

Web resource for K/P distribution

## **Kidney/Pancreas Distribution**

### **Current status**

The OPTN has given immediate priority to replacing donor service areas (DSAs) and regions in all organ distribution policies in which they occur. Accordingly, the OPTN/UNOS Executive Committee has charged the Kidney Transplantation Committee and the Pancreas Transplantation Committee to develop a new policy to replace DSA and regional boundaries currently used for kidney and pancreas distribution.

The committees are studying variations of two alternative approaches and have submitted them for simulation modeling by the Scientific Registry of Transplant Recipients (SRTR). The modeling results will help the committees examine the potential effects of various alternatives and develop a formal proposal.

The committees plan to publish a policy proposal for public comment beginning in January 2019, with the goal of having a final proposal for consideration by the OPTN/UNOS Board of Directors in June 2019. The alternatives proposed below only address distribution areas and would maintain the current classifications of allocation criteria within the respective kidney and pancreas allocation systems.

The OPTN is continuing to assess the merits of adopting a single framework for future distribution policy. More information on that initiative is available [here](#).

### **Timeline and process**

The Kidney Transplantation Committee and the Pancreas Transplantation Committee are working on a timeline that will include public comment in the early 2019 and a proposal to bring to the OPTN/UNOS Board in June 2019. This is the same timeline being used to update distribution policies for thoracic organs and vascular composite allografts (VCA).

Below are key policy development milestones:

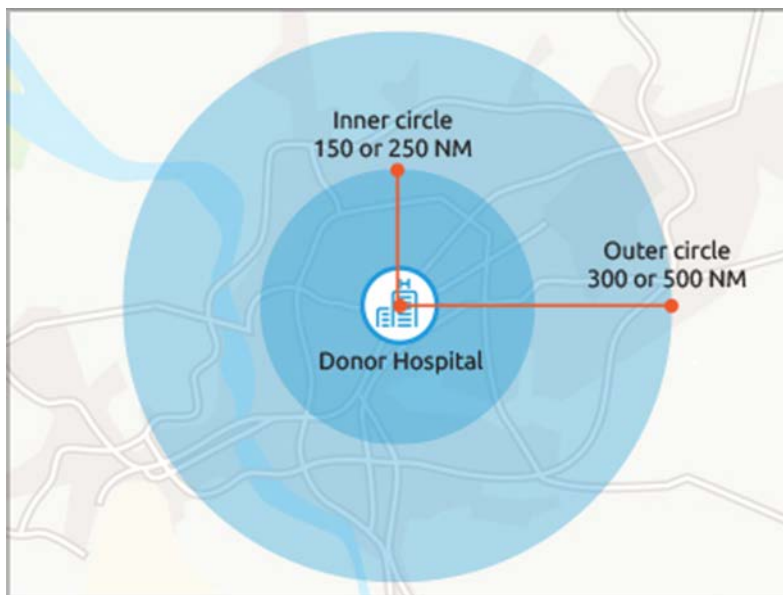
September 2018	Modeling request to the Scientific Registry of Transplant Recipients (SRTR)
December 7, 2018	Modeling results available
December 2018	Public comment proposal finalized
Jan. 21 – Mar. 22, 2019	Public comment period
June 10-11, 2019	OPTN/UNOS Board meeting

## Alternatives to DSA and Region-based allocation being modeled

### *Concentric circles approach*

One alternative being modeled is a fixed distance (concentric circles) approach. This would prioritize transplant candidates listed at transplant hospitals closer to the donor hospital location (within the circle(s)) before candidates listed at hospitals farther from the donor location (outside the circle(s)).

The first level of access would be within a circle of either 150 or 250 nautical miles from the donor hospital. This circle represents the common distance at which many kidney and pancreas offers transition from ground to air transport. After that, offers would go to candidates listed at transplant hospitals within a circle of either 300 or 500 nautical miles from the donor hospital. SRTR simulation modeling will compare differences in potential impact both between these two options (150/300 nautical mile circles and 250/500 nautical mile circles) and to the current system.



The chart below shows how a fixed distance framework would replace DSA and region in the kidney allocation policy sequence. Changes are indicated in red.

Sequence A KDPI 0-20%	Sequence B KDPI 20-34%	Sequence C KDPI 35-85%	Sequence D KDPI 86-100%
Highly Sensitized 0-ABDRmm Prior living donor <b>150/250NM circle</b> pediatrics <b>150/250NM circle</b> top 20% EPTS 0-ABDRmm (all) <b>150/250NM circle</b> (all) <b>300/500NM circle</b> pediatrics <b>300/500NM circle</b> (top 20%) <b>300/500NM circle</b> (all) National pediatrics National (top 20%) National (all)	Highly Sensitized 0-ABDRmm Prior living donor <b>150/250NM circle</b> pediatrics <b>150/250NM circle</b> safety net <b>150/250NM circle</b> adults <b>300/500NM circle</b> pediatrics <b>300/500NM circle</b> adults National pediatrics National adults	Highly Sensitized 0-ABDRmm Prior living donor <b>150/250NM circle</b> safety net <b>150/250NM circle</b> <b>300/500NM circle</b> National	Highly Sensitized 0-ABDRmm <b>150/250NM circle</b> safety net <b>150/250NM circle</b> + <b>300/500NM circle</b> National

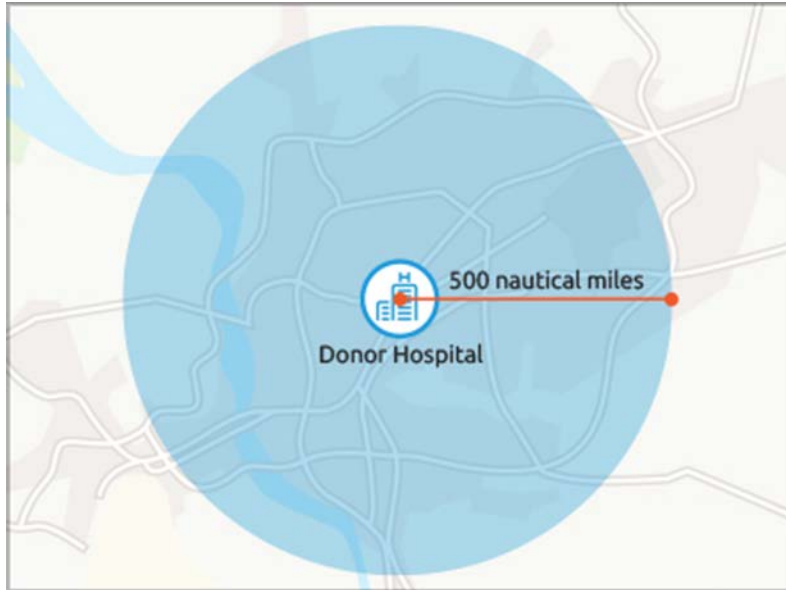
The chart below shows how the framework would apply to pancreas and kidney-pancreas (KP) distribution. Changes are indicated in red.

Distance	
<b>150/250NM circle</b>	0-ABDR, CPRA ≥ 80%, pancreas or KP candidates
<b>150/250NM circle</b>	CPRA ≥ 80%, pancreas or KP candidates
<b>300/500NM circle</b>	0-ABDR, CPRA ≥ 80%, pancreas or KP candidates
Nation	0-ABDR, CPRA ≥ 80%, pancreas or KP candidates
<b>150/250NM circle</b>	pancreas or KP candidates
<b>300/500NM circle</b>	CPRA ≥ 80%, pancreas or KP candidates
<b>300/500NM circle</b>	Pancreas or kidney-pancreas candidates
Nation	CPRA ≥ 80%, pancreas or KP candidates
Nation	pancreas or KP candidates
<b>150/250NM circle</b>	Islet candidates
<b>300/500NM circle</b>	Islet candidates
Nation	Islet candidates

*Single circle plus proximity points (“hybrid” approach)*

Another approach being modeled combines a fixed distance design (a single circle of 500 nautical miles around the donor hospital) with additional allocation points (proximity points) for candidates listed at transplant hospitals closer to the donor hospital than others within the boundary. All candidates outside the 500-mile circle would appear on the match after those within the circle. With a single circle,

there would be no intermediate step between the local and national sequence (currently represented by the region).



Proximity points would be added to a candidate’s total allocation score but would not allow patients to move from one KAS classification to another. In addition, added proximity points could not cause a candidate to move from outside to inside a circle. The proximity points only aid in ranking candidates within existing classifications, along with established policy criteria such as qualified waiting time and blood type compatibility.

The chart below shows how a single-circle, hybrid distribution framework would replace DSA and region in the allocation policy sequence for kidney. Changes are indicated in red or with a ~~strikethrough~~.

Sequence A KDPI 0-20%	Sequence B KDPI 20-34%	Sequence C KDPI 35-85%	Sequence D KDPI 86-100%
Highly Sensitized 0-ABDRmm Prior living donor 500NM circle pediatrics 500NM circle top 20% EPTS 0-ABDRmm (all) 500NM circle (all) <del>Regional pediatrics</del> <del>Regional (top 20%)</del> <del>Regional (all)</del> National pediatrics National (top 20%) National (all)	Highly Sensitized 0-ABDRmm Prior living donor 500NM circle pediatrics 500NM circle safety net 500NM circle adults <del>Regional pediatrics</del> <del>Regional adults</del> National pediatrics National adults	Highly Sensitized 0-ABDRmm Prior living donor 500NM circle safety net 500NM circle Regional National	Highly Sensitized 0-ABDRmm 500NM circle safety net 500NM circle + <del>Regional</del> National

Within each classification, candidates would be sorted by points awarded for waiting time, antibody sensitization, tissue matching, pediatric status, prior living donor status and proximity points.

The chart below shows how a single-circle, hybrid distribution framework would replace DSA and region in the allocation policy sequence for pancreas. Changes are indicated in red or with a ~~strikethrough~~.

Distance	Pancreas, KP or islet candidates that qualify
<u>500NM circle</u>	0-ABDR, CPRA $\geq$ 80%, pancreas or KP candidates
<u>500NM circle</u>	CPRA $\geq$ 80%, pancreas or KP candidates
Region	0-ABDR, CPRA $\geq$ 80%, pancreas or KP candidates
Nation	0-ABDR, CPRA $\geq$ 80%, pancreas or KP candidates
<u>500NM circle</u>	pancreas or KP candidates
Region	CPRA $\geq$ 80%, pancreas or KP candidates
Region	Pancreas or kidney-pancreas candidates
Nation	CPRA $\geq$ 80%, pancreas or KP candidates
Nation	pancreas or KP candidates
<u>500NM circle</u>	Islet candidates
Region	Islet candidates
Nation	Islet candidates

Three different options of the hybrid concept are being modeled, as described in more detail below:

1. No proximity points
2. Shallower proximity point slopes (maximum of 1 point inside circle, 2 points outside circle)
3. Steeper proximity point slopes (maximum of 2 points inside circle, 4 points outside circle)

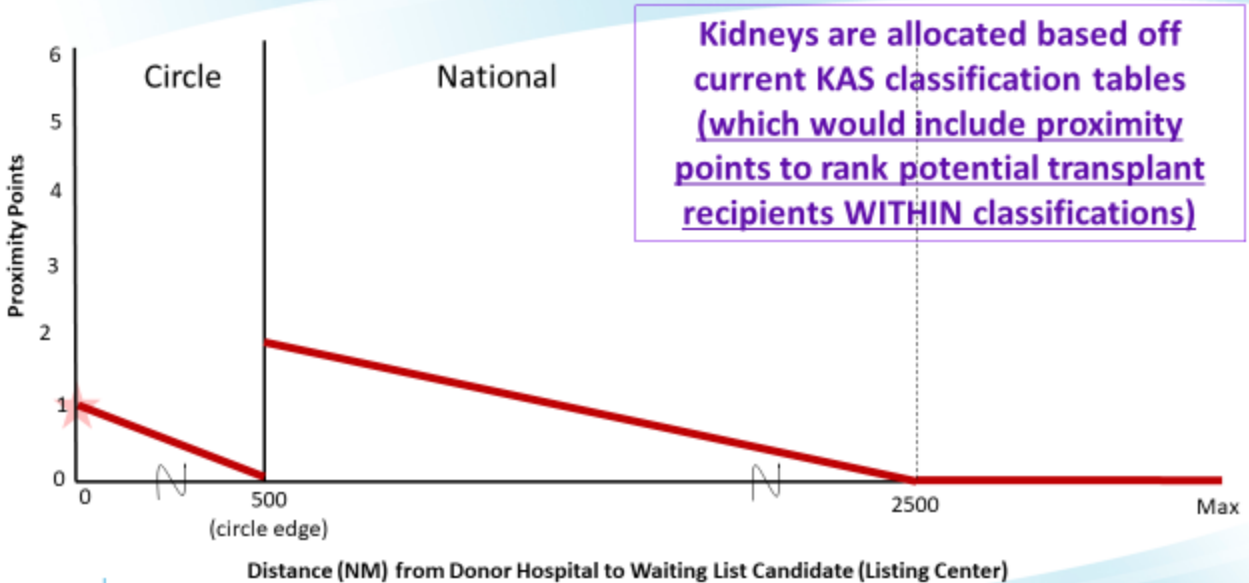
In one option, **no** proximity points would be awarded and there is no change to other existing allocation criteria. The circle only determines the sequence of offers. The circle would replace the DSA as the local unit; there is no region; and national is all candidates outside the circle.

In the other two options, candidates at hospitals could be awarded proximity points based on a sliding scale of distance from the donor hospital. In the first option:

- Candidates within the 500-mile circle would receive a maximum of one proximity point if their transplant hospital is in the same place as the donor.
- Other candidates within the circle would receive proportionally fewer points, including fractions of a point, down to zero points for candidates listed at hospitals located exactly 500 miles from the donor.
- Next, candidates outside the 500-mile circle would receive a maximum of two proximity points if their hospital is just beyond a 500-mile distance from the donor hospital.
- No proximity points would be awarded for any candidates beyond a 2500-mile distance.

(Please note the distances on the X-axis are for illustration only and are not to scale)

## Single 500NM, “shallow” proximity pts



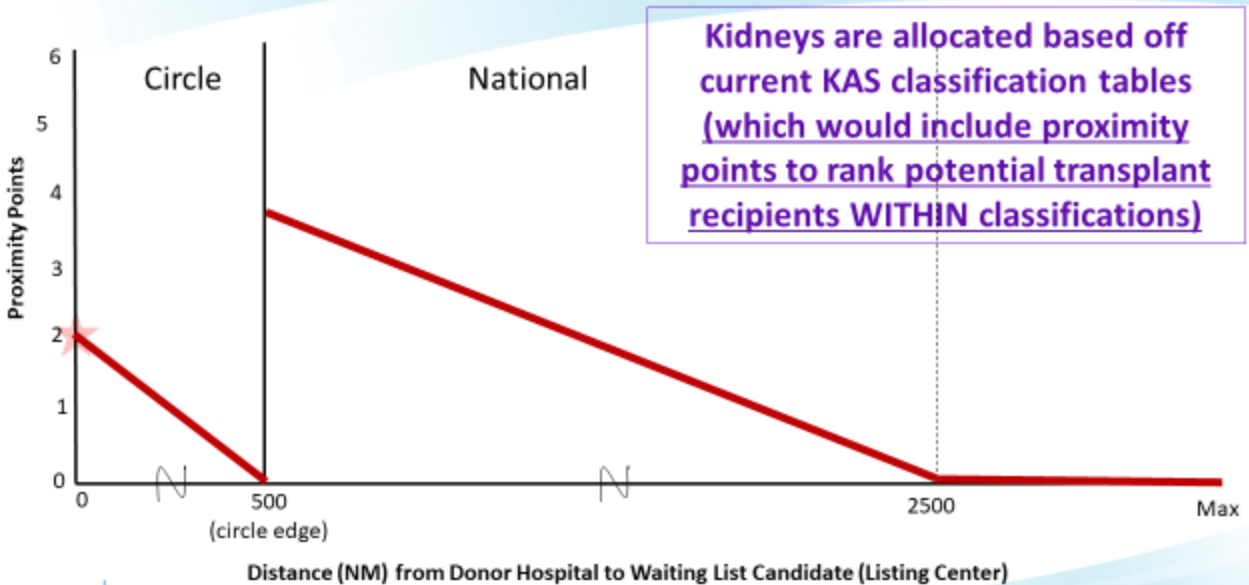
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In the final scenario, candidates within the 500-mile circle would receive a maximum of two proximity points if their transplant hospital is in the same place as the donor. Other candidates within the circle would receive proportionally fewer points, including fractions of a point, down to zero points for candidates listed at hospitals located exactly 500 miles from the donor. Candidates outside the 500-mile circle would receive a maximum of four proximity points if their hospital is just beyond a 500-mile distance from the donor hospital. No proximity points would be awarded for any candidates beyond a 2500-mile distance.

(Please note the distances on the X-axis are for illustration only and are not to scale)

## Single 500NM, “steep” proximity pts



SRTR simulation modeling will compare differences in potential impact both between these three options (no proximity points, “shallow” proximity points and “steep” proximity points) and to the current system.

### For additional information

Additional resource information and updates are available on the web pages of both the [Kidney Committee](#) and the [Pancreas Committee](#). You may also contact your regional representative to the committees or send an e-mail to [kidney@unos.org](mailto:kidney@unos.org) or [pancreas@unos.org](mailto:pancreas@unos.org).