

STS/EACTS Latin America Cardiovascular Surgery Conference

September 21-22, 2017 | Cartagena, Colombia

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www.CardiovascularSurgeryConference.org

The Argentinian Transplantation Registry: A Latin American “Bright Spot”



The Society
of Thoracic
Surgeons



EACTS
European Association For Cardio-Thoracic Surgery

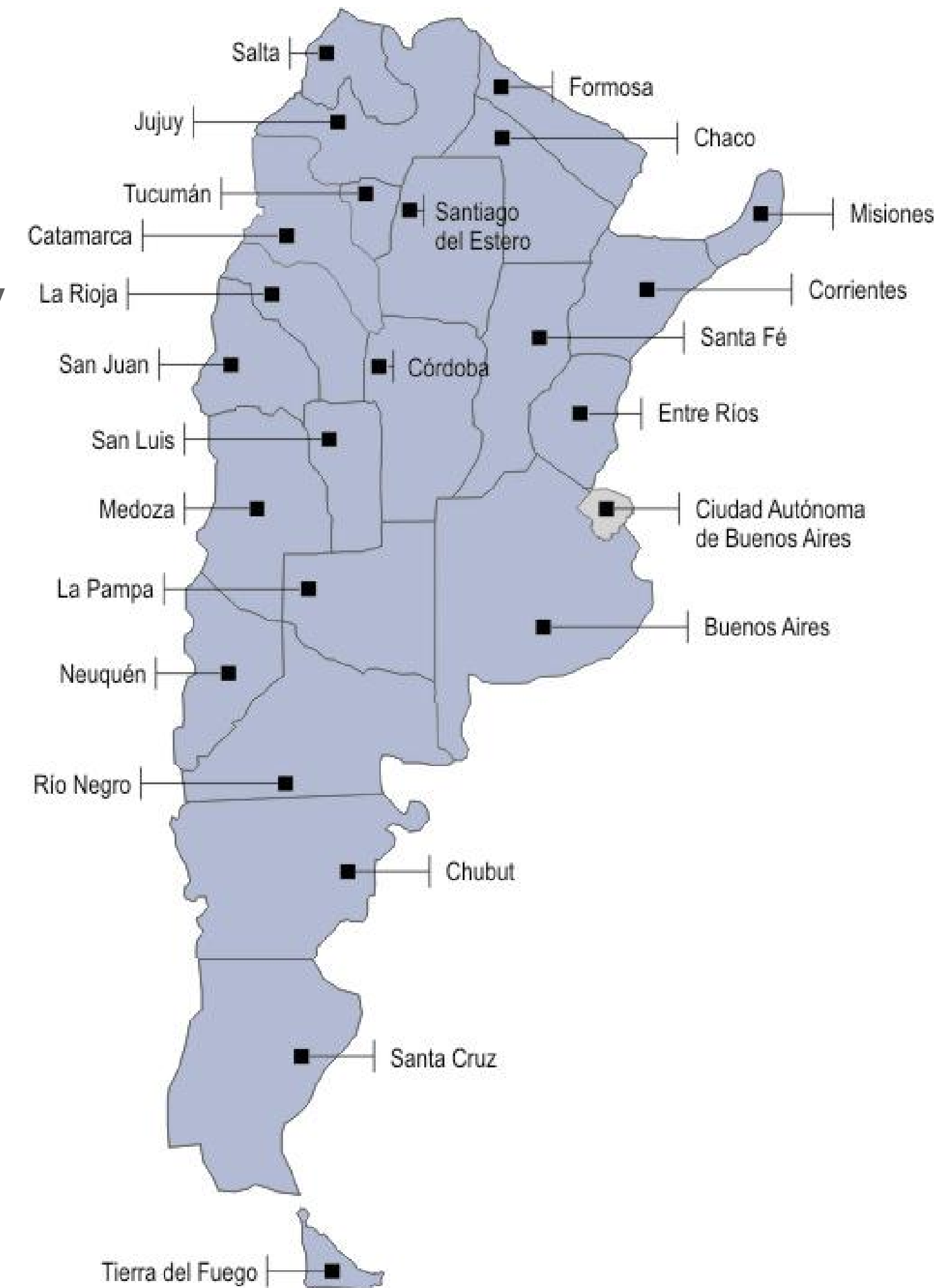


Disclosures

- I have nothing to disclose

National System of Procurement and Transplantation in Argentina

- **Population:** 44 million inhabitants
- **Surface:** 2.791.810 Km²
- **The country** is divided into 24 provinces and Buenos Aires City
- **INCUCAI**, decentralized organism depending on the National Ministry of Health -created by National Law N° 24.193-, is the national authority that coordinates organ, tissue and cell procurement and transplantation.



- **Highest Rate of donors:** 15.1 PMP (per million population) in 2012

YEAR	2009	2010	2011	2012	2013	2014	2015	2016
Heart Donors/ Real Donors (%)	17%	14%	13%	13%	14%	14%	14%	15%
Donors Rate pmp	12,6	14,3	14,7	15,1	13,5	13,1	13,7	11,9
Heart Donors Rate pmp	2,1	2,0	1,9	1,9	1,9	1,8	1,9	1,7

SINTRA: Sistema Nacional de Información de Procuración y Trasplante

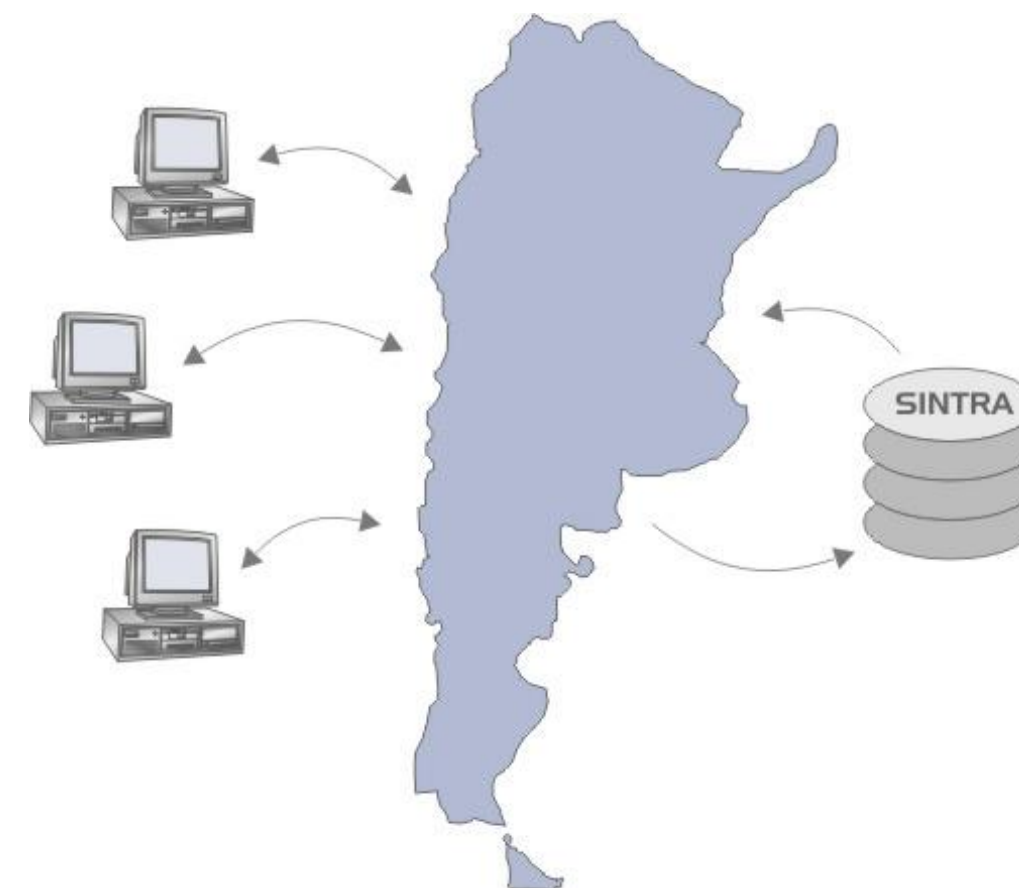
SINTRA (National Information System of Procurement and Transplantation)

SINTRA is the online database system that administrates, manages and supervises organ, tissue and cell procurement and transplantation activities in the national field.

A project impelled, coordinated and financed by INCUCAI, that started in 2003 and still continues its development.

Main strategy

To **decentralize information management**, in order to empower all the actors that take part in the different processes by interacting directly with SINTRA, and to **centralize information in a unique database**, integrated and consolidated.



SINTRA: Sistema Nacional de Información de Procuración y Trasplante

Main objectives

APPLY THE REGULATORY FRAMEWORK

To implement all the regulations established by INCUCAI policies through computer based procedures that guarantee their accomplishment.

REGISTRY

To create and keep updated national registries related to procurement and transplant activity, assuring the protection of personal information as is stated by Law of Habeas Data N° 25.326.

TRACEABILITY

To allow traceability across every process from donor to recipient and vice versa, assuring confidentiality and different access to information.

ASSESSMENT

To provide regional authority, INCUCAI and other health organizations with a tool that enables them to monitor and audit related activities.

MANAGEMENT CONTROL

To provide health authorities and professional community with a tool that enables them to evaluate and analyze different aspects of the procurement and transplant activity, aiming to help in the decision making process concerning health policies or clinical research.

TRANSPARENCY

To offer society a guarantee of transparency of the activity, allowing access and information availability with several levels of complexity, in order to satisfy different requirements.

MAJOR CONTRIBUTORS TO THE ISHLT TRANSPLANT REGISTRY

Organization	Countries	Heart	Lung
L'Agence de la Biomédecine	France	x	x
Australia and New Zealand Cardiothoracic Organ Transplant Registry (ANZCOTR)	Australia	x	x
Eurotransplant (ET)	Austria, Belgium, Croatia, Germany, Netherlands, Slovenia	x	x
Instituto Nacional Central Único Coordinador de Ablación e Implante (INCUCAI)	Argentina	x	x
Organización Nacional de Trasplantes (ONT)	Spain		x
Registro Español de Trasplante Cardíaco	Spain	x	
Scandiatransplant	Denmark, Finland, Norway, Sweden	x	x
United Kingdom Transplant Services Authority (UKTSSA)	United Kingdom, Ireland	x	x
United Network for Organ Sharing (UNOS)	United States	x	x

In addition, 84 individual centers from North America, Central/South America, Europe, Asia, Africa and the Middle East have reported at least one transplant since 1995.

ISHLT & INCUCAI Agreement Process

Started in 2013



Finished in 2015



BENEFIT!!
Increase in data reporting
after agreement!



Heart Transplant:

- 2014: 88%
- 2015: 96%

Lung Transplant:

- 2014: 81%
- 2015: 85%

Argentinian Heart Transplant Registry

- All data provided by INCUCAI
 - Scientific and Technical Director: Liliana Bisigniano, MD
- Unpublished data and statistics:
 - Period 1998-2016
 - Donor Heart Procurement
 - Processes and Outcomes on the Waiting List
 - Adult Heart Transplants:
 - Demographics
 - Survival Analysis



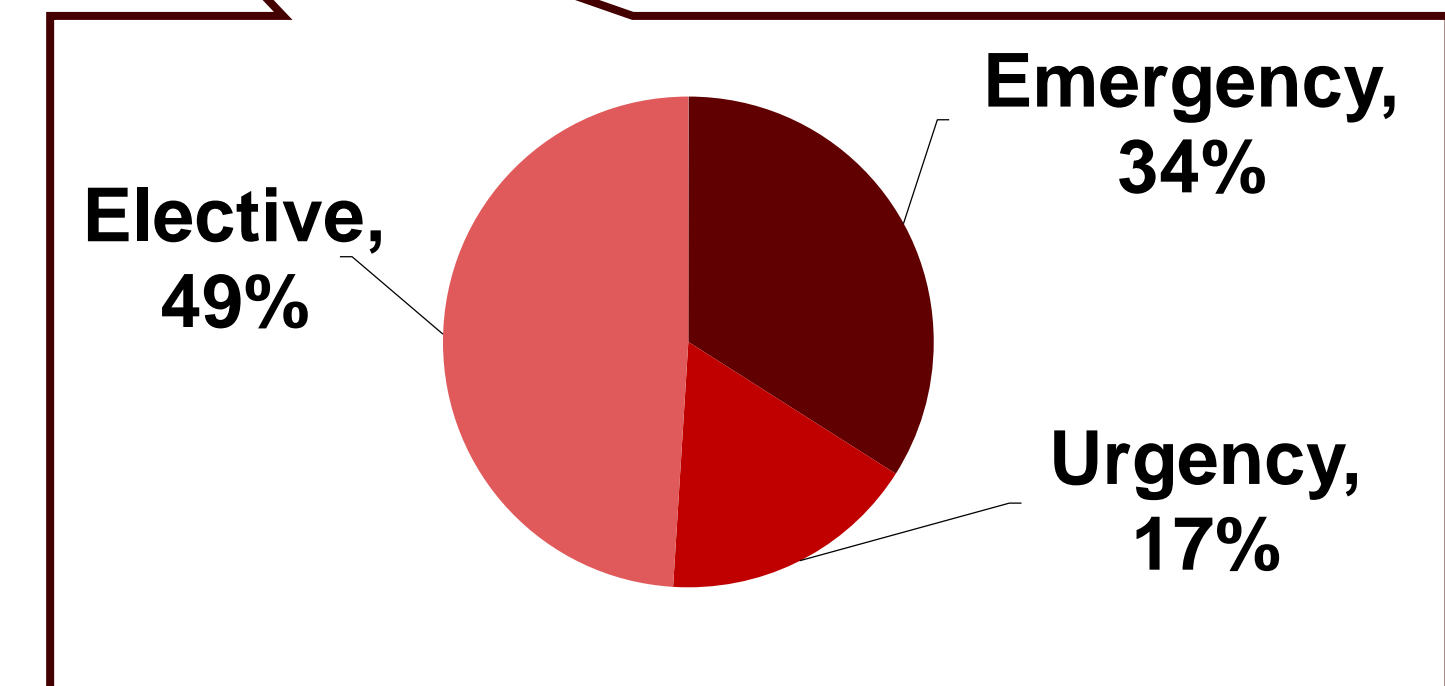
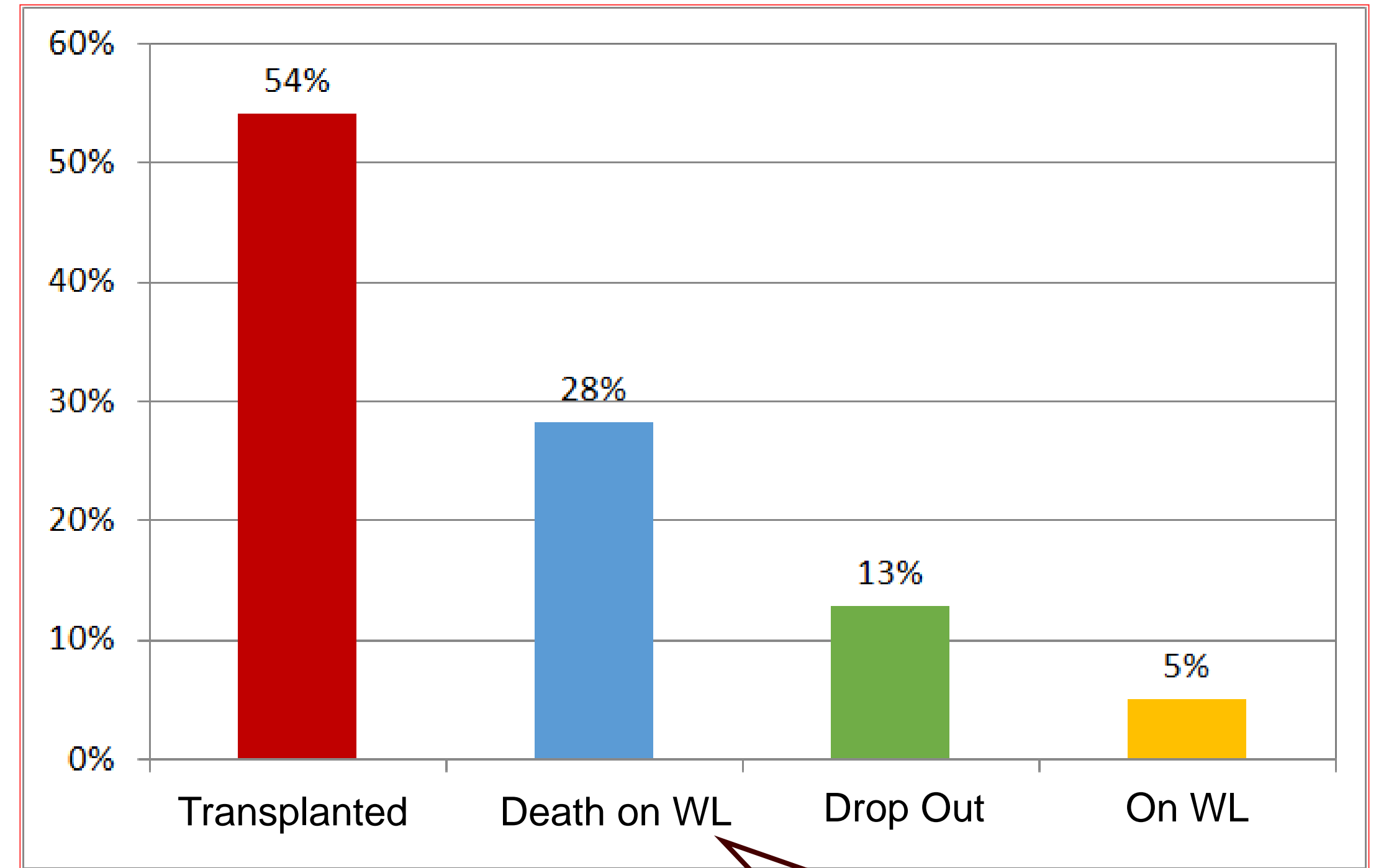
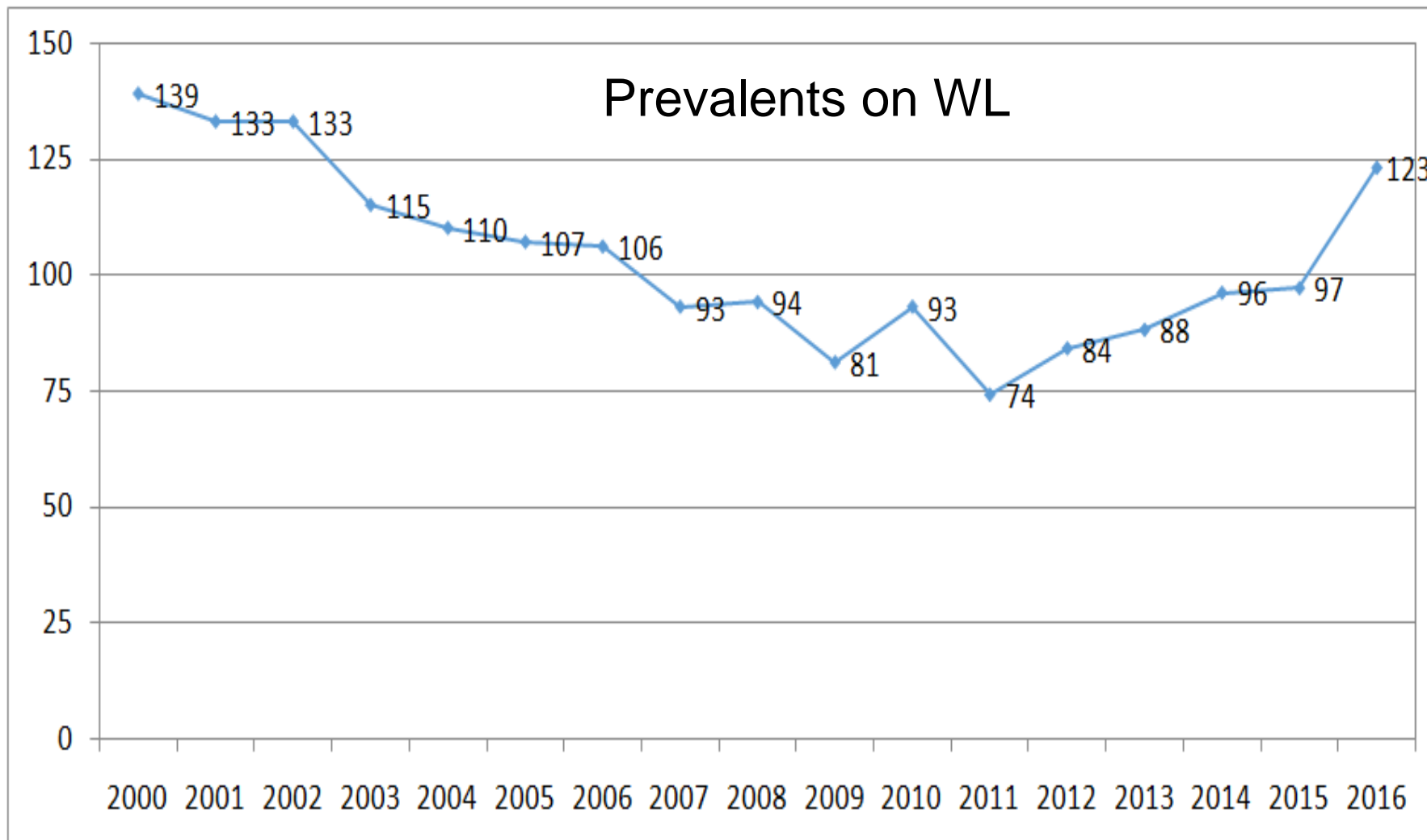
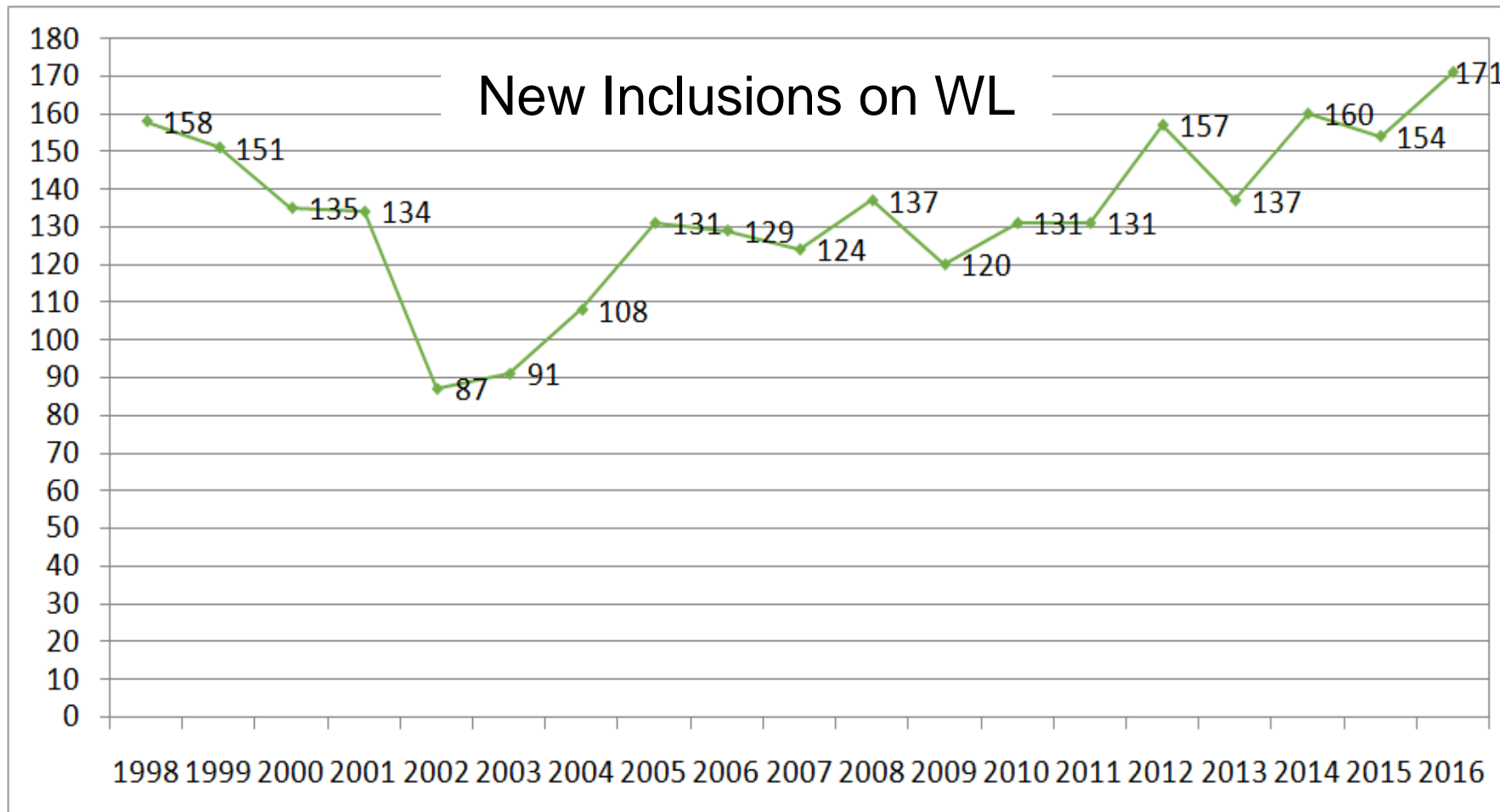
*Instituto Nacional
Central Unico Coordinador
de Ablación e Implante*

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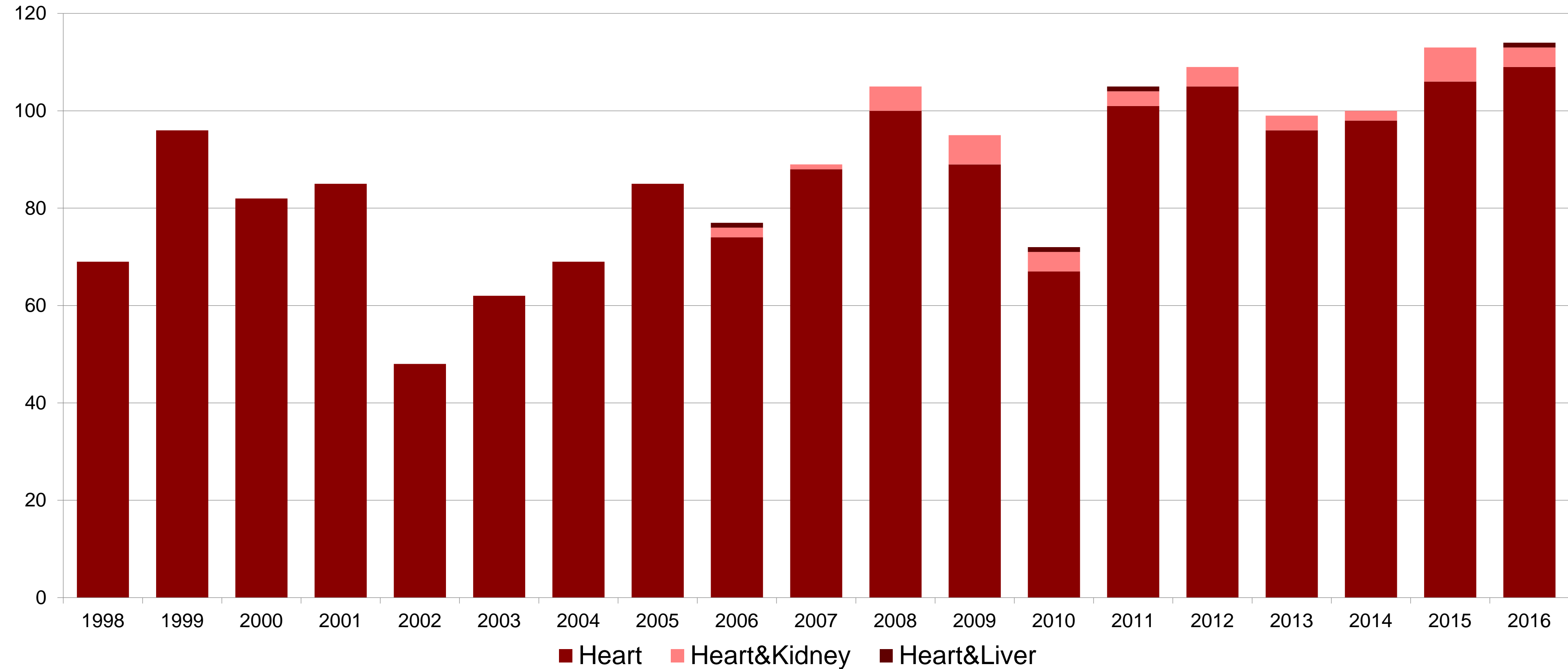


**Ministerio de
Salud**
Presidencia de la Nación

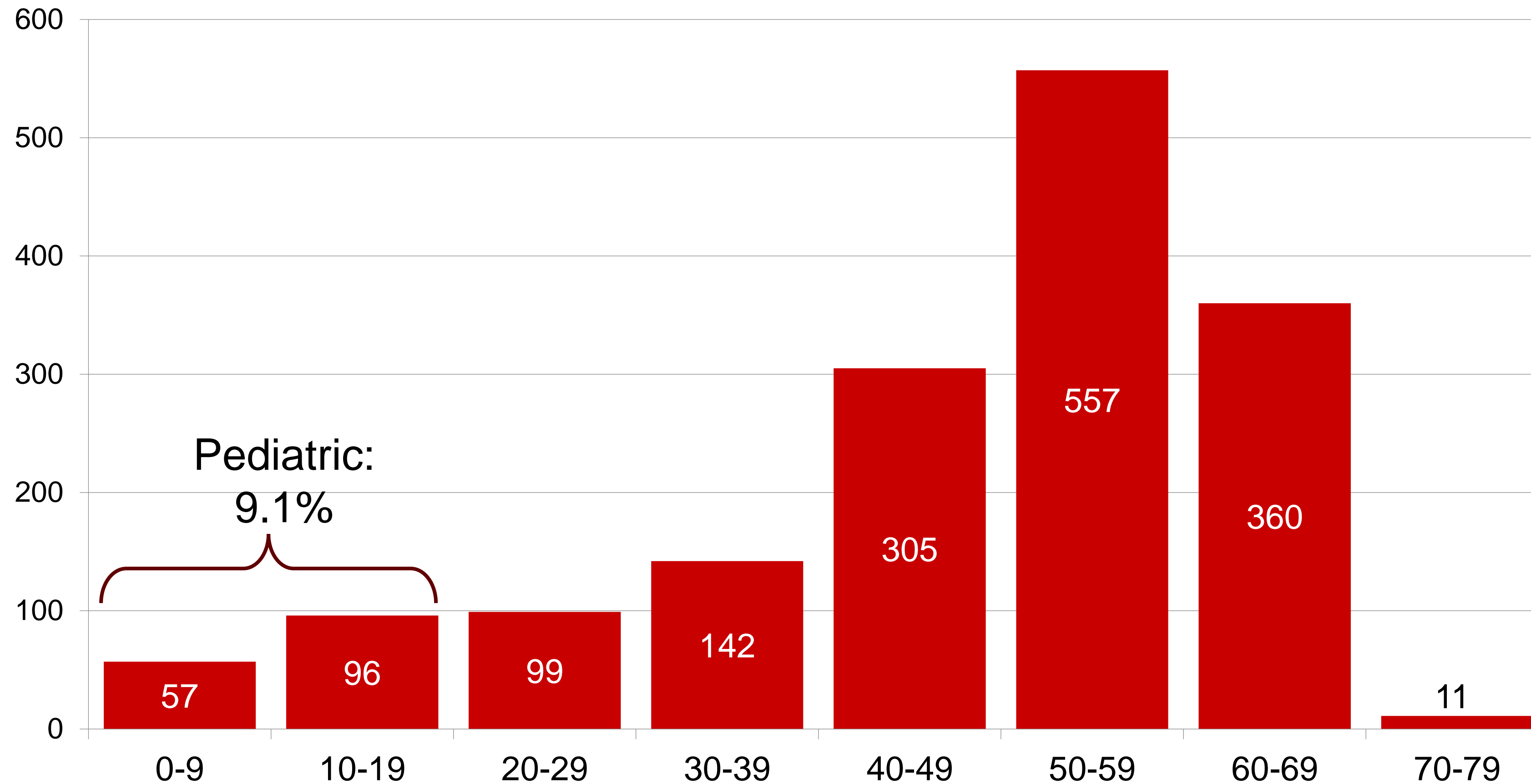
Patients on Heart Transplant Waiting List (Period 1998-2016) n=2546



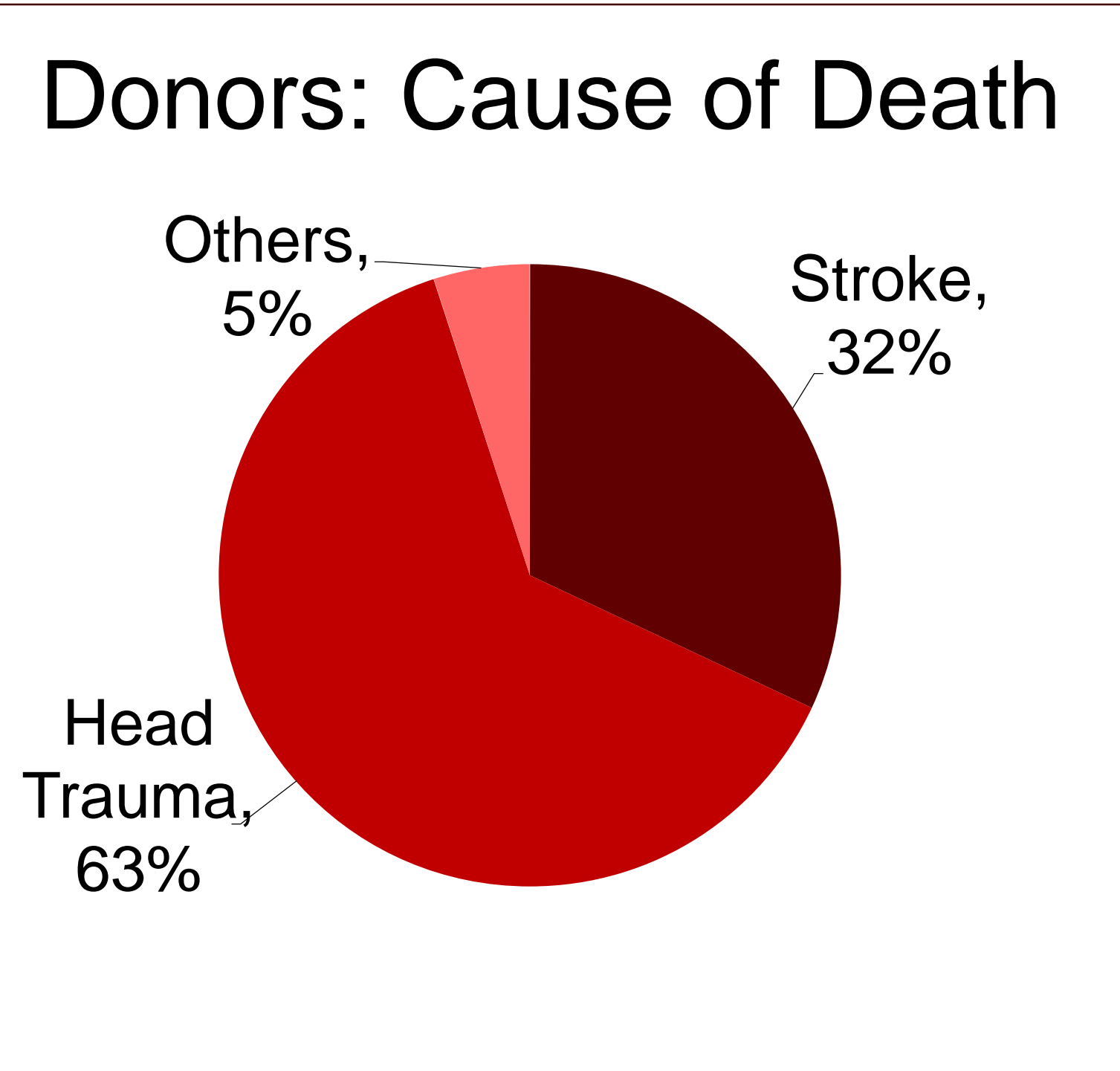
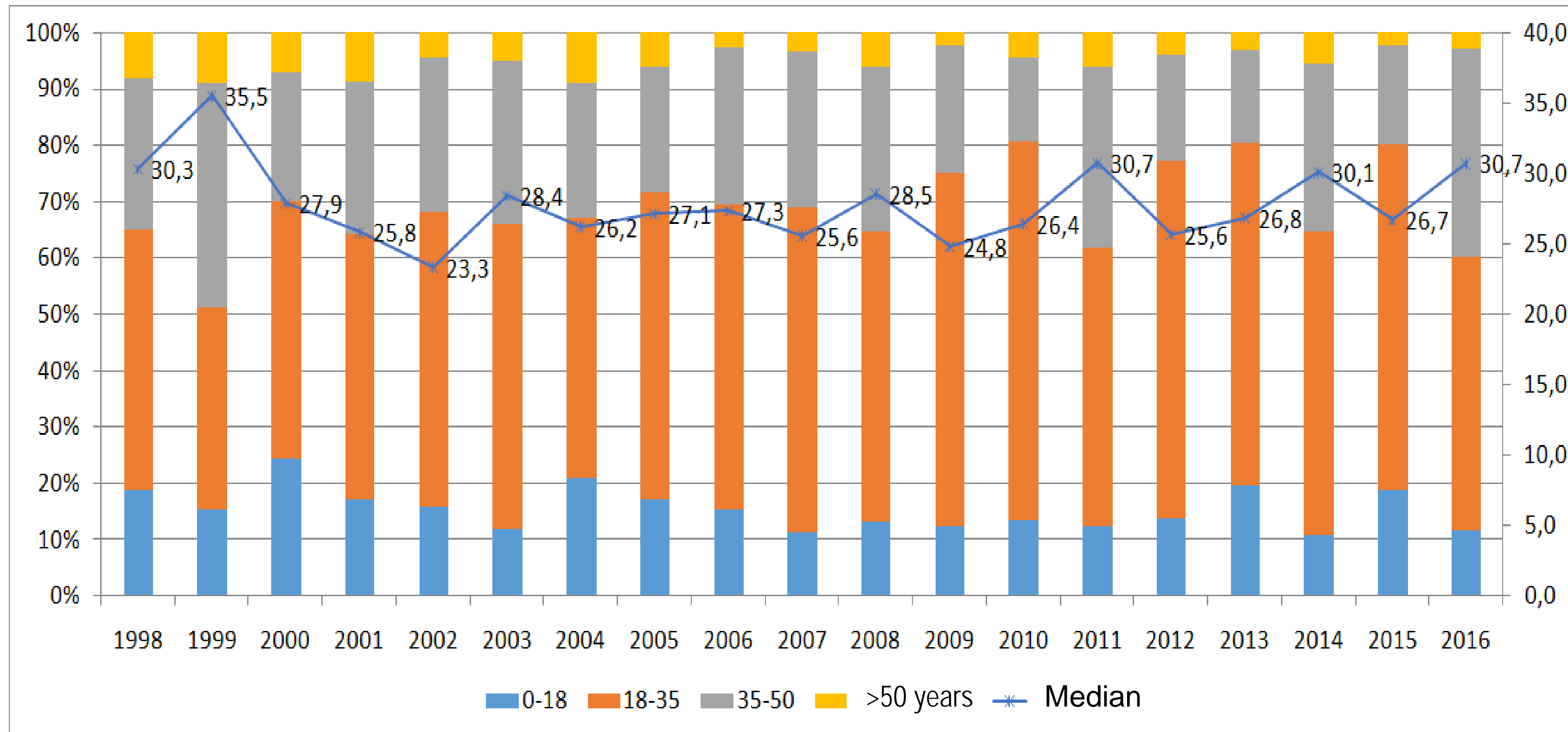
Overall Number of Heart Transplants (n=1674) By Year of Transplant: 1998-2016



Overall Heart Transplant Recipients (n=1674) Recipient Age Distribution by Groups (1998-2016)

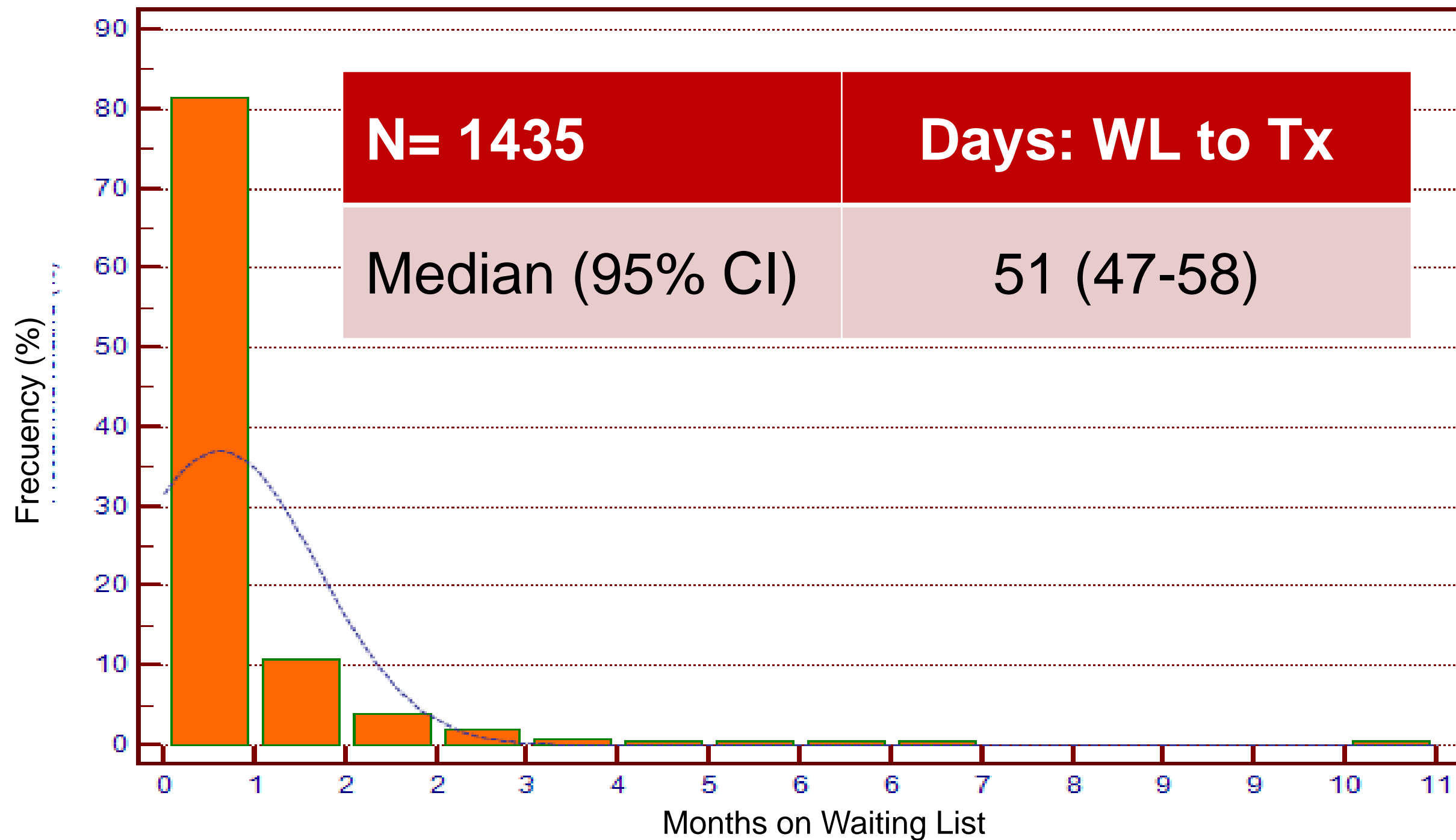


Adult Heart Transplants (n=1435) Donor Age By Year of Transplant: 1998-2016



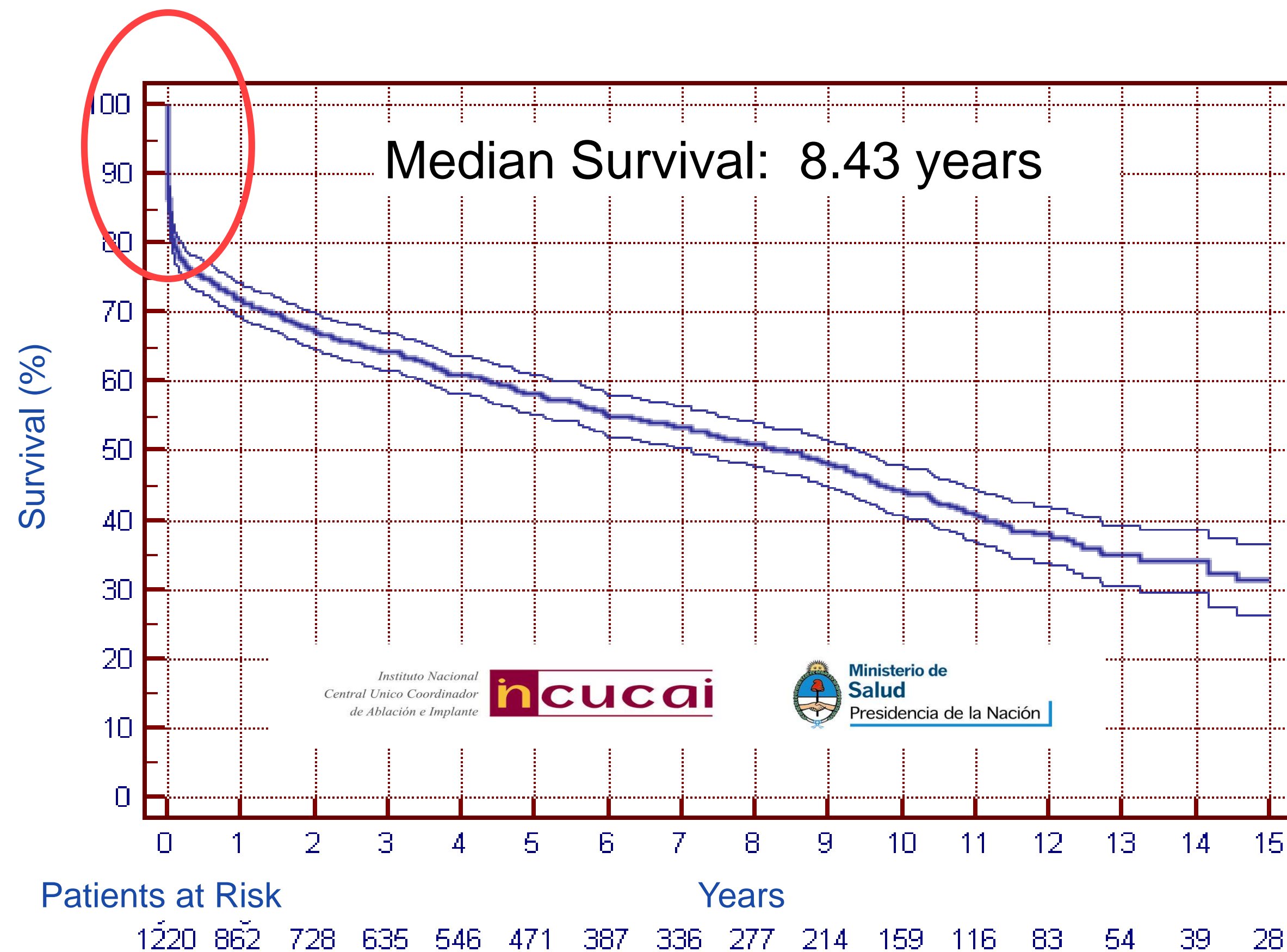
Median Donor Age : 27.3 years (IC 95% 26.4 a 28.3)

Adult Heart Transplant Recipients(n=1435) Time on Waiting List to Transplant (Period 1998-2016)

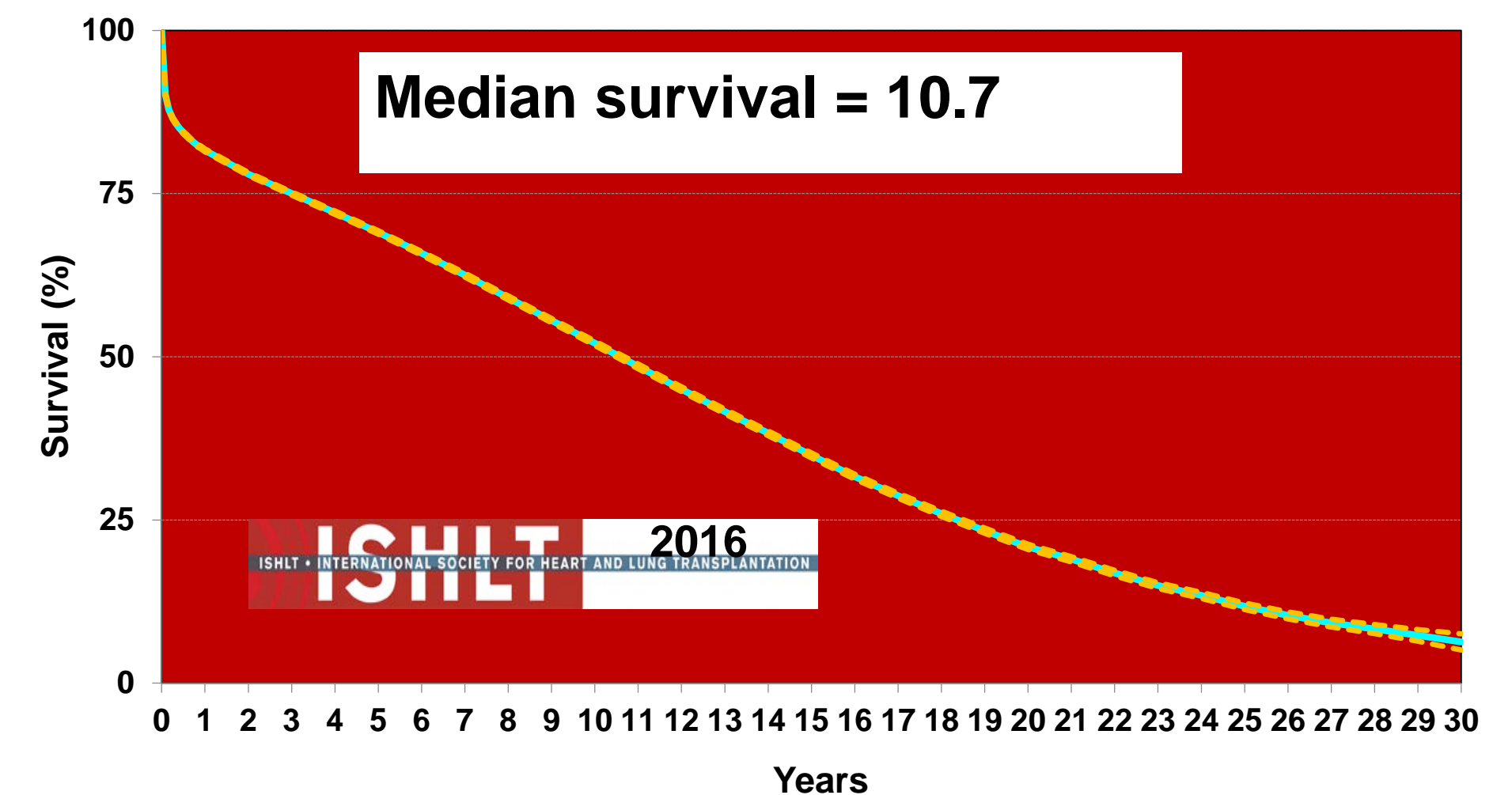


CLINICAL STATUS	ELECTIVE	URGENCY	EMERGENCY
N	421	470	544
Median (Days)	201	47	18
95% CI	168-234	34-55	15-22

Adult Heart Transplants (n=1435) Kaplan-Meier Survival Curve (Transplants: 1998-2016)



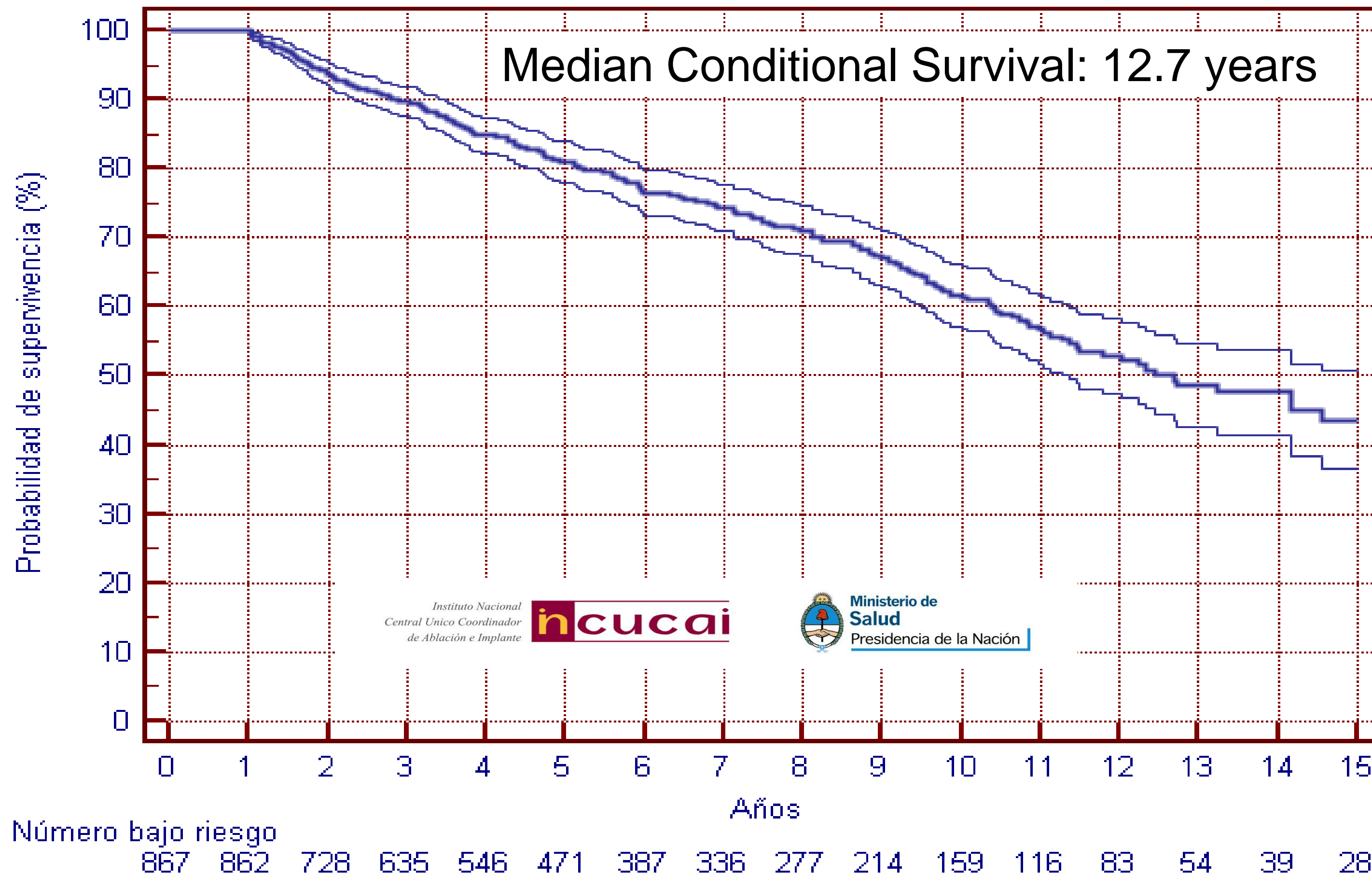
Follow-up	Survival	
	Argentina	ISHLT
1 Month	80%	88%
1 Year	72%	81%
3 Years	64%	77%
5 Years	58%	68%
10 Years	44%	54%



Adult Heart Transplants (n=1435)

Kaplan-Meier Survival Curve: Conditional to 1st Year Survival

(Transplants: 1998-2016)



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ISHLT 2016
ISHLT • INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION
JHLT. 2016 Oct; 35(10): 1149-1205

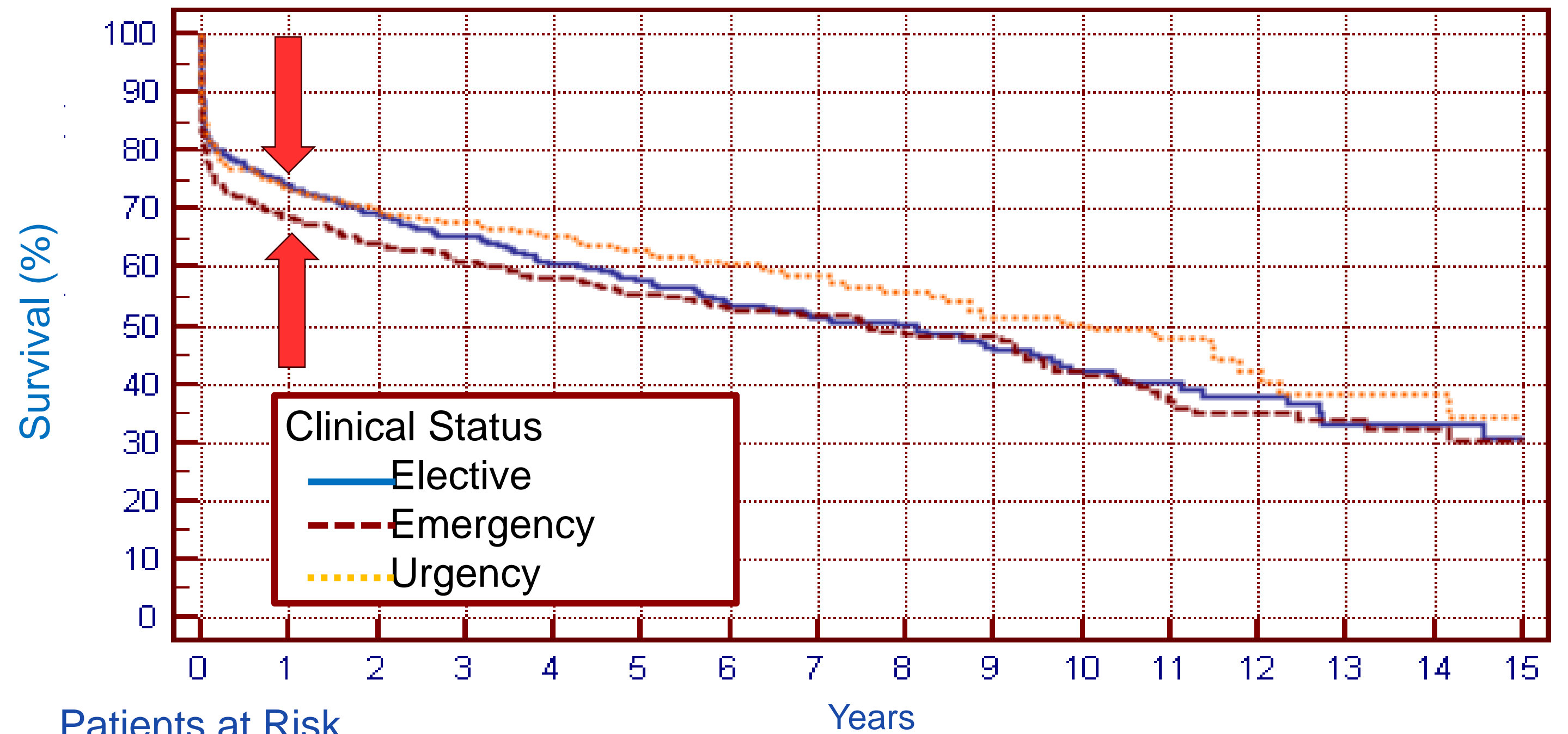
Median Conditional Survival: 13.3 years

Adult Heart Transplants (n=1435)

Kaplan-Meier Survival by Clinical Status

(Transplants: 1998-2016)

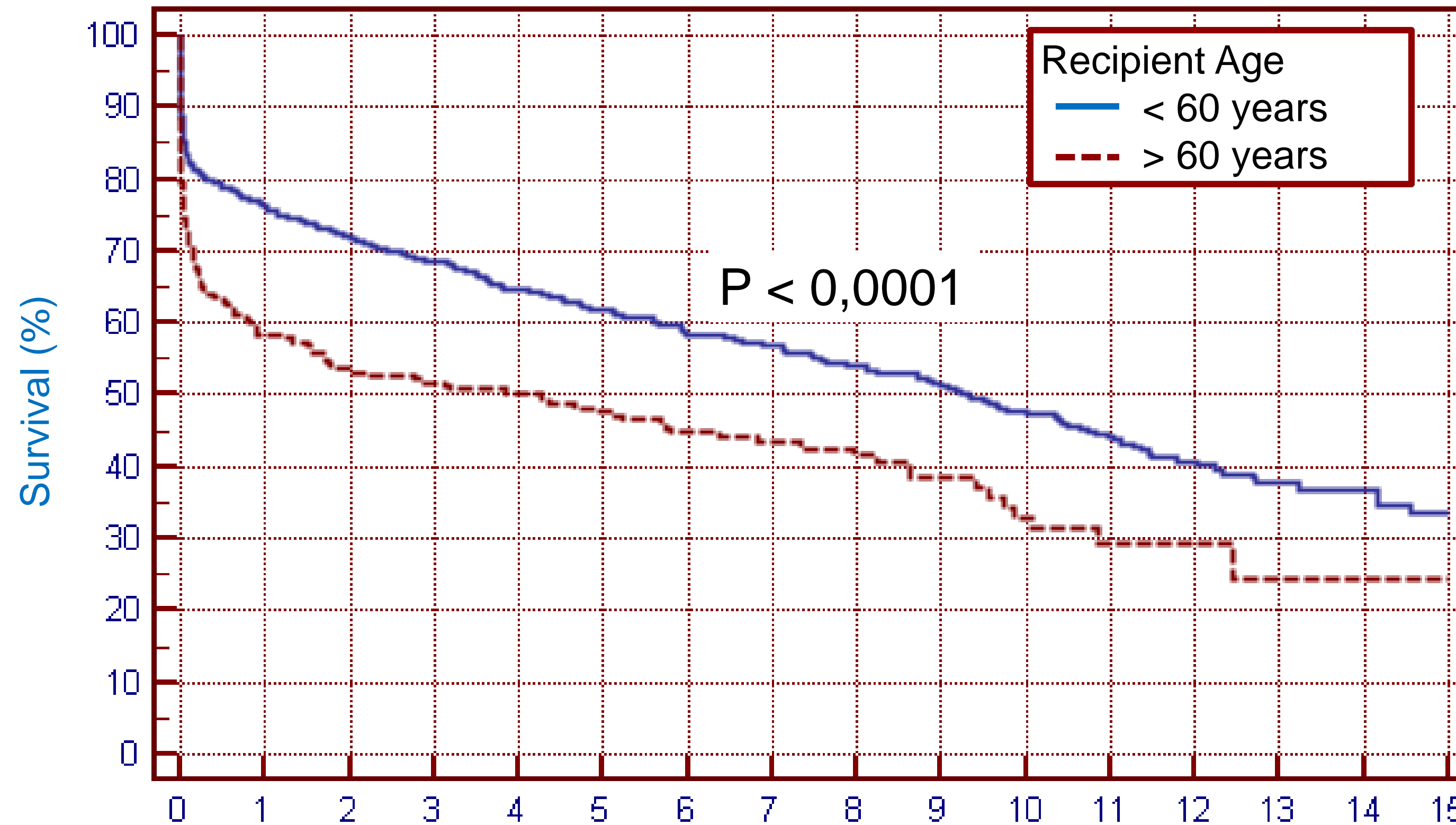
	EMERGENCY (n=508)	URGENCY (n=444)	ELECTIVE (n=399)
Median Survival	7.6	10.0	6.9
1 year	69%	73%	75%
5 years	55%	63%	58%



Patients at Risk

Years	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Group: ELECTIVE	363	281	250	232	205	182	151	128	106	80	56	44	28	16	12	10
Group: EMERGENCY	449	298	252	216	190	167	135	118	96	79	59	42	33	23	16	11
Group: URGENCY	408	283	226	187	151	122	101	90	75	55	44	30	22	15	11	7

Adult Heart Transplants (n=1435) Kaplan-Meier Survival by Recipient Age (Transplants: 1998-2016)



Patients at Risk

Group: < 60 years

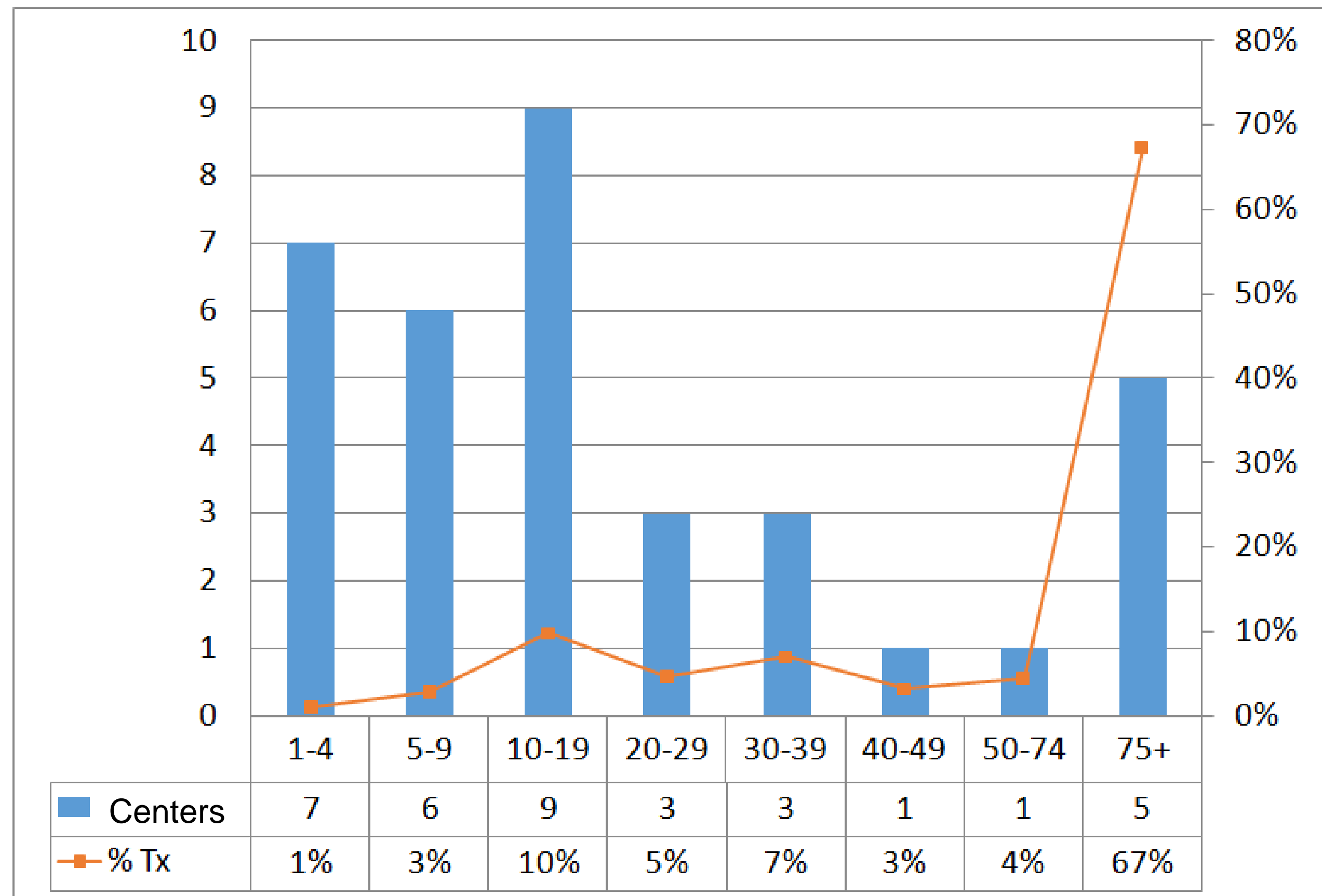
935 697 588 514 443 387 318 274 231 181 138 101 73 51 36 25

Group: > 60 years

285 165 140 121 103 84 69 62 46 33 21 15 10 3 3 3

Number of Adult Heart Transplants By Center Volume Between 1998 and 2016

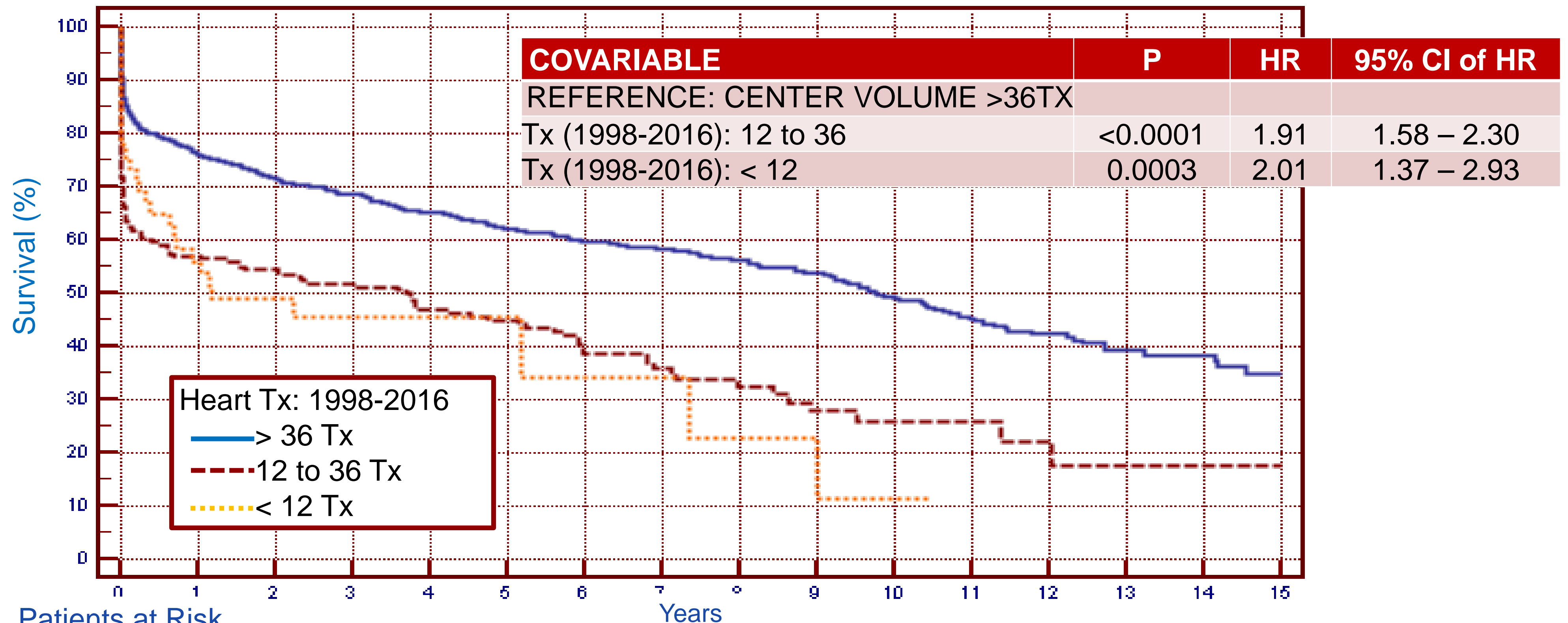
CENTER	% of Tx
FUNDACION FAVALORO	26%
HOSPITAL ITALIANO DE BUENOS AIRES	14%
HAREFIELD S.A. - HOSPITAL ITALIANO DE MENDOZA	14%
HOSPITAL GENERAL DE AGUDOS DR COSME ARGERICH	8%
CENTRO DE TRASPLANTE CARDIACO HOSPITAL PRIVADO CORDOBA	5%
CENTRO DE TRASPLANTE CARDIACO HOSPITAL ITALIANO CORDOBA	4%
INSTITUTO CARDIOVASCULAR DE BUENOS AIRES	3%
SANATORIO DE LA TRINIDAD MITRE	2%
SANATORIO PARQUE	2%
CENTRO DE TRASPLANTE CARDIACO DEL SANATORIO ALLENDE	2%
SANATORIO SANTA ISABEL	2%



Adult Heart Transplants (n=1435)

Kaplan-Meier Survival by Center Volume

(Transplants: 1998-2016)



Patients at Risk

Group	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Group: > 36 Transplants	970	712	609	536	464	402	335	298	249	196	147	108	78	50	37	26
Group: 12 to 36 Transplants	206	125	104	89	76	65	49	35	26	17	11	8	5	4	2	2
Group: > 12 Transplants	44	25	15	10	6	4	3	3	2	1	1	0	0	0	0	0

Conclusions I:

SINTRA is helpfull:

- ✓ Control and monitoring activities in INCUCAI and in the regional procurement and transplantation organizations
 - ✓ Allow management control, identify and detect deviations from the standard of care, apply corrections.
 - ✓ Perform scientific analysis and clinical research
 - ✓ Accomplish traceability in different processes
 - ✓ Guarantee the transparency of the activity
-

Conclusions II:

Heart Transplant in Argentina

- ✓ High mortality on WL (28%), specially in elective patients
 - ✓ The number of Tx is increasing (but not enough)
 - ✓ The rate of heart donors is low (mostly young donors)
 - ✓ Majority of Transplants performed on sickest patients (Emergency/Urgency)
 - ✓ Lack of long term VAD as BTT
 - ✓ High early mortality post transplantation (Emergency status, Age > 60 years, Low volume center)
 - ✓ Long term survival is similar to the ISHLT Registry
-

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Thank You



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