found in donor gall bladder after transplantation of 2 kidneys, lung and liver. Recipients informed.
1215	Copenhagen		Cancer diagnosed in kidney 14 years after transplantation. Involved centers informed.

Report from transplantation center in Sweden

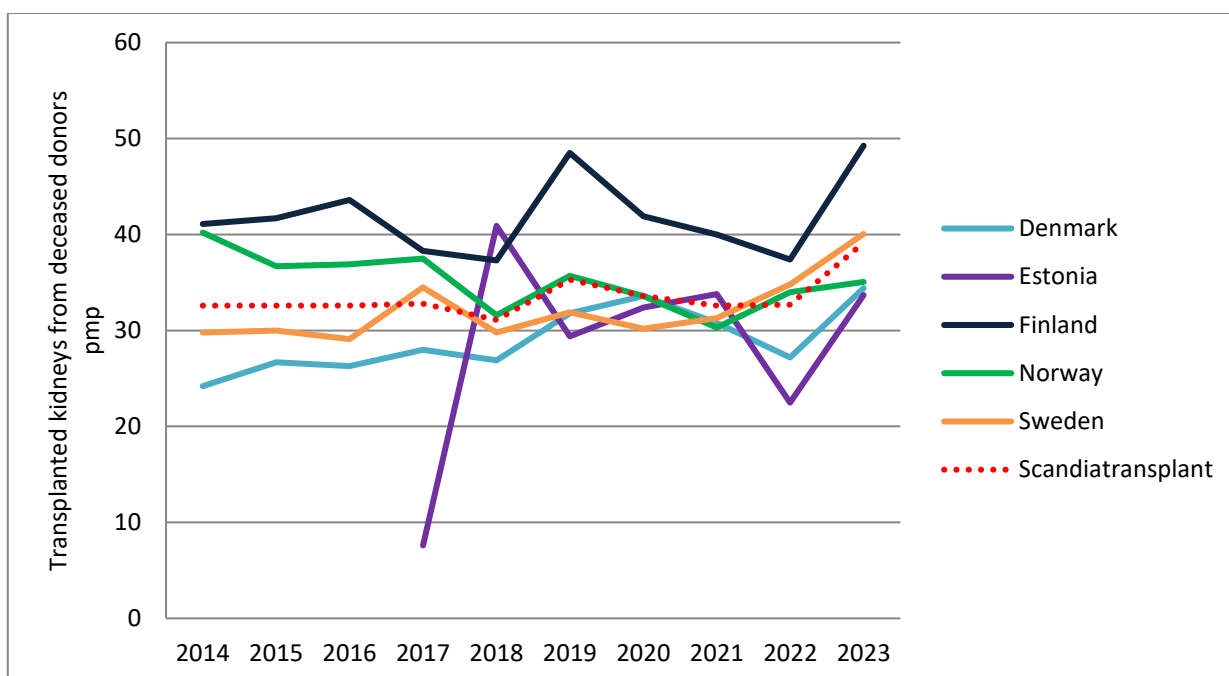
ID	Center	OIC	Short description of SAE/SAR
1210	Gothenborg		Bilateral aneurysm of donor kidney arteries overlooked at CT. Other centers involved contacted, only one kidney used.

Kidneys 2023



Transplanted kidneys pmp⁴¹ from deceased donors per year

Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
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
2023	34,4	33,7	49,26	35,1	40,1	39,2



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

Transplanted kidneys pmp⁴³ from DBD donors per year

Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2014	24,2	24,6	41,1	43,1	29,8	32,4
2015	26,7	21,3	41,7	34,8	30,0	32,3
2016	26,3	14,8	43,6	36,1	29,1	32,5
2017	28,0	7,6	38,3	37,5	34,5	32,3
2018	26,9	40,9	37,3	31,6	28,1	30,9
2019	31,8	29,4	48,5	35,7	31,3	35,1
2020	33,6	32,4	41,9	33,6	28,0	32,8
2021	30,6	33,8	38,8	30,3	26,7	30,6
2022	26,5	22,5	33,8	32,3	26,9	28,8
2023	32,4	33,0	42,1	29,3	29,2	32,4

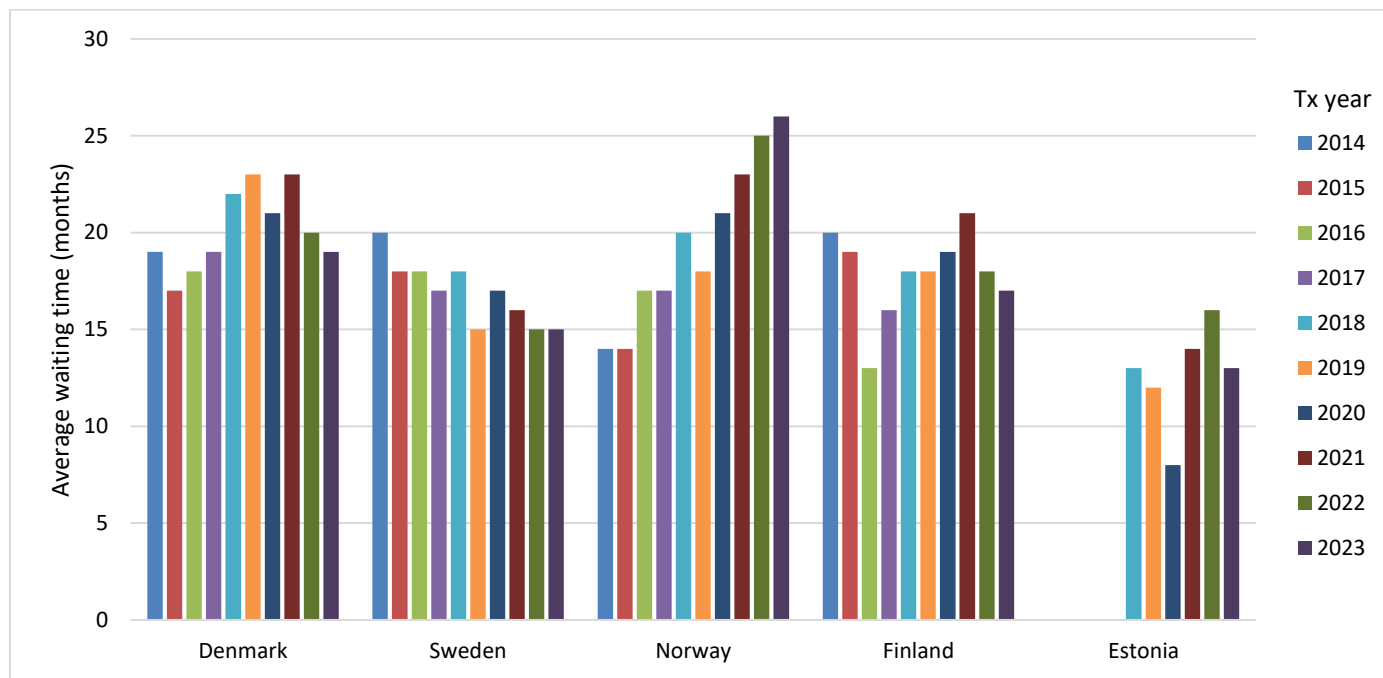
Transplanted kidneys pmp⁴⁴ from cDCD donors per year

Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2014	0	0	0	0,8	0	0,2
2015	0	0	0	1,9	0	0,4
2016	0	0	0	0,8	0	0,1
2017	0	0	0	2,7	0	0,5
2018	0	0	0	0	1,7	0,6
2019	0	0	0	0	0,6	0,2
2020	0	0	0	0	2,2	0,8
2021	0,2	0	1,6	0	4,6	2,0
2022	0,7	0	3,4	1,6	7,9	4,0
2023	2,0	0,7	7,1	5,8	10,9	6,8

⁴³ pmp: per million population

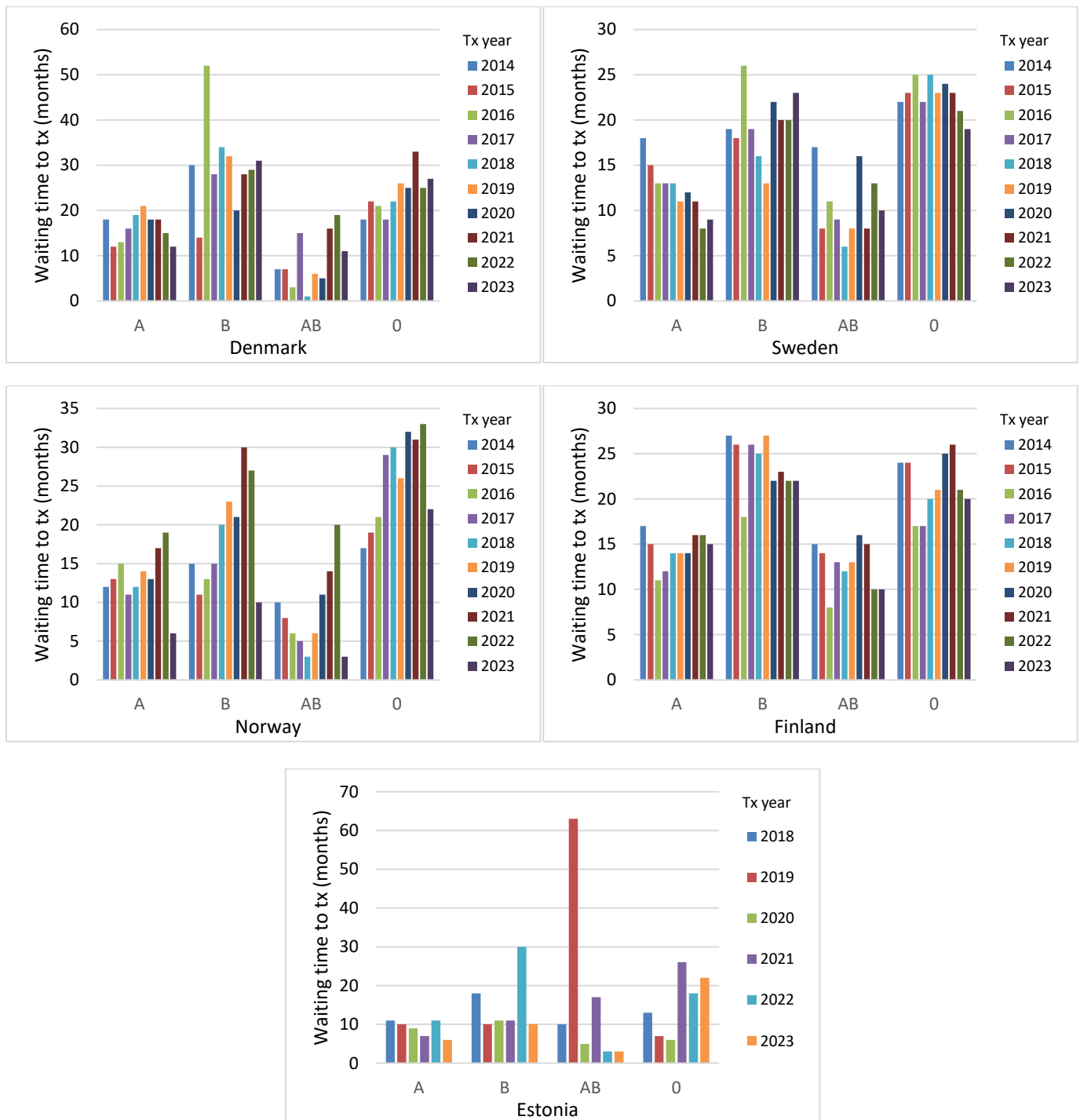
⁴⁴ pmp: per million population

Average waiting time on the waiting list until transplantation with deceased donor kidney⁴⁵



⁴⁵ Icelandic patients are counted as part of Sweden.

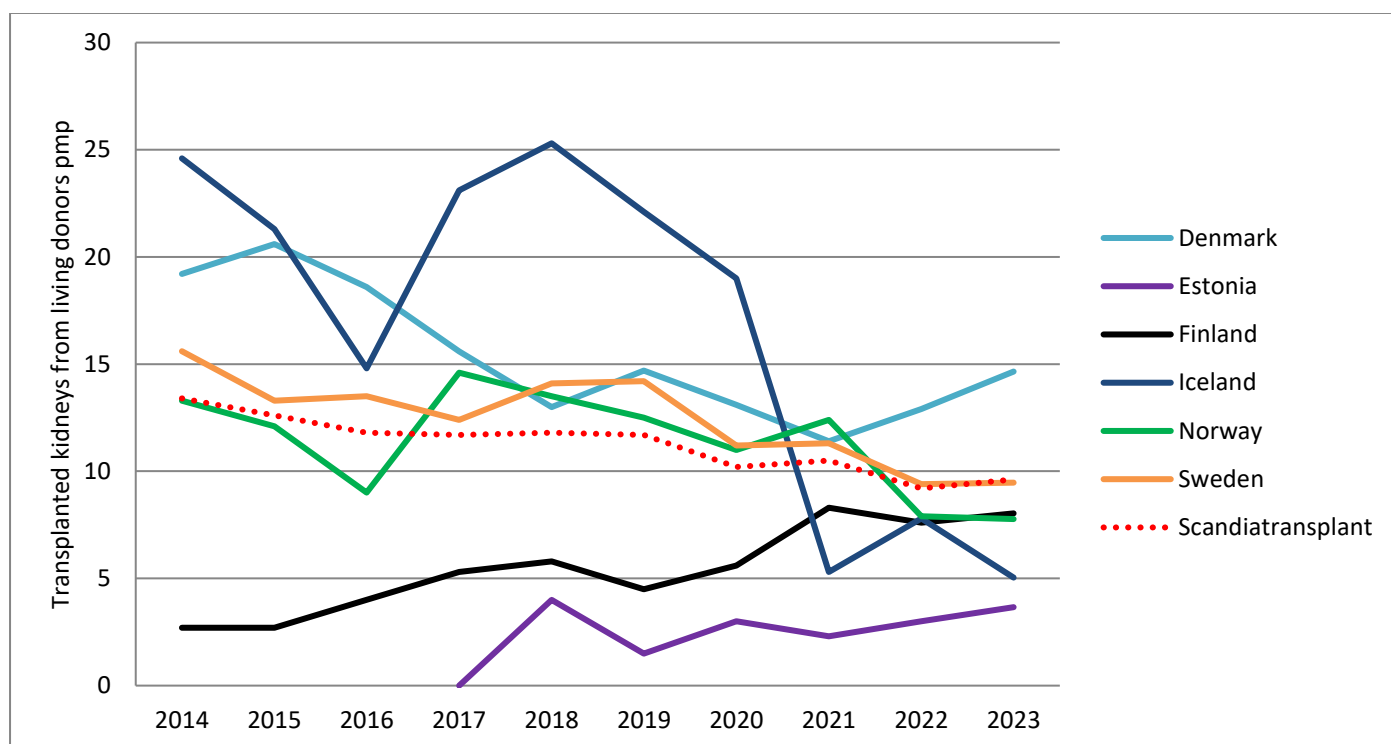
Average waiting time on the waiting list until transplantation with deceased donor kidney by blood group for each country⁴⁶



⁴⁶ Icelandic patients are counted as part of Sweden

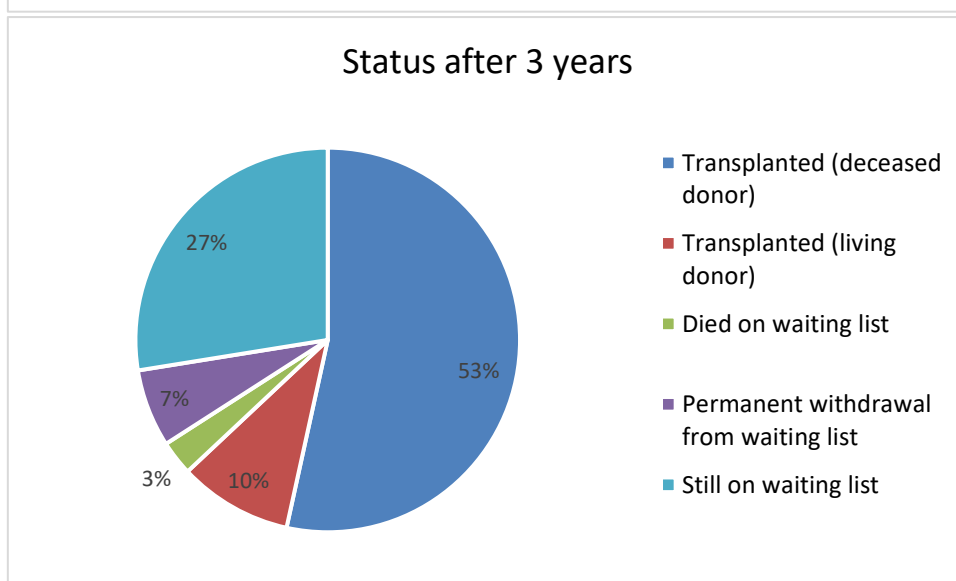
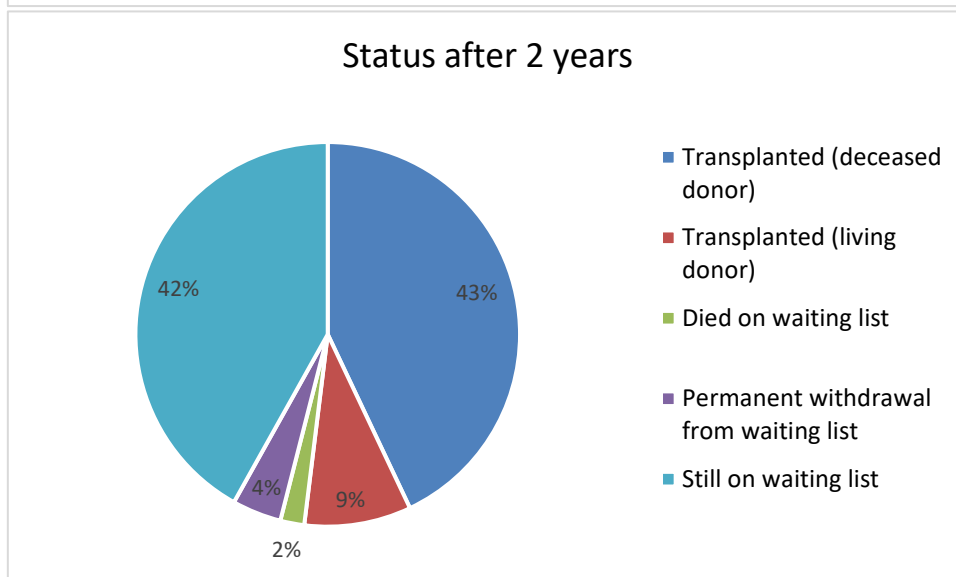
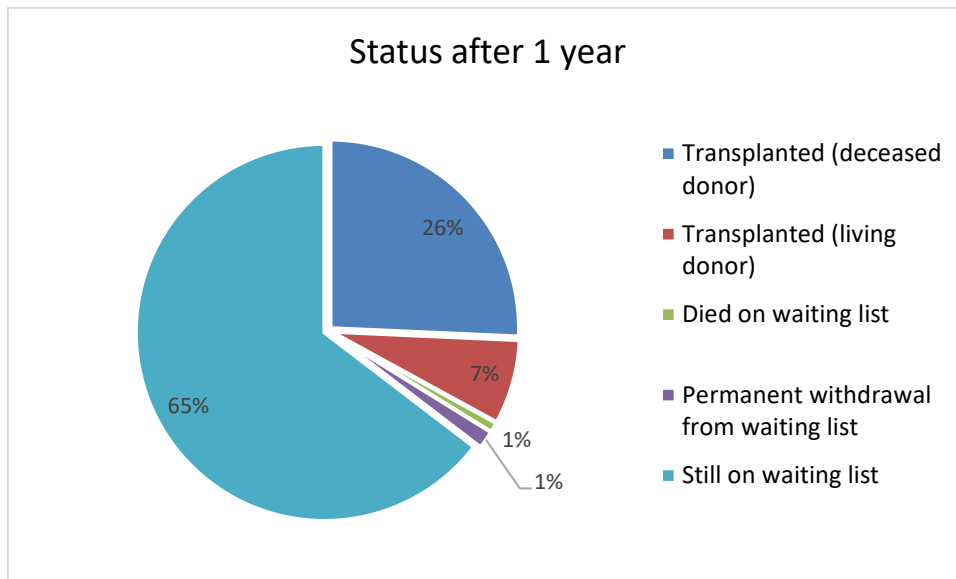
Transplanted kidneys pmp⁴⁷ from living donors per year

Year	Denmark	Estonia	Finland	Iceland	Norway	Sweden	Scandiatransplant
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
2023	14,7	3,7	8,0	5,0	7,8	9,5	9,6



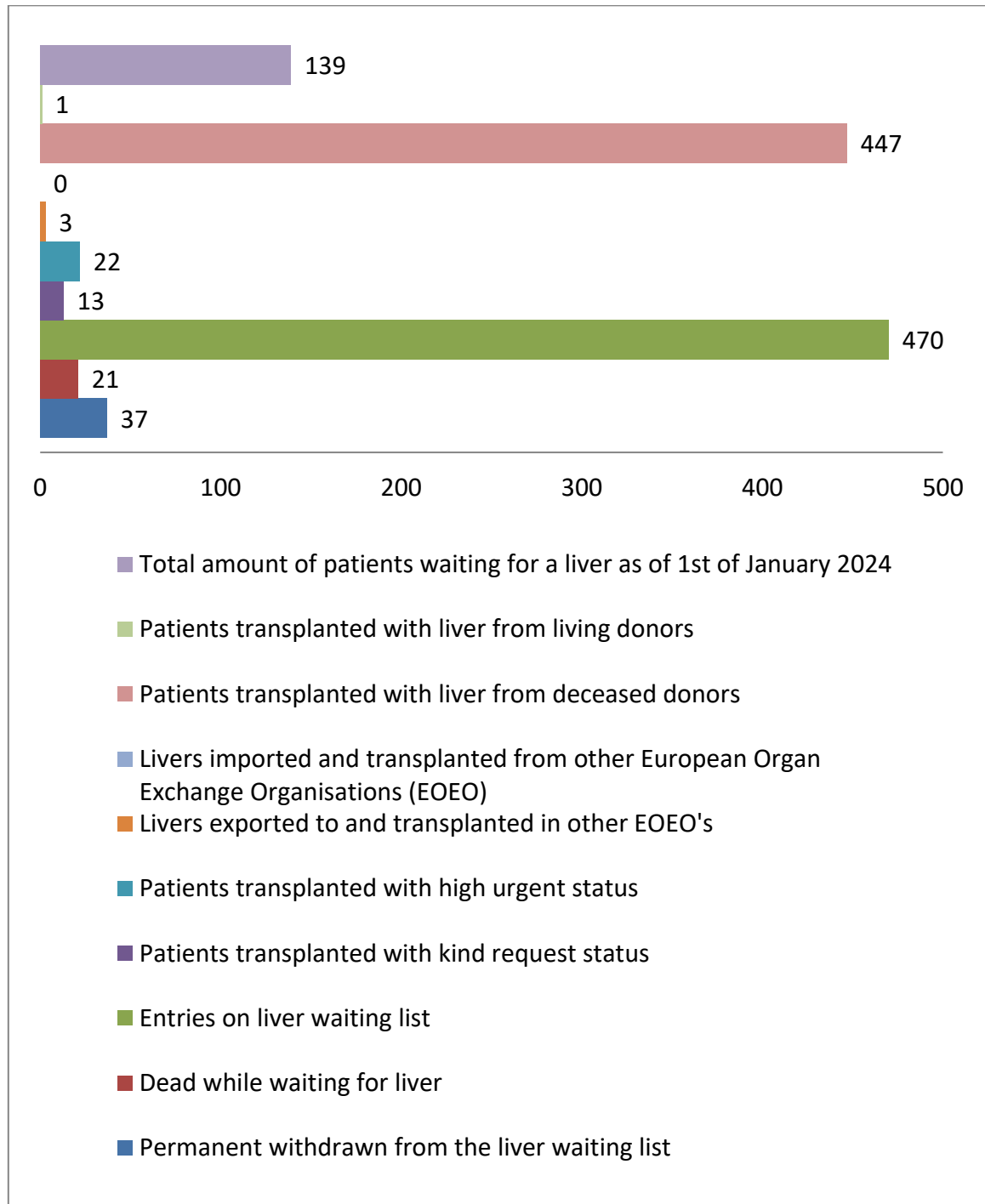
⁴⁷ pmp: per million population

Kidney waiting list registrations 2016-2020 - 3-year outcome⁴⁸



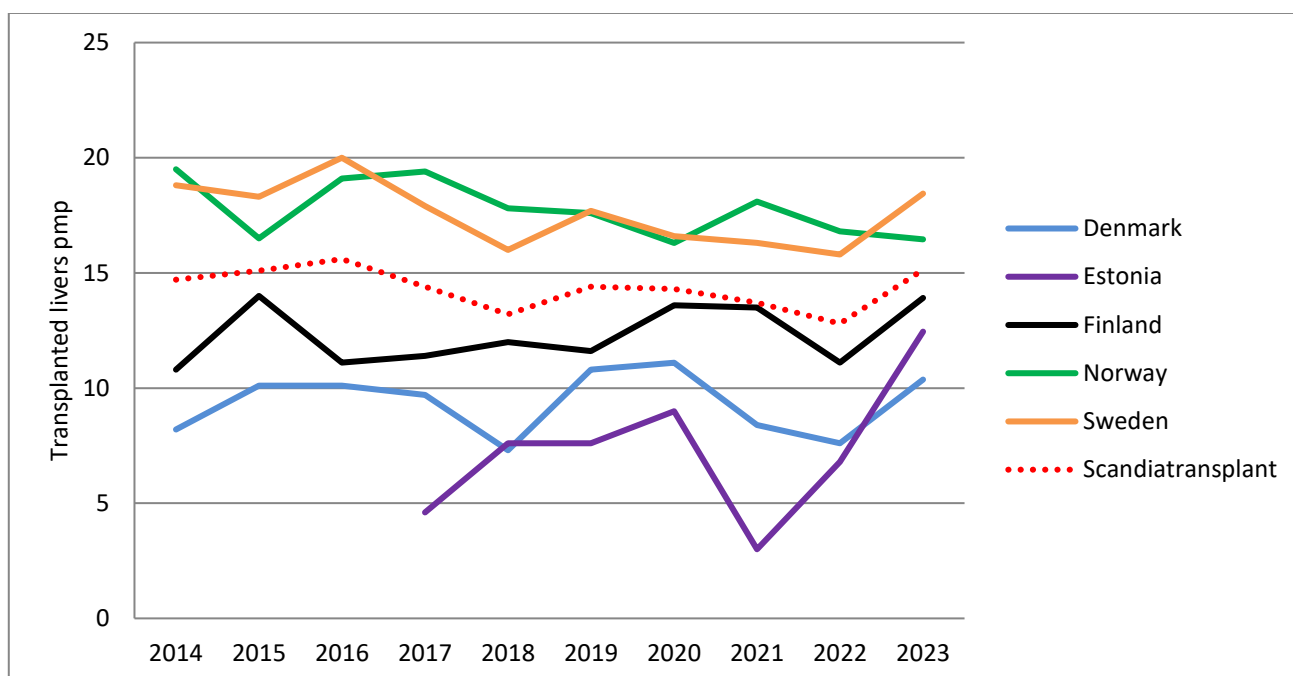
⁴⁸ Combined kidney+liver and kidney+pancreas waiting list registrations are not included in these charts.

Livers 2023



Transplanted livers (Deceased and living donors) pmp⁴⁹ per year

Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
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 ⁵⁰	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
2023	10,4	12,5	13,9	16,6	18,8	15,2

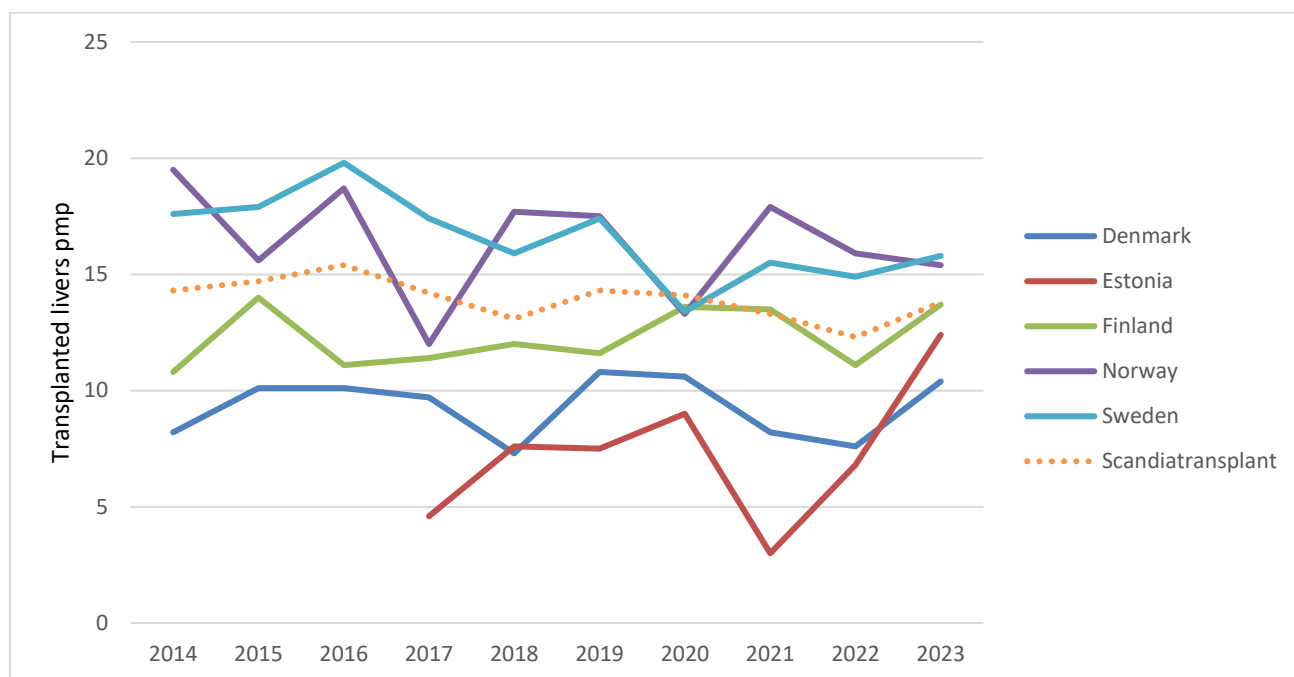


⁴⁹ pmp: per million population

⁵⁰ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Transplanted livers pmp⁵¹ from DBD donors per year

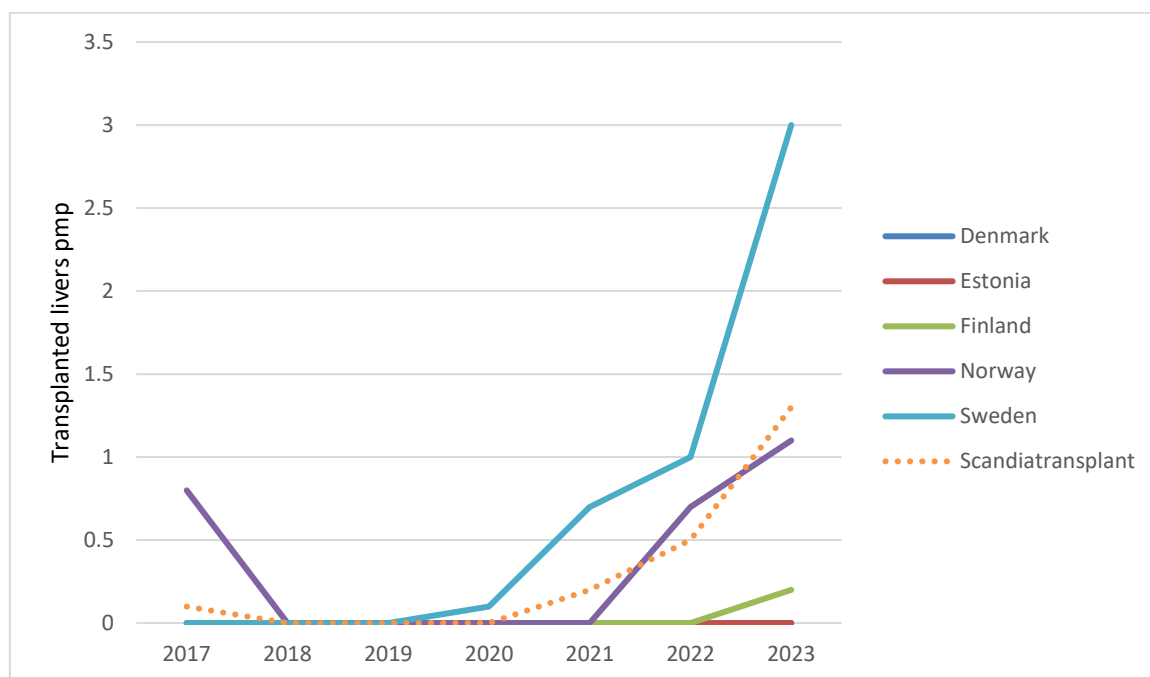
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2014	8,2		10,8	19,5	17,6	14,3
2015	10,1		14,0	15,6	17,9	14,7
2016	10,1		11,1	18,7	19,8	15,4
2017	9,7	4,6	11,4	12,0	17,4	14,2
2018	7,3	7,6	12,0	17,7	15,9	13,1
2019	10,8	7,5	11,6	17,5	17,4	14,3
2020	10,6	9,0	13,6	13,3	13,4	14,1
2021	8,2	3,0	13,5	17,9	15,5	13,3
2022	7,6	6,8	11,1	15,9	14,9	12,3
2023	10,4	12,5	13,7	15,4	15,8	13,9



⁵¹ pmp: per million population

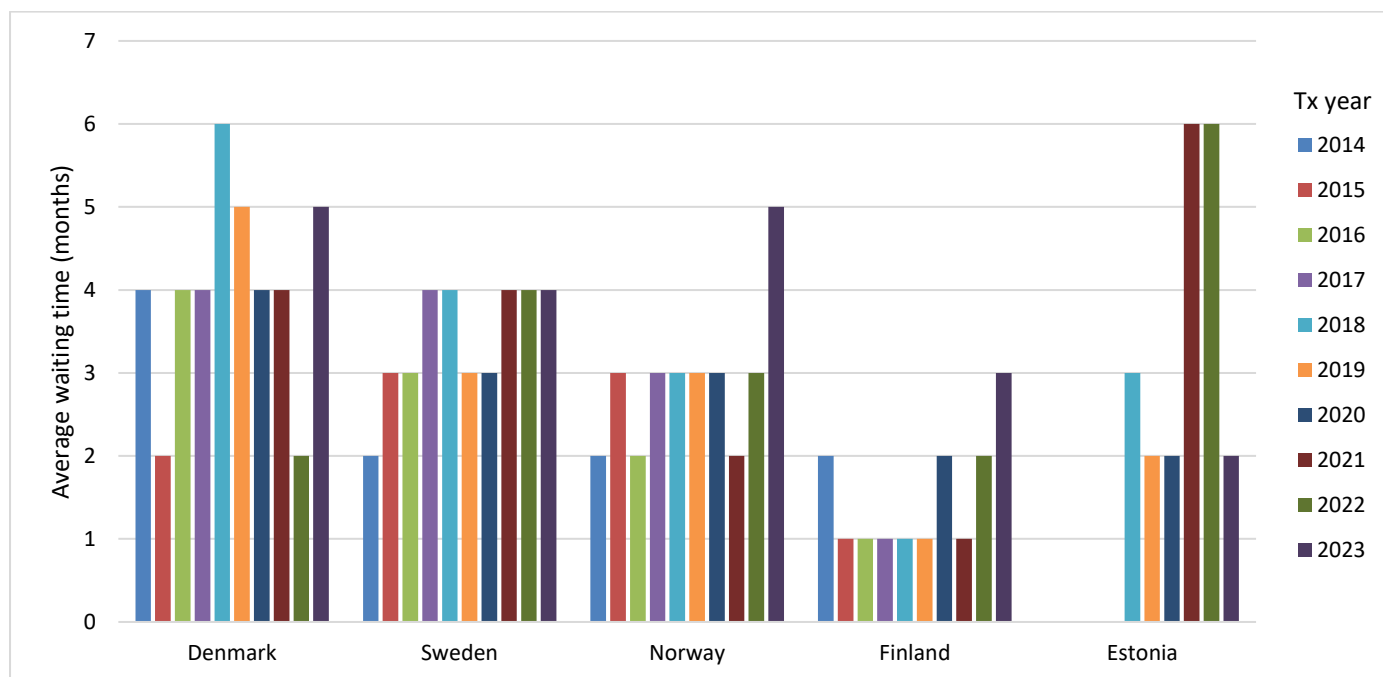
Transplanted livers pmp⁵² from cDCD donors per year

Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2017	0	0	0	0,8	0	0,1
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0,1	0
2021	0	0	0	0	0,7	0,2
2022	0	0	0	0,7	1,0	0,5
2023	0	0	0,2	1,1	3,0	1,3



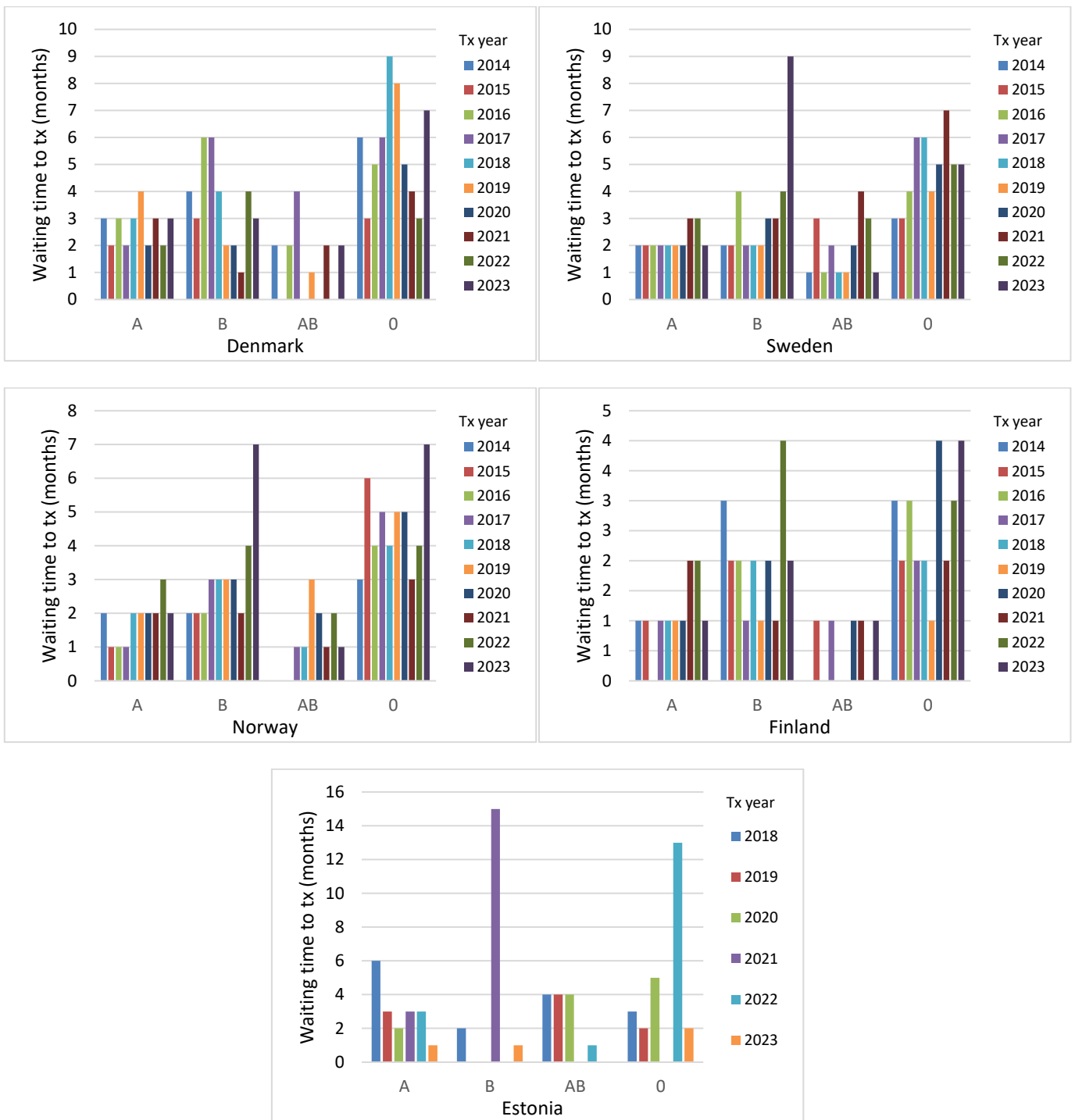
⁵² pmp: per million population

Average waiting time on the waiting list until transplantation with deceased donor liver⁵³



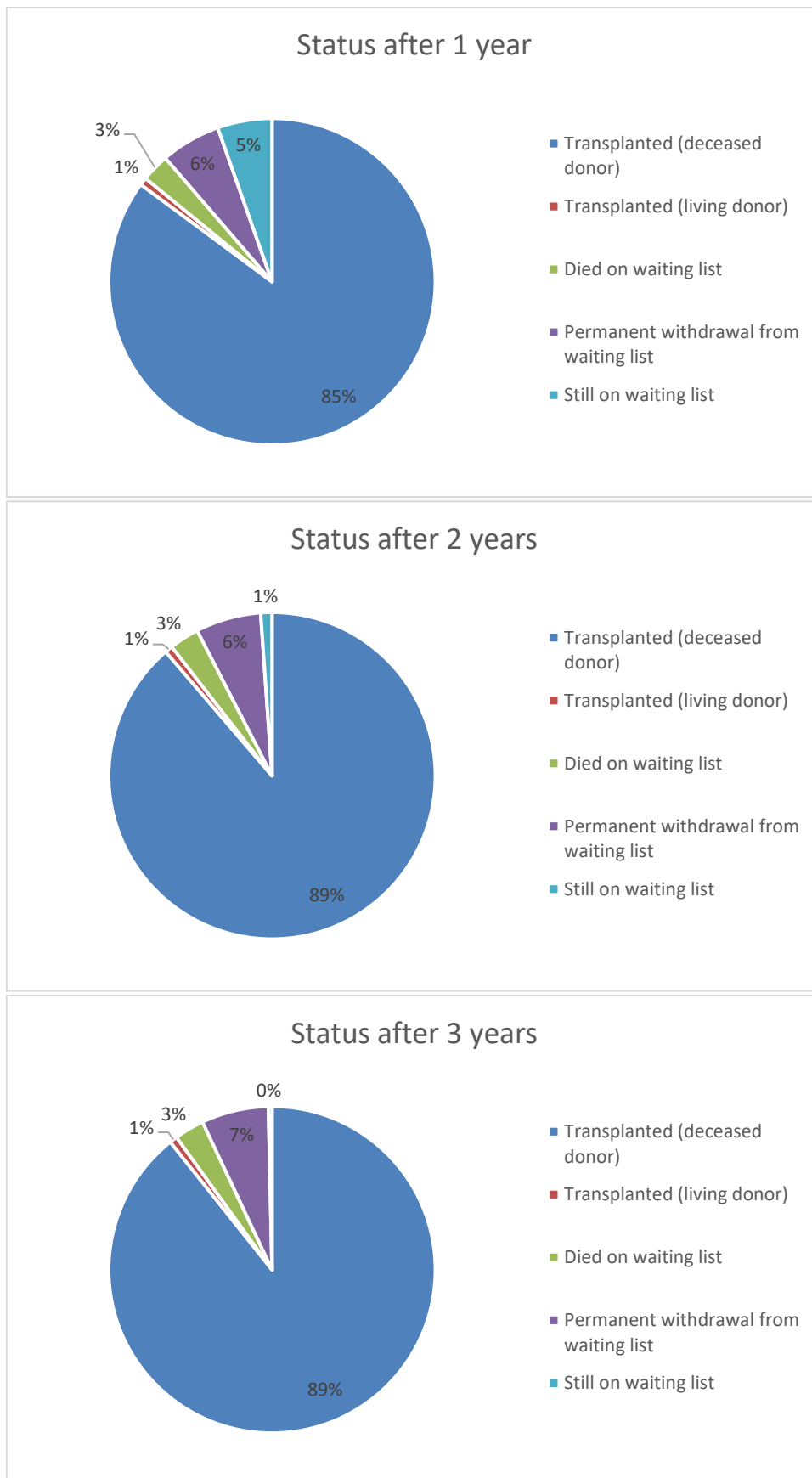
⁵³ Icelandic patients are counted as part of Sweden.

Average waiting time on the waiting list until transplantation with deceased donor liver by blood group for each country⁵⁴



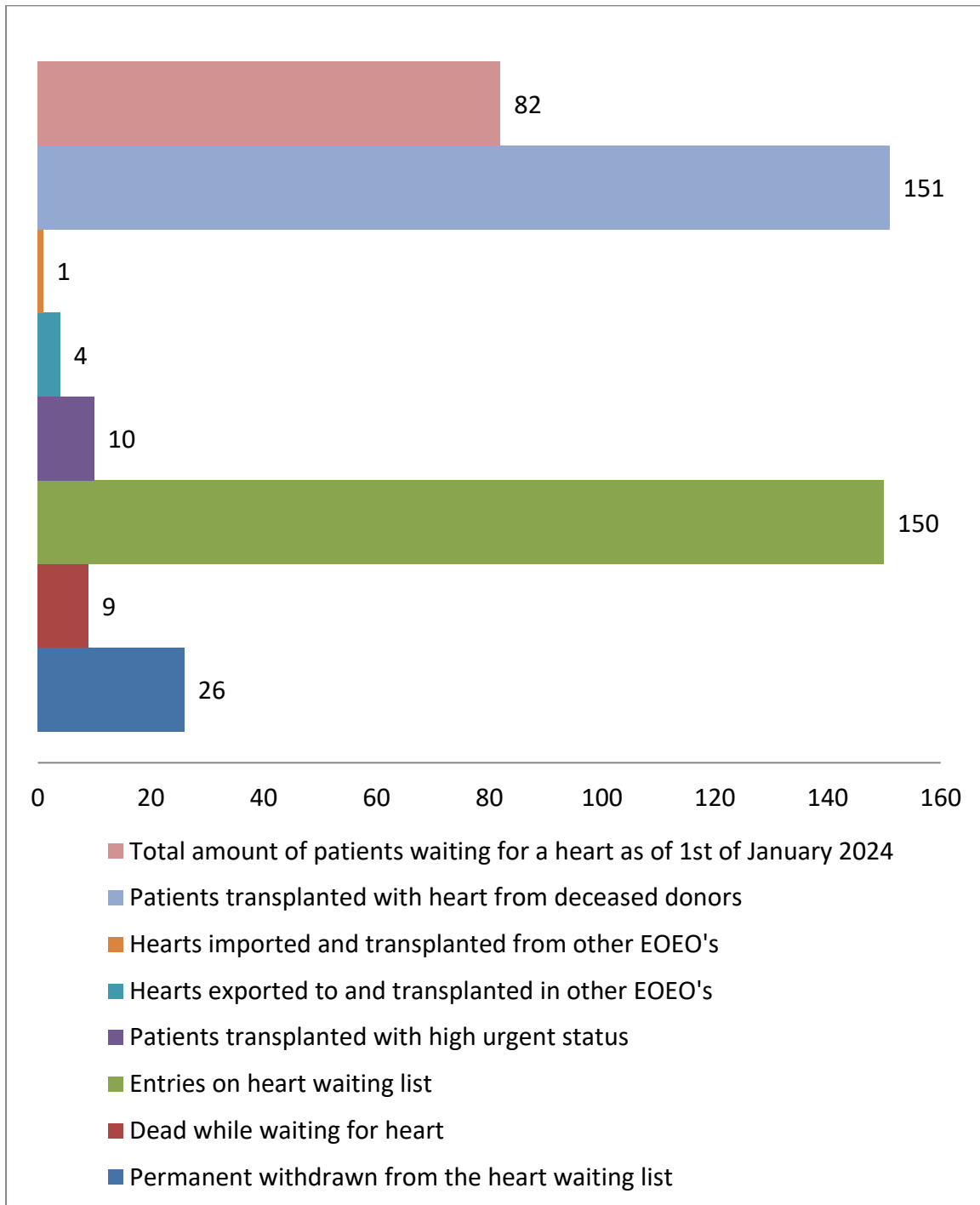
⁵⁴ Icelandic patients are counted as part of Sweden

Liver waiting list registrations 2016-2020 – 3-year outcome⁵⁵



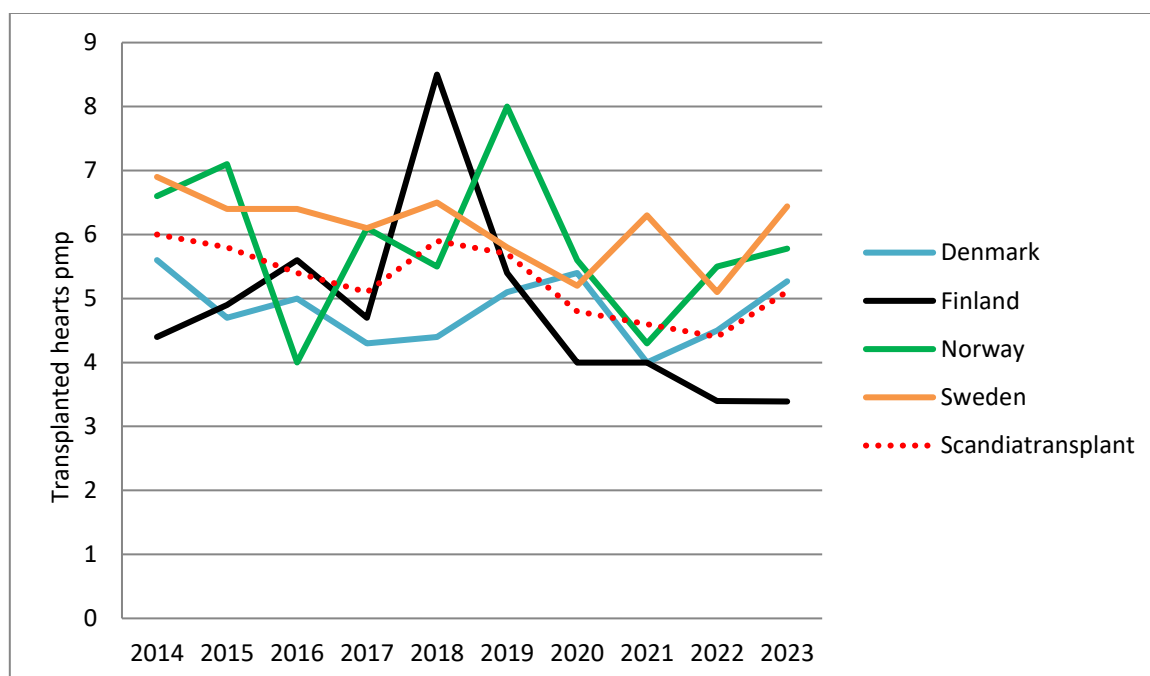
⁵⁵ Combined kidney+liver waiting list registrations are not included in these charts.

Hearts 2023



Transplanted hearts pmp⁵⁶ per year⁵⁷

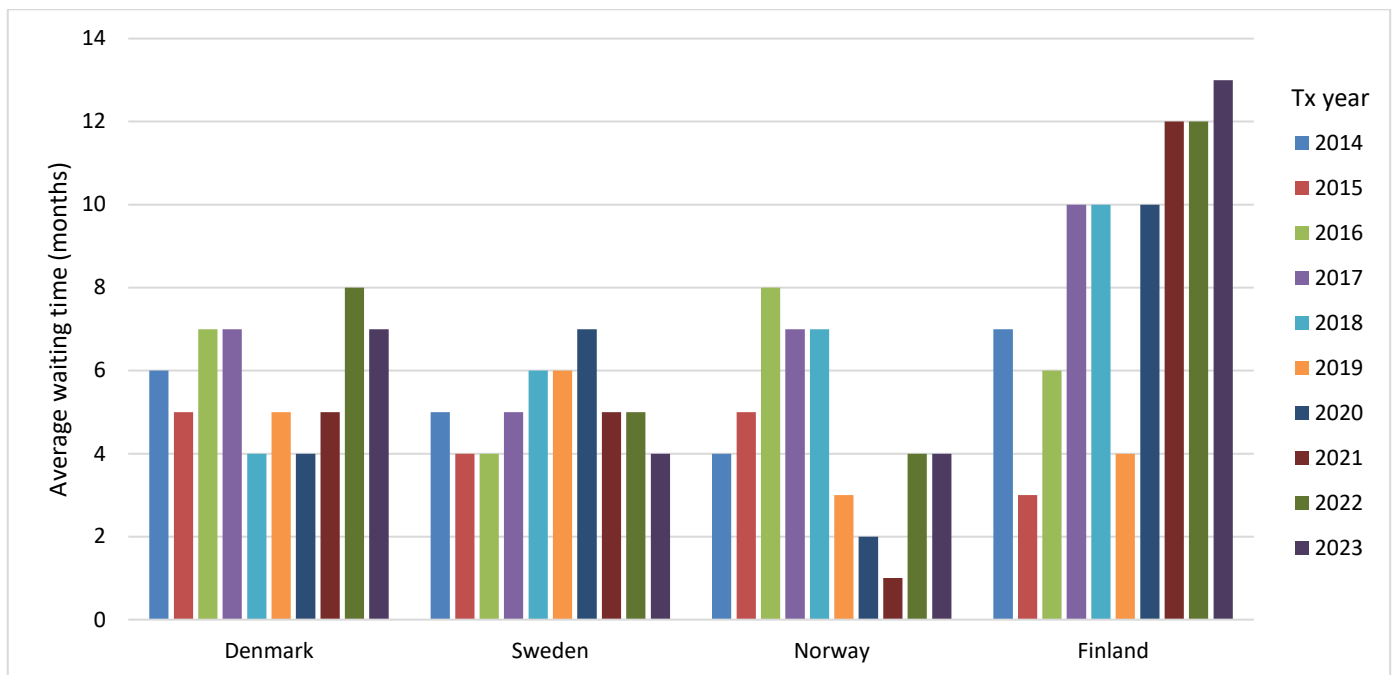
Year	Denmark	Finland	Norway	Sweden	Scandiatransplant
2014	5,6	4,4	6,6	6,9	6,0
2015	4,7	4,9	7,1	6,4	5,8
2016	5,0	5,6	4,0	6,4	5,4
2017	4,3	4,7	6,1	6,1	5,1
2018	4,4	8,5	5,5	6,5	5,9
2019	5,1	5,4	8,0	5,8	5,7
2020	5,4	4,0	5,6	5,2	4,8
2021	4,0	4,0	4,3	6,3	4,6
2022	4,5	3,4	5,5	5,1	4,4
2023	5,3	3,4	5,8	6,4	5,1



⁵⁶ pmp: per million population

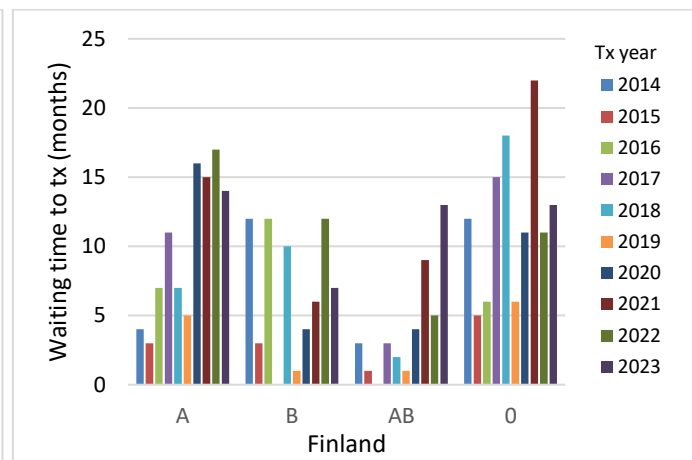
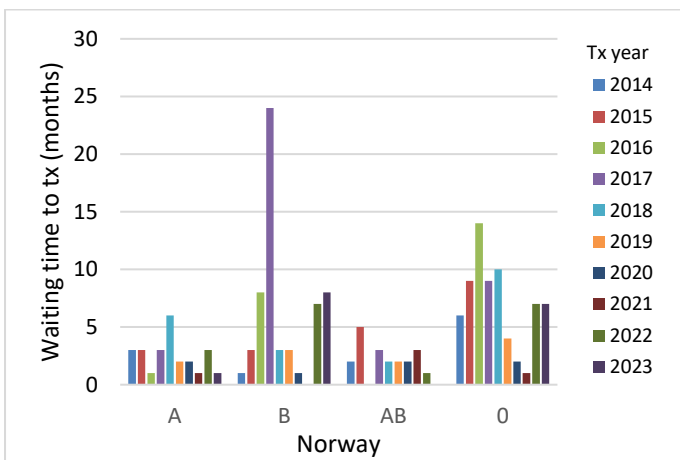
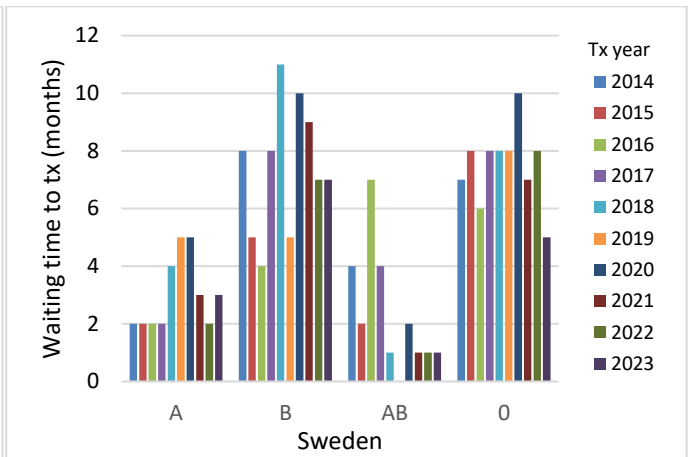
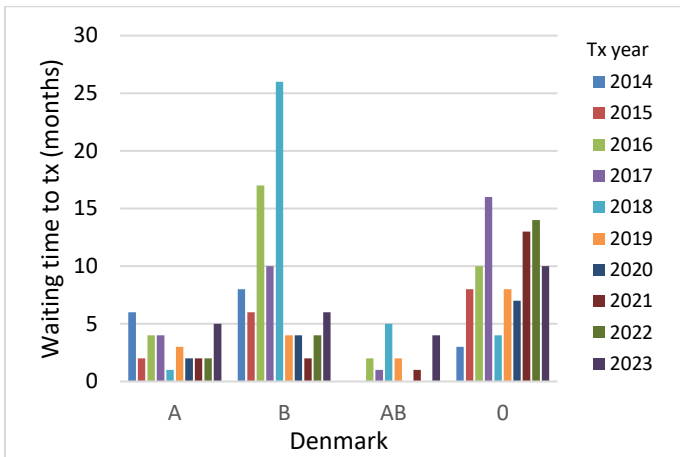
⁵⁷ Estonian deceased donor heart transplantations are performed in Helsinki.

Average waiting time on the waiting list until transplantation with deceased donor heart⁵⁸



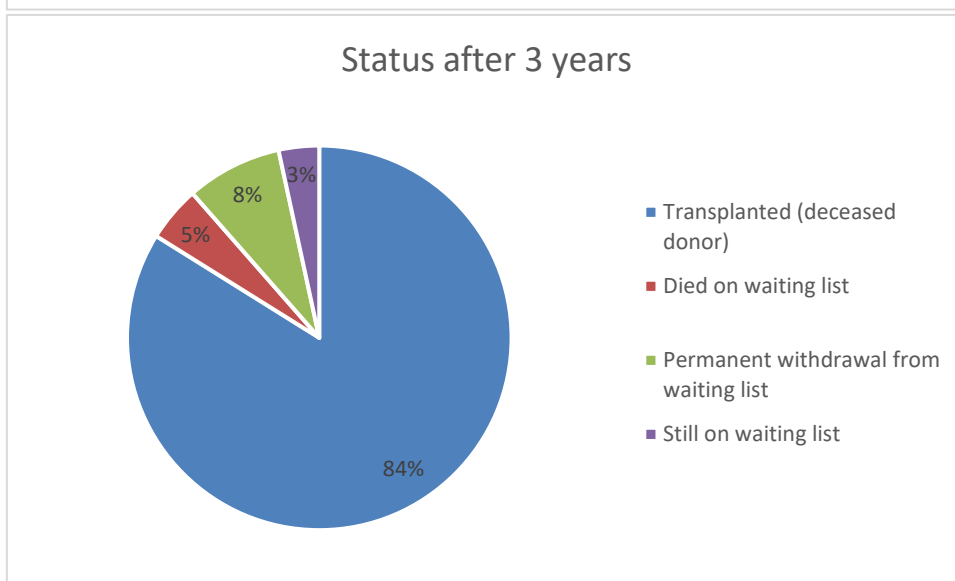
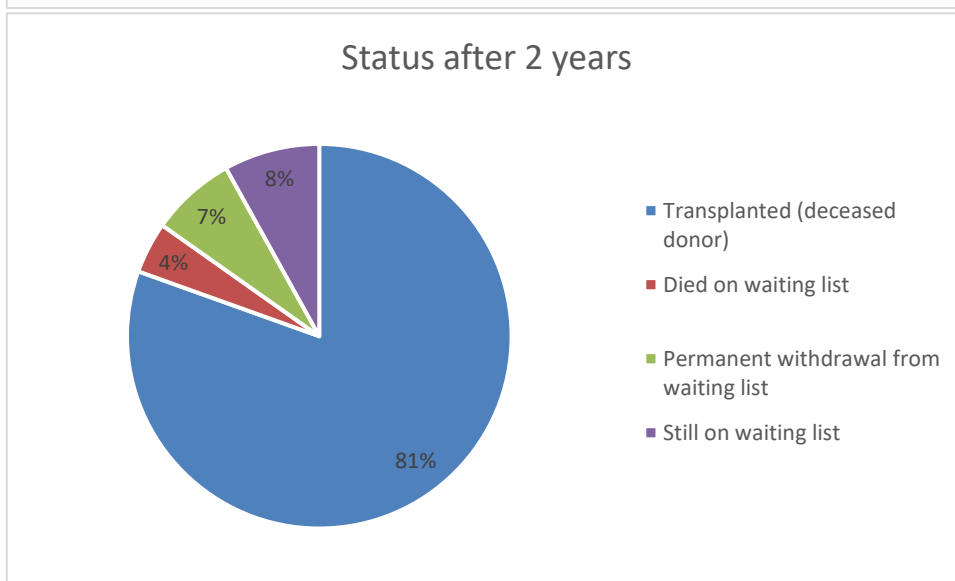
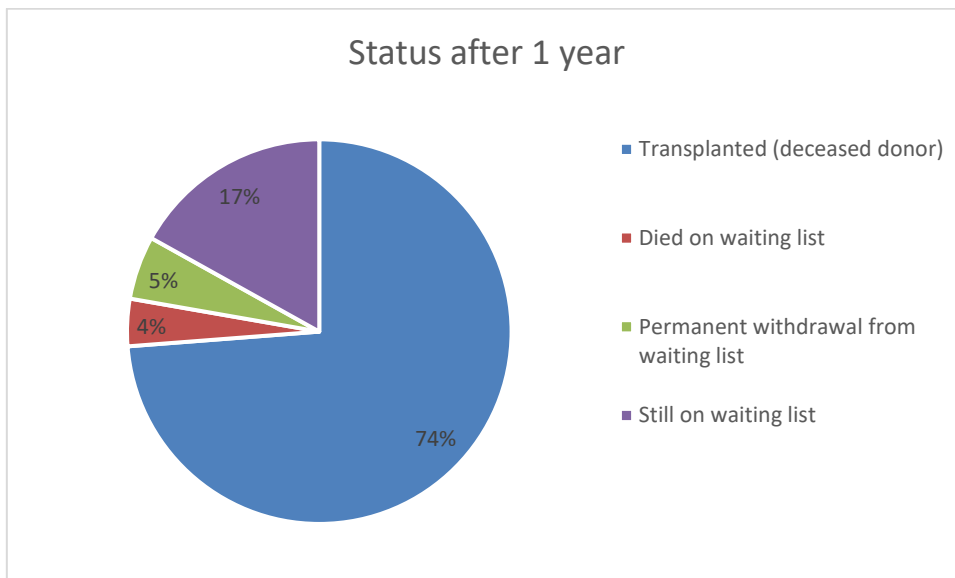
⁵⁸ Icelandic patients are counted as part of Sweden and Estonian patients are included in the Finnish figures.

Average waiting time on the waiting list until transplantation with deceased donor heart by blood group for each country⁵⁹

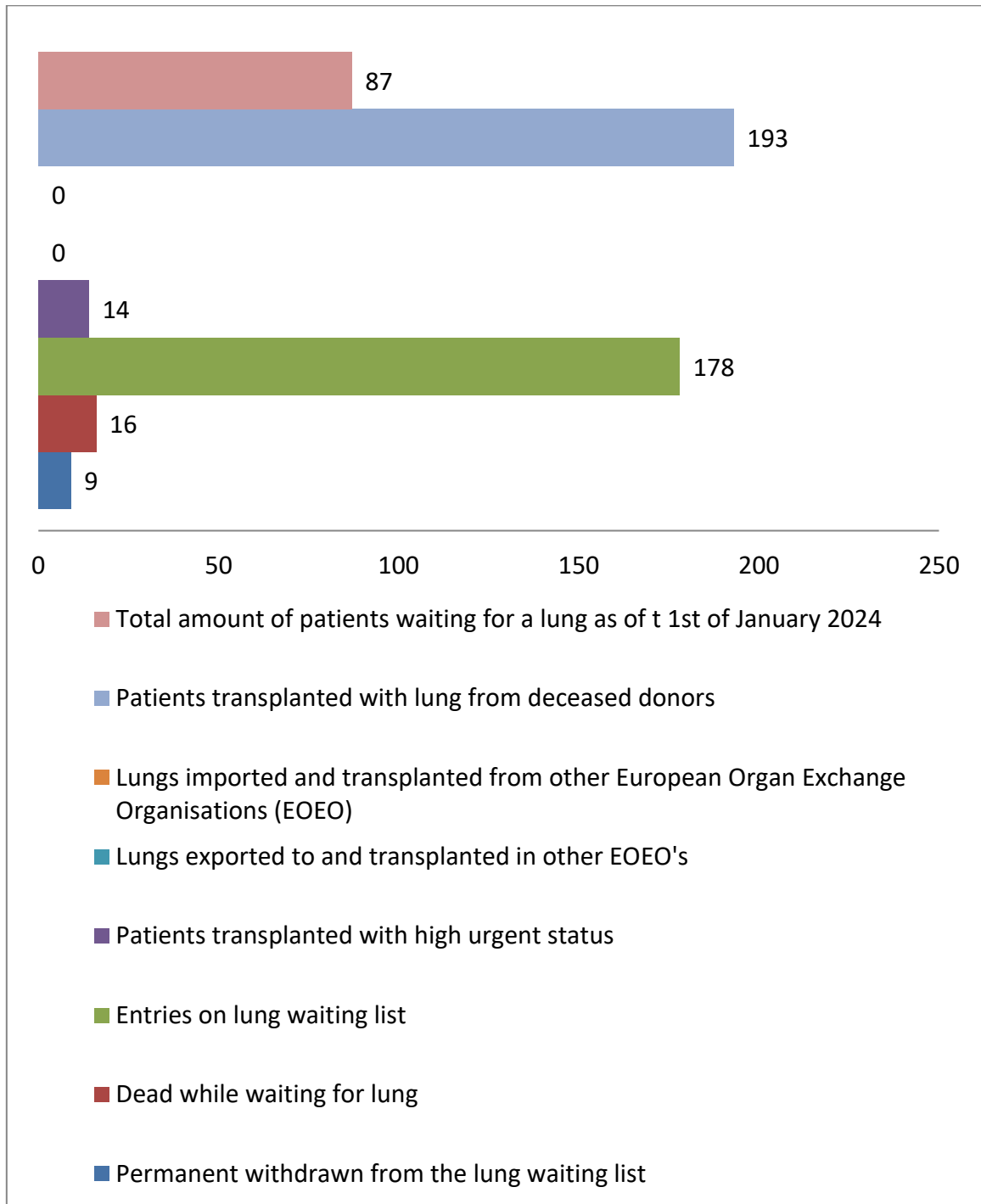


⁵⁹ Icelandic patients are counted as part of Sweden and Estonian patients are included in the Finnish figures..

Heart waiting list registrations 2016-2020 – 3-year outcome

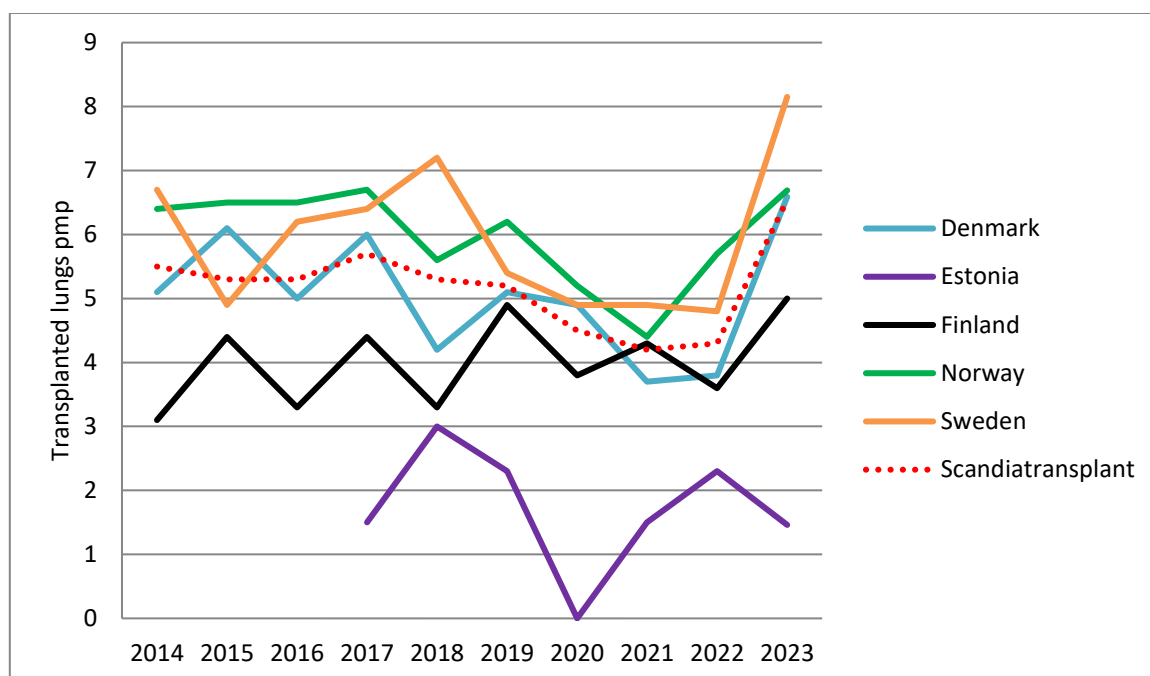


Lungs 2023



Transplanted lungs (Double, single and heart-lung) pmp⁶⁰ per year

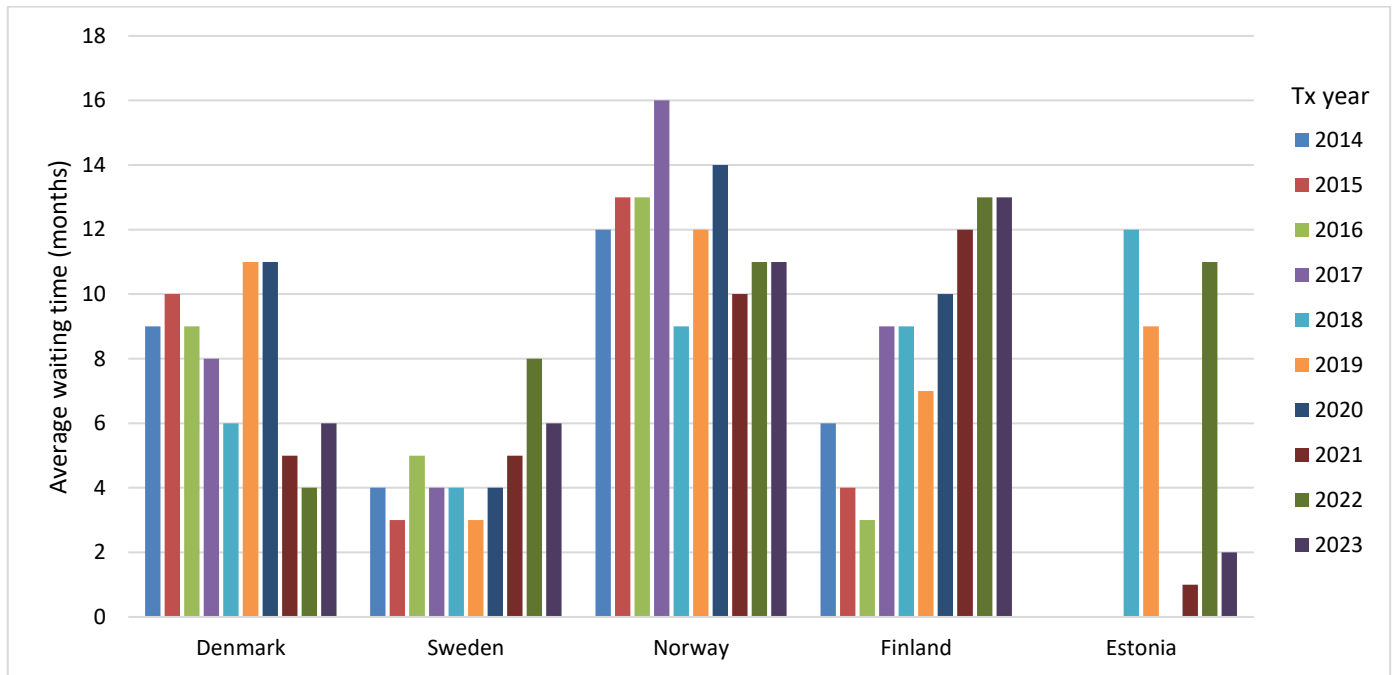
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2014	5,1		3,1	6,4	6,7	5,5
2015	6,1		4,4	6,5	4,9	5,3
2016	5,0		3,3	6,5	6,2	5,3
2017	6,0	1,5 ⁶¹	4,4	6,7	6,4	5,7
2018	4,2	3,0	3,3	5,6	7,2	5,3
2019	5,1	2,3	4,9	6,2	5,4	5,2
2020	4,9	0	3,8	5,2	4,9	4,7
2021	3,7	1,5	4,3	4,4	4,9	4,2
2022	3,8	2,3	3,6	5,7	4,8	4,3
2023	6,6	1,5	5,0	6,7	8,2	6,5



⁶⁰ pmp: per million population

⁶¹ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

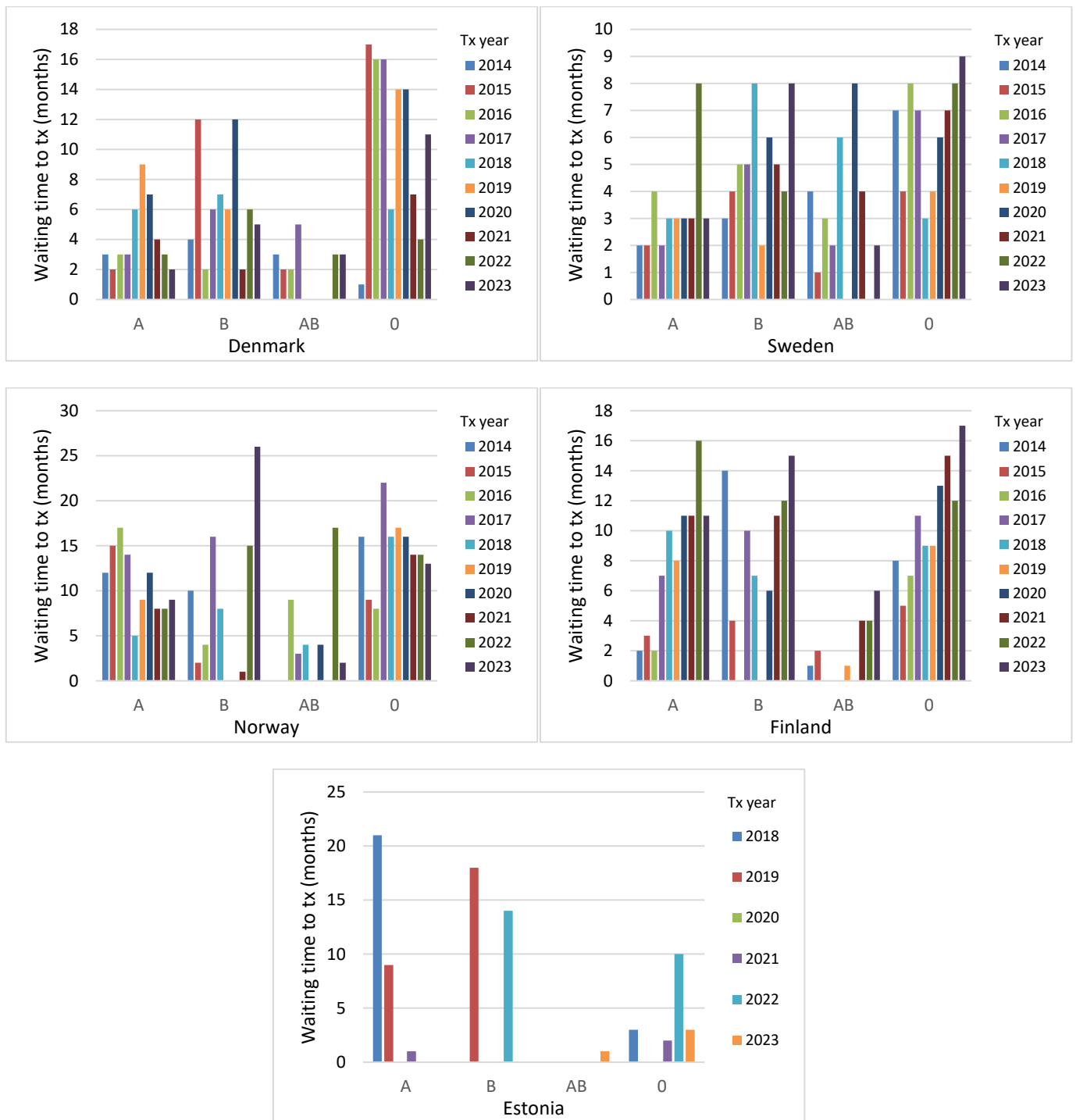
Average waiting time on the waiting list until transplantation with deceased donor lungs^{62,63}



⁶² Icelandic patients are counted as part of Sweden.

⁶³ 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^{64,65}

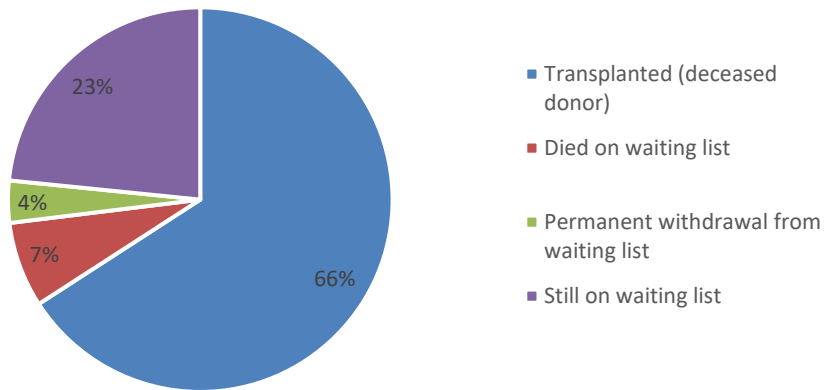


⁶⁴ Icelandic patients are counted as part of Sweden.

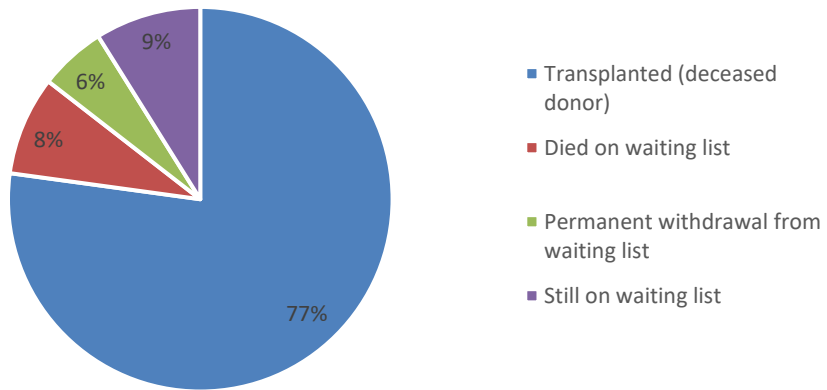
⁶⁵ Includes double lung, single lung and heart-lung block.

Lung waiting list registrations 2016-2020 – 3-year outcome

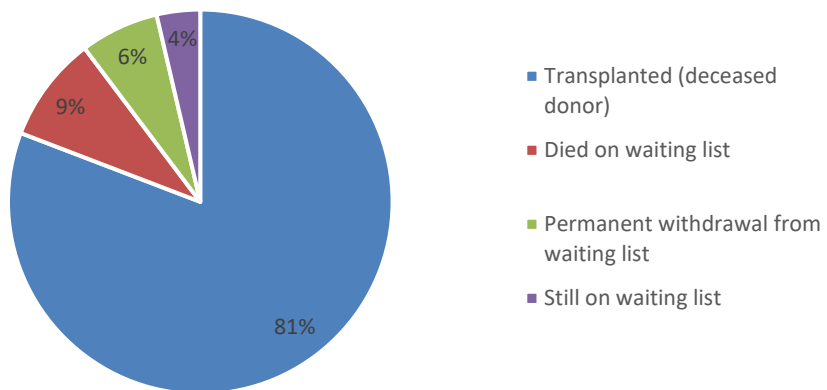
Status after 1 year



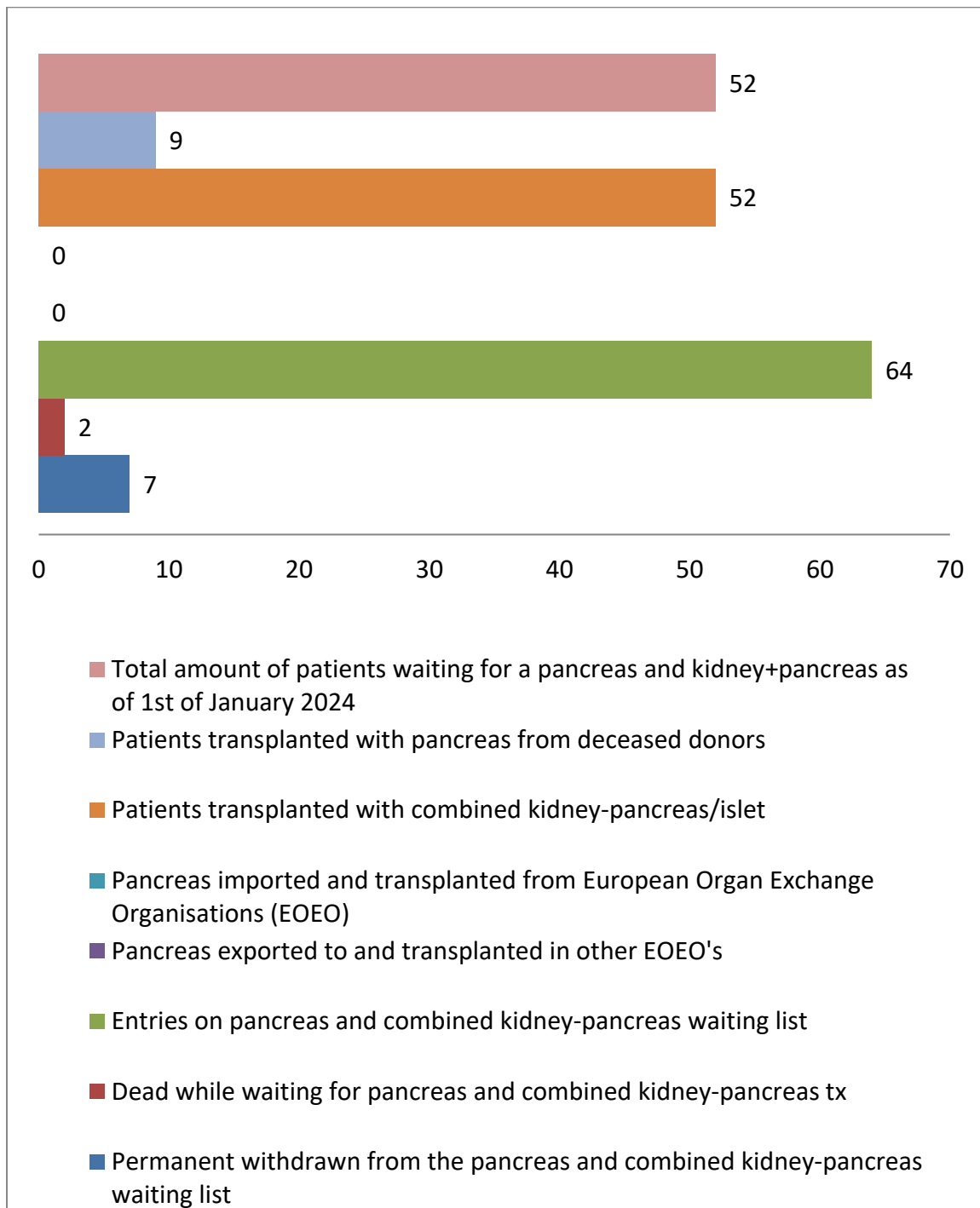
Status after 2 years



Status after 3 years

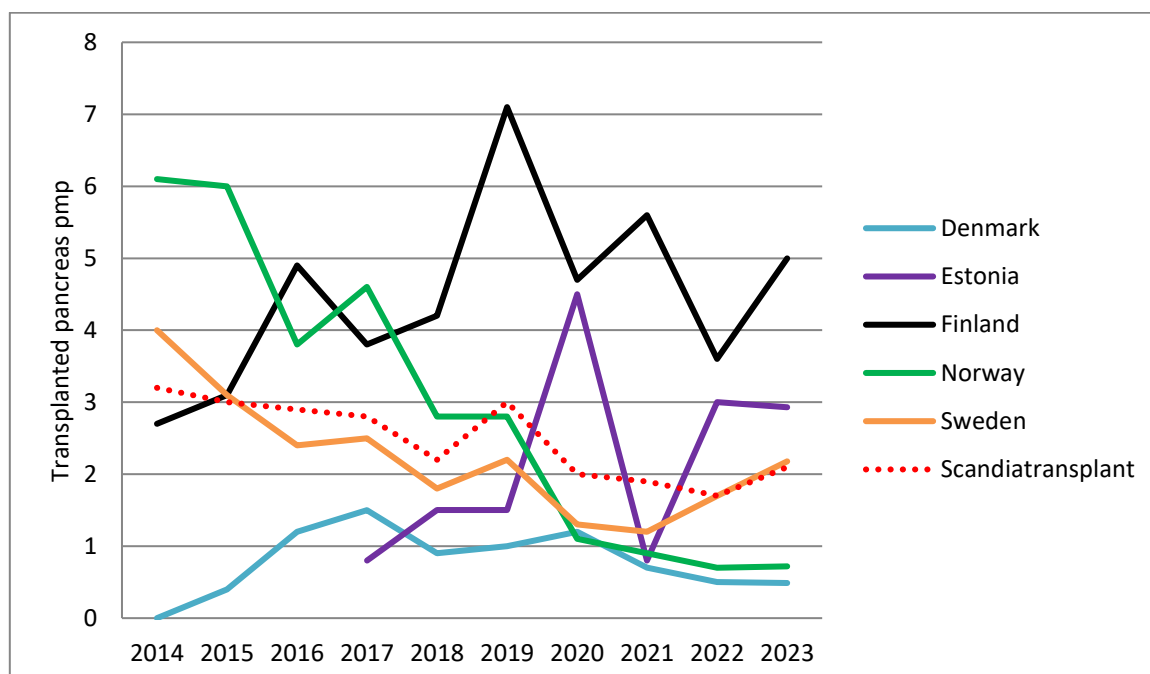


Pancreas 2023



Transplanted pancreas (incl. combined kidney-pancreas) pmp⁶⁶ per year

Year	Denmark ⁶⁷	Estonia	Finland	Norway	Sweden	Scandiatransplant
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 ⁶⁸	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
2023	0,5	2,9	5,0	0,7	2,2	2,1



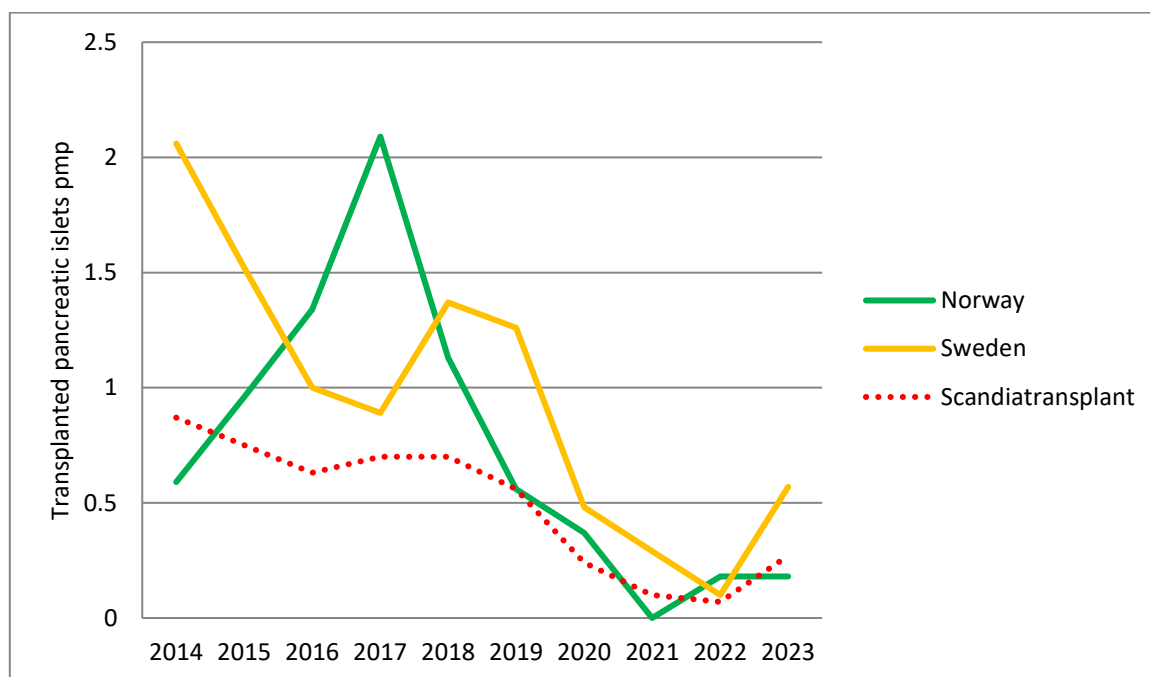
⁶⁶ pmp: per million population

⁶⁷ Pancreas program started in Denmark in 2015.

⁶⁸ Figures included from Estonia year 2017 starts from October 1st 2017, which has negative impact on PMP for Estonia and Scandiatransplant

Transplanted pancreatic islets⁶⁹ pmp⁷⁰ per year

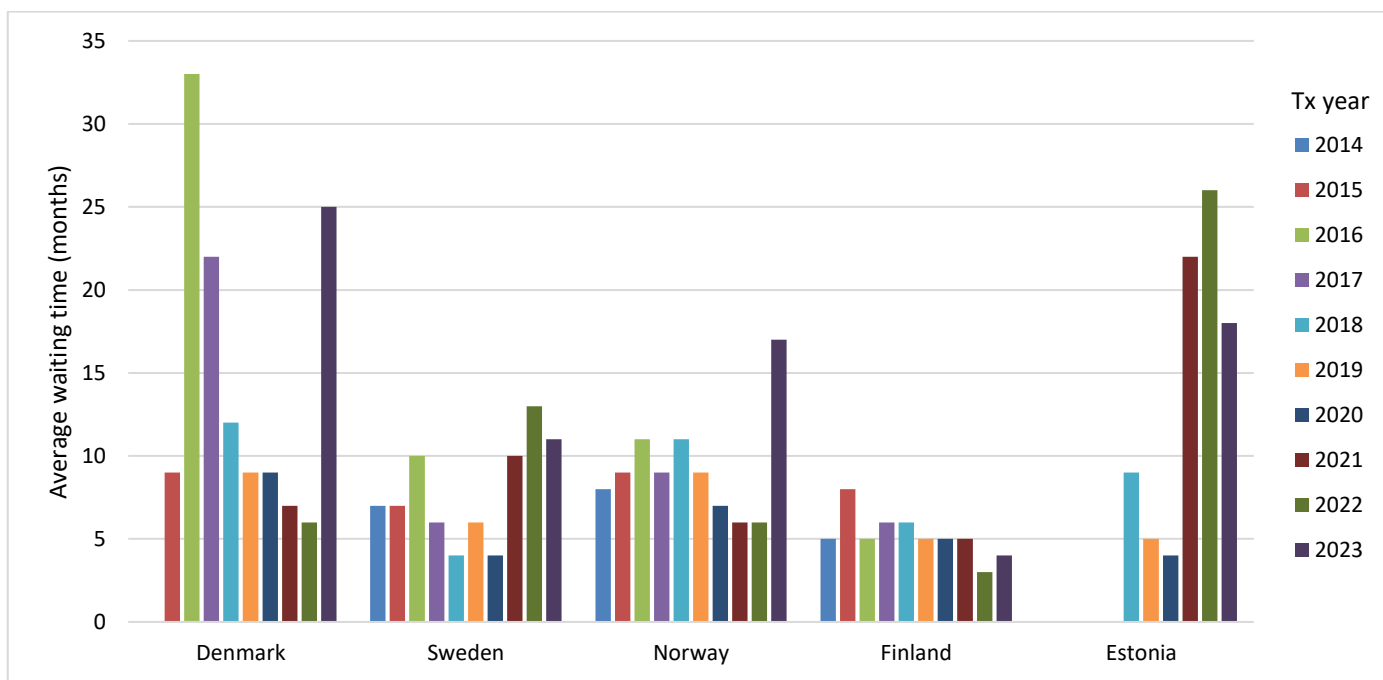
Year	Denmark	Estonia	Finland	Norway	Sweden	Scandiatransplant
2014	0		0	0,59	2,06	0,87
2015	0		0	0,96	1,52	0,75
2016	0		0	1,34	1,00	0,63
2017	0	0	0	2,09	0,89	0,70
2018	0	0	0	1,13	1,37	0,70
2019	0	0	0	0,56	1,26	0,56
2020	0	0	0	0,37	0,48	0,24
2021	0	0	0	0,00	0,29	0,10
2022	0	0	0	0,18	0,10	0,07
2023	0	0	0,18	0,18	0,57	0,27



⁶⁹ Each portion is counted as one transplantation

⁷⁰ pmp: per million population

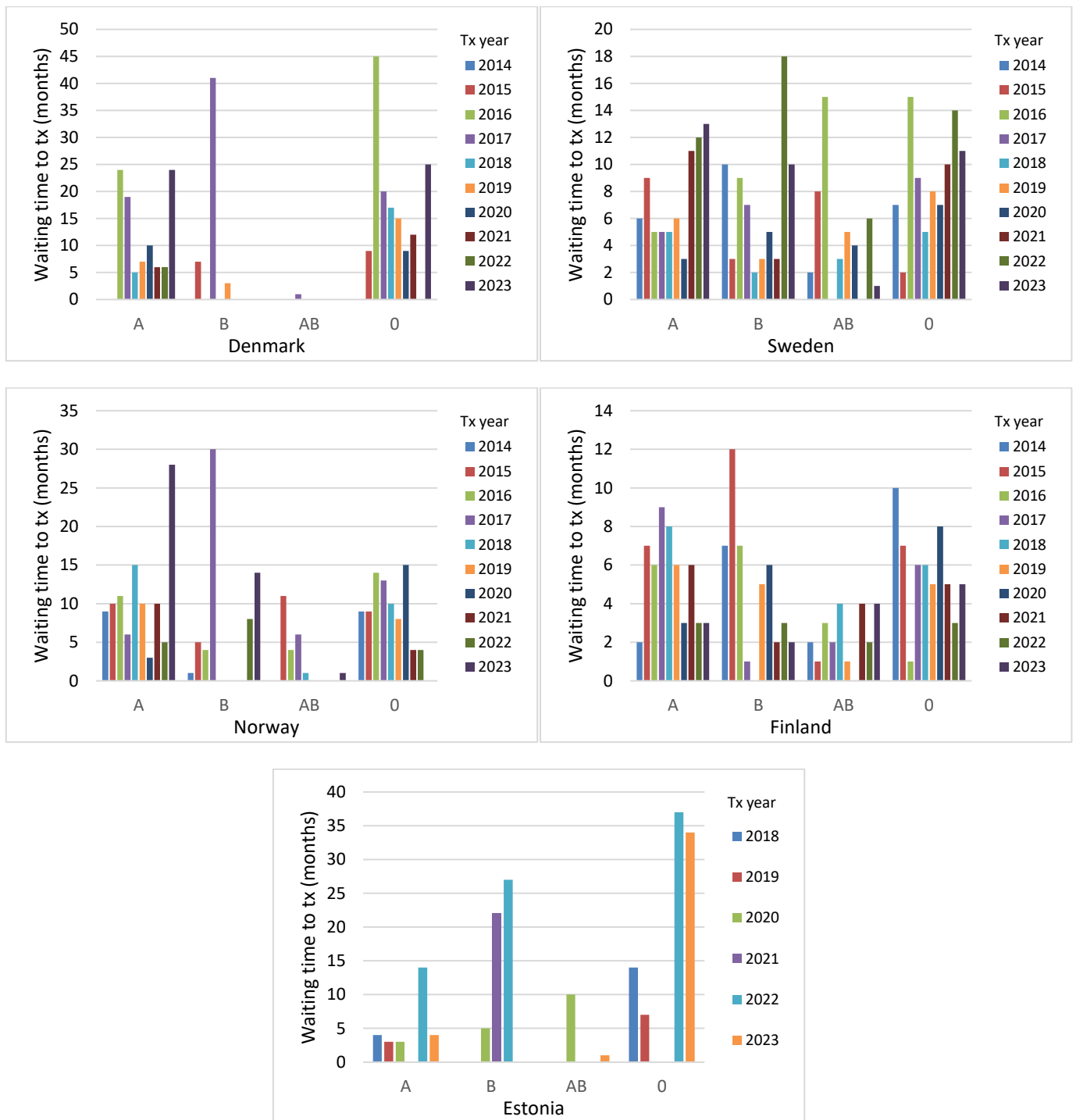
Average waiting time on the waiting list until transplantation with deceased donor pancreas^{71,72}



⁷¹ Icelandic patients are counted as part of Sweden.

⁷² Pancreas program started in Denmark in 2015.

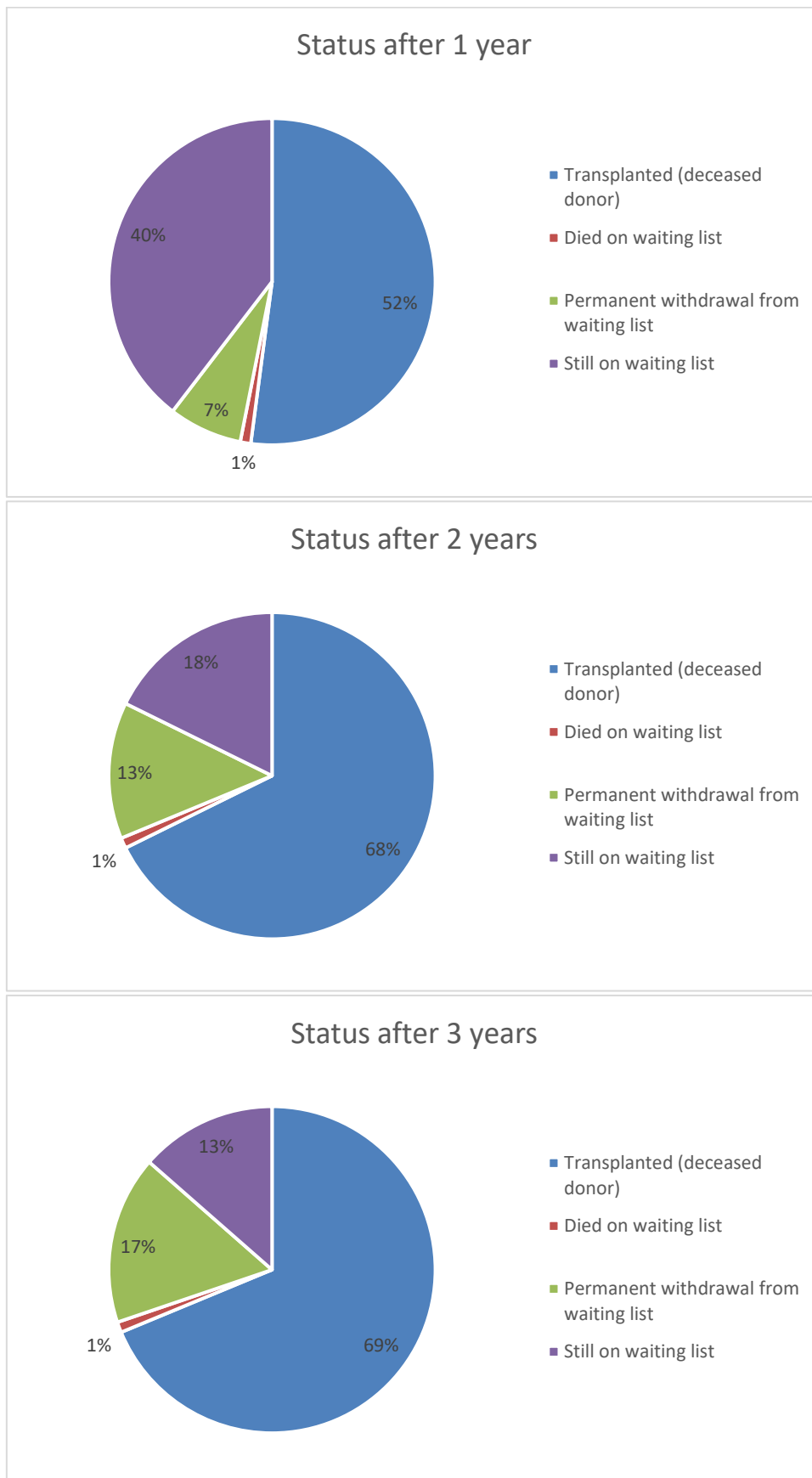
Average waiting time on the waiting list until transplantation with deceased donor pancreas by blood group for each country^{73,74}



⁷³ Icelandic patients are counted as part of Sweden.

⁷⁴ Pancreas program started in Denmark in 2015.

Pancreas waiting list registrations 2016-2020 – 3-year outcome⁷⁵



⁷⁵ Combined kidney+pancreas waiting list registrations are not included in this chart.

On behalf of Scandiatransplant

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Anne Ørskov Boserup
(Clinical Data Manager)