



MedStar Georgetown
University Hospital

Knowledge and Compassion
Focused on You

Kidney Transplantation

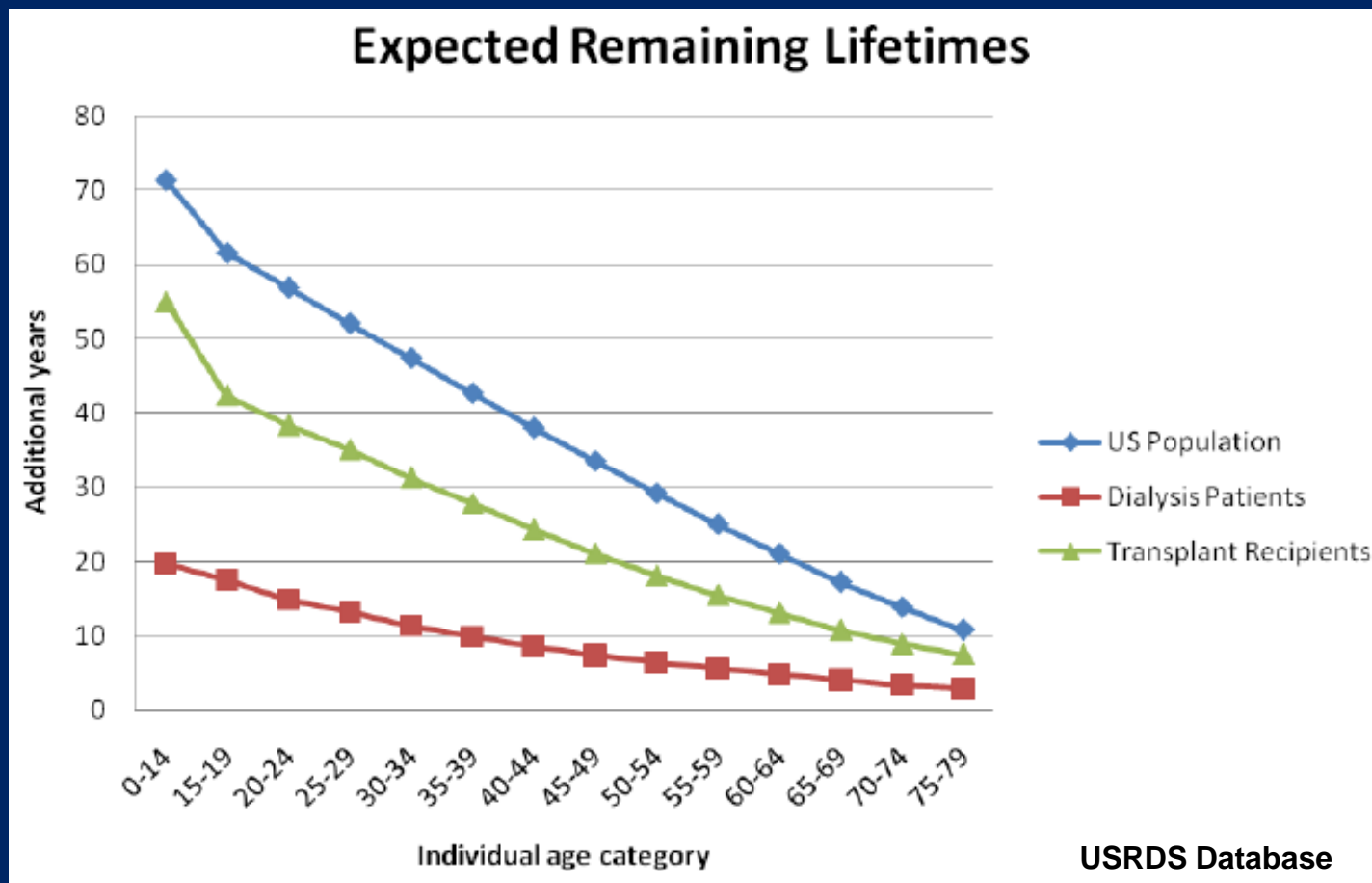
The Difficulties- Real and Perceived

Things to Know About Kidney Transplantation

- Why should a patient get a transplant ?
- Who should consider transplantation ?
- What are the types of kidneys available ?
- How are patients selected to receive kidneys ?
- Common Questions/Myths about transplant

Why Get A Transplant?

Patients Live Longer With Transplants



All Types of Patients Do Better

	Projected Life Without Transplant	Projected Life With Transplant
All Patients	10 years	20 years
Disease		
Diabetes	8 years	19 years
Glomerular	11	18
Other	12	20
Sex		
Male	10 years	19 years
Female	11	23

Data from: Wolfe et al (1999) NEJM 341(23):1725



Not Just Living Longer, Living Better

- Reports of enhanced quality of life (QOL) for patients post transplant versus dialysis include:

- Increased physical activity, energy, and mobility

- Better overall psychological health/well-being/self-esteem

- Better social life



Comparison of Lifestyle

- On Dialysis

- Pregnancy

- Difficult/Impossible

- Activity

- Limited by time on dialysis
 - Limited by fatigue

- Travel

- International travel impossible
 - Domestic travel is limited

- Post-transplant

- Pregnancy

- Needs planning, but possible with high success rates

- Activity

- No limitation after 3 months
 - No need for masks/gloves
 - Increased energy

- Travel

- Unrestricted after 1 year



Comparison of Diet

- On Dialysis

- Low Sodium

- Chinese Food
- Snacks/Chips

- Low Potassium

- Potatoes, Beans, Citrus Fruit, Green Leafy Vegetables

- Low Phosphate

- Dairy

- Restricted Fluids

- 2 liters a day

- Post-transplant

- No Sushi/Raw Meats

- For 6 months

- No grapefruit/grapefruit juice

- Low Potassium (rarely)



Who Should Get A Transplant

- Everyone!
- There are some conditions where transplant is not indicated:
 - If the surgery is not feasible
 - Severe Cardiac disease (if not fixable)
 - Extreme Vascular disease (no place to attach the kidney)
 - Severe Pulmonary disease (unable to wean from ventilator)
 - If the immune suppression will harm the patient
 - Active malignancy
 - Uncontrolled infection (HIV, Hepatitis, TB, Osteomyelitis)
 - If the patient can not manage the transplant afterwards
 - Lack of ability to take medication (lack of insurance, unstable living situation)
 - Active psychiatric condition

The Two Basic Types of Transplants

Living Donor Kidneys (LDK)

Deceased Donor Kidneys (DDK)

Function	90%+ Function Immediately	70% Function Immediately
Kidney Lifespan	Average 15-20 years	Average 10-12 years
Immune Suppression	Less	More
Time to Transplant	Months	3-5 years on waitlist
Scheduling	When Convenient for patient and donor	Whenever organ is available

Transplant Survival and Time on Dialysis

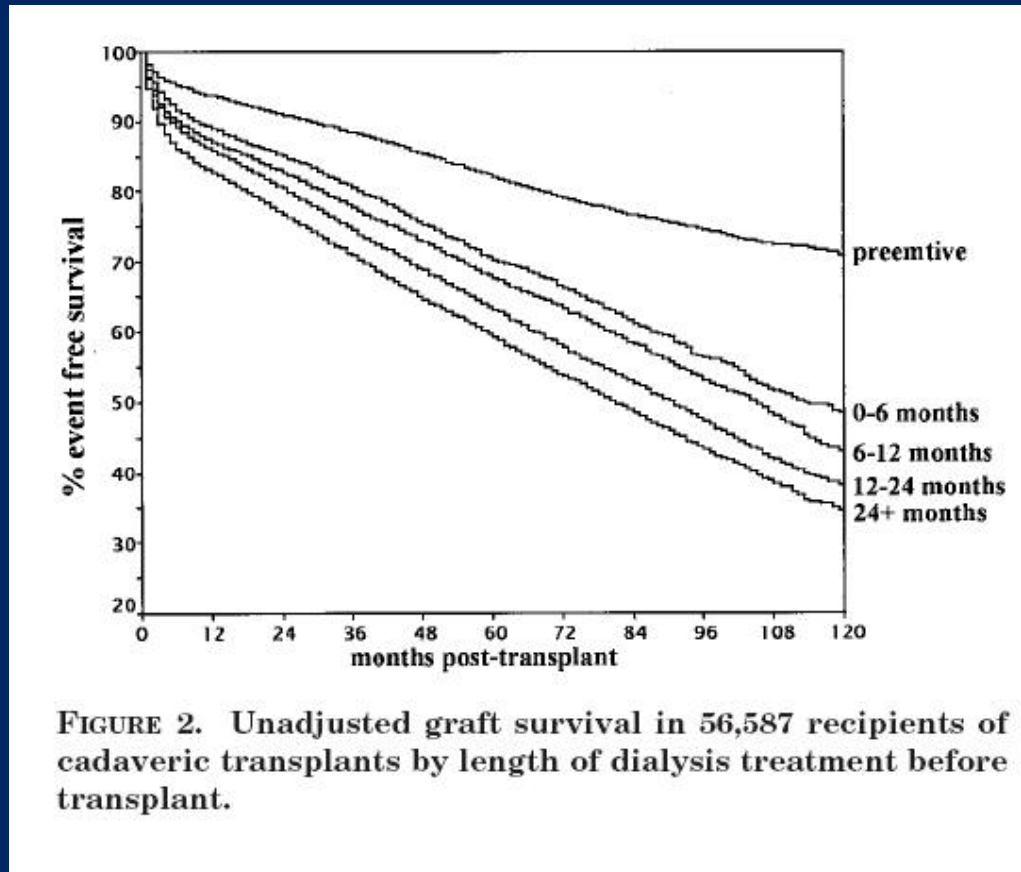
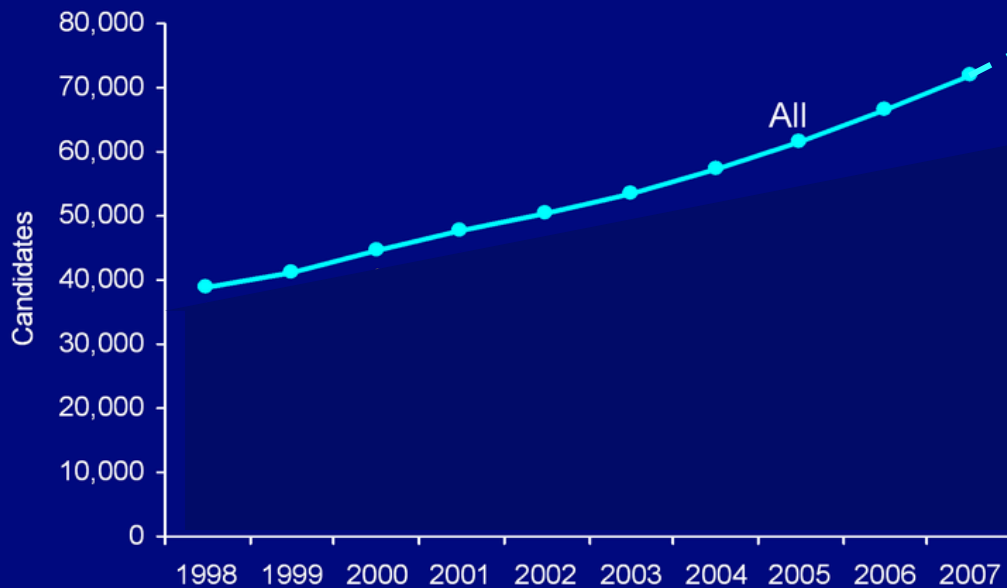


FIGURE 2. Unadjusted graft survival in 56,587 recipients of cadaveric transplants by length of dialysis treatment before transplant.

Meier-Kriesche and Kaplan (2002) Transplantation 74(10):1377-81

The Problem

Figure III-2. Active/Inactive Status of Kidney Waiting List Candidates at Year-End, 1998-2007



SRTR

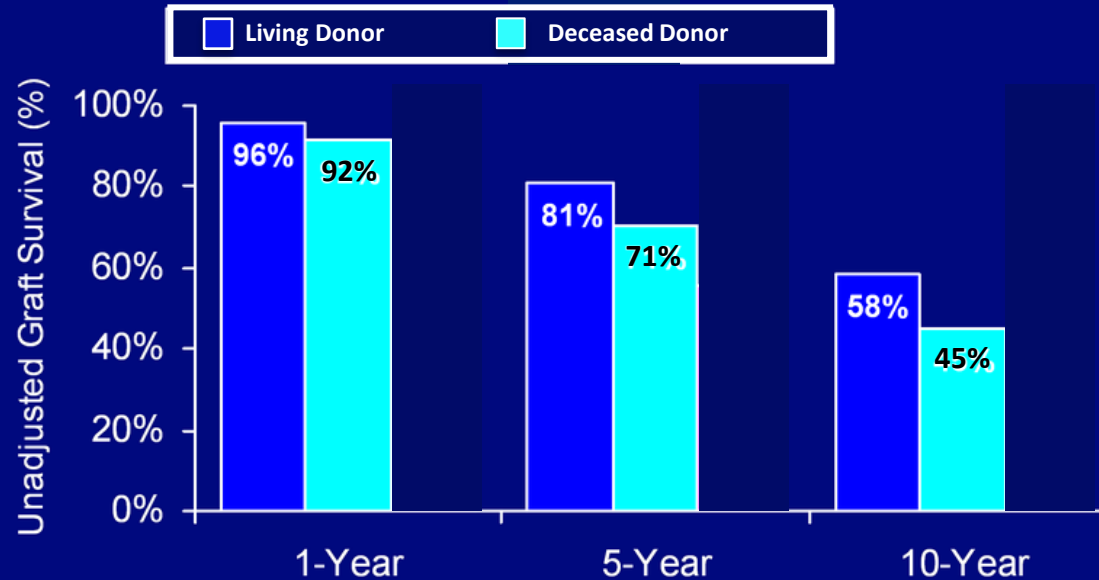
Source: 2008 OPTN/SRTR Annual Report, Tables 5.1a, 5.1b.

As of February 20, 2015
There are 101,513 patients
on the kidney waiting list



How do Kidneys Compare to Others

Figure III-7. Unadjusted 1-Year (2005-2006), 5-Year (2001-2006), and 10-Year (1996-2006) Kidney Graft Survival*, by Donor Type



*Death is included as an event.

SRTR

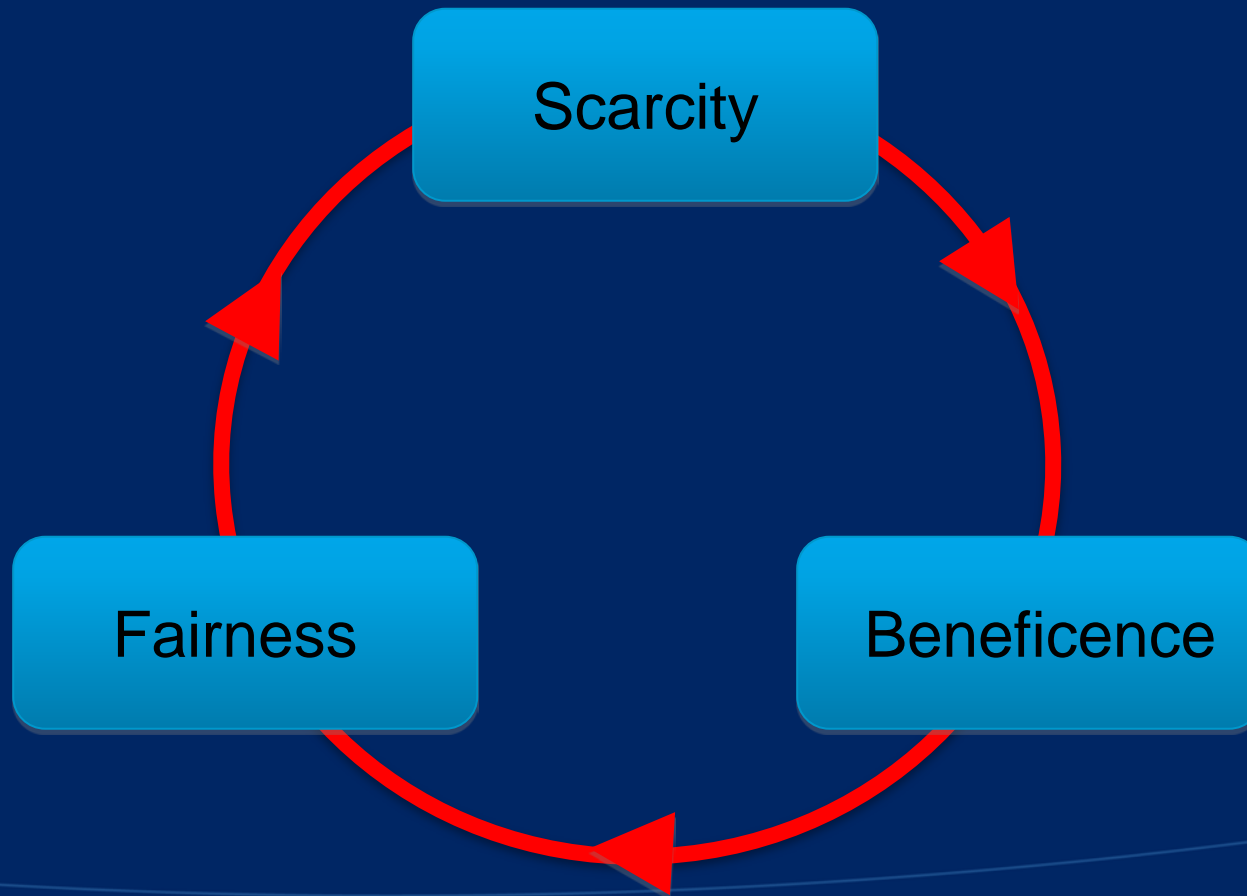
Source: 2008 OPTN/SRTR Annual Report, Tables 5.10a, b, d.



Matching Donors to Recipients

- Blood Group Compatibility
 - Blood Group **A** is compatible with **A** or **O** (75% of the population)
 - Blood Group **B** is compatible with **B** or **O** (50% of the population)
 - Blood Group **O** is compatible with **O** (40% of the population)
 - Blood Group **AB** is compatible with **all** groups
- Cross-match Compatibility
 - Tests if the recipient has antibodies against donor proteins
 - Through pregnancy (exposure across the placenta)
 - Through blood transfusions
 - Through prior transplants

Principles of Organ Allocation for Deceased Donors



Allocating Deceased Donor Kidneys

- Recipients are allocated kidneys by UNOS via the Kidney Allocation System
 - The latest modification in UNOS listing policies
 - 10 years in development
 - Became active on December 4, 2014
 - For the first time allocation based on beneficence as well as fairness
- Allocation is done on several tiers:
 - Local- based on the organ procurement organization (OPO)
 - Regional- based on the UNOS region
 - National- covering all 50 states

Gaining Points on the List

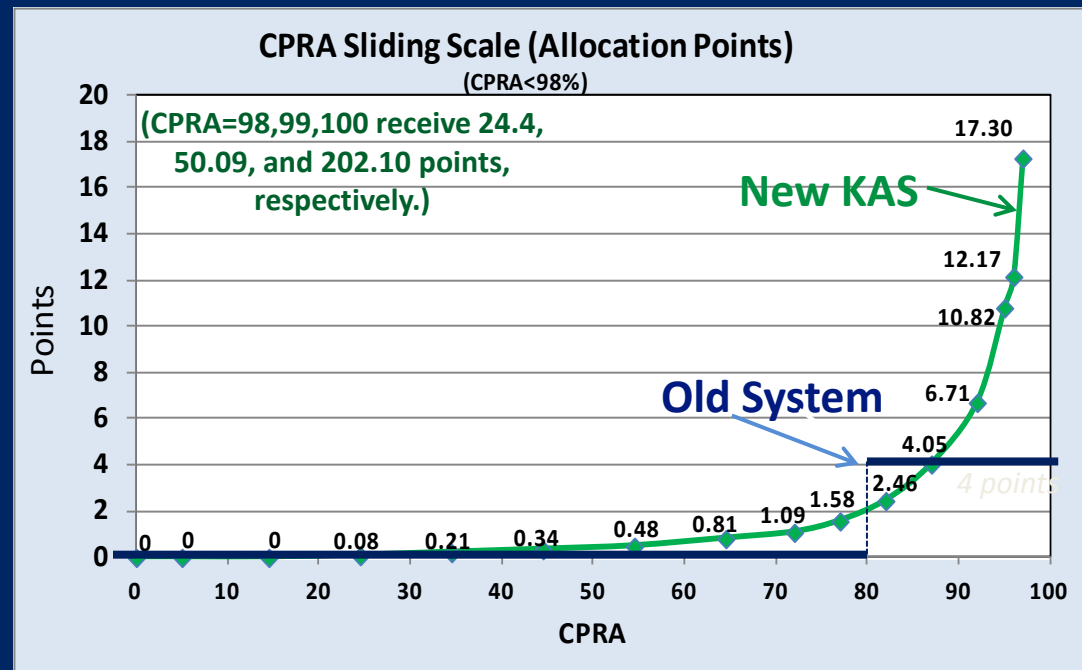
- Within the allocation priorities, recipients are chosen by a point system
- Patients gain points from their time of listing. Kidneys are offered to the recipient with the most points.
 - Recipients receive points in the following ways:
 - Time on the list
 - Sensitization (the presence of antibodies)
 - Prior Kidney Donation
 - Degree of class II MHC match

Time on the List

- Recipients receive 1 point for every year on the list
 - Given as fractions of a point each day
- **Time on the list begins from the point of ESRD**
 - This is a change with the new KAS
 - Old system counted time from listing
 - This has meant a re-ordering of the list recently
- For patients listed before ESRD, time still begins from listing
 - So long as their GFR is equal to or less than 20 mL/min

Sensitization

- Goal is to equalize the chance of highly sensitized patients receiving a kidney
- New system provides some points at all levels of sensitization
 - Provides far more support for high sensitization
 - Patients who were previously told they had little chance at transplant now have much greater hope



Results of the new KAS

- System projected to result in:
 - Maintenance of Access to Transplant for all patients
 - 8,000+ additional life years gained annually
 - Improved access for moderately and highly sensitized candidates
 - Improved access for ethnic minority candidates
 - Comparable levels of kidney transplants at regional/national levels
 - Significant cost savings for Medicare
 - \$230,000,000 Year 1
 - \$47,000,000 following years

What is the Process to get Transplanted?

Initial Evaluation



Listing



Transplant

Patients are seen at a transplant center
Start of patient education
NOT the same as being listed

This process takes weeks – months
Needs to be completed promptly
Testing is only good for a limited time



What is the Process to get Transplanted?

Initial Evaluation



Listing



Transplant

Done once all testing is complete
Even patients with living donors are listed

If patients become too sick, they can be inactivated

- Also called 'status 7'
- this means they continue to accumulate time, but would not get a kidney until made active
- If patients are not getting better, they will be removed



What is the Process to get Transplanted?

Initial Evaluation



Listing



Transplant

Average wait time is 3-5 years

While listed, patients need monthly blood samples

These are used for texting against donors

Without current samples, transplant may be impossible

Patients need routine visits at the transplant center



What is the Process to get Transplanted?

Initial Evaluation



Listing



Transplant

Time to walk: 1 day

Time in hospital: 5 days

Time to feeling 'normal': 4-6 weeks

- loss of appetite
- difficulty sleeping
- lack of energy

Time to going back to work: 2-3 months

Time to full activity: 3-6 months





The Truth About Transplant Medications

- After transplant, patients take a ton of medications



The Truth About Transplant Medications

- After transplant, patients take a ton of medications **FALSE**
 - Standard regimens are 2 drugs taken once or twice a day
 - For the few months after transplant, there are 3 other medications to prevent infection, but these are all stopped within 6 months
 - When we add 2 drugs, there are many others that are stopped
 - Vitamin D (Calcitriol, Hectorol, Zemplar)
 - Sensipar
 - Aranesp/Procrit
 - Phosphate Binders
 - *Some* high blood pressure pills

○



The Truth About Transplant Medications

- Immunosuppressive Medications have terrible side effects



The Truth About Transplant Medications

- Immunosuppressive Medications have terrible side effects **FALSE**
 - Like any medications, there are side effects to transplant drugs
 - However they are no worse than many others
 - Typical side effects
 - Tremor
 - Bloating/diarrhea
 - Hair loss
 - Hair gain
 - Mouth sores
- Most importantly, we have options- so if a drug is not good for a patient, we can switch to something else

The Truth About Transplant Medications

- Immunosuppressive Medications are incredibly expensive



The Truth About Transplant Medications

- Immunosuppressive Medications are incredibly expensive **TRUE**
 - Without insurance, these medications cost \$1,500 to \$2,000 per month
 - BUT, they are entirely covered by insurance
 - Most important thing is to maintain health insurance throughout the transplant



Any Questions?

