



# Under-represented Populations Awaiting OHT

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CUTTING EDGE OF  
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**RESOLVING THE ORGAN SHORTAGE**



PRACTICE |



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POLITICS

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# Disclosures:

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# Outline: Under-represented Populations

- Overview
  - Under-represented Populations
  - Outcome
- Limitations in this Field
- Goals for the Future

# Under-representation



## Populations

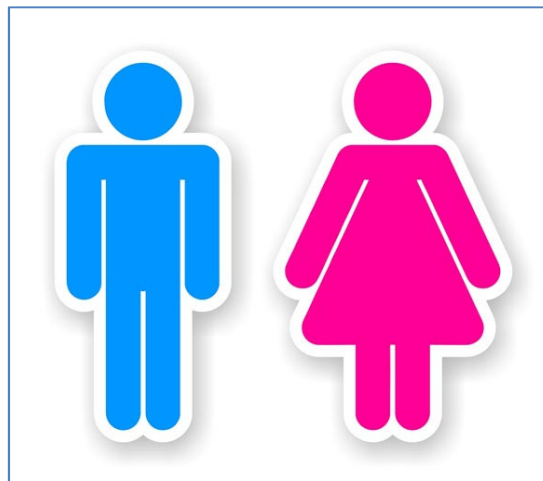
- Gender
- Race
- Type of Heart Disease

<http://www.healthcentral.com/sites/www.healthcentral.com/files/isolated.jpg>

# Under-representation: Gender

SRTR 1999-2008

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Women	21%	20%	20%	21%	23%	23%	23%	24%	25%	24%
Men	79%	80%	80%	79%	78%	77%	77%	76%	75%	76%



[http://www.srtr.org/annual\\_Reports/archives/2009/2009\\_Annual\\_Report/1101a\\_can-gender\\_hr.htm](http://www.srtr.org/annual_Reports/archives/2009/2009_Annual_Report/1101a_can-gender_hr.htm)

# Under-representation: Race

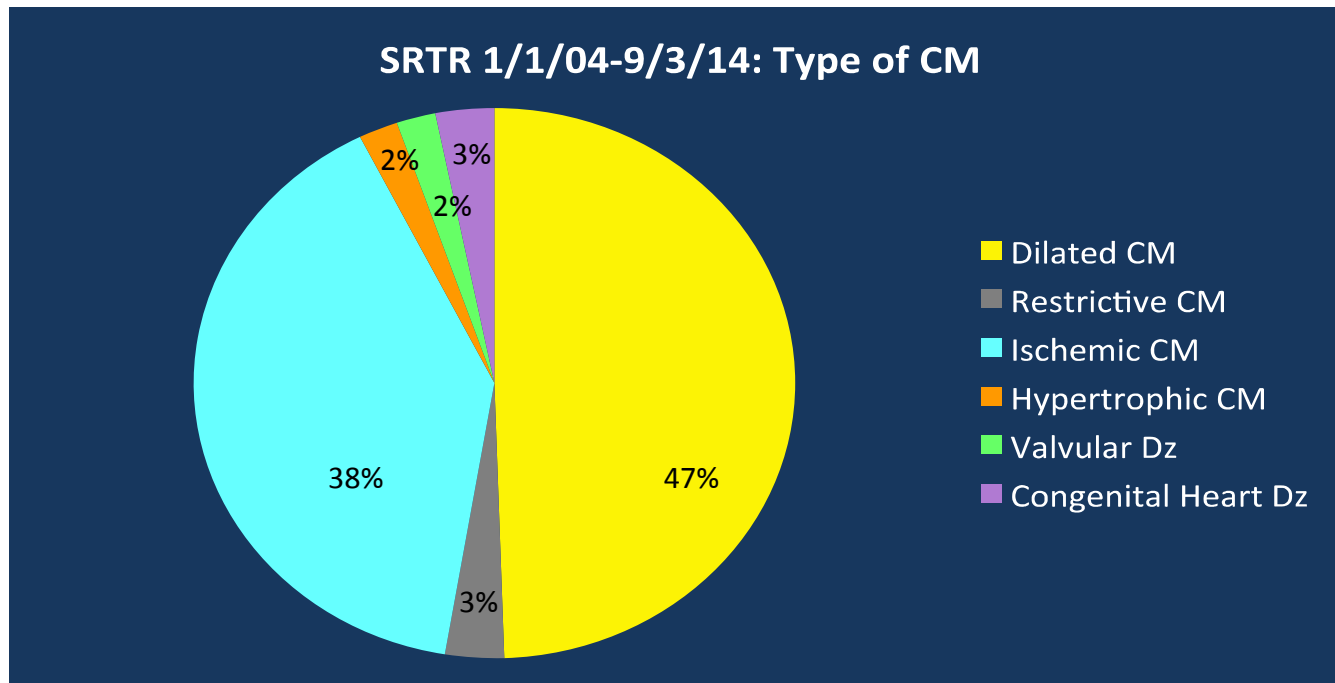
## SRTR 1999-2008

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
White	79%	79%	79%	77%	75%	73%	73%	74%	74%	73%
Black	13%	14%	13%	15%	15%	16%	18%	18%	17%	18%
Asian	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%
Hispanic	6%	6%	6%	6%	8%	8%	7%	6%	7%	7%
Other	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%



[http://www.srtr.org/annual\\_Reports/archives/2009/2009\\_Annual\\_Report/iHR\\_Candidates\\_race.htm?o=5&g=1&c=3](http://www.srtr.org/annual_Reports/archives/2009/2009_Annual_Report/iHR_Candidates_race.htm?o=5&g=1&c=3)

# Under-representation: Type of Heart Disease



**RCM:** idiopathic, amyloid, endocardial fibrosis, sarcoidosis, XRT/chemotherapy, other

**Other:** 80% OHT, 20% other



# Outcomes

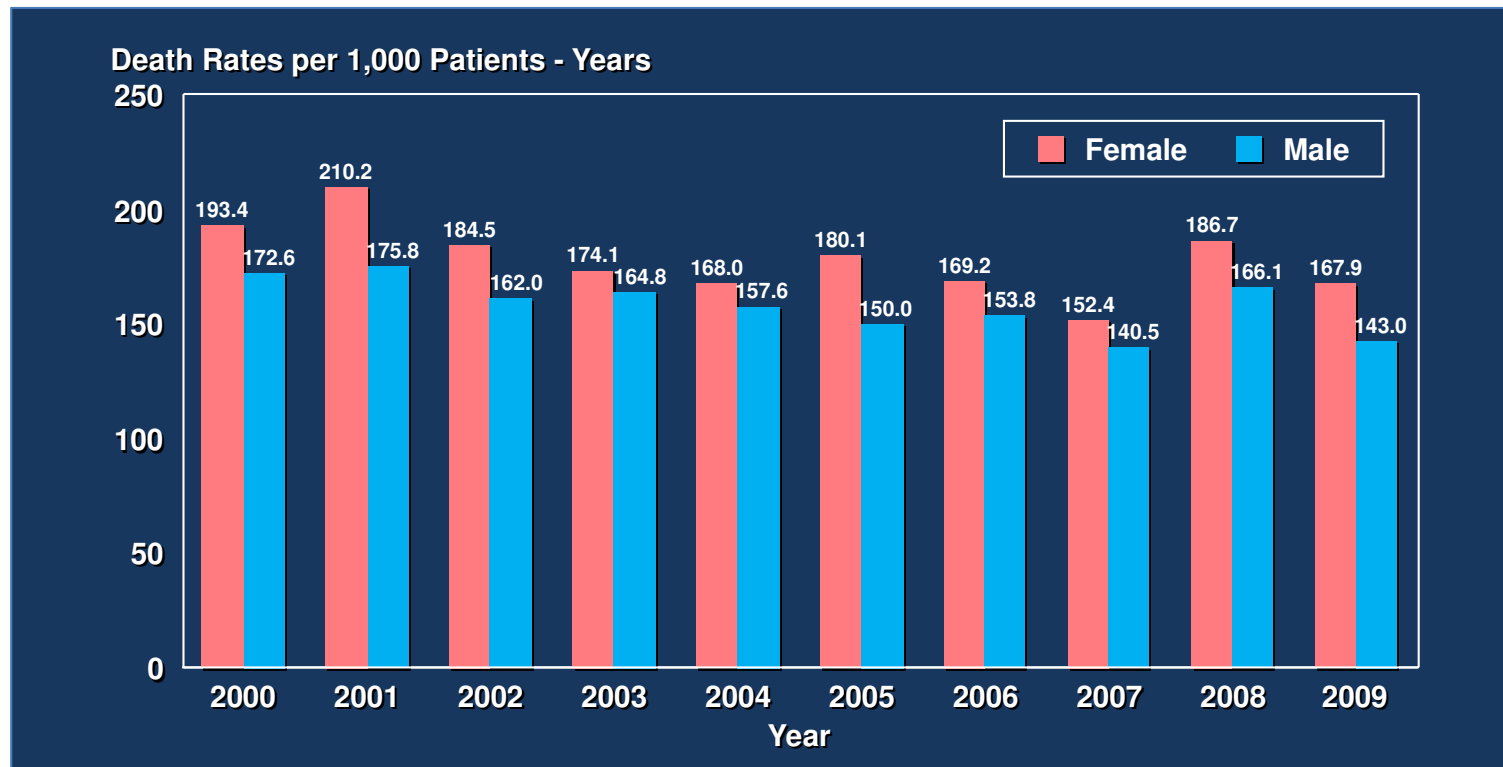


Death and Life 1911 by Gustav Klimt



# Outcome: Gender Differences Awaiting OHT

SRTR Database



[Http://srtr.Transplant.Hrsa.Gov/annual\\_reports/2010/1103\\_can-gender\\_hr.Htm](http://srtr.Transplant.Hrsa.Gov/annual_reports/2010/1103_can-gender_hr.Htm)

# Risk of Being Female Awaiting OHT:

## Cox Proportional Hazards Analyses

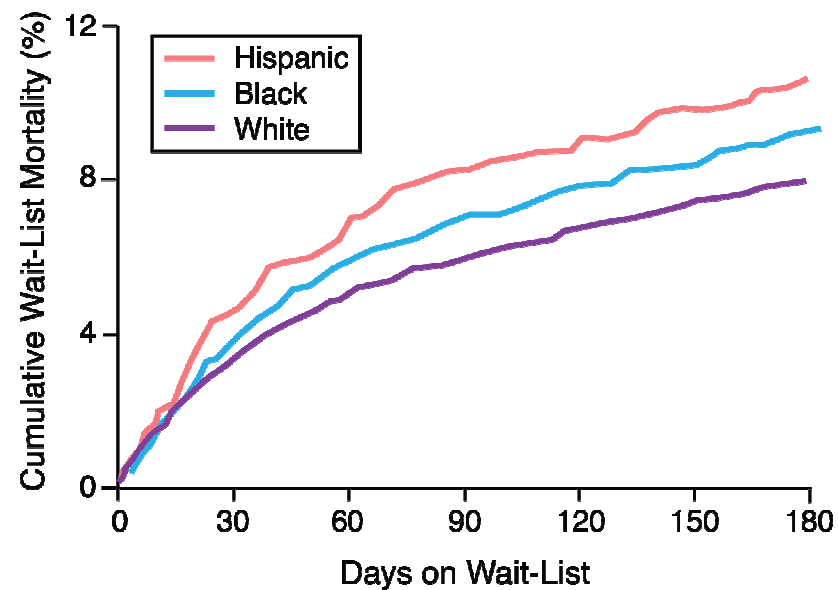
Model: Death	HR (95% CI)	P value
Status 1A		
Unadjusted	1.23 (1.10-1.38)	0.0004
Adjusted*	1.17 (1.03-1.34)	0.0185
Status 1B		
Unadjusted	1.10 (0.98-1.23)	0.1234
Adjusted*	1.08 (0.95-1.23)	0.2572
Status 2		
Unadjusted	0.73 (0.66-0.81)	<0.0001
Adjusted*	0.70 (0.63-0.79)	<0.0001

\* Adjusted for age, DM, dialysis, BMI, prior OHT, race, CVA, history of tobacco, inotropes, GFR, ventilator, insurance, type of VAD, antiarrhythmic, prior cardiac surgery, HTN, malignancy, PVD, ECMO, IABP, era, cardiac diagnosis, ABO blood type, defibrillator, pulmonary artery mean, PCWP mean, total albumin, and cardiac output with dummy variables for missing GFR, pulmonary artery mean pressure, PCWP mean, cardiac output, and albumin

Hsich et al., JACC HF. 2014;4:347-55

# Outcome: Racial Differences

7/12/06-9/30/10 OPTN: Mortality on Waiting List for OHT

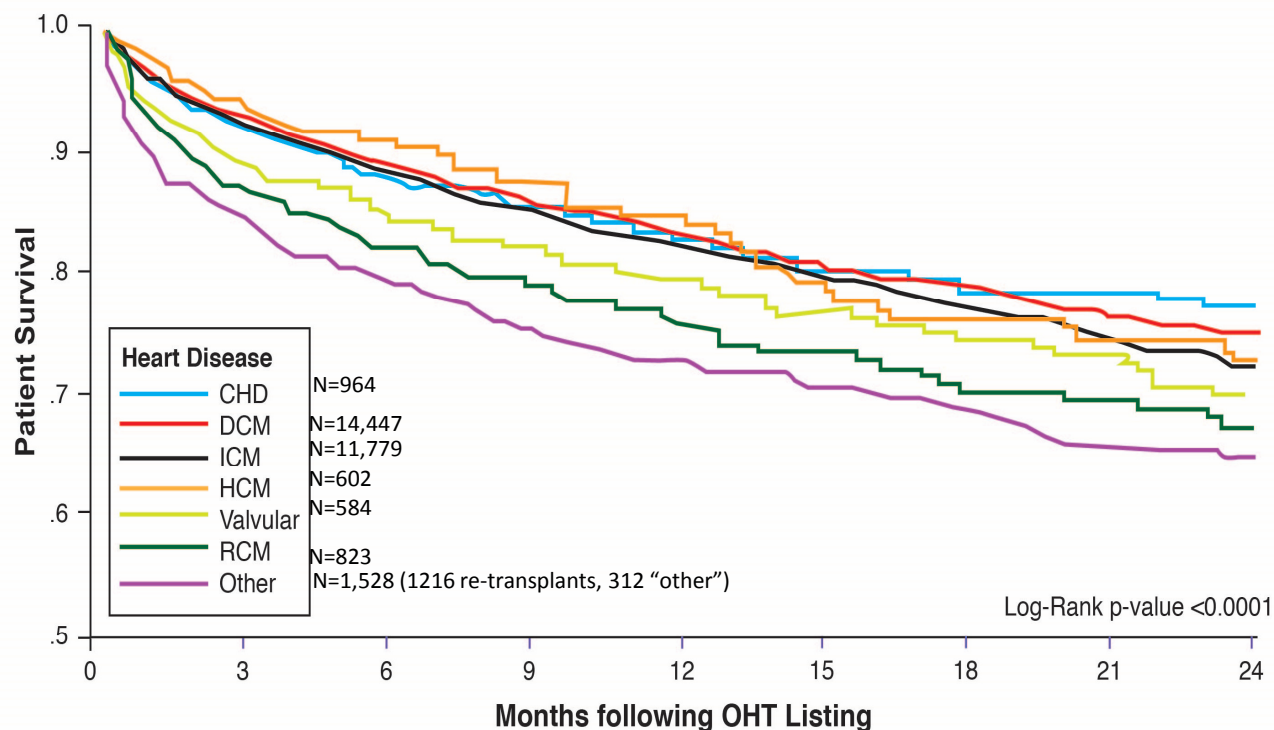


Hispanic were at higher risk of wait-list mortality (adjusted hazard ratio 1.51, 95% CI 1.23-1.85) in comparison with White, but not Blacks (adjusted hazard ratio 1.13, 95% CI 0.97-1.31)

T. Singh. Circulation. 2012;125:3022-3030

# Outcome: Differences by Heart Disease

2004-2014 SRTR: Two Year Survival on OHT Waitlist



E. Hsich, J. Rogers, D. McNamara, D. Taylor, R. Starling, E. Blackstone, J. Schold. 2016, JAAC: HF *in press*

# Risk of Death Compared to DCM

## Cox Proportional Hazards Analyses

Model: Death	Unadjusted HR (95% CI)	Adjusted HR (95% CI)
<u>DCM</u>	---	---
RCM	1.50 (1.27-1.77) *	1.70 (1.43-2.02) *
ICM	1.17 (1.10 -1.24) *	1.10 (1.03-1.18) *
HCM	0.99 (0.79-1.24)	1.23 (0.98-1.54)
Valvular	1.33 (1.10-1.60) *	1.30 (1.07-1.57) *
CHD	0.96 (0.83-1.12)	1.37 (1.17-1.61) *
Other	1.78 (1.60-1.98) *	1.51 (1.34-1.69) *

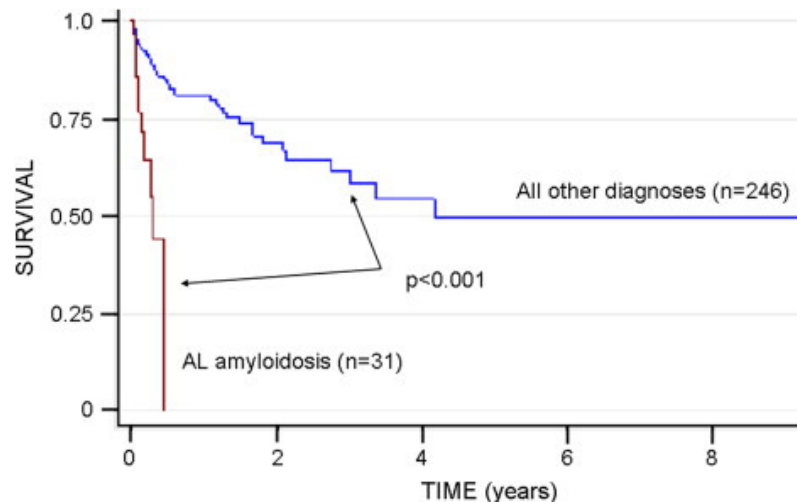
\*=P <0.05

Adjusted for age, sex, era before/after April 1, 2008, DM, dialysis, BMI, race, CVA, tobacco, inotropes, eGFR, mechanical ventilator, insurance, type of VAD, HTN, malignancy, PVD, ECMO, IABP, ABO blood type, defibrillator, pulmonary artery mean, albumin, and cardiac index

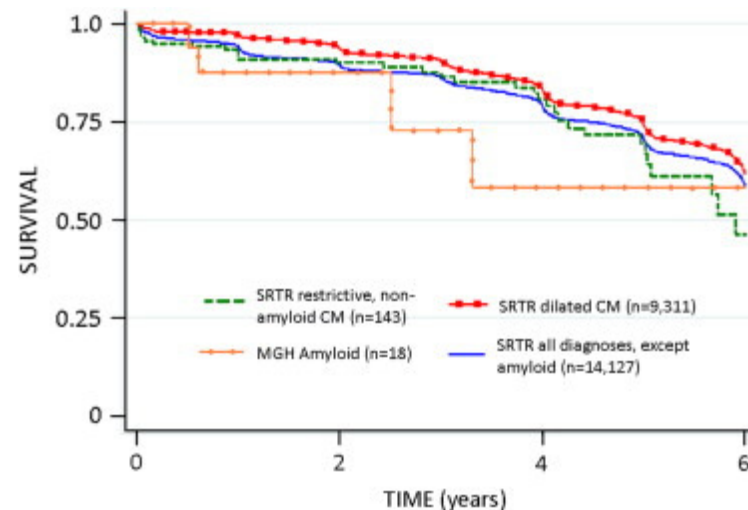
E. Hsich, J.Rogers, D. McNamara, D. Taylor, R. Starling, E. Blackstone, J. Schold. 2016 JAAC: HF *in press*,

# Survival for Patients with Light Chain (AL)-Amyloidosis

## Survival Awaiting OHT at MGH



## Survival After OHT



M. Semigran, et al. JHLT, 2014-02-01, Volume 33, Issue 2, Pages 149-156



# Limitations in the Field



# Limitations in the Field

- Limited UNOS/OPTN research
- Important risk factors for survival not required upon data entry
- No specific definitions to define each type of cardiomyopathy

# Goals for the Future

- Require essential variables to be entered in the OPTN/UNOS database
- Determine for under-represented populations the risk factors for survival and their interactions
- Require verification of the “type of cardiomyopathy” post OHT
- Create a heart transplant allocation score

# Conclusions: HF in Women

- Under-represented populations: Women, non-whites, all cardiomyopathies except ICM and NICM
- High Wait-list Mortality
  - F > M initially listed as UNOS Status 1A
  - Hispanic > White
  - RCM > DCM
- HCM has a similar waitlist mortality to DCM

# The End

