Northwestern University

Transplantation Outcomes Research Collaborative Patient Safety • Quality of Life • Informed Consent • Access and Allocation Risk Prediction and Economics 

Health Informatics

### BACKGROUND

Transplantation and, in particular, living donor liver transplantation (LDLT), involves complex processes and systems of care that are particularly susceptible to medical errors and preventable complications.<sup>1</sup>

In order to capture safety issues and events after each LDLT procedure, a proactive, web-based patient safety debriefing tool was developed.

The tool was developed by an interdisciplinary team of patient safety experts, transplant surgeons, nurses, ancillary clinicians and staff.

Division leadership actively supported the study and encouraged participation.

While several high profile transplantation patient safety events have been reported, there has still been limited systematic research to describe the range of specific patient safety issues and events that occur in the context of transplantation.<sup>2-4</sup>

Proactive, timely debriefings of clinicians about safety related issues and events during clinical care has been shown to be an effective way of gathering information about risks in healthcare processes and systems.<sup>5-6</sup>

#### **METHODS**

#### Timeframe: May 2009-May 2010

**Clinician Responders:** All members of the healthcare team who participated in the LDLT procedure at Northwestern Memorial Hospital, including, but not limited to Surgeons, Anesthesiologists, Nurses, Technicians, Residents, Fellows, and Observers.

NUTORC TRANS	SPLANTATION SAFETY DEBRIEFIN	ід Номе				
Select your site: Northw	vestern					
ſ	SETTING AND ROLE					
Project Title: Compres	Please select the setting that you will be addressing in this debriefing survey.					
Supported by: The Nd The purpose of this Ic This safety log is com	Surgical Procedure Surgical Procedure: Please select ye	Organ and Patient Typ	Έ			
access to individual le presented to any clini		Please select the organ(s) for which	h the patient was receiving related care	e.		
Introduction/Purpose The purpose of this res	SOBMIT	Liver (Deceased Donor) Please select which type of patien Recipient in your description of the e Recipient case	ISSUE IDENTIFICATION: PAGE 1 OF	2 Progress: 40%		
been limited systematic surveillance of existing			We would like to ask you to comment on several areas and select from the following options: Not Applicable, No Issue(s), Occurred (see description). You will be asked for further details on those areas in which you indicate that an issue occurred describe any and all related issues. We are interested in any and all issues or problems you experienced or witnessed, even if they are minor and had no impa outcome of today's procedure (near misses). Please do not use any names (patients, clinicians, staff, etc.) when answering t questions.			
		BACK SUBMIT				
			Please note, you can click on the (?) symbol r	can click on the (?) symbol next to each area category to view example issues.		
			Communication with the Patient and Family (	(?) O Not Applicable O No Issue(s) Issue(s) Occurred (see description)		
			Informed Consent (?)	Not Applicable     No Issue(s)     Sue(s) Occurred (see description)     Briefly describe:     Consent form for recipient liver biopsy not in patient folder.		
			Inter-Provider Communication (?)	Not Applicable ● No Issue(s) ● Issue(s) Occurred (see description)		
			Distractions (?)	○ Not Applicable ④ No Issue(s) ○ Issue(s) Occurred (see description)		
			OR Scheduling/Coordination (?)	○ Not Applicable ○ No Issue(s) ④ Issue(s) Occurred (see description)		
<b>O</b>	<b>F</b>			Briefly describe: Last minute room change		

#### **Debriefing Survey Format:**

Each member of the clinical team receives a reminder email containing a link to the secure, web-based tool.

The tool includes a consent form, which assures participant confidentiality, and describes how the debriefings will be used to improve the transplantation process.

The safety debriefing tool solicits comments on all errors, adverse events, near misses, and safety related system or process issues encountered during the procedure.

Both open-ended questions and specific prompts are used.

# **Near Misses in Living Donor Liver Transplantation: Proactive Safety Debriefings**

Olivia Ross MPH\*, Daniela Ladner MD MPH\*<sup>†</sup>, Donna Woods EdM PhD\*, Anton Skaro MD PhD\*<sup>†</sup>, Anna Torricelli BS\*, Jessica Thurk MA\*, Gwen McNatt RN MA<sup>†</sup>, Renee Ziomek, RN<sup>†</sup>, Jane Holl MD MPH<sup>\*</sup>

\*Institute for Healthcare Studies, Northwestern University, Chicago, Illinois <sup>†</sup>Northwestern Memorial Hospital, Chicago, Illinois



#### Table 1: Frequently Reported Safety Risks

High Risk Area	Example	% of LDLT Procedures	# of LDLT Debriefings
Teamwork/ Communication	Anesthesia unaware of revised procedure start time	74%	43
Protocols Suboptimal or Not Followed	Sterile IV line procedures not followed	61%	22
Staffing	Fellow not available	48%	17
Coordination between Donor and Recipient Cases	Delay in removing donor liver as recipient was not ready	43%	17
Obtaining Blood Product/Vessels	Native vessels unavailable	39%	12
Equipment Availability and Functioning	Power supply for anesthesia machine short circuited	35%	24
IT/Data Access	Cardiology workup not in electronic medical record	30%	7
Availability of Laboratory Results	Key intra-operative lab values missing	30%	9
Supply Availability	Inadequate amount of preservation solution in the OR	22%	10

LDLT clinicians complete online safety debriefings after each procedure

✤ A group of experts in transplantation and patient safety conducts an analysis

Results are used to identify key areas of risk

These areas are then targeted or safety interventions and system and process improvement projects

A number of frequently reported safety risks (Table 1) have been identified. Next steps include an indepth analysis to determine the high criticality safety risks. In combination with other risk assessments, these findings will be used to develop solutions to improve LDLT patient safety. Improvements will lead to superior care and increased safety for patients and a better work environment for clinicians. As clinicians continuously provide feedback through the *safety debriefings*, a cycle of risk-informed system and process improvements will begin.

- procurement to transplantation. Prog Transplant 2009;19:208-14.
- 2007;84(12):1602-1609.
- 3. van der Vliet JA, Tidow G, Kootstra G, et al. Transplantation of contaminated organs. Br J Surg. 1980;67(8):596-598.
- Transplantation. 2007;7(2):480-483.

This project is the work of the Northwestern University Transplantation Outcomes **Research Collaborative (NUTORC)** Transplantation Safety Outcomes Group





## NORTHWESTERN UNIVERSITY

## **RESULTS & CONCLUSIONS**

131 individual web-based safety debriefings were submitted.

Debriefings were in response to 20 LDLT procedures.

Clinicians were willing to describe safety problems using a proactive, electronic surveillance system.

Safety debriefings, conducted for each transplantation procedure, can provide ratebased estimates of errors, adverse events, and near miss events.



## REFERENCES

Steinberger DM, Douglas SV, Kirschbaum MS. Use of failure mode and effects analysis for proactive identification of communication and handoff failures from organ

2. Cook RI, Wreathall J, Smith A, et al. Probabilistic risk assessment of accidental ABO-incompatible thoracic organ transplantation before and after 2003. Transplantation.

4. Friedman AL, Lee KC, Lee GD. Errors in ABO Labeling of Deceased Donor Kidneys: Case Reports and Approach to Ensuring Patient Safety. American Journal of

5. van Beuzekom M, Akerboom SP, Boer F. Assessing system failures in operating rooms and intensive care units. Qual Saf Health Care 2007;16:45-50. 6. Marx D. Patient safety and the 'Just Culture': A primer for healthcare executives. In: Trustees of Columbia University; 2001.

> ationships to disclose within the past 12 months relevant to this researc

