

# NLTG Gothenburg 24 March 2026 – Meeting Minutes



## 1. Minutes from the NLTG in Oslo, October 21, 2025

William Bennet opened the meeting and welcomed approx. 30 participants from all the countries in ScandiTransplant (participant list see appendix 1) to Gothenburg. The purpose of the NLTG meetings is reiterated: to strengthen the personal relationship between centers, facilitate knowledge exchange, harmonize clinical practices, and promote joint research initiatives aimed at improving liver transplant outcomes across the Nordic countries. The minutes from the previous NLTG meeting in Oslo were discussed and the group confirmed that the documented discussions from the Oslo meeting were accurate they were approved

## 2. Center-Wise Update and Discussion

An overview of liver transplant activity across the Nordic region during 2025 is presented and discussed (see appendix 2). The overall activity was high, with more than 400 liver transplants performed across the participating centers, representing one of the most active years to date. A total of 426 patients were transplanted of which 36 were paediatric recipients.

All centers apart from Tartu and Riga are now performing DCD-NRP liver procurements and transplantations and the DCD liver transplants seems to becoming an increasing proportion of the transplants in many centers. In Sweden the proportion of DCD livers is  $\approx 25\%$ , in Oslo  $\approx 8\%$ , in Copenhagen  $\approx 5\%$  and Helsinki just recently performed their 1<sup>st</sup> DCD-NRP LTx. Tartu are planning to start a DCD program soon. Living donor transplantation remains rare across the region and only two LD LTx were performed in 2025, one in Gothenburg and one in Oslo, both to paediatric recipients. The group agreed that presenting annual data in a unified slide deck contributes to transparency and shared learning.

Machine perfusion has begun to influence clinical practices in several centers, shaping logistics, evaluation, and organ acceptance patterns. Sweden, Norway and Copenhagen are all using hypothermic machine perfusion (HMP) in selected case before LTx. Stockholm is so far the only center performing normothermic liver perfusion (NMP) for both logistical purposes and for donor liver quality evaluation and then transplanting approved livers after informed consent from the recipients. Gothenburg also plan to start NMP during 2026.

**Action Point: Continue annual unified reporting for all centers.**

## 3. NLTR Annual Report 2025 & Form Revision

Dr. Katrine Engesæter presented key findings from the 2025 Nordic Liver Transplant Registry (NLTR) annual report. Transplant activity has increased compared to previous years, and the number of patients listed for transplantation has reached a record level. The waiting times have decreased, and mortality on the waiting list remains very low. Primary sclerosing cholangitis continues to be the most common indication for transplantation, while metabolic-associated steatohepatitis (MASH) is emerging as an increasing cause for transplantation. Recipient and

donor demographics remain relatively stable. The outcome remains excellent, with high patient and graft survival across indications. Improvements in re-transplantation outcomes over time are also highlighted.

An update was provided on the ongoing revision of NLTR forms and variables. A working group with representatives from all centers has made significant progress, particularly following the in-person workshop. The goal is to modernize the registry while maintaining alignment with international standards, including compatibility with the European Liver Transplant Registry (ELTR).

Proposed revisions include the addition of new diagnostic categories, restructuring of the transplantation data, the follow-up data, and simplification of certain variables. The importance of accurate and complete data entry is emphasized as essential for maintaining a high quality value of the registry.

**Action Point:** The office in Aarhus will proceed with implementing the agreed changes in YASWA.

#### **4. Update from Scandiatransplant**

##### **Payback and Balance**

Ilse Duus Weinreich presented an overview of liver exchange activity and payback status within Scandiatransplant. The number of “active” payback obligations remains stable. The payback system is functioning well despite that some paybacks remain unresolved for long periods. This is often due to challenges related to paybacks to the rarer blood groups (B and AB) or donor-recipient mismatches. A key theme was the need to make better use of flexible blood group acceptance, an option that exists but is not consistently used.

Differences in the number of livers a country exports and imports were discussed. The discrepancies are largely caused by variations in country population and waiting list composition. When adjusted for population size the number of imported and exported livers between countries become just about equal. Sweden often receives ROTA list offers on a later list position and can more often accept the offers because of a larger waiting list with more potential candidates to fit a particular graft offer. It was also emphasized that the high proportion of livers exchanged between countries reflect the high level of collaboration within Scandiatransplant.

**Action Point:** Centers should update acceptable blood groups for paybacks in YASWA.

#### **5. Payback Rules Revisited**

While the existing rules are generally followed, several practical challenges are identified, including long-standing unresolved cases and repeated declined offers. There are scenarios where offers are declined multiple times due to concerns about donor quality or mismatch with recipient needs. Particularly “smaller” centres report difficulties in fulfilling payback obligations due to limited patients on their waiting lists. Various potential improvements are discussed, such as increasing flexibility regarding blood groups, redefining donor age categories, and limiting the number of repeated offers allowed when there are potential recipients on the waiting list of the receiving center. No decisions were made during the meeting, but it was agreed on that William

Bennet will consolidate the ideas into a concrete new pay-back proposal model to be circulated ahead of the next meeting for comments. The proposals will be discussed at the next NLTG meeting.

**Action Point:** A concrete proposal will be developed and circulated ahead of the next meeting, where a more formal decision may be taken (William Bennet).

## 6. Clarification of CIT for Machine Perfusion and NRP

As machine perfusion becomes more widely used, the need for a standardized definitions of cold- and warm ischemia times are important. Current automated calculation in YASWA does not distinguish between time spent in static cold storage and time spent on an active perfusion device, which can lead to misleadingly long ischemia times in the data. All needed registration fields are already present in YASWA, it was suggested to make a dedicated machine perfusion tab in YASWA, however this has implications for all organs. To be discussed further with coordinators, the machine perfusion group (point 10), and at the next NLTG meeting.

**Action Point:** The current registration and possible changes will be brought up at the next coordinator meeting (Ilse D. Weinreich).

## 7. Revision of Text for Paediatric Liver Allocation

Sweden's dual-center setup has caused ambiguity in interpreting the current paediatric allocation rules. The group approved a revised wording to clarify that paediatric and splitable grafts shall be used anywhere within the country before entering the Nordic rota list.

**Decision:** Revised wording unanimously approved.

**Action Point:** Guidelines will be updated accordingly when NLTG meeting minutes have been distributed (Ilse D. Weinreich).

## 8. XVIVO Update (Machine Perfusion Developments)

Martin Kuizenga from XVIVO presented an overview of emerging clinical evidence on liver machine perfusion. The presentation highlighted today's clinical evidence indicating that hypothermic perfusion appears to reduce biliary complications and early graft dysfunction and that liver perfusion generally enables smoother logistics by supporting planned daytime liver transplants.

## 10. Establishing a Nordic Liver Machine Perfusion Group (NLMPG)

William Bennet suggested to establish a Nordic liver machine perfusion group with the vision to share protocols and experiences, assist in clinical implementation, establish indications for machine perfusion, address regulatory challenges and to coordinate research. Gothenburg, Oslo, Stockholm, and Copenhagen immediately expressed interest, and representatives from all other centers about to begin perfusion programs should also be represented. Dr Gabriel Oniscu

accepted the offer to coordinate and establish the group. The plan is to have a defined group by the next NLTG meeting in the fall of 2026.

**Action Point:** Establish a Nordic liver machine perfusion group (Dr Gabriel Oniscu)

## **11. Liver Complication Registry in Oslo**

Dr. Bastian Pedersen presented Oslo's new development of a liver complication registry based on the data platform Ledidi. The registry is designed to capture detailed perioperative and postoperative data. The group recognized this as a valuable model for future NLTR enhancements, particularly around complication definitions and follow-up. The importance of standardized definitions and consistent reporting was emphasized. Many participants expressed an interest in potential collaboration and expansion of the registry to include multiple centers. The registry is amendable for further discussions at future meetings if there is an interest for that within the group.

## **12. Ongoing Studies and Research Updates**

### **12.1 Use of Donor CT for Allocation**

Dr. Veronica Reivell presented the Nordic CT study. While the study contains extensive data, the central conclusion of the study was that CT scanning provides substantial clinical value in assessing donors, identifying contraindications early, and optimizing matching and allocation which should result in improved patient safety. A manuscript is being prepared and will be circulated to co-authors for comments and subsequently submitted for publication before the summer.

### **12.2 Temporary Portocaval Shunt Study**

Dr. Alexandru Ilie presents data from a retrospective study from Gothenburg regarding temporary portocaval shunts during liver transplantation. The data suggests that the temporary shunt may offer perioperative stability benefits. However, the findings are still preliminary but offer a foundation for future prospective exploration.

### **12.3 Night–Day Study**

Gabriel Oniscu provided updates on the night-day liver transplant study. After analysing approx. 800 LTx performed in Sweden (2019-2023), the results show a clear advantage to scheduling liver transplants during daytime hours (06-17). Day time transplants had significantly less post-operative complications, mainly Clavian-Dindo grade IIIa/IIIb. Also, the cost analysis showed a substantial cost reduction for transplants performed during the daytime hours. Although patient- and graft survival remain similar, the clinical, logistical and cost-effective benefits of daytime transplantation have already influenced practice in Stockholm. Gabriel is hoping to collect more data from the other participating centers in Scandinavia.

### **12.4 Scandinavian VITTAL Study**

Dr. Gabriel Oniscu presented this initiative that explores the possibility of recovering organs deemed unusable through normothermic perfusion. Discussion about logistic as many centers have plans to start NMP at their own centers. The discussion will continue within the Nordic liver machine perfusion group as soon as it has been established.

### **12.5 TRACE – Cancer Risk After Transplantation**

Professor Michael Bretthauer outlined the ongoing Nordic cohort project examining cancer risk following organ transplantation. The study will leverage national registries, and while Norway and Sweden are fully engaged, Denmark and Finland are exploring their technical and legal pathways for participation.

### **12.6 Polycystic Liver Disease Study**

Lovisa Karlsson shared early multicenter findings on outcomes for liver transplantation for polycystic liver disease (PCLD).

The dataset is one of the largest in the region, and the study will continue with remaining data collection. A contact person from each center was appointed for the further work.

### **12.7 Ten-Year Evaluation of Paediatric Priority Allocation**

Ilse Duus Weinreich presented encouraging results showing that paediatric priority rules have effectively shortened waiting times for children. The methodology was approved, and the study will now proceed toward completion.

## **13. Studies that were not discussed which may be updated at the next meeting**

- *A study on DILI and transplantation – Helgi Bjornsson*
- *DSA study – news*
- *Nordic study on hepatico-duodenostomy in liver transplantation – Nicolai Schultz/Morten Hagness/other*
- *SALT – Study of oxidized Albumin in liver transplantation – Oslo, Stockholm - Lars Grønningsæter ?*

## **14. MVTx, donor selection & allocation - Gustav Herlenius/Ulrika Skogsberg – POSTPONED TO NEXT MEETING**

## **15. Date for Next Combined NLTG & NPLTG Meeting**

The group agreed on that the next combined paediatric (NPLTG) and adult (NLTG) meeting in Stockholm will be held on the 19–20 October 2026.

The meeting concluded with expressions of the unique collaborative efforts within the NLTG and all participating centers and the shared commitment to improving policies in liver transplantation in within the Scandiatransplant network.

Gothenburg, 2026-04-24

William Bennet, Gothenburg, Host of the meeting and writer of the minutes

Controller of minutes:

- Katrine Engesæter, Oslo
- Carl Jorns, Stockholm
- Ilse Duus Weinreich, Scandiatransplant

## APPENDIX 1

### NLTG meeting, Gothenburg, March 24, 2026- Participants

	<b>Name</b>	<b>Center</b>	<b>Dinner</b>	<b>Meeting</b>
1	Niclas Kvarnström	Gothenburg	Yes	Yes
2	Jānis Vilmanis	Riga	Yes	Yes
3	Katrine Engesæter	Oslo	Yes	Yes
4	Ulla Brink Plagborg	Copenhagen	Yes	Yes
5	Ulrika Samuelsson	Gothenburg	Yes	Yes
6	Anna Bladh	Gothenburg	Yes	Yes
7	Markus Gäbel	Gothenburg	Yes	Yes
8	Monika Olofsson Storrø	Oslo	Yes	Yes
9	Johanna Savikko	Helsinki	Yes	Yes
10	Eija Tukiainen	Helsinki	Yes	Yes
11	Andres Tein	Tartu	Yes	Yes
12	Maris Niibek	Tartu	Yes	Yes
13	Andrei Uksov	Tartu	Yes	Yes
14	Ilse D. Weinreich	Scandiatransplant	Yes	Yes
15	Kristian Schaumburg Kiim	Copenhagen	No	Yes
16	Andreas Schult	Gothenburg	Yes	Yes
17	Gabriel Dumitrescu	Stockholm	Yes	Yes
18	Carl Jorns	Stockholm	Yes	Yes
19	Per Lindner	Gothenburg	Yes	Yes
20	Veronica Reivell	Gothenburg	Yes	Yes
21	William Bennet	Gothenburg	Yes	Yes
22	Alexandru Ille	Gothenburg	Yes	Yes
23	Gabriel Oniscu	Stockholm	No	Yes
24	Lotta Bouveng	Gothenburg	Yes	No
25	Ammar Khan	Oslo	Yes	Yes
26	Bastian Pedersen	Oslo	Yes	Yes
27	Allan Rasmussen	Copenhagen/Scandiatransplant	No	Yes
28	Ulrika Skogsberg	Gothenburg	Yes	Yes
29	Gustaf Herlenius	Gothenburg	Yes	Yes
30	Lovisa Karlson	Gothenburg	No	Yes
31	Matthew Walker	XVIVO	Yes	Yes
32	Martin Kuizenga	XVIVO	Yes	Yes
	TOTAL		28	32

## APPENDIX 2

### Center Statistics Ltx 2025

2025	GOT	STH	OS	CPH	HEL	TAR	RIGA
Total LTx	107	89	89	57	67	15	8
Total Pat. Ltx	106	88	86	56	67	15	8
1st LT / re-LT	101 / 6	83/6	82/7	52/5	61/6	14/1	7/1
Malign/benign	27 /79	18/71	13/76	4/52	18/49	4/11	3/5
Adult/Ped	97 / 9	84/4	78/11	47/9	66/1	15/0	8/3 (Hamburg)
Full / split/LD	93/13/1	85/4/0	79/9/1	50/7/0	66/1/0	15/0/0	8/0/0
DBD /DCD	81 / 25	66/23	81/7	54/3	67/0	15/0	8/0
Combi LTx	4	2	2	1	3	0	0
Machine Perf? Hypo/norm?	HMP/NMP '23/ '26	HMP/NMP 2/10	NMP '26 (HMP)	DHOPE	0	0	0

WL 2026	GOT	STH	OS	CPH	HEL	TAR	RIGA
Listed Jan. , 2026 Adults/ped	15/5	45/1	37/1	21/5	24/2	7/0	9/1