
Il Paziente Candidato a Trapianto di Cuore

F. Grigioni



Istituto di Cardiologia
Università di Bologna



Istituto di Cardiologia
Università di Bologna

Waiting List

General Definition

..A list of people waiting to obtain some object, **a treatment**, etc..



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

When the treatment is HT..

- ✓ *Life saving* procedure
- ✓ Accessible for **very few** among the **very many** potentially eligible patients
- ✓ Major **ethical** implications related to the process of **organ donation**



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

When the treatment is HT..

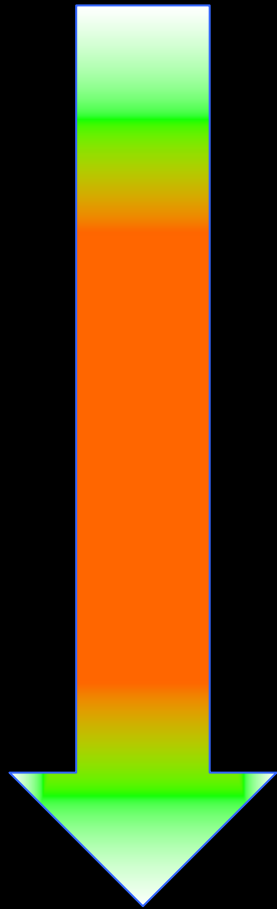
- ✓ Highly *remunerative* for the Institution
- ✓ Complex process but heavily *influenced* by *few individuals*
- ✓



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

The process

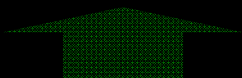


ACUTE CV
EVENT

EVALUATION FOR HT

WAITING LIST

TRANSPLANT

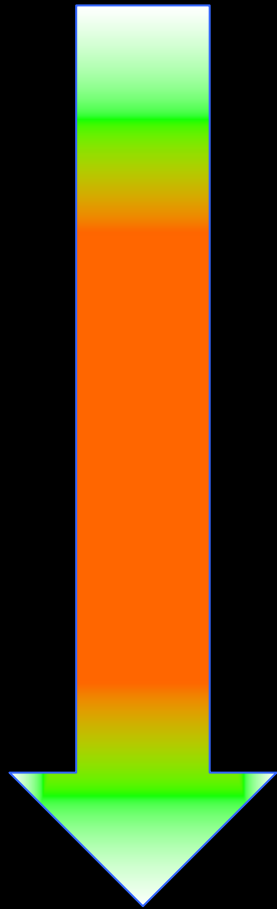




Istituto di Cardiologia
Università di Bologna

Heart Transplantation

The process

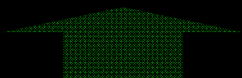


ACUTE CV
EVENT

EVALUATION FOR HT

WAITING LIST

TRANSPLANT





Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Evaluation for HT

- ✓ What is the probability for an individual walking down the street potentially suitable for HT to be indeed ***at least evaluated*** for HT?



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Fundamental

- ✓ Neither **place** of **residence** nor place of **listing** should be a major determinant of access to a transplant

Institute of medicine Committee on Organ Procurement and Transplantation Policy, Washington, 1999



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Evaluation for HT

Hypothetical Center #1

- ✓ Optimal HT outcome
- ✓ Short waiting list
- ✓ Few patients listed as compared to potential candidates



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Evaluation for HT

Hypothetical Center #2

- ✓ Only **acceptable** HT outcome
- ✓ Very **long** waiting list
- ✓ **Most** patients listed as compared to potential candidates



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Evaluation for HT

19 HT Centers in Italy



(Probably) 19 Different modalities
to be referred for HT

***Should we work to establish similar
criteria to be referred to an HT Center
?***

Heart Transplantation

Istituto di Cardiologia
Università di Bologna

Evaluation for HT

Hypothetical Center 1

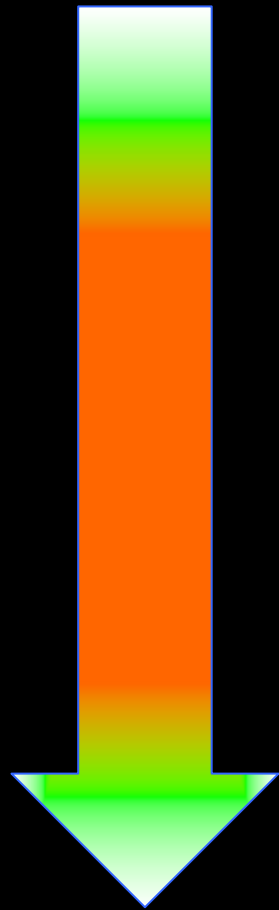
- ✓ Few patients listed as compared to potential candidates..**because of:**
 - Sub-optimal Policy of the Center ?
 - **Regional** or **National** health-system characteristics?
 - Local or national cultural environment ?



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

The process

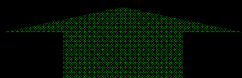


ACUTE CV
EVENT

EVALUATION FOR HT

WAITING LIST

TRANSPLANT





Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted



Number of
patients
waiting



Characteristics
of patients
waiting



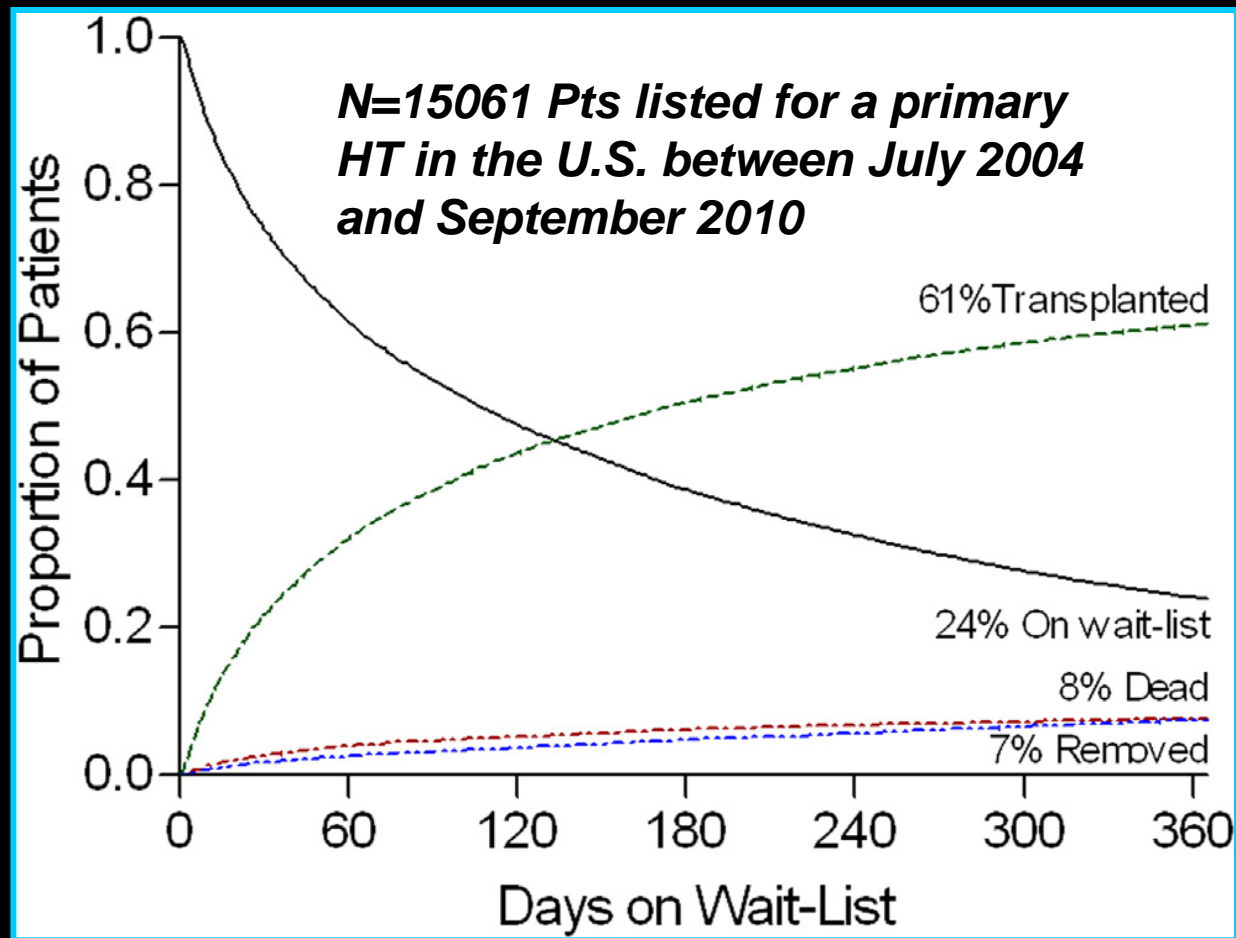
Number of
transplants
performed



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

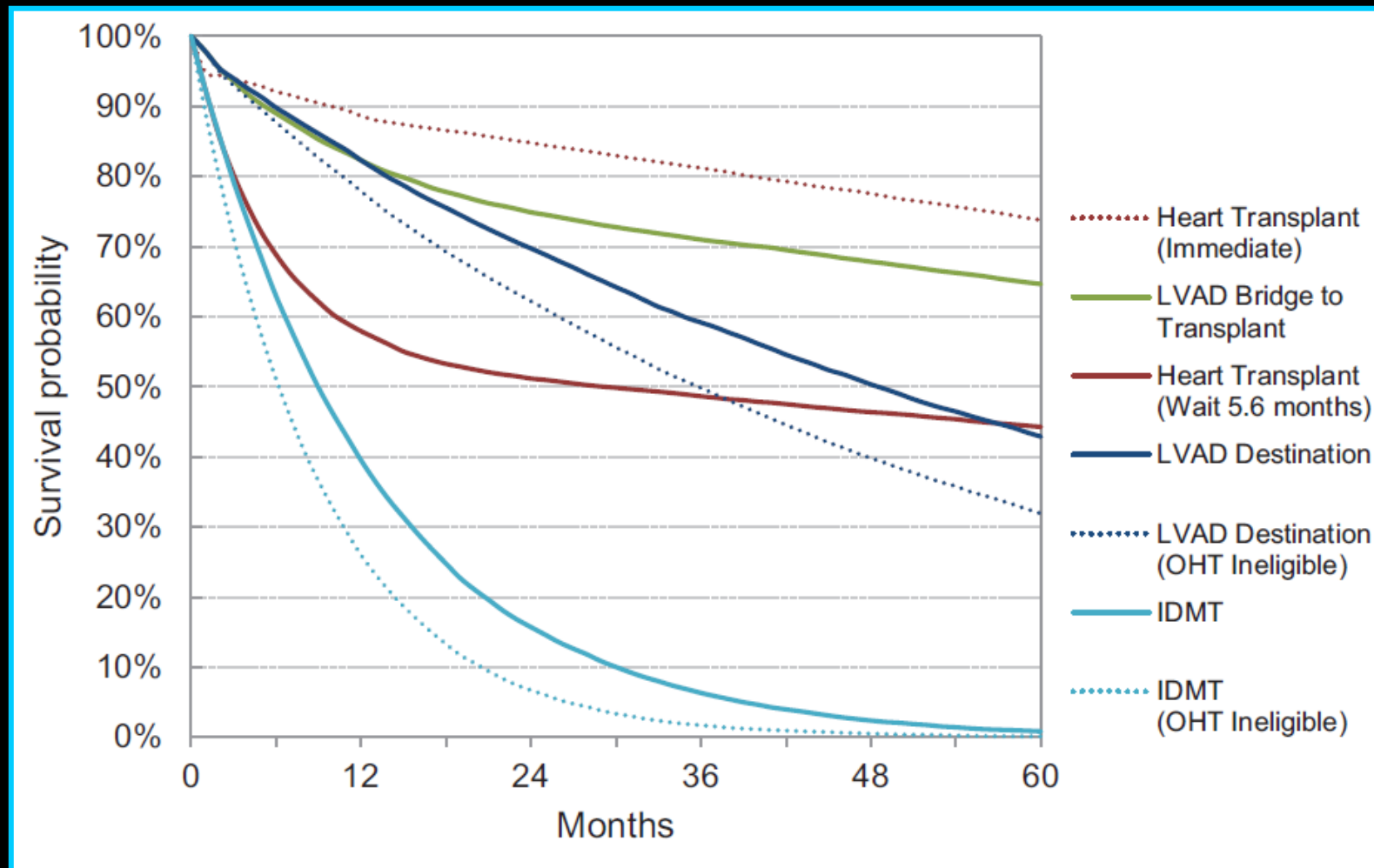




Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List



Long, Circ Heart Fail. 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted



Number of
patients
waiting



Characteristics
of patients
waiting



Number of
transplants
performed



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted

**Number of
patients
waiting**

- ✓ Referral modalities of the system
- ✓ Disease severity-related criteria for listing
- ✓



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted

✓ Center reputation

- Number of transplants performed
- Ability to address comorbidities
- Ability of the Center to address multi organ transplantation
- MCS program
-

**Number of
patients
waiting**



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted



Number of
patients
waiting



Type of
patients
waiting



Number of
transplants
performed



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted

**Number of
HT
performed**

- ✓ Procurement ability
- ✓ Use of “marginal” donors
- ✓ Length of the waiting list
- ✓ Criteria for organ sharing
- ✓



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted

**Number of
HT
performed**

- ✓ Procurement ability
- ✓ Use of “marginal” donors
- ✓ Length of the waiting list
- ✓ **Criteria for organ sharing**
- ✓



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organs Sharing

- ✓ The logistics of HTx restrict donor procurement to geographic zones such that the estimated ischemic time will be approximately 4 h or less.



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ Medical factors are not the greatest barrier to broader sharing
(unfortunately)

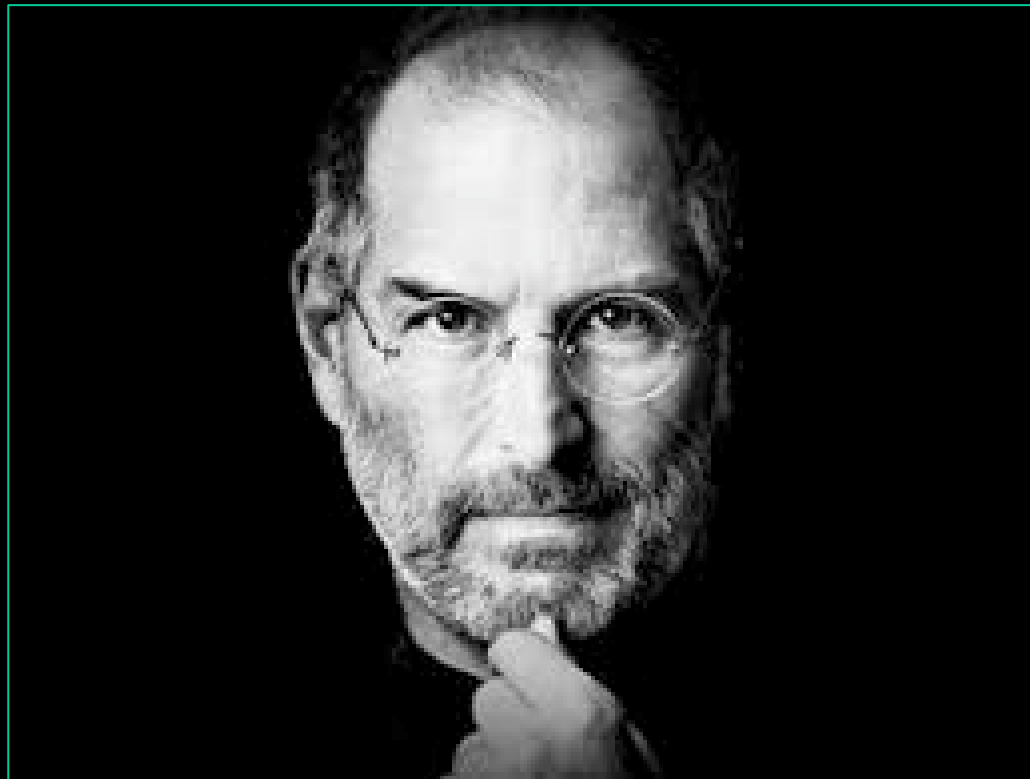


Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing





Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

Steve Jobs had a problem. He needed a liver transplant, but ..where he lived, people waited more than 6 years.

So he got himself listed at a second transplant center ..where average wait times were less than 3 months.

When an organ became available..Jobs chartered a private jet and went to receive the transplant.

Ubel, NEJM, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ With increased organ sharing across regions, many transplant programs would become net exporters of organs

Ubel, NEJM, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ Smaller transplant programs might well go out of business, larger programs with longer lists of sicker patients would often receive organs ahead of them

Ubel, NEJM, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ An alternative to mobilizing the organs
mobilizing the recipients
- ✓ Start-up companies hope to make long-distance listing more affordable and feasible

Ubel, NEJM, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ A guiding principle has always been the allocation of organs to those in greatest need



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Organ Sharing

- ✓ Nel corso del 2014 (dati parziali) il Centro ha coordinato 1.177 donatori, risposto a 219 urgenze (78 cuore, 100 fegato, 2 rene, 39 polmone)

Il Corriere 12 gen 2015



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

- ✓ In 2001, 35% of all transplantations were performed on UNOS status 1A patients; by 2011, the percent of patients transplanted in this category had risen to 56.3%

N/SRTR 2011 annual report. Richmond, VA: United Network for Organ Sharing; 2012:119–47.



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Potential Improvements

- ✓ “Transplant benefit” vs “Sicker come first served” policy ?

Kobashigawa JACC, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Probability to be transplanted



Number of
patients
waiting



Characteristics
of patients
waiting



Number of
transplants
performed



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Patients Characteristics

- ✓ Other factors that discriminate who will receive a donor organ include human leukocyte antigen cross-match status, body size..blood type.

Kobashigawa JACC, 2014



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Disadvantaged Patients

- ✓ Restrictive CMP
- ✓ Hypertrophic CMP
- ✓ Amyloid
- ✓ Congenital Heart Disease
- ✓ Total Artificial Heart Patients
- ✓ Selected LVAD patients
- ✓



Istituto di Cardiologia
Università di Bologna

Heart Transplantation

Waiting List

Conclusions

- ✓ One way or another, I believe the ..organ transplantation system needs to change...
- ✓ Revisions cannot be mired into political or economical deadlock..

Ubel, NEJM, 2014