

Questions & Answers
for **Transplant**
Professionals *about*
Lung Allocation Policy



Effective May 2005, the method for allocating lungs changed significantly. The new system helps determine the order that lung offers are made to lung transplant candidates by assigning each candidate a Lung Allocation Score. This score is based on each candidate's particular medical information. It reflects both the seriousness of each candidate's medical status before transplant and the likelihood of a successful transplant.

What is the lung allocation system?

At its June 2004 meeting, the OPTN/UNOS Board of Directors approved a significant revision to lung allocation policy that was put into place in May 2005. This lung allocation system determines the order in which lung offers are made to candidates awaiting transplantation based on estimates of each candidate's medical urgency prior to transplant and his or her probability of success following a transplant. This method is based on a "net benefit" concept and will give priority for lung offers to the candidates who are most urgently in need of a transplant and who are expected to receive the greatest benefit.

The lung allocation system uses clinical information from individual lung transplant candidates ages 12 and older to help determine the order in which lung offers are made. This information includes lab values, test results, and disease diagnosis. The system uses this information in a formula that estimates candidates' medical urgency and their probability of prolonged survival following a transplant. These results are then used to calculate a *lung allocation score*, ranging from 0 to 100, for each candidate. At the time a match is run, the *lung allocation score* will be used along with ABO blood group and distance from the donor hospital to determine the order for making offers to lung candidates. Age will also play a role because lungs from pediatric and adolescent donors will be offered first to pediatric and adolescent transplant candidates before they are offered to adults.

How is waiting time used in the lung allocation system?

Waiting time plays a very limited role in the lung allocation system for candidates ages 12 and older. For these candidates, waiting time will be used only to sort candidates who happen to have tied *lung allocation scores*.

Waiting time plays a more significant role for pediatric transplant candidates under age 12. Waiting time will be a main factor in allocating donor lungs to these candidates.

Lung allocation scores are calculated using the following clinical information from each transplant candidate. For additional information about how all variables are applied in the lung allocation score, refer to OPTN/UNOS policy 3.7.6.

Lung Allocation Score Clinical Data Requirements and Update Requirements						
Data Variable	Absolutely required to add a new candidate to Waitlist	Least Beneficial Value is used if data are missing	Least Beneficial Value is used if data are expired	Zero score is assigned if data are missing or expired	Center may request <i>estimated value</i> if actual value not available	Normal values used if data are missing
Lung diagnosis	X*					
Date of Birth used to calculate age	X					
Height & Weight body mass index	X		X			
Diabetes		X	X			
Supplemental oxygen		X	X			
Six minute walk distance		X	X		X	
Pulmonary artery systolic pressure					X	X
Pulmonary artery mean pressure Sarcoidosis diagnoses only					X	X
Pulmonary capillary wedge mean					X	X
Forced Vital Capacity (FVC)		X	X		X	
Serum creatine		X	X		X	
Functional status				X		
Assisted ventilation				X		
PCO ₂						X+

* Research has shown that medical urgency prior to transplant and survival following transplant vary among candidates with different lung diseases. Therefore, for every candidate, diagnosis factors into the calculation of the *lung allocation score*.

+ Normal clinical value is used if PCO₂ is missing, expired, or <40mmHg.

How are lung transplant candidates registered on the system?

When it is time to register a candidate for a lung transplant, he or she will need to have a complete transplant workup that includes tests and labs for the values listed. Those values will then be entered into UNetSM, the secure Internet-based system for organ allocation and data collection.

A variable that does not have an actual value or an approved estimated value will be considered incomplete. For most of the data variables, UNetSM will use a pre-determined value to calculate the score if the fields are left blank. For pulmonary artery pressure fields (pulmonary artery systolic pressure, pulmonary artery mean pressure and pulmonary capillary wedge pressure), normal values will be used in the calculation of the lung allocation score, if actual values are not provided. These normal values will be used to calculate a score until the transplant center provides an actual value or an estimated value is approved by the Lung Review Board.

Two of the clinical data fields (functional status and assisted ventilation) must be completed with an actual value—a “Least Beneficial Value” does not exist for these two variables. If these data fields are incomplete, the transplant candidate will receive a *lung allocation score of zero* (the lowest possible score). Candidates with a lung allocation score of zero are screened from the match and cannot receive organ offers.

Four of the clinical data fields (lung diagnosis, birthdate, height, and weight) must be completed with an actual value or the center will not be allowed to register the candidate on the waiting list.

See chart (p. 2) for a complete description of the clinical data requirements.

What if a candidate cannot perform a diagnostic test?

Much of the clinical information that is needed to calculate the *lung allocation score* comes from diagnostic tests, medical procedures, and lab values. There may be situations where a candidate’s medical team determines that a candidate should not perform tests or undergo procedures because of the severity of his or her condition. In these situations, the center may submit a request to the Lung Review Board to allow an estimated value to be used instead. The estimated value should represent the transplant physician’s best medical judgment of what the actual value would be.

Because a heart catheterization is required to obtain an actual value for pulmonary artery systolic pressure, pulmonary artery mean pressure, and pulmonary capillary wedge pressure, these three diagnostic variables need only to be entered one time. These three variables do not require updates. If heart catheterization is not an option for a candidate, the candidate will receive a normal value for those clinical variables, or the transplant center may request to use estimated values instead.

The Lung Review Board must review and approve all estimated values before they will be used in calculating a candidate’s *lung allocation score*. Estimated values that have been approved by the Lung Review Board will remain valid until they are updated with an actual value or another estimated value is approved.

How often must a candidate's clinical data be updated on UNetSM?

Because the lung allocation system will determine priority for lung offers based on each candidate's clinical information, it is important that the most current information is entered in UNetSM. Transplant centers **may** update a candidate's clinical information in the system **at any time** to reflect a change in disease severity.

Transplant centers **will be required** to update each candidate's information **at least once every six months** with intervals based on the date that the candidate is first registered in UNetSM. Each value must have a certification date within the past six months or that variable field will be considered expired. Most expired clinical values will result in a least beneficial or normal value for that variable; however, two clinical variables (Assisted Ventilation and Functional Status) will result in a *lung allocation score* of zero if they are expired and therefore the candidate will not receive any organ offers.

Example: If a candidate was first registered on the waitlist on January 1, 2005, and the most recent six-month "anniversary" is January 1, 2006, then any clinical variables older than July 1, 2005, will be considered expired.

Transplant centers will be notified in advance on Secure EnterpriseSM of those candidates whose diagnostic variables are nearing the six-month expiration date. Transplant centers will need to work with registered candidates to set up a schedule for visits that will ensure their information is kept up-to-date.

See chart (p. 2) for a complete description of the clinical data requirements.

How are lung offers made to pediatric candidates?

All lung transplant candidates ages 12 and older will receive a *lung allocation score*. Matching donor lungs with candidates under age 12 presents unique challenges. For this reason, pediatric candidates under age 12 will continue to receive lung offers based on the amount of time they have spent waiting for a lung transplant, ABO compatibility, and distance from the donor hospital.

Offers of lungs from donors under age 12, ages 12-17, and 18 and older, to transplant candidates will be made in the following order:

	Donor Age <12	Donor Age 12–17	Donor Age 18+
1 st priority candidate	Age <12	Age 12–17	Age 12+
2 nd priority candidate	Age 12–17	Age <12	Age <12
3 rd priority candidate	Age 18+	Age 18+	

What if a transplant candidate has an exceptional situation that is not reflected by his or her *lung allocation score*?

If a transplant physician or surgeon believes that a candidate's needs are not being met by the lung allocation system because of that candidate's exceptional characteristics, then they may request that the Lung Review Board approve a new allocation score. The Lung Review Board will consider any special circumstances and determine if an adjustment should be made to the candidate's *lung allocation score*.

How high must a candidate's *lung allocation score* be before he or she might receive a lung offer?

There is no specific *lung allocation score* that will guarantee that a candidate receives an offer for donor lungs. When donor lungs become available, a match list is created to match the lungs with suitable candidates based on ABO type, distance from the donor hospital to their transplant center, and age group (see chart above). Candidates registered at transplant centers in the local area around the donor hospital with an ABO type that matches the donor are then ordered by age group and *lung allocation score for candidates with a lung allocation score greater than zero*. The candidate with the highest *lung allocation score* in a particular age group will receive first priority for a donor lung offer. If no appropriate recipient is found among local candidates in any of the three age groups, then potential compatible recipients at greater distances from the donor hospital are offered the lungs.

The medical team at the transplant center and the candidate will always have the discretion to decide whether a lung transplant is the right choice for the candidate at that time and whether the particular lungs being offered are right for the candidate.

How are transplant professionals affected by the lung allocation system?

Transplant professionals need to monitor their candidates to keep their clinical information current in UNetSM so that their lung allocation scores accurately reflect their condition. This will involve tracking data certification dates and working with candidates to establish a visit schedule that will permit their data to be *updated on time at least once every six months*.

If you need assistance in accessing or using UNetSM you may contact the UNetSM Help Desk at 1-800-978-4334 or unethelpdesk@unos.org. The Organ Center is also available to assist you during nights and on weekends.

In addition, candidates may have many questions. Transplant professionals will need to be knowledgeable about the features of the lung allocation system so that they may explain it to candidates and answer their questions. In addition to this pamphlet, UNOS has produced “Answers to Your Questions about Lung Allocation Policy: Information for Lung Transplant Candidates and their Families.” Copies of this brochure are available from UNOS or may be found on the UNOS Web site.

Will the lung allocation system change in the future?

As transplant professionals apply this system and learn from it, some changes will likely be required to better meet the needs of lung transplant candidates. This system is designed to be flexible and allow for improvements. The system is monitored closely so that necessary changes may be identified and adopted as we collect more data. The clinical data requirements are re-evaluated periodically, and adjustments may be made to the way *lung allocation scores* are calculated.

Transplant centers will be notified in advance of changes to the allocation system and data entry requirements through UNetSM emails.

Where is more information found?

A lung allocation score calculator is available on the OPTN website for informational purposes. You will find the LAS calculator under resources. Additional information about OPTN, UNOS and allocation policy is available on the following Web sites:

www.optn.org • www.unos.org • www.transplantliving.org

*The UNOS mission is to advance organ availability and transplantation
by uniting and supporting its communities for the benefit of patients
through education, technology and policy development.*



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