FIGURE 1

Effectiveness of Family Planning Methods (CDC)

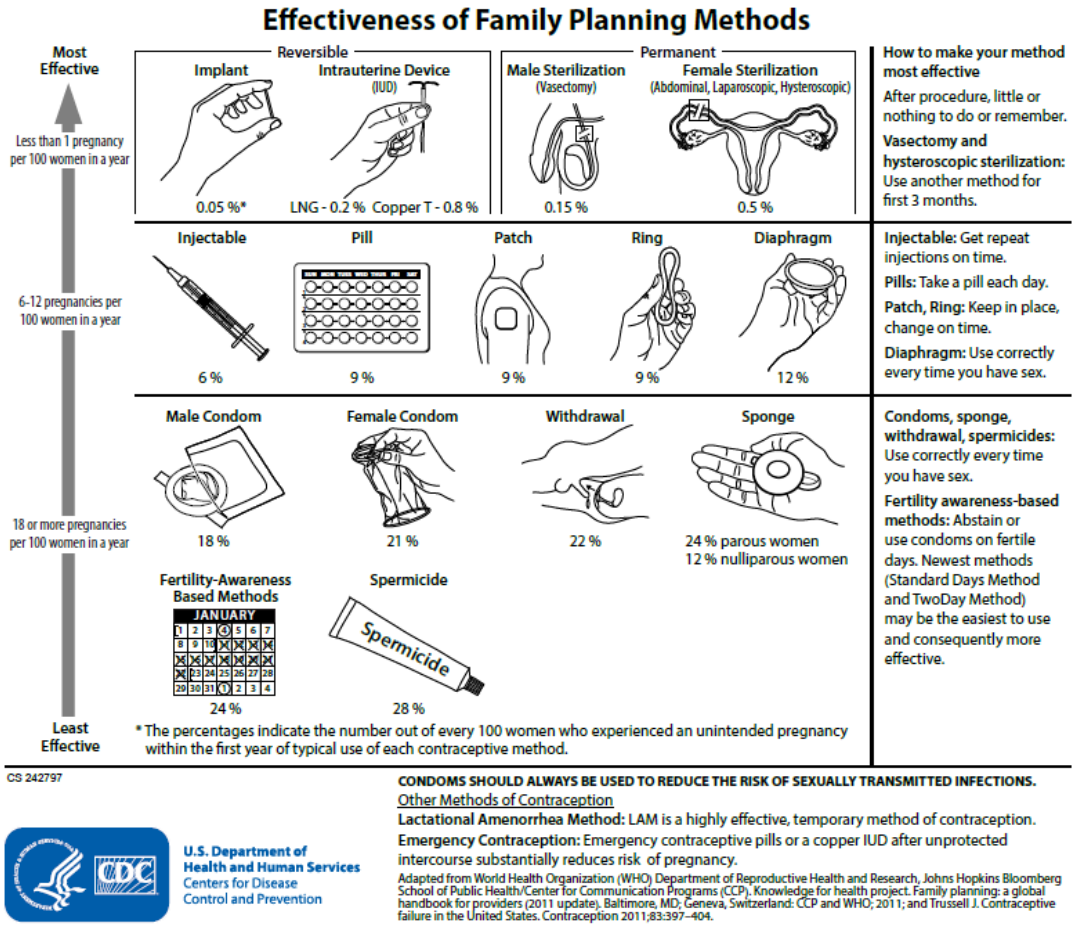

FIGURE 2

Kaplan Meier Survival Plot of Discontinuation of LARC Method Comparing Non-exposure and Exposure Groups

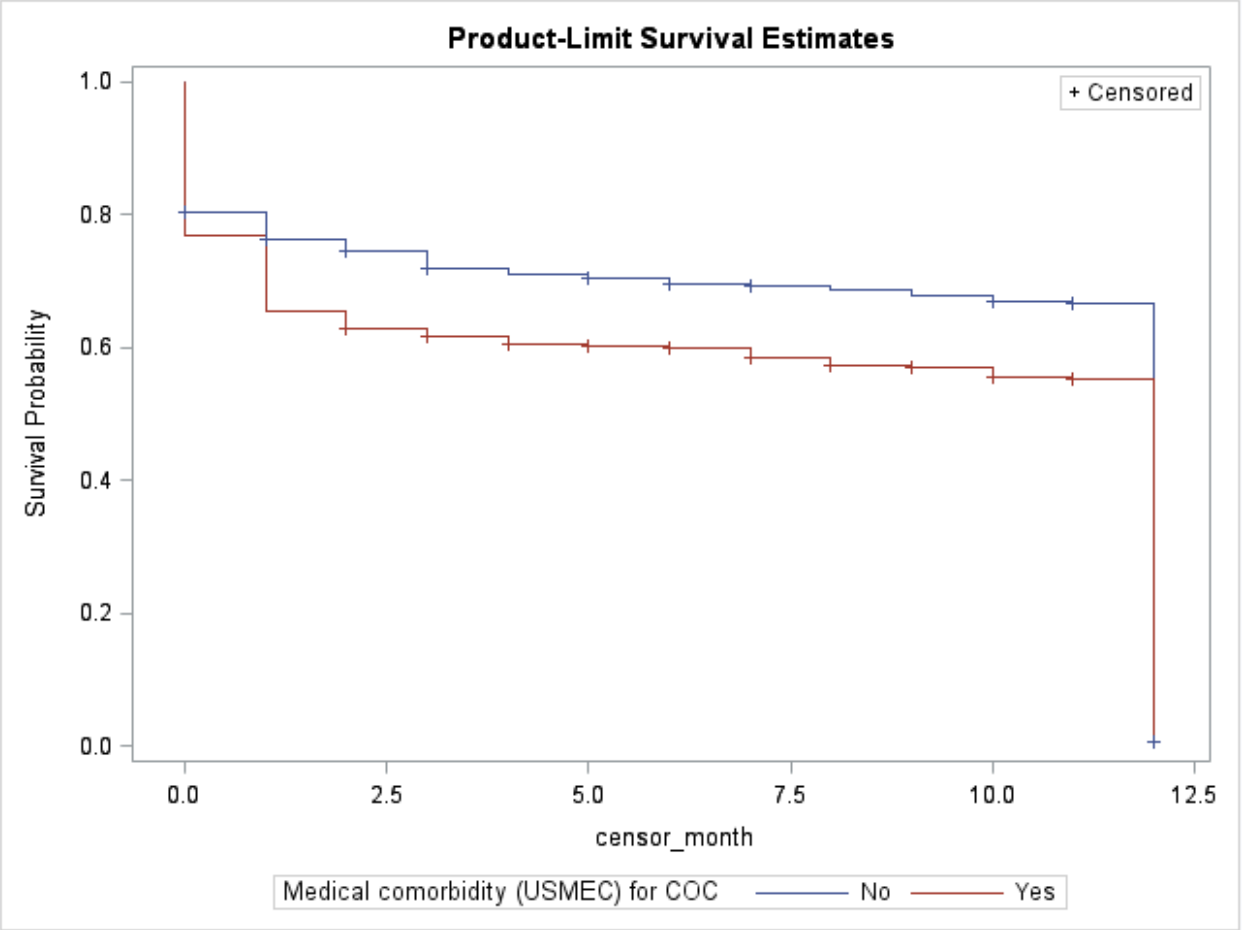

TABLE 1

Baseline Characteristics and Insertion Data for Patients Who Received LARC Methods at Grady Memorial Hospital Between 11/01/2010 - 03/31/2014

	N = 2338
Age (y)	26.7 (+/- 8.2)
	age range: 12 - 67
Race	
Black	1623 (70.0)
White	613 (26.5)
Other	82 (3.5)
missing (20)	
Ethnicity	
Hispanic	600 (28.3)
Non-hispanic	1517 (71.7)
missing (221)	
Gravidity	
Nulligravid	217 (10.4)
1	428 (20.6)
2	453 (21.8)
3	382 (18.4)
4	266 (12.8)
5 or more	336 (14.4)
missing (256)	
Previous BC method *	
None	957 (42.2)
Barrier	277 (12.2)
Hormonal	764 (33.7)
Permanent	46 (2.0)
LARC	176 (7.8)
Other	46 (2.0)
missing (72)	
Employment	
None	808 (70.9)
Part-time	186 (16.3)
Full-time	145 (12.7)
missing (1199)	
Education (highest achieved)	
None	11 (1.0)
Pre-highschool	477 (42.1)
High school	514 (45.4)
Post-highschool	131 (11.6)
missing (1205)	
Insurance	
None	1475 (63.6)
Medicare/Medicaid	824 (35.6)
Private	19 (0.8)
missing (20)	
Relationship	
Single	492 (43.3)
Coupled	644 (56.7)
missing (1202)	
LARC method	
Implant	1350 (57.8)
Mirena	747 (32.0)
Paragard	239 (10.2)
missing (2)	
Provider	
Medical student	185 (7.9)
Resident	1711 (73.3)
Fellow	54 (2.3)
Faculty	384 (16.5)
missing (4)	

Data are reported as mean (+/- std dev) or as n (%)

* Previous birth control method used before most recent pregnancy

TABLE 2
Baseline Characteristics and Insertion Data for Randomly Selected Cohort

	Non-exposure (n = 410)	Exposure** (n = 347)	p-value
Age (y)	25.4 (+/- 7.1)	28.0 (+/- 7.9)	<0.0001
Race			0.0196
Black	263 (64.1)	252 (72.6)	
White	123 (30.0)	73 (21.0)	
Other	22 (5.3)	20 (5.8)	
missing (4)			
Ethnicity			0.0053
Hispanic	126 (30.7)	71 (20.5)	
Non-hispanic	263 (64.1)	240 (69.2)	
missing (57)			
Gravidity			0.0044
Nulligravid	48 (11.7)	15 (4.3)	
>/= 1	313 (76.3)	301 (86.7)	
missing (80)			
Previous BC method *			<0.0001
None	130 (31.7)	167 (48.1)	
Barrier	55 (13.4)	36 (10.4)	
Hormonal	158 (38.5)	94 (27.1)	
Permanent	4 (0.10)	10 (2.9)	
LARC	39 (9.5)	28 (8.1)	
Other	13 (3.2)	2 (0.6)	
missing (21)			
Employment			0.1293
None	122 (29.8)	143 (41.2)	
Part-time	37 (9.0)	29 (8.4)	
Full-time	25 (6.1)	17 (4.9)	
missing (384)			
Education (highest achieved)			0.1051
None	2 (0.5)	0 (0.0)	
Pre-highschool	79 (19.3)	68 (19.6)	
High school	84 (20.5)	91 (26.2)	
Post-highschool	17 (4.1)	29 (8.4)	
missing (387)			
Insurance			0.0011
None	281 (68.5)	192 (55.3)	
Medicare/Medicaid	125 (30.5)	147 (42.4)	
Private	2 (0.5)	4 (1.2)	
missing (6)			
Relationship			0.0441
Single	63 (15.4)	84 (24.2)	
Coupled	121 (29.5)	104 (30.0)	
missing (385)			
LARC method			<0.0001
Implant	202 (49.3)	227 (65.4)	
Mirena	140 (34.1	98 (28.2)	
Paragard	68 (16.6)	21 (6.1)	
missing (1)			
Provider			<0.0001
Medical student	55 (13.4)	17 (4.9)	
Resident	239 (58.3)	281 (81.0)	
Fellow	7 (1.7)	6 (1.7)	
Faculty	107 (26.1)	42 (12.1)	
missing (3)			

Data are reported as mean (+/- std dev) or as n (%)

* Previous birth control method used before most recent pregnancy

** Exposure defined as CDC MEC category 3 or 4 medical conditions

TABLE 3

Distribution of MEC Category 3 and Category 4 Medical Comorbidities in Exposure Group

	n = 347	%
Category 3		
Post partum: Breastfeeding < 1 mo	132	38.0
Post partum: Non-breastfeeding < 21 days	50	14.4
Smoking: >/= 35 yo, < 15 cigarettes/day	12	3.5
Bariatric surgery: malabsorptive procedures (roux-en-Y bypass, biliopancreatic diversion)	0	0.0
Htn: adequately controlled	57	16.4
Htn: Elevated bp systolic 140-159 OR diastolic 90-99	27	7.8
DVT/PE: +History, no anticoags, no risk factors	2	0.6
DVT/PE: +History, anticoags >3 mths, no risk factors	2	0.6
Hyperlipidemias	44	12.7
Peripartum cardiomyopathy: NYHA Class I/II, >/= 6 mths	0	0.0
SLE: severe thrombocytopenia	1	0.3
Migraine headaches: without aura <35 yo	13	3.7
Gestational trophoblatic disease: decreasing or undetectable B-hCG levels	0	0.0
Breast cancer: no evidence of current disease 5 yrs	1	0.3
STIs: increased risk for STIs	11	3.2
AIDS (not clinically well)	0	0.0
IBD (Crohn, ulcerative colitis)	1	0.3
Gallbladder: symptomatic, medically treated	0	0.0
Gallbladder: symptomatic, current	0	0.0
Cholestatis: past COC-related	1	0.3
ARVs: nucleoside reverse transcriptase inhibitors	9	2.6
ARVs: non-nucleoside reverse transcriptase inhibitors	2	0.6
ARVs: ritonavir-boosted protease inhibitors	5	1.4
Anticonvulsants: phenytoin, carbamezepine, barbiturates, primidone, topiramate, oxcarbazepine	6	1.7
Anticonvulsants: lamotrigine	2	0.6
Antimicrobials: rifampicin, rifabutin	0	0.0
Category 4		
Pregnancy	1	0.3
Postpartum: puerperal sepsis	0	0.0
Postabortion: immediate postseptic abortion	2	0.6
Smoking: >/= 35 yo, >/= 15 cigarettes/day	6	1.7
Htn: elevated bp, systolic >/= 160 OR diastolic >/= 100	5	1.4
Htn: +vascular disease	0	0.0
DVT/PE: + history, no anticoags, >/= 1 risk factor	3	0.9
DVT/PE: acute DVT/PE	1	0.3
DVT/PE: + history, + anticoags > 3 mths, >/= 1 risk factor	8	2.3
DVT/PE: major surgery, prolonged immobilization	0	0.0
Thrombogenic mutations (factor V Leiden, prothrombin, protein S, protein C, antithrombin)	0	0.0
Ischemic heart disease: current OR + history	4	1.2
Stroke: + history	6	1.7
Valvular heart disease: complicated (pulm htn, risk for afib, subacute bacterial endocarditis)	3	0.9
Peripartum cardiomyopathy: NYHA class I/II, < 6 mths	1	0.3
Peripartum cardiomyopathy: NYHA class III/IV	2	0.6
SLE: + (or unknown) antiphospholipid antibodies	3	0.9
Migraine headaches: w/o aura >/= 35 yo	5	1.4
Migraine headaches: with aura	5	1.4
Unexplained vaginal bleeding: before evaluation	5	1.4
Gestational trophoblastic disease: persistently elevated B-hCG levels or malignant disease	2	0.6
Cervical cancer: awaiting treatment	0	0.0
Breast cancer: current	0	0.0
Endometrial cancer	0	0.0
Anatomical abnormalities: distorted uterine cavity (congenital/acquired; incompatible with IUD insertion)	1	0.3
Pelvic inflammatory disease: current	5	1.4
STIs: current purulent cervicitis or chlamydial infection or gonorrhea	5	1.4
Tuberculosis: pelvic	0	0.0
Diabetes: + nephropathy/retinopathy/neuropathy	1	0.3
Diabetes: + other vascular disease OR > 20 yrs	6	1.7
Viral hepatitis: acute/flare	1	0.3
Cirrhosis: severe	0	0.0
Liver tumors: benign hepatocellular adenoma	0	0.0
Liver tumors: malignant	0	0.0
Solid organ transplantation: complicated (acute/chronic graft failure, rejection, cardiac allograft vasculopathy)	0	0.0

TABLE 4

Discontinuation, Censorship, and Survival (Continuation) Between Non-exposure and Exposure Groups

	Non-exposure (n = 410)	Exposure (n = 347)
Discontinued before 12 months	42 (10.2)	24 (6.9)
Censored before 12 months	116 (28.3)	132 (38.0)
Censored at 12 months (Survived)	252 (61.5)	191 (55.0)

Data expressed as n (%)

TABLE 5
Missing Data by Variable (in Selected Cohort)

Variable	n Missing	%
Age	0	0
Race	4	0.5
Ethnicity	57	7.5
Gravidity	80	10.6
Previous BC Method	21	2.8
Employment*	384	50.7
Education (highest achieved)*	387	51.1
Insurance	6	0.8
Relationship*	385	50.9
LARC method	1	0.1
Provider	3	0.4

* Variable excluded from analysis

TABLE 6

Cox Proportional Hazards Model Parameters for Possible Predictors of LARC Discontinuation

Variable	Hazard Ratio	95% Wald CI	p-value
Medical Comorbidity	1.17	0.99 - 1.37	0.06
Present vs not present			
Age	0.82	0.62 - 1.10	0.18
Adolescent (<18 yo) vs adult			
Race	0.93	0.78 - 1.10	0.37
Black vs not			
Ethnicity	1.02	0.86 - 1.22	0.81
Hispanic vs not			
Gravidity	1.37	1.03 - 1.82	0.03
Previously pregnant vs nulligravid			
Previous BC method	0.90	0.77 - 1.07	0.24
Use of any BC method before most previous pregnancy vs none			
Insurance	1.07	0.90 - 1.27	0.44
Insured vs not			
LARC method			0.52
Implant vs Mirena	1.11	0.93 - 1.33	
Implant vs. Paragard	1.07	0.82 - 1.39	
Mirena vs. Paragard	0.96	0.73 - 1.28	
Provider	0.999	0.81 - 1.22	0.99
Trainee (student, resident, fellow) vs faculty			

TABLE 7
Reasons for Discontinuation for Selected Cohort

	Non-exposure	Exposure*	Total
Bleeding	11	14	**25**
Discomfort	16	5	**21**
Expulsion	13	1	**14**
Pregnancy	5	2	**7**
Hysterectomy	1	7	**8**
Other	8	11	**19**
None	2	2	**2**

***** Exposure defined as CDC MEC category 3 or 4 medical conditions

TABLE 8
Complications/Dissatisfaction WITHOUT Discontinuation for Selected Cohort

	Non-exposure	Exposure*	Total
Infection	6	1	**7**
Bleeding	21	19	**40**
Discomfort	15	11	**26**
Headache	5	2	**7**
Weight changes	3	4	**7**
Other	14	10	**24**

***** Exposure defined as CDC MEC category 3 or 4 medical conditions