

The Society of Thoracic Surgeons Intermacs Annual Report

Twelfth Interagency Registry for Mechanically Assisted Circulatory

Support Report: Readmissions after LVAD Implantation

Supplemental Material

Supplemental Table: Adverse Event by Era

Adverse events by era (January 1, 2011-December 31,2020 with follow up through June 30, 2021)

Event	Period ^a	Era 2011-2015				Era 2016-2020				p-value
		Event Count	AE Rate ^b	Patient Count	Patient Percent	Event Count	AE Rate ^b	Patient Count	Patient Percent	
Readmission (all cause)	Early	8,622	2.97	5,309	42.6%	7438	2.251	5042	35%	<.0001
	Late	52,468	2.17	9,900	79.4%	34893	1.779	9327	66%	<.0001
Arterial Non-CNS Thromboembolism	Early	124	0.043	113	1%	83	0.025	80	1%	0.0002
	Late	84	0.003	79	1%	58	0.003	50	0.4%	0.3421
Major Bleeding	Early	5649	1.95	3628	29%	4304	1.303	2939	21%	<.0001
	Late	10710	0.44	4133	33%	6199	0.316	3099	22%	<.0001
GI Bleeding	Early	2620	0.90	1792	14%	2114	0.640	1557	11%	<.0001
	Late	7667	0.32	3104	25%	4423	0.225	2249	16%	<.0001
Non-GI Reoperation for Bleeding	Early	847	0.29	775	6%	698	0.211	626	4%	<.0001
	Late	285	0.012	257	2%	169	0.009	152	1%	0.0012
Cardiac Arrhythmia	Early	3699	1.27	2692	22%	3058	0.925	2375	17%	<.0001
	Late	3689	0.15	2142	17%	2288	0.117	1523	11%	<.0001
Device Malfunction/Pump Thrombus	Early	1305	0.45	1086	9%	677	0.205	594	4%	<.0001
	Late	6270	0.26	3706	30%	2361	0.120	1728	12%	<.0001
Device Malfunction	Early	913	0.31	788	6%	250	0.076	234	2%	<.0001
	Late	4082	0.17	2712	22%	1111	0.057	889	6%	<.0001
Pump Thrombus	Early	551	0.19	477	4%	442	0.134	385	3%	<.0001
	Late	2354	0.097	1693	14%	1311	0.067	1001	7%	<.0001
Major Infection	Early	5286	1.82	3635	29%	4323	1.308	3169	22%	<.0001
	Late	12972	0.54	5440	44%	8905	0.454	4699	33%	<.0001
MCS Infection	Early	679	0.23	623	5%	499	0.151	469	3%	<.0001
	Late	4873	0.20	2703	22%	3377	0.172	2157	15%	<.0001
Non-MCS Infection	Early	4803	1.65	3318	27%	3956	1.197	2898	20%	<.0001
	Late	9178	0.38	4405	35%	6192	0.316	3609	25%	<.0001

Hepatic Dysfunction	Early	309	0.11	289	2%	276	0.084	270	2%	0.0034
	Late	457	0.019	413	3%	263	0.013	243	2%	<.0001
Myocardial Infarction	Early	42	0.014	39	0.3%	26	0.008	26	0.2%	0.0133
	Late	77	0.003	68	1%	41	0.002	38	0.3%	0.0279
Neurological Dysfunction	Early	1603	0.55	1401	11%	1548	0.468	1377	10%	<.0001
	Late	3961	0.16	2758	22%	2583	0.132	1936	14%	<.0001
Stroke	Early	896	0.31	822	7%	946	0.286	864	6%	0.1086
	Late	2503	0.10	1985	16%	1705	0.087	1393	10%	<.0001
Pericardial Drainage	Early	571	0.20	511	4%	435	0.132	397	3%	<.0001
	Late	25	0.001	24	0.2%	18	0.001	17	0.1%	0.6973
Renal Dysfunction	Early	1376	0.47	1267	10%	1412	0.427	1301	9%	0.0064
	Late	1331	0.055	1079	9%	862	0.044	702	5%	<.0001
Respiratory Failure	Early	2486	0.86	1997	16%	2316	0.701	1865	13%	<.0001
	Late	1527	0.063	1245	10%	883	0.045	736	5%	<.0001
Venous Thromboembolism	Early	477	0.16	444	4%	218	0.066	205	1%	<.0001
	Late	120	0.005	114	1%	68	0.003	64	0%	0.0172
Wound Dehiscence	Early	190	0.065	174	1%	123	0.037	116	1%	<.0001
	Late	101	0.004	89	1%	54	0.003	50	0.4%	0.0125
Other SAE	Early	4310	1.48	2679	21%	3495	1.058	2248	16%	<.0001
	Late	5445	0.23	2771	22%	3169	0.162	1931	14%	<.0001

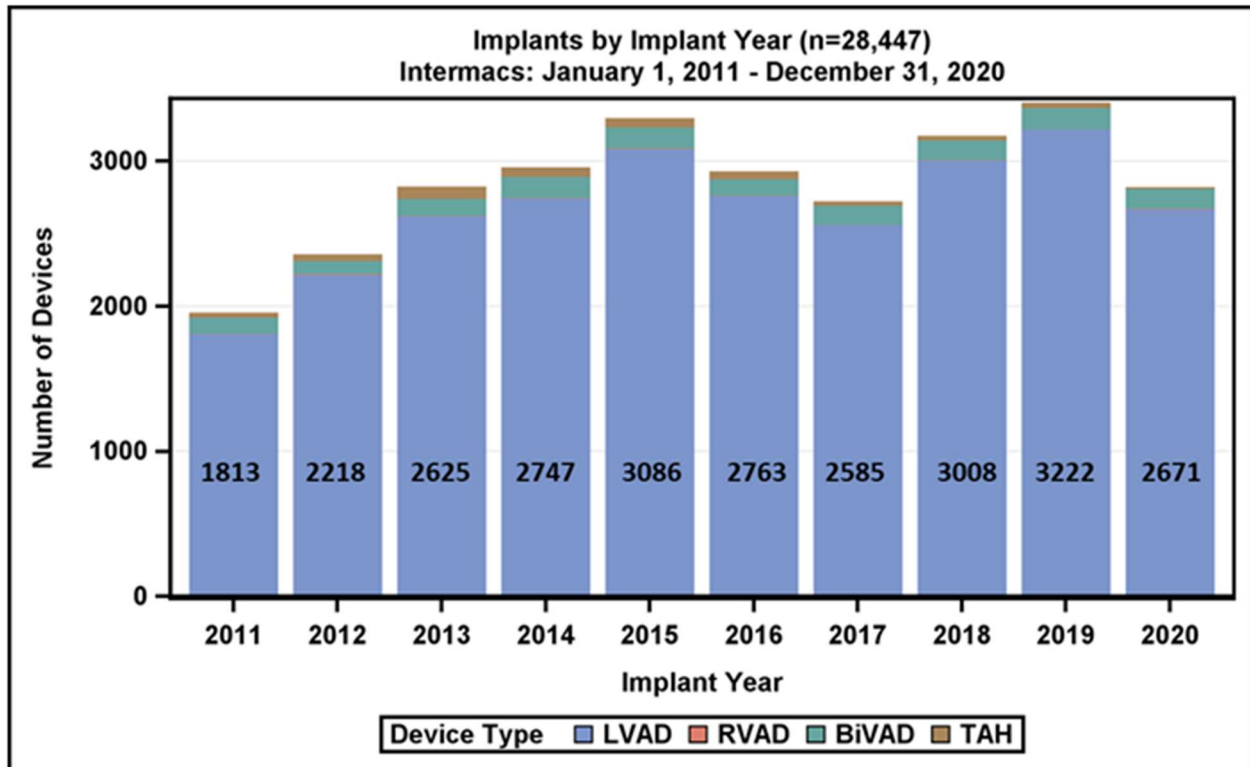
^aEarly = within 90 days post implant; Late = beyond 90 days post implant

^bRates are reported per patient year

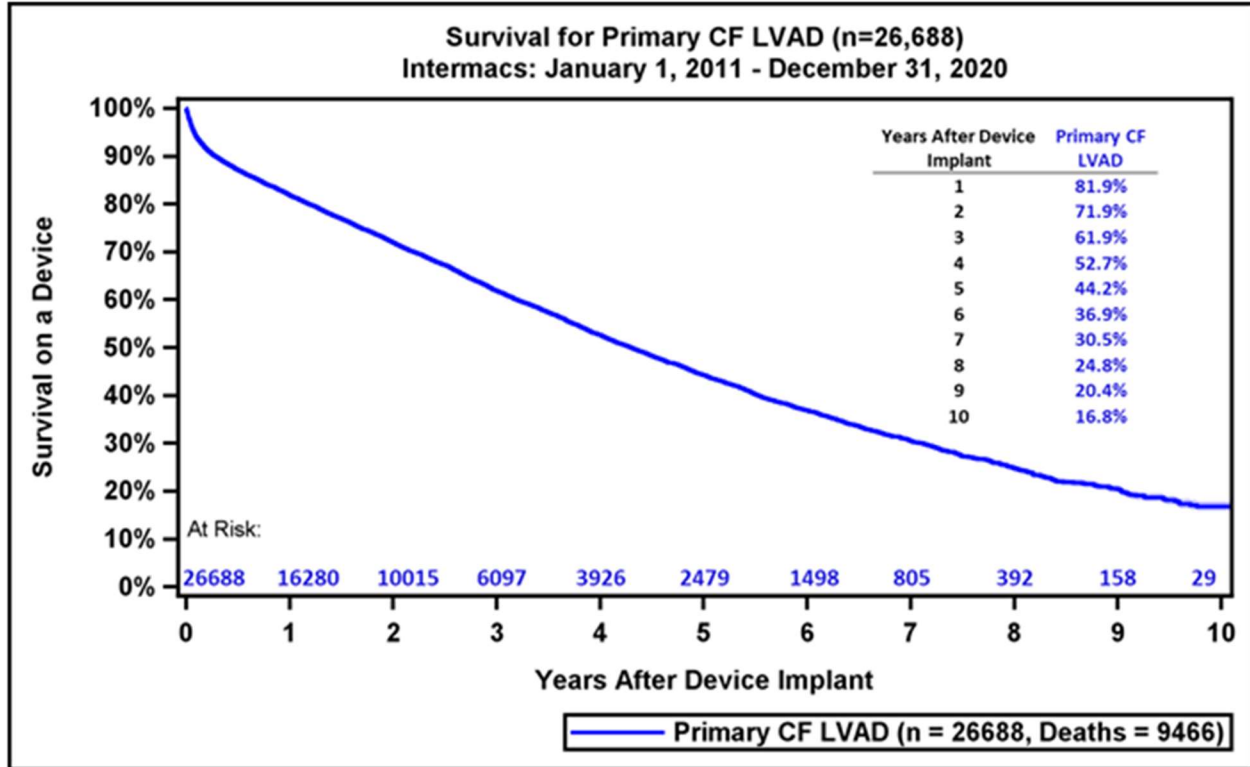
Supplemental Figures

Supplemental Figure 1: Mechanical Circulatory Support Implantation from 2010 to

2020

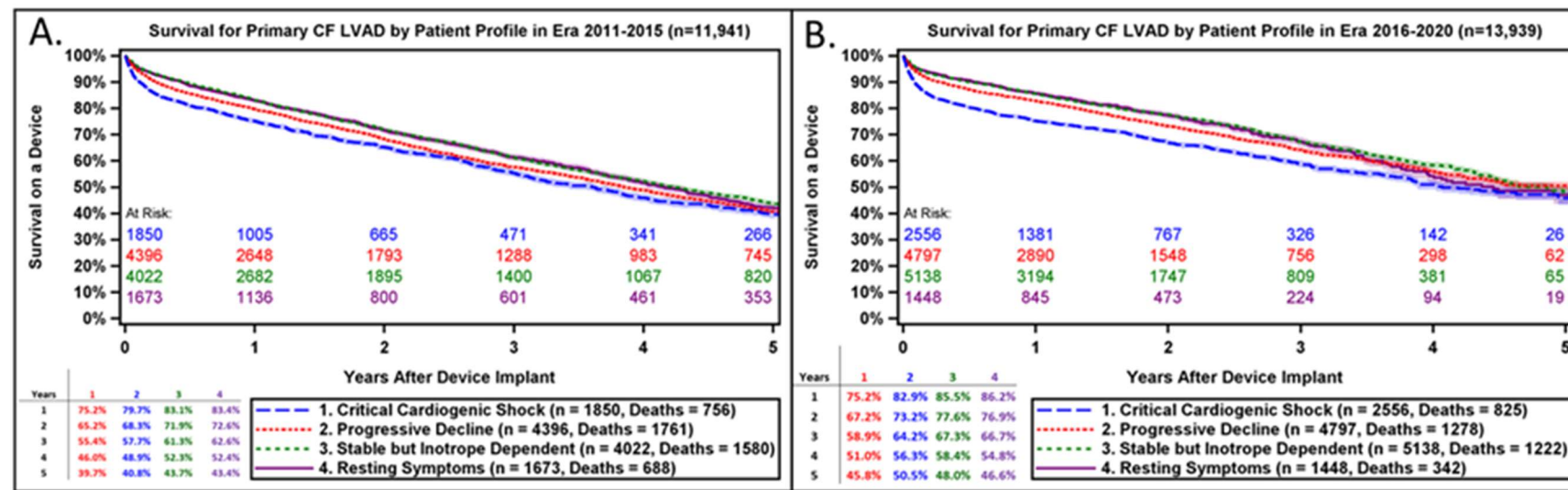


Supplemental Figure 2: Long-term Survival in LVAD Patients from 2010 to 2020



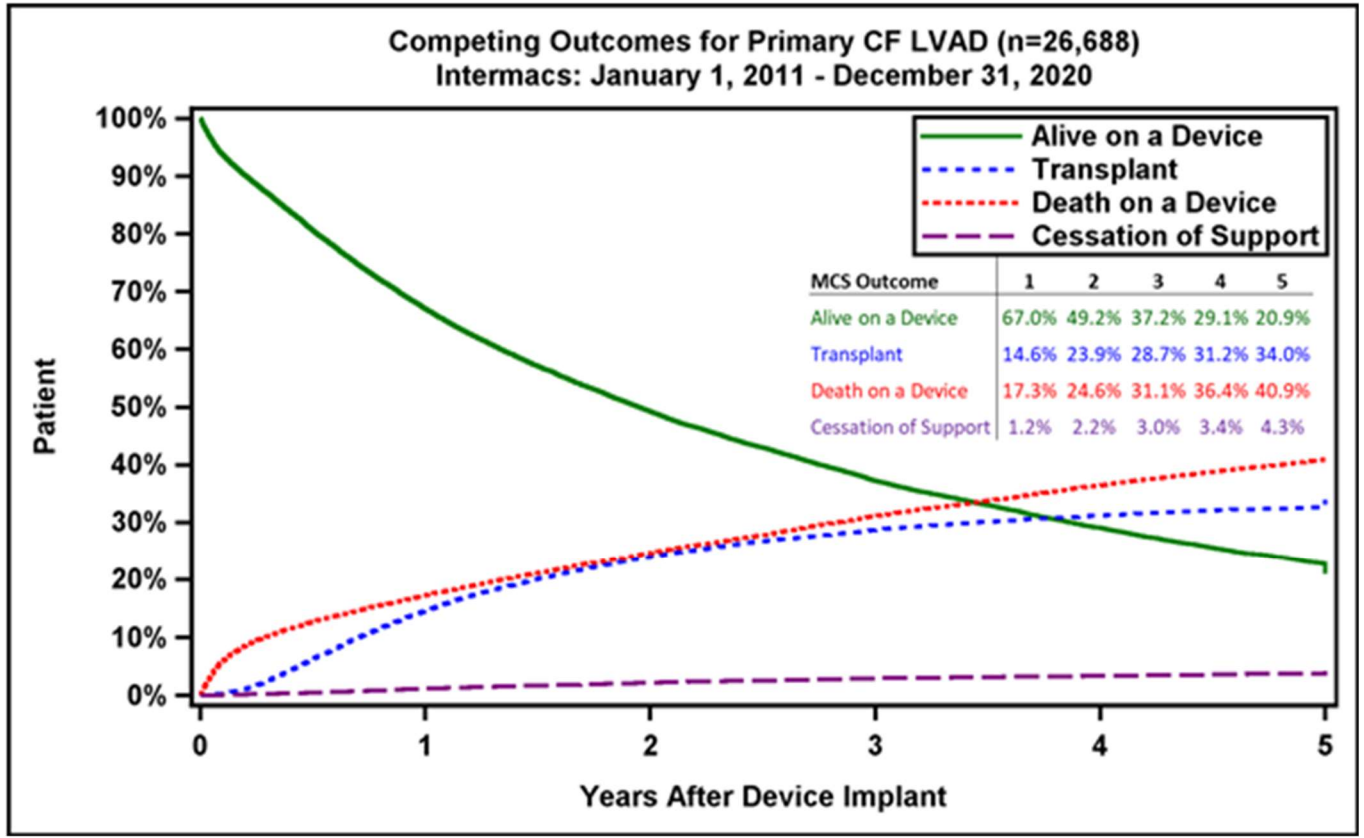
Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001 , Event: Death (censored at transplant or cessation of support)

Supplemental Figure 3: Comparison of Survival in Recent Era vs. Previous Era by Intermacs Profile



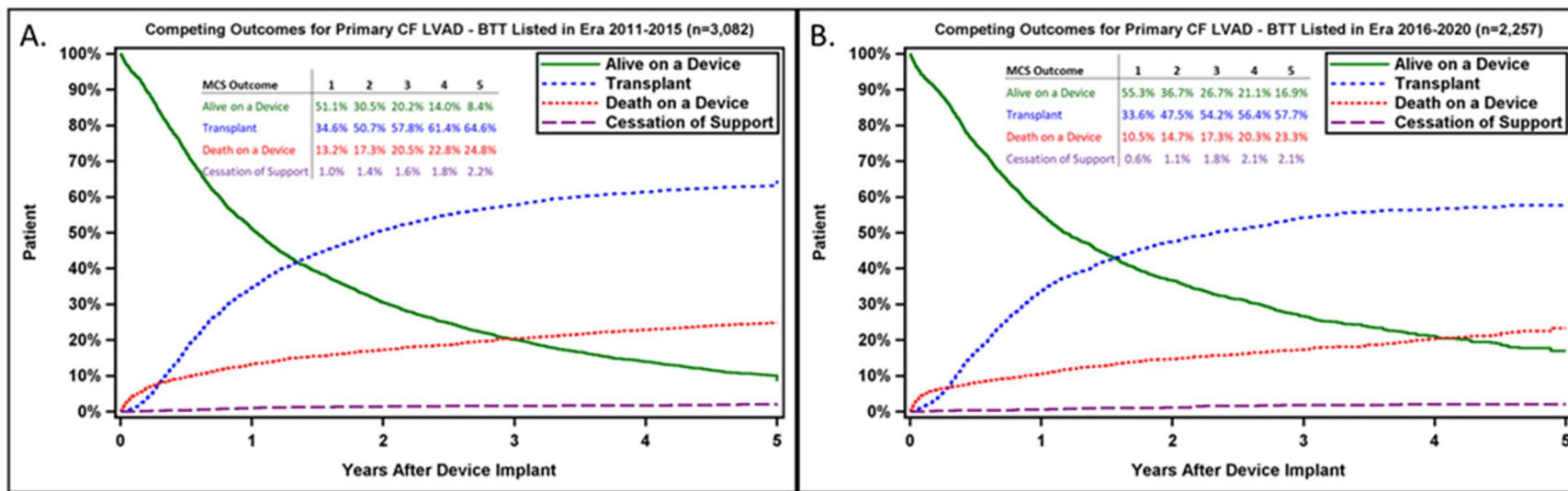
Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001, Event: Death (censored at transplant or cessation of support)

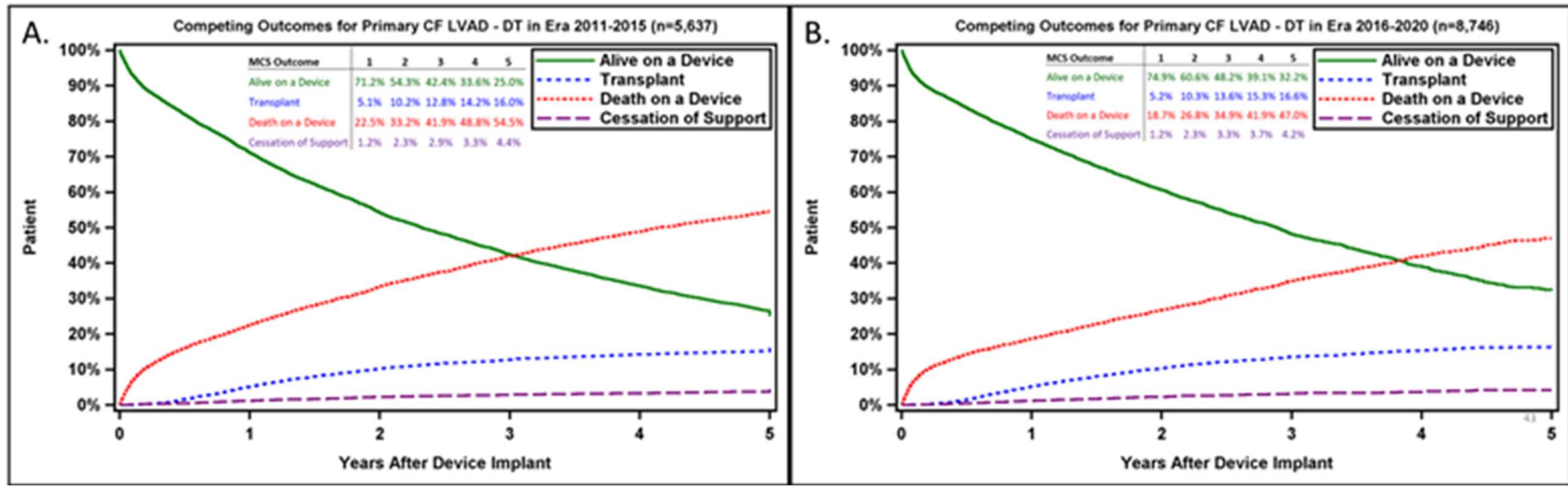
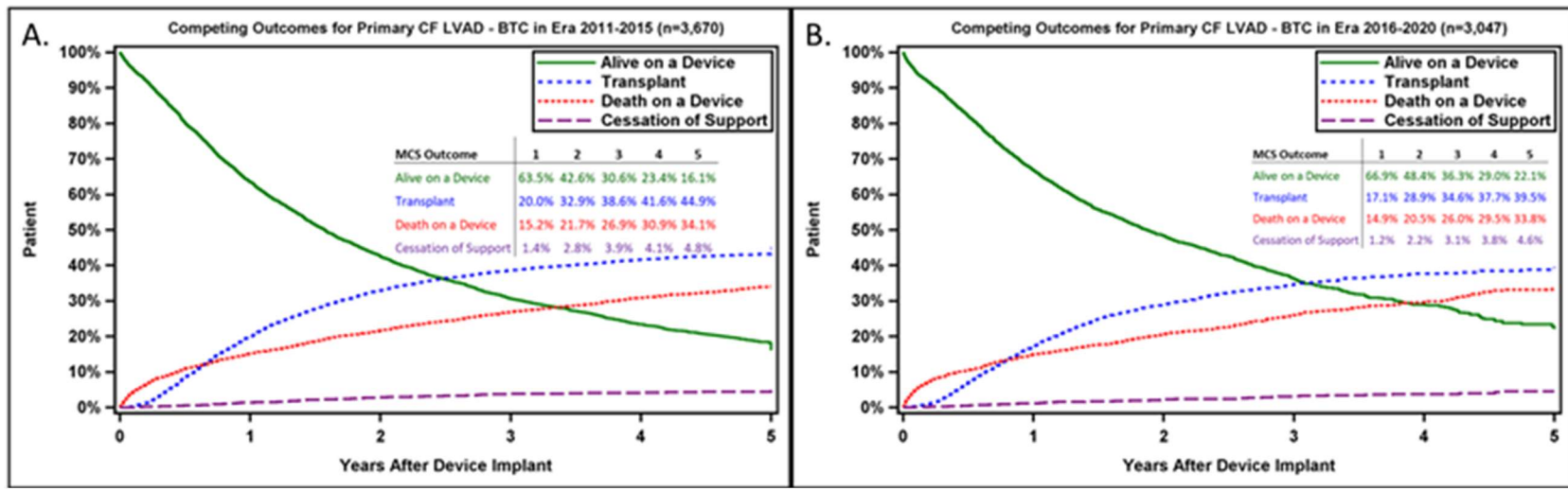
Supplemental Figure 4: Competing Outcomes Analysis for All LVAD Patients



Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001 , Event: Death (censored at transplant or cessation of support)

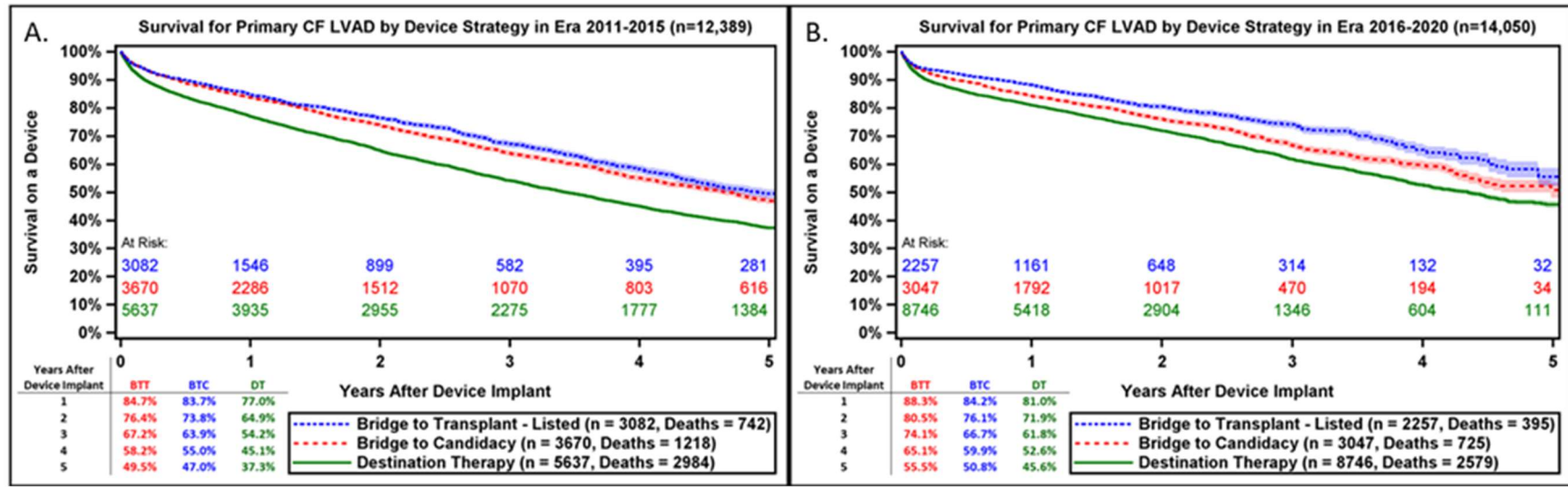
Supplemental Figure 5: Competing Outcomes Analysis for All LVAD Patients by Intent at Time of Device Implant and Era





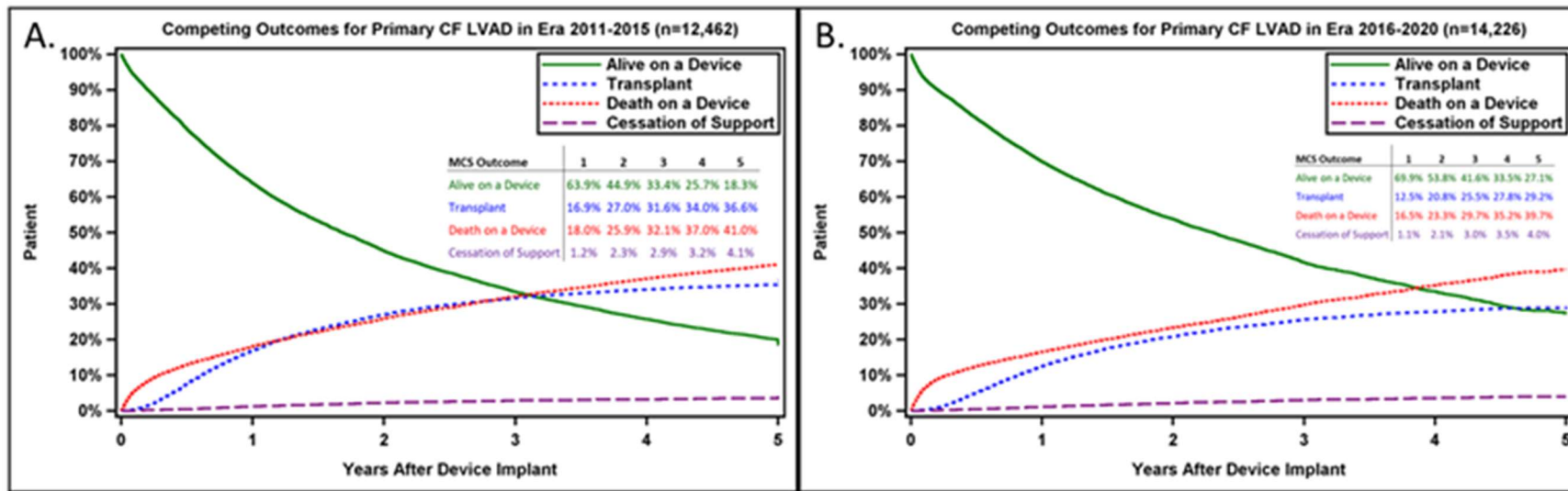
Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001 , Event: Death (censored at transplant or cessation of support)

Supplemental Figure 6: Comparison of Survival in Recent Era vs. Previous Era by Implant Strategy



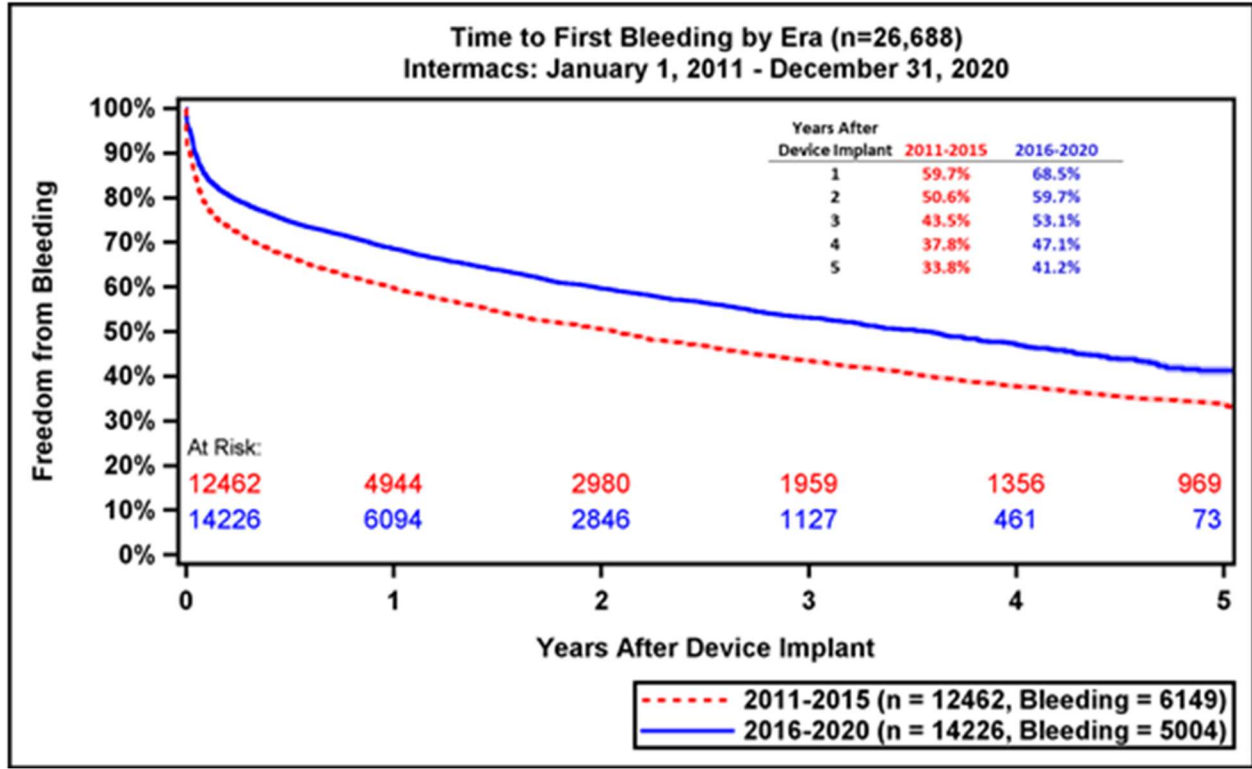
Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001, Event: Death (censored at transplant or cessation of support)

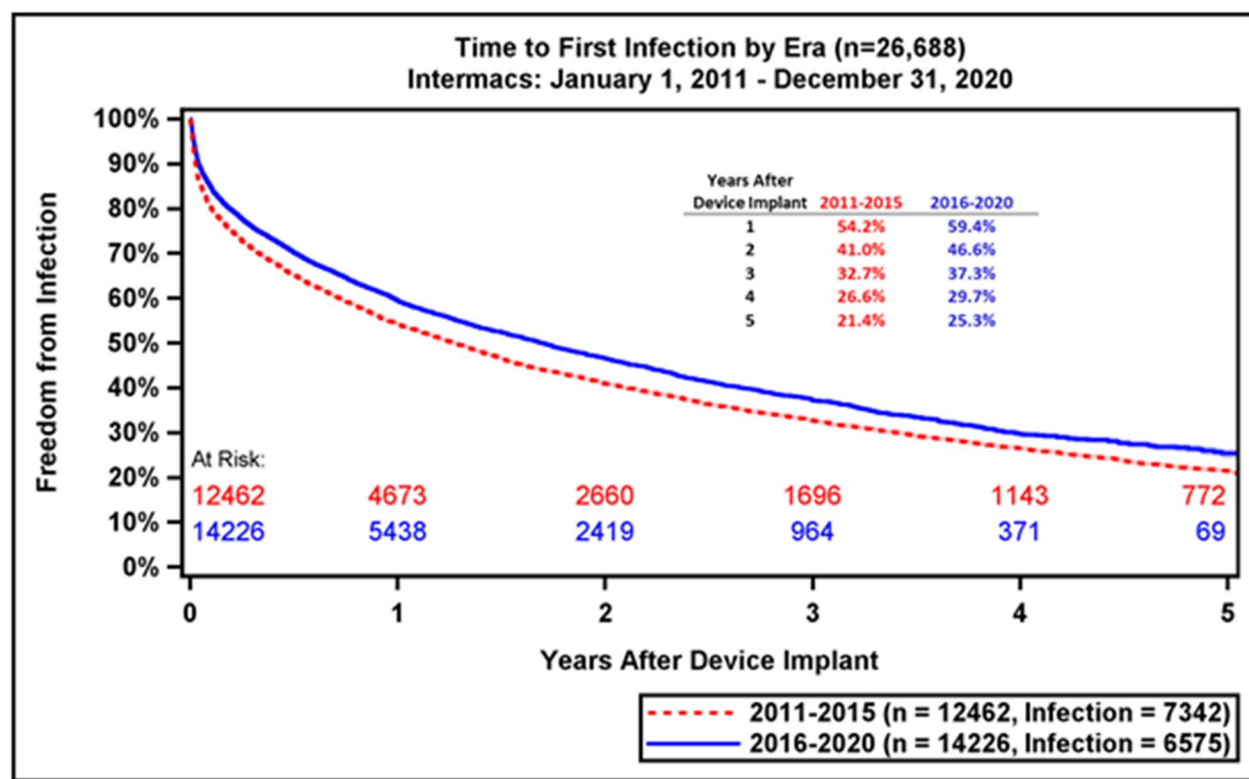
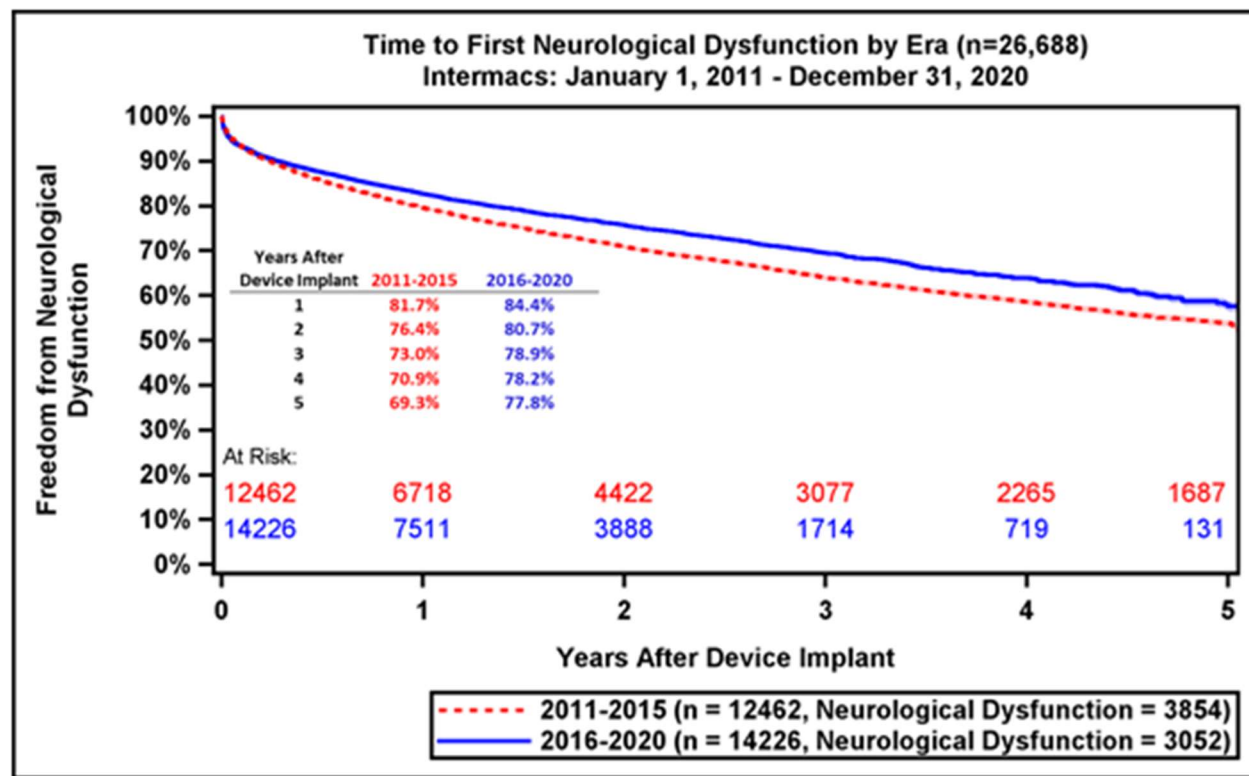
Supplemental Figure 7: Competing Risks Analysis by Era in All LVAD Patients

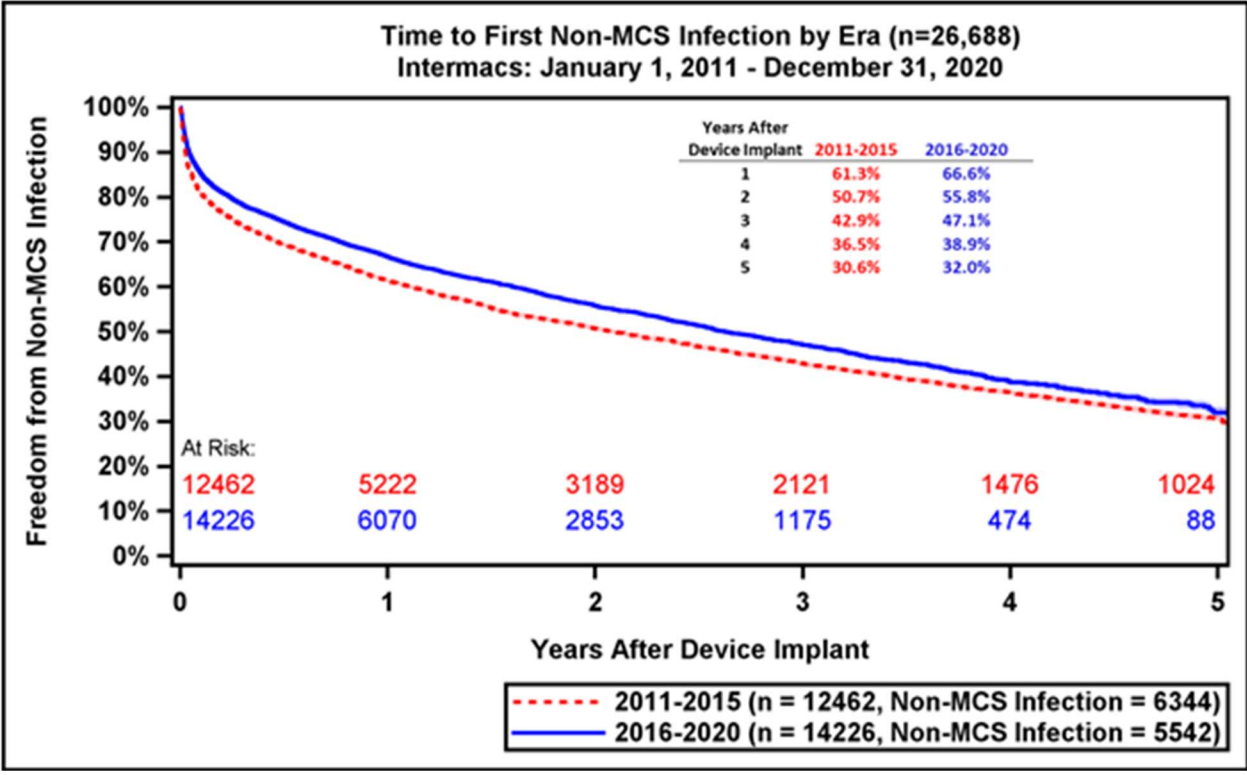


Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001 , Event: Death (censored at transplant or cessation of support)

Supplemental Figure 8: Freedom from First Bleeding, Neurological Dysfunction, Infection and non-MCS Infection by Era

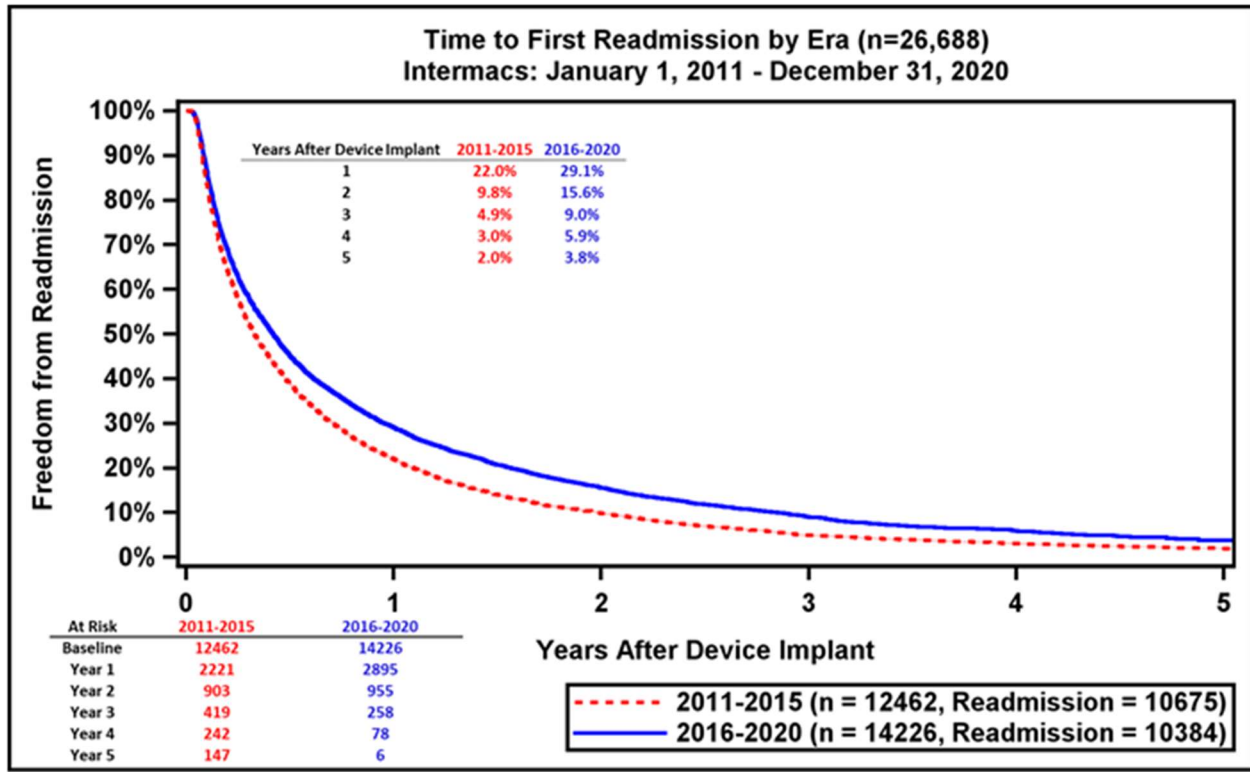






Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001, Event: Death (censored at transplant or cessation of support)

Supplemental Figure 9: Freedom from Hospital Readmission by Era



Shaded areas indicate 70% confidence limits, p (log-rank) = <0.0001, Event: Death (censored at transplant or cessation of support)