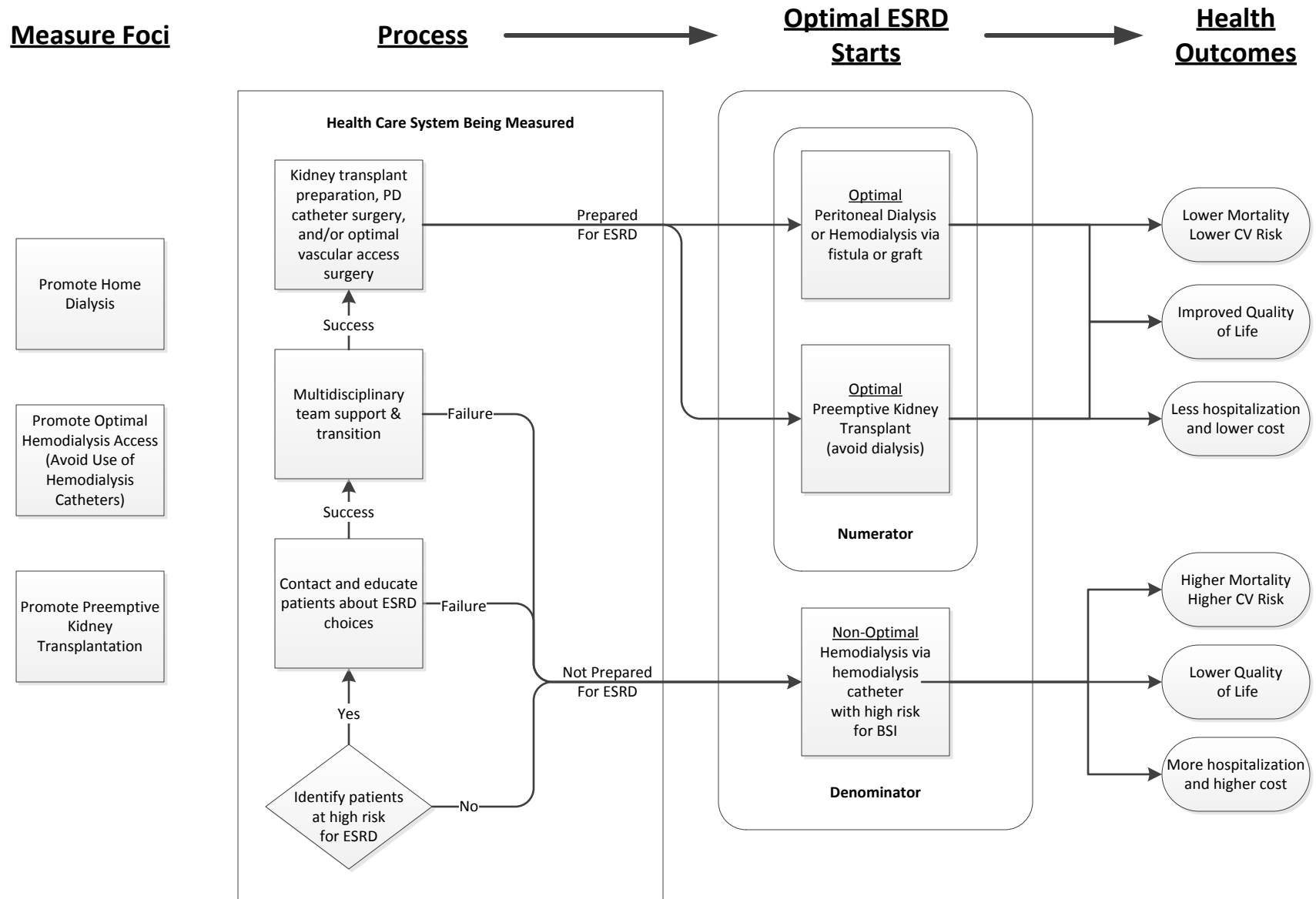


NQF Renal Measure Submission #2594: ESRD Optimal Starts

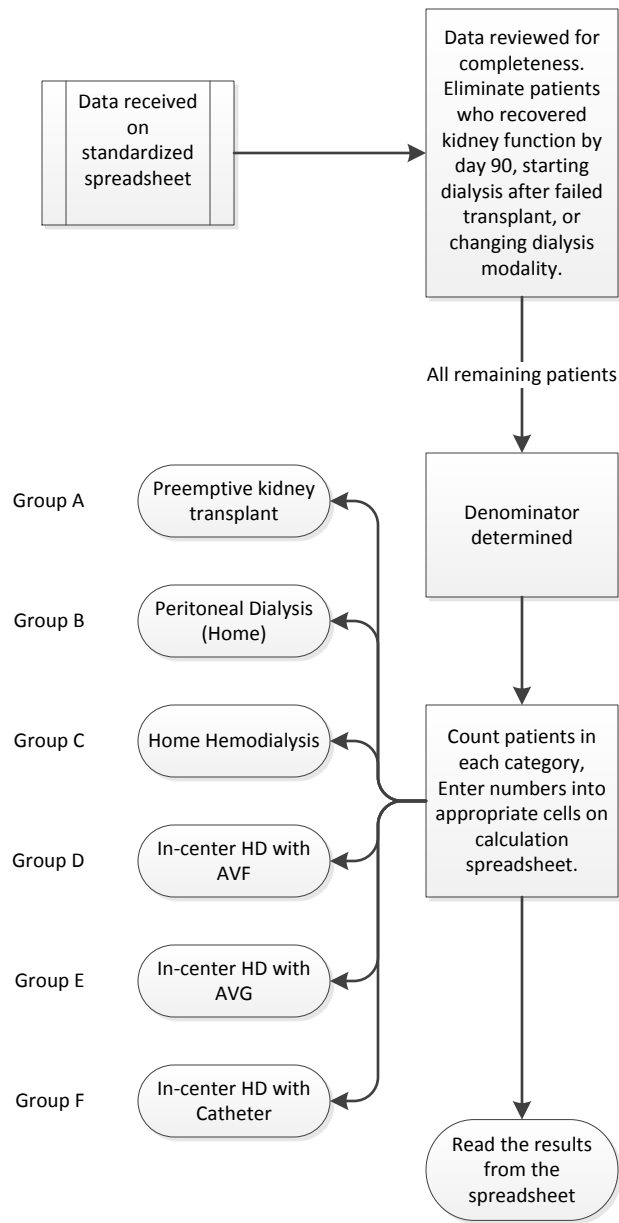
Appendix Index

1. Process to Outcome Diagram
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3. Kaiser Permanente Results
4. Calculation of Estimated Optimal ESRD Starts in the U.S. in 2012
5. Fistula First Incidence Data
6. Optimal ESRD Starts Data Submission Form

The Optimal ESRD Starts Metric Linking Process to Health Outcomes

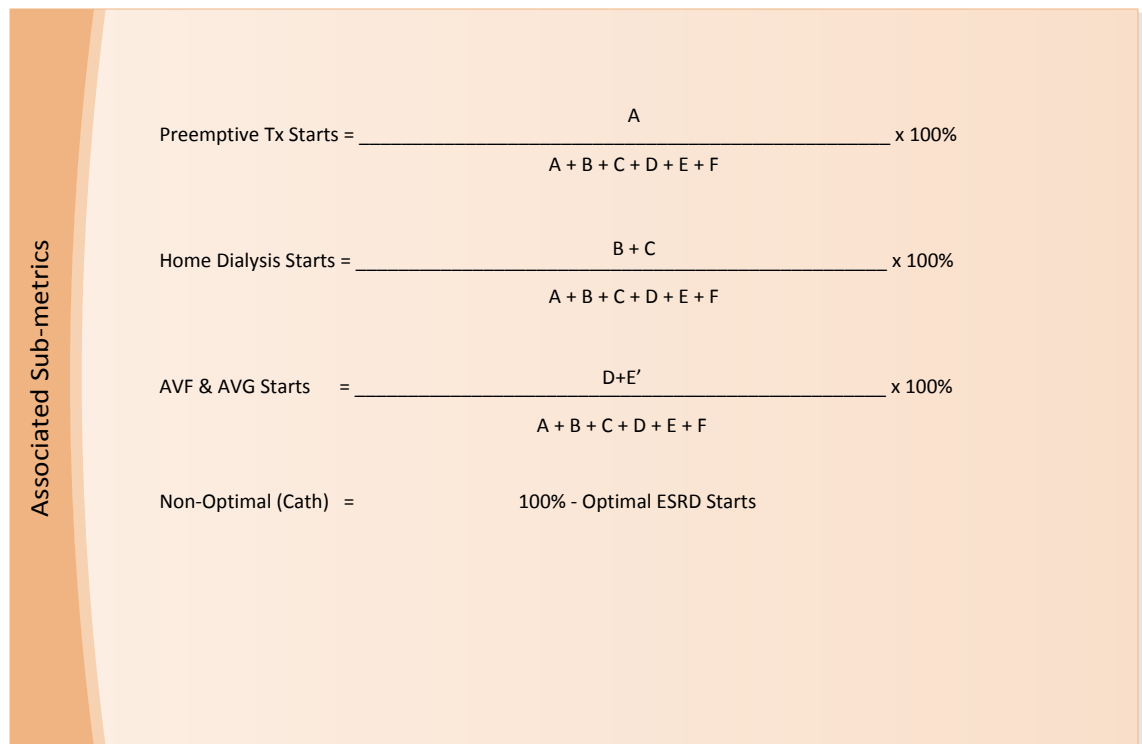


Optimal ESRD Starts Calculation Algorithm



Adjusted AVG (E') = Smaller of [E] or [(C + D + E + F) ÷ 10]

$$\text{Optimal ESRD Starts} = \frac{A + B + C + D + E'}{A + B + C + D + E + F} \times 100\%$$



Calculation of Estimated Optimal ESRD Starts in the US in 2012

Based on the USRDS 2014 Report¹ (latest data year 2012) and CMS Fistula First² data for Jan-April 2012 (last available before switch to Crown Web)

2012

All ESRD ¹	114813	
All Dialysis ¹	111818	
Started with Transplant ¹	2995	
Started with in-center HD ¹	101706	
% Started in-center HD via Catheter ²	72.8%	
% Started in-center HD via AVF or AVG	27.2%	(100% - 72.8%)
Started in-center HD via AVF or AVG	27664	(27.2 % x 101706)
Started home dialysis/in-center self-HD (75 pts) ¹	10,110	
Optimal ESRD Starts denominator	114813	
Optimal ESRD Starts numerator (sum)	40,769	(2995+10110+27664)
Estimated Optimal ESRD Starts 2012	35.5%	(40769/114813) x 100%

¹ <http://www.usrds.org/adr.aspx>

² Archived Fistula First Data Tables (table in appendix)

OPTIMAL ESRD STARTS^{KP US*}

All Kaiser Permanente Regions and Group Health

July 1, 2013 - June 30, 2014

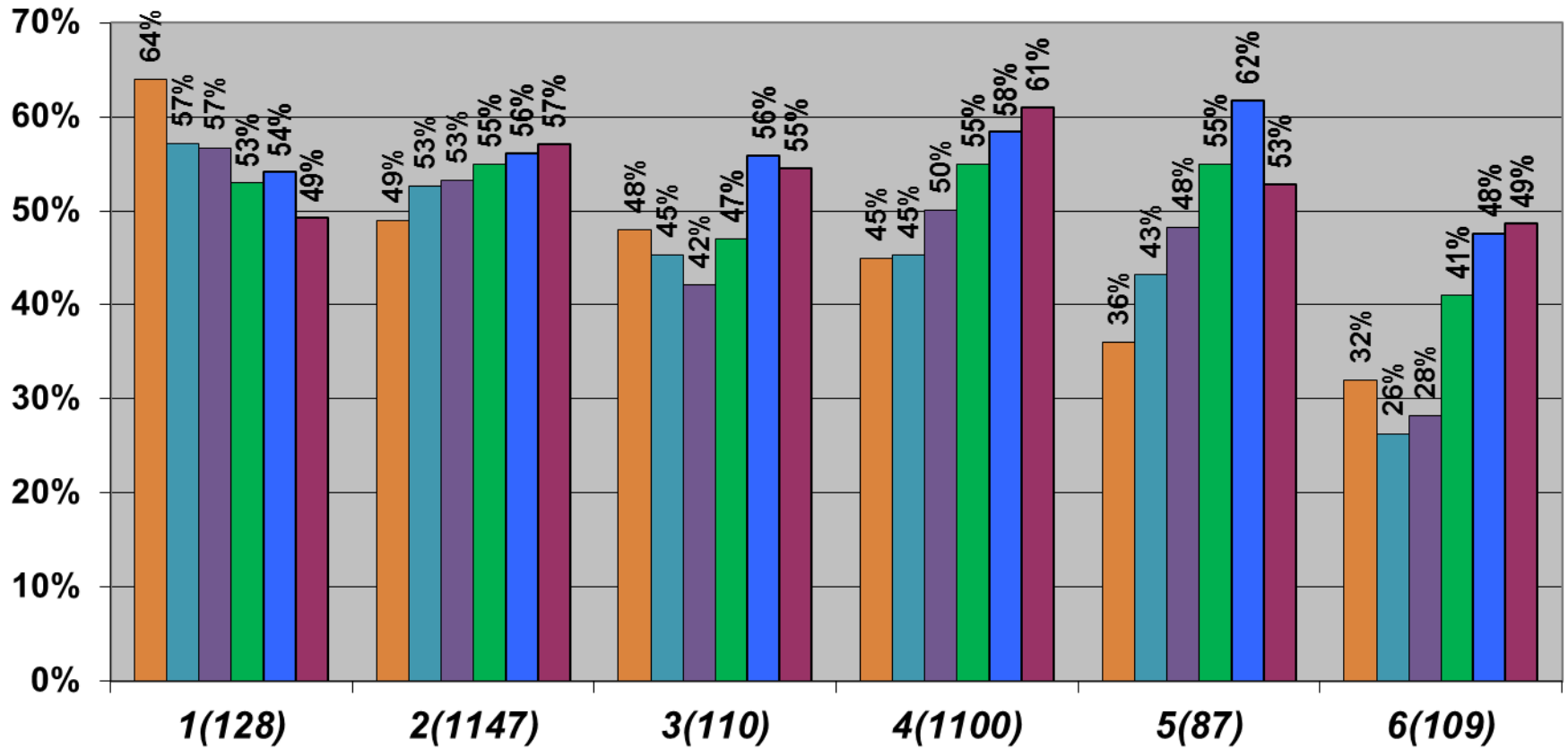
Historical Data

Region	New ESRD Patients	HOME DIALYSIS STARTS			IN-CENTER HEMODIALYSIS STARTS						PREEMPTIVE		% Optimal Start July 1, 2013 - June 30, 2014	% Optimal Start 2013	% Optimal Start July 1, 2012 - June 30, 2013	% Optimal Start 2012	% Optimal Start July 1, 2011 - June 30, 2012	% Optimal Start 2011
		Peritoneal Dialysis Starts	Home HD Starts	% Home Dialysis Starts	Starting with AV Fistula	% Starting with AV Fistula	Starting with Graft	Allowable % with AV Graft	Starting with Catheter	% Starting with Catheter	Pre-emptive Transplant	% Pre-emptive Transplant						
1	128	16	0	12.5%	36	28.1%	10	7.8%	65	51%	1	0.8%	49.2%	54.1%	53%	57%	57%	64%
2	1147	200	0	17.4%	398	34.7%	41	3.6%	492	43%	16	1.4%	57.1%	56.1%	55%	53%	53%	49%
3	110	20	1	19.1%	30	27.3%	7	6.4%	50	45%	2	1.8%	54.5%	55.9%	47%	42%	45%	48%
4	1100	357	4	32.8%	220	20.0%	70	6.4%	429	39%	20	1.8%	61.0%	58.4%	55%	50%	45%	45%
5	87	16	0	18.4%	24	27.6%	5	5.7%	41	47%	1	1.1%	52.9%	61.7%	55%	48%	43%	36%
6	109	23	0	21.1%	24	22.0%	1	0.9%	56	51%	5	4.6%	48.6%	47.6%	41%	28%	26%	32%
KP All	2681	632	5	23.8%	732	27.3%	134	5.0%	1133	42.3%	45	1.7%	58%	57%	54%	51%	48%	47%

Optimal ESRD Starts: KP National Metric

Region (New ESRD Patients July 2013 - June 2014)

Dec-11 Jun-12 Dec-12 Jun-13 Dec-13 Jun-14

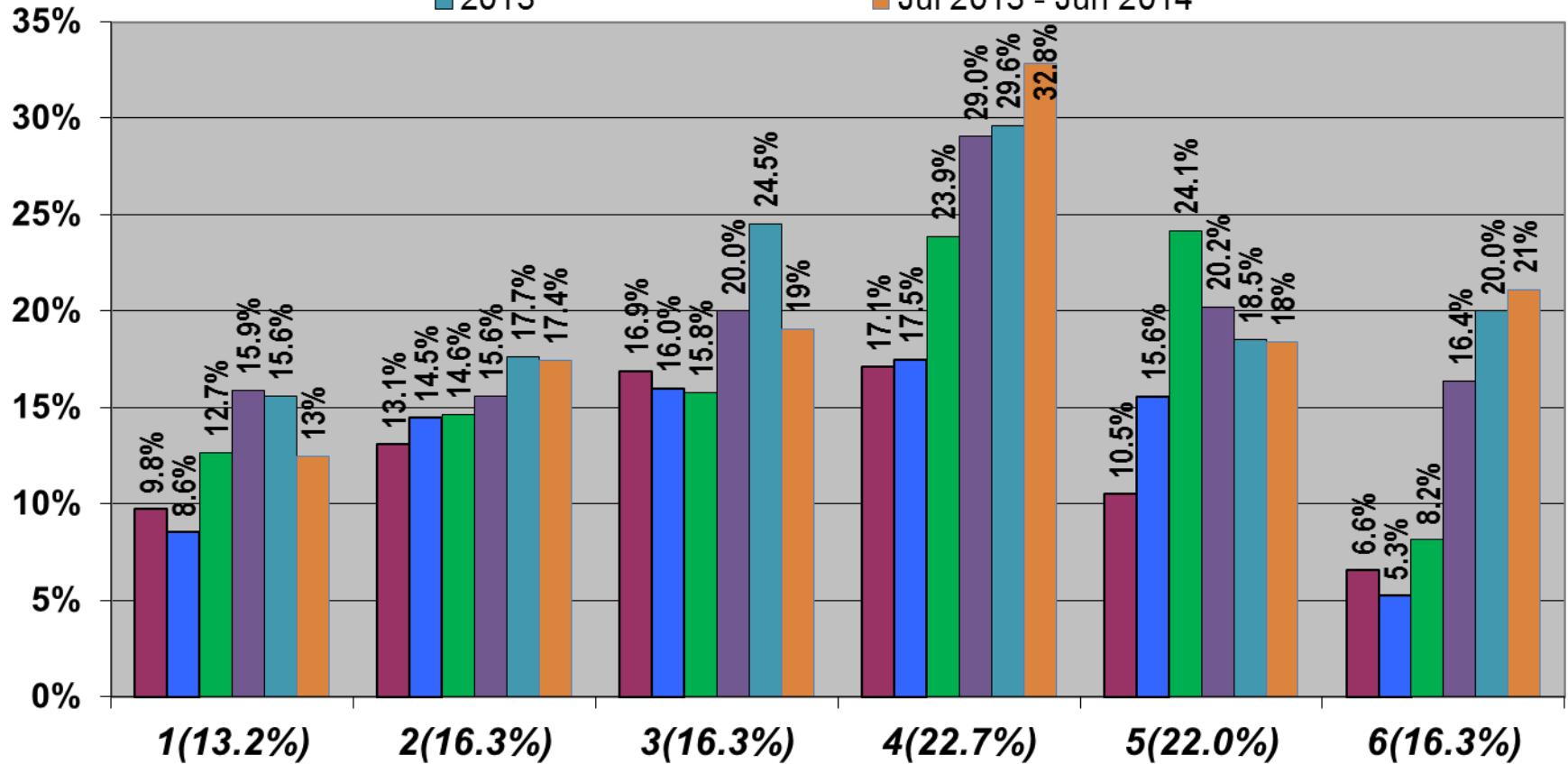


Optimal ESRD Starts: Home Dialysis (PD & HHD)

by Region(Prevalence 6/30/2014)

■ 2011
■ 2012
■ 2013

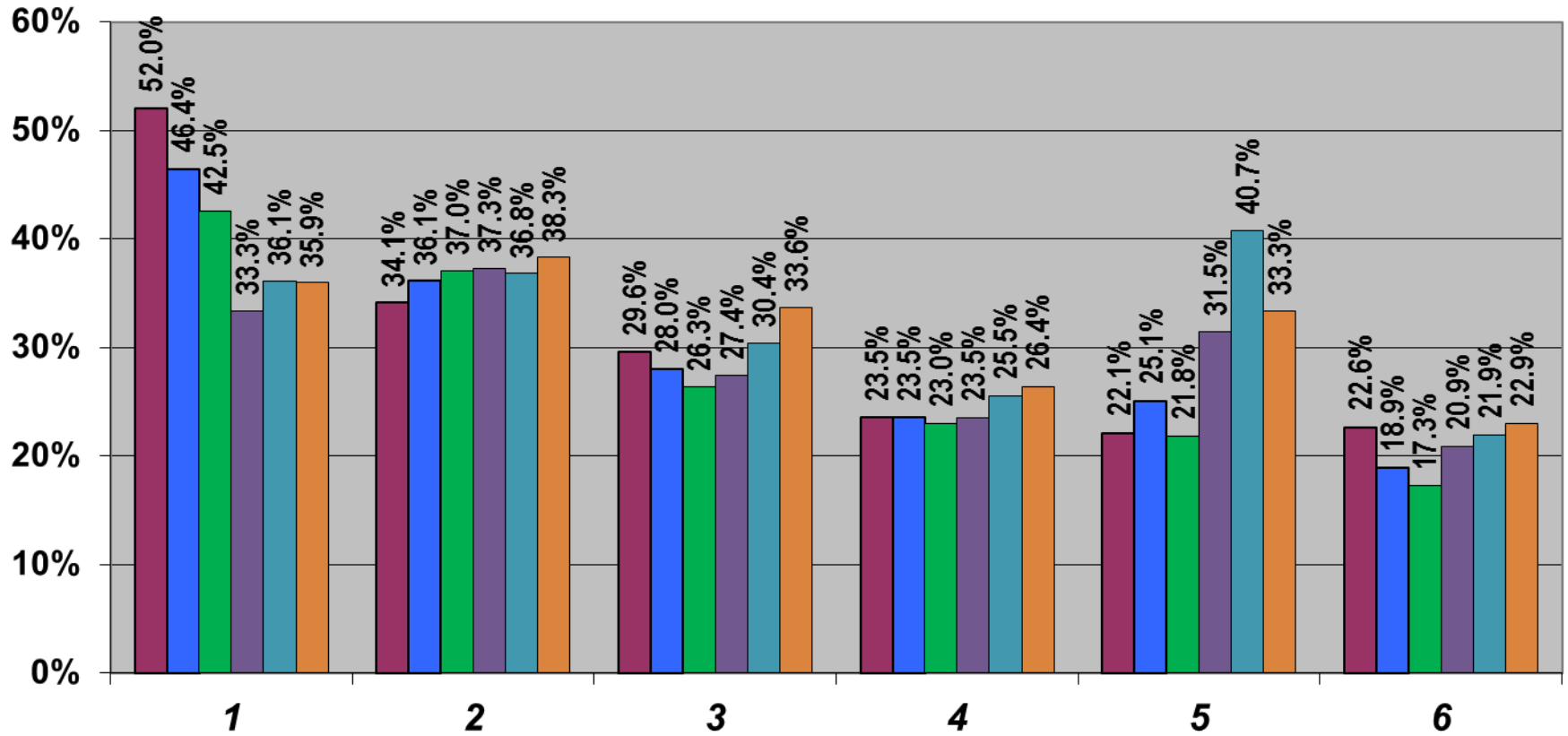
■ Jul 2011 - Jun 2012
■ Jul 2012 - Jun 2013
■ Jul 2013 - Jun 2014



Optimal ESRD Starts: Fistula and Graft

■ 2011
■ 2012
■ 2013

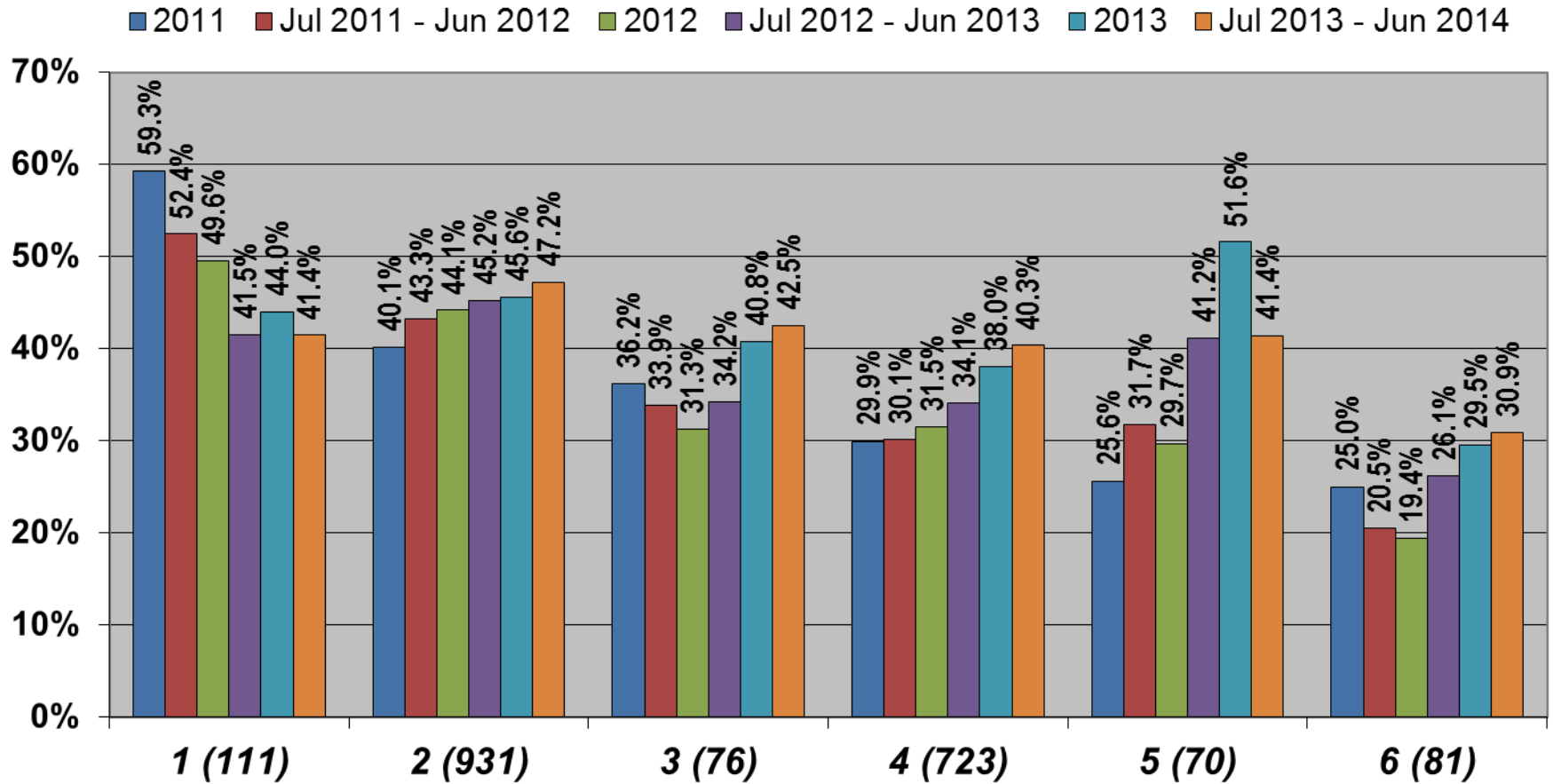
■ July 2011 - Jun 2012
■ Jul 2012 - Jun 2013
■ Jul 2012 - Jun 2014



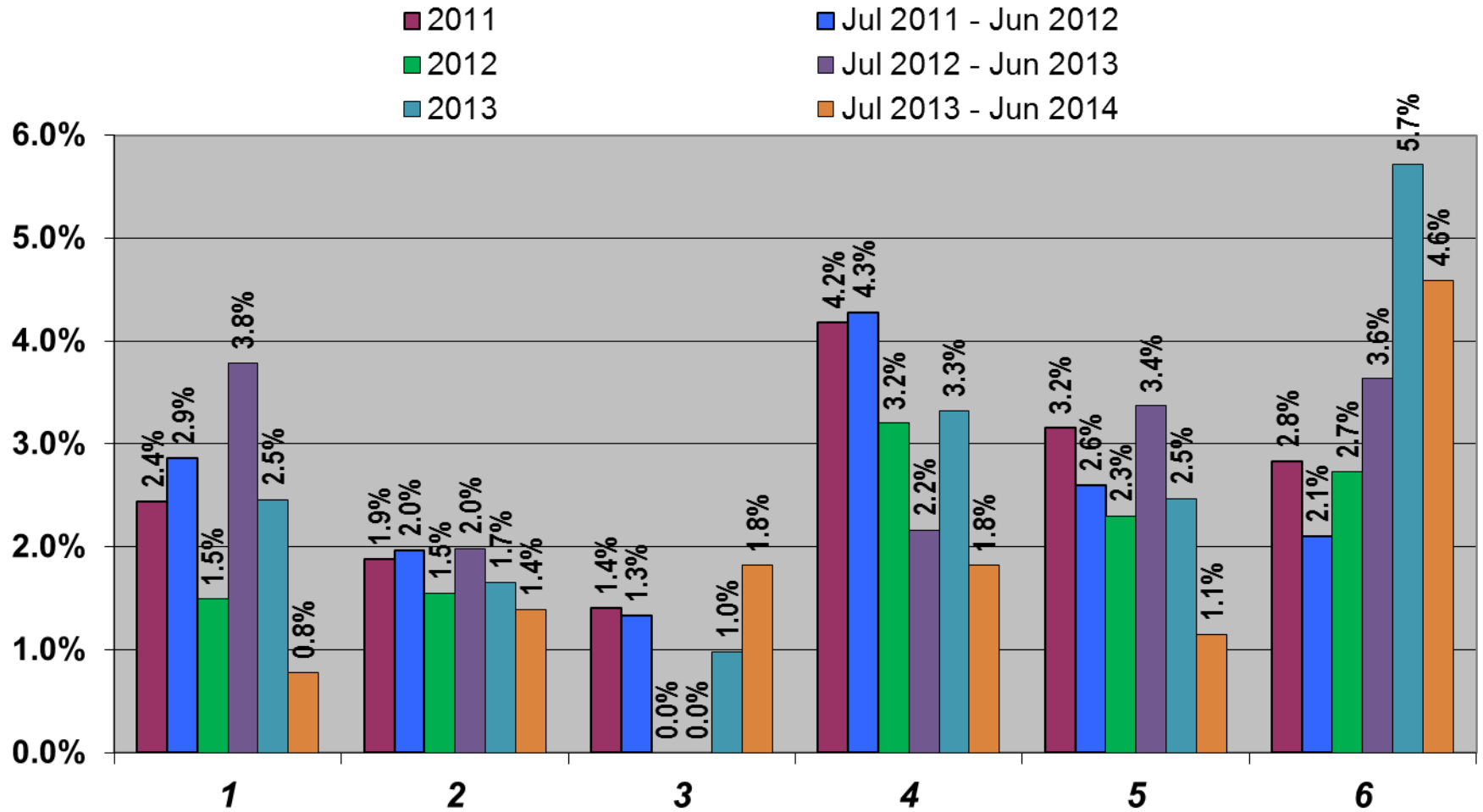
Vascular Access Metric: % Fistula & Graft

(In-Center Hemodialysis Starts)

Region (New HD Patients)



Optimal ESRD Starts: Preemptive Kidney Transplant



period_yrmonth	Reporting_Fac_Count	No_Fistulas_Use	No_Fistula_Paced	No_Grafts_Use	No_CVC90days_more	No_CVC_Total	No_Patients_Reported	Fistula_Use_Percentage	Placed_Percent age	Graft_Use_Percentage	CVC90days_more_Percentage	Total_CVC_Use_Percentage
2003-07	2272	378	737	324	13	2152	2986	12.7%	24.7%	10.9%	0.4%	72.1%
2003-08	2328	355	654	279	15	1983	2764	12.8%	23.7%	10.1%	0.5%	71.7%
2003-09	2340	354	646	332	16	2043	2849	12.4%	22.7%	11.7%	0.6%	71.7%
2003-10	3025	552	1037	470	42	3391	4868	11.3%	21.3%	9.7%	0.9%	69.7%
2003-11	2870	737	1172	325	34	2768	4021	18.3%	29.1%	8.1%	0.8%	68.8%
2003-12	3259	551	1138	470	101	3531	4962	11.1%	22.9%	9.5%	2.0%	71.2%
2004-01	3660	786	1595	524	131	4279	6182	12.7%	25.8%	8.5%	2.1%	69.2%
2004-02	3792	645	1297	484	132	3629	5535	11.7%	23.4%	8.7%	2.4%	65.6%
2004-03	3694	723	1325	565	86	4272	6385	11.3%	20.8%	8.8%	1.3%	66.9%
2004-04	4025	799	1459	624	123	4543	6691	11.9%	21.8%	9.3%	1.8%	67.9%
2004-05	4119	886	1577	585	105	4658	6743	13.1%	23.4%	8.7%	1.6%	69.1%
2004-06	4063	834	1505	576	102	4385	6419	13.0%	23.4%	9.0%	1.6%	68.3%
2004-07	4062	848	1568	591	86	4308	6355	13.3%	24.7%	9.3%	1.4%	67.8%
2004-08	4128	816	1523	531	93	4294	6252	13.1%	24.4%	8.5%	1.5%	68.7%
2004-09	4058	819	1523	529	58	4199	6093	13.4%	25.0%	8.7%	1.0%	68.9%
2004-10	4122	870	1622	539	67	4297	6214	14.0%	26.1%	8.7%	1.1%	69.2%
2004-11	4184	778	1470	491	58	4425	6262	12.4%	23.5%	7.8%	0.9%	70.7%
2004-12	4152	867	1644	498	49	5181	7003	12.4%	23.5%	7.1%	0.7%	74.0%
2005-01	4182	1048	1884	535	57	5053	7079	14.8%	26.6%	7.6%	0.8%	71.4%
2005-02	4270	846	1681	492	46	4873	6602	12.8%	25.5%	7.5%	0.7%	73.8%
2005-03	4210	987	1922	575	38	5780	7723	12.8%	24.9%	7.4%	0.5%	74.8%
2005-04	4213	950	1838	538	27	5252	7081	13.4%	26.0%	7.6%	0.4%	74.2%
2005-05	4276	908	1782	514	40	5137	6914	13.1%	25.8%	7.4%	0.6%	74.3%
2005-06	4285	941	1768	467	29	4890	6652	14.1%	26.6%	7.0%	0.4%	73.5%
2005-07	4298	887	1594	470	32	4499	6159	14.4%	25.9%	7.6%	0.5%	73.0%
2005-08	4252	949	1733	458	33	4679	6417	14.8%	27.0%	7.1%	0.5%	72.9%
2005-09	4265	960	1690	552	31	4586	6505	14.8%	26.0%	8.5%	0.5%	70.5%
2005-10	4255	1009	1810	477	39	4561	6415	15.7%	28.2%	7.4%	0.6%	71.1%
2005-11	4282	885	1712	426	23	4692	6353	13.9%	26.9%	6.7%	0.4%	73.9%
2005-12	4307	983	1877	412	34	5509	7273	13.5%	25.8%	5.7%	0.5%	75.7%
2006-01	4383	1175	2126	472	43	5570	7562	15.5%	28.1%	6.2%	0.6%	73.7%

2006-02	4392	849	1660	373	50	4578	6084	14.0%	27.3%	6.1%	0.8%	75.2%
2006-03	4408	1057	2097	421	57	5553	7308	14.5%	28.7%	5.8%	0.8%	76.0%
2006-04	4412	921	1841	342	32	4723	6255	14.7%	29.4%	5.5%	0.5%	75.5%
2006-05	4382	1052	1940	336	48	4941	6553	16.1%	29.6%	5.1%	0.7%	75.4%
2006-06	4393	997	1822	368	56	4777	6387	15.6%	28.5%	5.8%	0.9%	74.8%
2006-07	4454	866	1649	342	35	4280	5712	15.2%	28.9%	6.0%	0.6%	74.9%
2006-08	4473	1006	1836	332	33	4633	6198	16.2%	29.6%	5.4%	0.5%	74.7%
2006-09	4510	990	1767	295	20	4374	5886	16.8%	30.0%	5.0%	0.3%	74.3%
2006-10	4539	972	1798	307	25	4589	6147	15.8%	29.3%	5.0%	0.4%	74.7%
2006-11	4557	892	1651	292	31	4672	6092	14.6%	27.1%	4.8%	0.5%	76.7%
2006-12	4568	905	1705	286	9	4554	5994	15.1%	28.4%	4.8%	0.2%	76.0%
2007-01	4609	1109	2056	331	25	5290	6982	15.9%	29.4%	4.7%	0.4%	75.8%
2007-02	4608	937	1771	300	19	4847	6319	14.8%	28.0%	4.7%	0.3%	76.7%
2007-03	4594	1033	2013	325	20	5163	6764	15.3%	29.8%	4.8%	0.3%	76.3%
2007-04	4641	1051	1983	326	25	5088	6692	15.7%	29.6%	4.9%	0.4%	76.0%
2007-05	4658	1188	2199	344	40	5454	7213	16.5%	30.5%	4.8%	0.6%	75.6%
2007-06	4668	1060	1925	341	17	5053	6711	15.8%	28.7%	5.1%	0.3%	75.3%
2007-07	4686	1031	1879	303	37	4928	6520	15.8%	28.8%	4.6%	0.6%	75.6%
2007-08	4704	1104	1956	327	16	5084	6739	16.4%	29.0%	4.9%	0.2%	75.4%
2007-09	4724	988	1779	298	17	4448	5892	16.8%	30.2%	5.1%	0.3%	75.5%
2007-10	4767	1107	2070	314	29	5391	7006	15.8%	29.5%	4.5%	0.4%	76.9%
2007-11	4784	1043	1893	269	22	5080	6573	15.9%	28.8%	4.1%	0.3%	77.3%
2007-12	4784	1032	1861	281	28	5407	6911	14.9%	26.9%	4.1%	0.4%	78.2%
2008-01	4813	1289	2276	341	34	5903	7770	16.6%	29.3%	4.4%	0.4%	76.0%
2008-02	4839	1155	2082	317	38	5577	7274	15.9%	28.6%	4.4%	0.5%	76.7%
2008-03	4854	1138	2128	330	41	5798	7494	15.2%	28.4%	4.4%	0.5%	77.4%
2008-04	4885	1160	2326	542	51	5761	7653	15.2%	30.4%	7.1%	0.7%	75.3%
2008-05	4897	1085	2157	521	36	5008	6763	16.0%	31.9%	7.7%	0.5%	74.0%
2008-06	4915	882	1837	481	36	4221	5716	15.4%	32.1%	8.4%	0.6%	73.8%
2008-07	4954	974	1921	445	33	4277	5826	16.7%	33.0%	7.6%	0.6%	73.4%
2008-08	4968	1135	2196	551	38	4978	6822	16.6%	32.2%	8.1%	0.6%	73.0%
2008-09	4982	1192	2285	556	30	5092	6980	17.1%	32.7%	8.0%	0.4%	73.0%
2008-10	4993	1177	2352	552	50	5455	7336	16.0%	32.1%	7.5%	0.7%	74.4%
2008-11	5018	1066	2106	518	36	5071	6779	15.7%	31.1%	7.6%	0.5%	74.8%

2008-12	5050	1113	2212	564	28	5583	7383	15.1%	30.0%	7.6%	0.4%	75.6%
2009-01	5074	1322	2541	578	48	6008	8037	16.4%	31.6%	7.2%	0.6%	74.8%
2009-02	5077	1143	2308	542	58	5506	7295	15.7%	31.6%	7.4%	0.8%	75.5%
2009-03	5119	1307	2698	586	55	6259	8264	15.8%	32.6%	7.1%	0.7%	75.7%
2009-04	5140	1317	2672	588	39	6020	7999	16.5%	33.4%	7.4%	0.5%	75.3%
2009-05	5160	1166	2433	546	31	5612	7383	15.8%	33.0%	7.4%	0.4%	76.0%
2009-06	5172	1249	2564	548	49	5760	7599	16.4%	33.7%	7.2%	0.6%	75.8%
2009-07	5191	1261	2445	606	37	5581	7490	16.8%	32.6%	8.1%	0.5%	74.5%
2009-08	5196	1170	2240	542	47	5155	6883	17.0%	32.5%	7.9%	0.7%	74.9%
2009-09	5224	1193	2338	539	42	5204	6954	17.2%	33.6%	7.8%	0.6%	74.8%
2009-10	5242	1263	2565	565	27	5744	7600	16.6%	33.8%	7.4%	0.4%	75.6%
2009-11	5261	1109	2264	527	32	5012	6669	16.6%	33.9%	7.9%	0.5%	75.2%
2009-12	5282	1200	2390	534	36	5827	7588	15.8%	31.5%	7.0%	0.5%	76.8%
2010-01	5303	1392	2674	534	57	5846	7794	17.9%	34.3%	6.9%	0.7%	75.0%
2010-02	5309	1221	2475	526	30	5424	7199	17.0%	34.4%	7.3%	0.4%	75.3%
2010-03	5323	1379	2845	610	33	6377	8369	16.5%	34.0%	7.3%	0.4%	76.2%
2010-04	5341	1332	2664	608	37	5744	7685	17.3%	34.7%	7.9%	0.5%	74.7%
2010-05	5350	1315	2643	571	30	5622	7510	17.5%	35.2%	7.6%	0.4%	74.9%
2010-06	5368	1310	2580	603	30	5449	7362	17.8%	35.0%	8.2%	0.4%	74.0%
2010-07	5391	1246	2461	540	125	5340	7127	17.5%	34.5%	7.6%	1.8%	74.9%
2010-08	5409	1283	2563	587	142	5129	7000	18.3%	36.6%	8.4%	2.0%	73.3%
2010-09	5414	1278	2416	525	155	4994	6804	18.8%	35.5%	7.7%	2.3%	73.4%
2010-10	5419	1291	2540	569	112	5160	7022	18.4%	36.2%	8.1%	1.6%	73.5%
2010-11	5432	1202	2472	530	132	5247	6980	17.2%	35.4%	7.6%	1.9%	75.2%
2010-12	5436	1287	2617	555	142	5801	7646	16.8%	34.2%	7.3%	1.9%	75.9%
2011-01	5468	1366	2695	572	133	5755	7695	17.8%	35.0%	7.4%	1.7%	74.8%
2011-02	5497	1252	2562	521	119	5485	7260	17.2%	35.3%	7.2%	1.6%	75.6%
2011-03	5519	1414	2817	608	125	6136	8169	17.3%	34.5%	7.4%	1.5%	75.1%
2011-04	5532	1226	2549	540	110	5538	7307	16.8%	34.9%	7.4%	1.5%	75.8%
2011-05	5538	1368	2760	572	101	5359	7300	18.7%	37.8%	7.8%	1.4%	73.4%
2011-06	5558	1536	2903	581	100	5286	7406	20.7%	39.2%	7.8%	1.4%	71.4%
2011-07	5567	1269	2467	549	99	4899	6718	18.9%	36.7%	8.2%	1.5%	72.9%
2011-08	5577	1352	2683	617	90	5122	7096	19.1%	37.8%	8.7%	1.3%	72.2%
2011-09	5592	1284	2573	612	90	4835	6731	19.1%	38.2%	9.1%	1.3%	71.8%

2011-10	5602	1339	2674	580	87	4932	6852	19.5%	39.0%	8.5%	1.3%	72.0%
2011-11	5608	1292	2619	586	99	5042	6923	18.7%	37.8%	8.5%	1.4%	72.8%
2011-12	5628	1331	2770	638	125	5721	7697	17.3%	36.0%	8.3%	1.6%	74.3%
2012-01	5637	1487	3029	666	116	5839	7999	18.6%	37.9%	8.3%	1.5%	73.0%
2012-02	5647	1331	2791	687	106	5424	7445	17.9%	37.5%	9.2%	1.4%	72.9%
2012-03	5651	1438	3075	720	103	5918	8077	17.8%	38.1%	8.9%	1.3%	73.3%
2012-04	5639	1289	2790	693	86	5166	7150	18.0%	39.0%	9.7%	1.2%	72.3%

Data Collection Period: July 1, 2013 to June 30, 2014[illegible]