

**OPTN Histocompatibility Committee
Meeting Summary
December 14, 2021
Conference Call**

**Peter Lalli, Ph.D., D(ABHI), Chair
John Lunz, Ph.D., D(ABHI), Vice Chair**

Introduction

The Histocompatibility Committee met via Citrix GoToMeeting teleconference on 12/14/2021 to discuss the following agenda items:

1. Update: MFA in UNetSM
2. DonorNet Predictive Analytics
3. Educational Resource on Virtual Crossmatching
4. Standardize HLA Typing Requirements

The following is a summary of the Committee's discussions.

1. Update: MFA in UNetSM

Multi-factor authentication of UNetSM users will be required starting in early 2022.

Summary of discussion:

Committee members were reminded that multi-factor authentication of all UNetSM users will be introduced as a requirement in early 2022. Committee members were reminded to download and set up an Authy account prior to 2022 in order to avoid any issues following two-factor authentication implementation. Members were also provided contact information if they need assistance or have questions.

2. DonorNet Predictive Analytics

Overview of DonorNet mobile predictive analytics project.

Summary of discussion:

UNOS Research staff provided the Committee members with an overview of a project that is focused on providing specific types of information to kidney transplant programs to facilitate their decision-making about when and under what circumstances to accept a donor organ.

UNOS staff have partnered with Accenture to develop this predictive analytics functionality. Both groups have used a human-centered design approach, relying on patients, surgeons, physicians, coordinators, and others to guide the choices. General findings from this effort include the following: the transplant community is interested in predictive analytics; specifically, the community is interested in analytics demonstrating estimated graph function, net benefit of transplant for patients, and time to better offer for candidates; and the importance of transparency when developing the analytics in order to develop trust among the decision-makers.

Collaboration goals were to design concepts that will support decision-making, to develop working analytical models, to build the technical architecture, and to successfully deploy a pilot study. The project was segmented into three phases, with the first starting in May 2021 with a projected completion date of around April 2022. Early findings suggested that displaying predictive analytics impacts offer acceptance decisions, predictive analytics increased consistency in decisions (in terms of consensus decisions), the availability and use of predictive analytics improved decision-makers' reported confidence levels. Additionally, initial results found that shorter times to a better offer resulted in increased likelihood that the offer would be refused, while longer wait times to a better offer resulted in increased likelihood that the offer would be accepted.

A pilot study is expected to launch in January 2022. As part of the pilot, the following information will be displayed in DonorNet mobile for consideration:

- Candidates' time to next offer
- Probability of death before next offer
- Survival curve if the candidate is not transplanted

While other information may also be useful, the development team believes this is a good place to start.

A Committee member asked if the functionality will only be available in DonorNet mobile, or whether thought had been given to making the functionality available across other platforms where it could be applied to a transplant program's entire list of candidates? According to UNOS staff, the functionality is available only in DonorNet mobile currently, and launches at the time of a match run. As a result, a candidate would have to appear on a match run in order for the information to populate. UNOS staff indicated that the question would be shared with the internal team for consideration. The question also seems to be more along the lines of a waiting list management approach, as opposed to a "in the moment" approach, which is a little different than what the internal team was focusing on.

Next steps:

There were no next steps from the Committee member's perspective. UNOS staff would share the question about expanding availability beyond DonorNet with the development team.

3. Educational Resource on Virtual Crossmatching

The members were asked for their input regarding potential improvements to the existing educational material addressing virtual crossmatching. The members identified opportunities to expand and go into more detail about the clinical and practical implications of virtual crossmatching, but ultimately decided not to proceed until there is greater agreement around the implications.

Summary of discussion:

UNOS staff shared with the Committee members that the existing educational offerings addressing histocompatibility are being reviewed for potential redesign. Committee members were asked for their feedback as to whether there is a need to revise or update the existing educational materials addressing virtual crossmatching. Currently, one redesigned educational module has been posted, and another is expected to be posted by the end of December 2022. The virtual crossmatching module, entitled "Predicting the Future by Virtual Crossmatch," is the next one begin examined for a redesign. UNOS staff asked for the members' input about what information is needed, where it is lacking in the current module, and where greater clarity or emphasis is needed.

The Committee Chair asked for clarification as to whether this means recreating the educational modules already in UNOS Connect or if UNOS staff are looking to do something different? Staff

responded that it could be whatever the Committee members think is appropriate. Staff are planning to redesign the existing virtual crossmatching module but that effort can be expanded if the Committee believes there are needs for additional resources as well. The Chair then asked the Committee members to share what they encounter as barriers or misunderstandings within the community about virtual crossmatching, and/or how it may be used in appropriately?

The members agreed that there are some more complex issues at play that need addressing before the next iteration of an educational offering should be developed. They identified those issues as including how does or should the information be used in clinical practice when deciding which candidate does or does not get an offer. For example, how should donor-recipient relations with respect to the antibodies be used in making such determinations? The consensus was that these considerations are likely the “next step” in educational material for the community.

Next steps:

The members agreed to table any efforts for the time being to develop educational resources addressing the more substantial considerations of virtual crossmatching from clinical and practical standpoints.

4. Standardize HLA Typing Requirements

Members reviewed previously identified opportunities for standardizing HLA typing requirements, and were asked to share any additional areas for standardization with UNOS staff.

Summary of discussion:

The Committee was given an overview of previous efforts and potentially new actions that could be taken to better standardize the HLA typing requirements for all of the systems within UNetSM, consisting of DonorNet, KPD, Waitlist, and TIEDI.

Recent Committee standardization efforts discussed were the inclusion of all classic HLA loci in all systems for both candidates and donors, and reporting of homozygous reporting with “no second antigen detected.”

Looking forward, the Committee member’s consensus was to pursue a project that would require HLA typing at the molecular level. Would change resolution at which typings are reported. Currently, molecular typing is required of deceased donors, but not for living donors or candidates. This change is almost a given for the histocompatibility community; however, there may be some labs there are still performing serologic typing for candidates and donors, but even those labs probably have the capability to perform molecular typing.

Requiring typing at a molecular level provides additional flexibility with some of the data. It also provides more information in the system that can allow for the use of WHO nomenclature better than is currently possible. Additionally, molecular level typing may make data reporting more consistent.

The Committee has also previously discussed requiring HLA typing of all donors prior to a match run. The preferred state is for all HLA typing to be entered prior to any match run. As the community uses more donor information to perform functions, like virtual crossmatching, the need to have the information entered earlier is becoming more and more necessary.

This has been discussed previously with the OPO Committee, and they were supportive as long as the Histo Committee includes a stipulation in any policy language that in cases of expedited offers an OPO can start match runs before the HLA typing was entered. This may be specific to liver transplantation.

The consensus of the Committee members appeared to also be in favor of pursuing a project around this concept.

Next steps:

The members were asked to think about other potential areas for standardization, and to submit any such ideas to UNOS staff.

Upcoming Meetings

- January 11, 2022
- February 8, 2022

Attendance

- **Committee Members**
 - Peter Lalli, Chair
 - John Lunz, Vice Chair
 - Caroline Alquist
 - Valia Bravo-Egana
 - Amber Carriker
 - Idoia Gimferrer
 - Bill Goggins
 - Reut Hod Dvorai
 - Evan Kransdorf
 - Gerald Morris
 - Cathi Murphey, Past Chair
 - Marcelo Pando Rigal
 - Vikram Pattanayak
 - Jennifer Schiller
 - Manu Varma
 - Eric Weimer
- **HRSA Representatives**
 - Jim Bowman
 - Marilyn Levi
 - Raelene Skerda
- **SRTR Staff**
 - Katie Audette
- **UNOS Staff**
 - Laura Cartwright
 - Amelia Devereaux
 - Michael Ferguson
 - Betsy Gans
 - Erica Inge
 - Kelsi Lindblad
 - Eric Messick
 - Sarah Scott
 - Leah Slife
 - Susan Tlusty
- **Other Attendees**
 - Medhat Askar
 - Loren Gragert
 - Annette Jackson, OPTN Board member