

**Supplementary Table 1. Trends in prevalence of DKA at type 1 diabetes diagnosis by age in the SEARCH for Diabetes in Youth study (2010-2016)**

	0-4 years			5-9 years			10-14 years			≥15 years		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	555	46.68	43.84-49.51	904	37.67	35.73-39.61	1114	39.45	37.64-41.25	356	29.72	27.13-32.30
2010	72	44.72	37.04-52.40	102	33.89	28.54-39.23	111	35.46	30.16-40.76	39	27.46	20.12-34.81
2011	80	45.71	38.33-53.10	131	37.54	32.46-42.62	149	36.97	32.26-41.69	39	24.68	17.96-31.41
2012	71	42.77	35.24-50.30	141	41.59	36.35-46.84	160	40.61	35.76-45.46	51	30.54	23.55-37.52
2013	77	42.78	35.55-50.01	109	33.75	28.59-38.90	155	36.13	31.58-40.68	56	31.64	24.79-38.49
2014	92	52.57	45.17-59.97	132	39.64	34.39-44.89	178	41.59	36.92-46.26	56	30.43	23.79-37.08
2015	82	47.95	40.47-55.44	126	35.39	30.43-40.36	178	41.98	37.28-46.68	56	33.94	26.71-41.16
2016	81	50.31	42.59-58.03	163	40.85	36.03-45.68	183	42.26	37.61-46.92	59	28.78	22.58-34.98
P trend*		0.1808			0.4152			0.0543			0.1951	

\* P-value for trend is generated by creating 4 equal time-periods

\*\*n=1490 with missing data on age at diagnosis for the period 2010-2016

**Supplementary Table 2. Trends in prevalence of DKA at type 1 diabetes diagnosis by sex in the SEARCH for Diabetes in Youth study (2010-2016)**

	Female			Male		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	1335	38.22	36.61-39.83	1594	38.70	37.21-40.19
2010	146	33.64	29.20-38.09	178	36.85	32.55-41.16
2011	192	38.02	33.79-42.25	207	35.63	31.73-39.52
2012	186	40.09	35.63-44.55	237	39.37	35.47-43.27
2013	190	35.38	31.34-39.43	207	36.19	32.25-40.13
2014	204	40.24	35.97-44.51	254	41.44	37.54-45.34
2015	191	38.66	34.37-42.96	251	40.35	36.50-44.21
2016	226	40.94	36.84-45.04	260	40.25	36.47-44.03
P trend*		0.1090			0.0477	

\* P-value for trend is generated by creating 4 equal time-periods

\*\*n=1491 with missing data on sex for the period 2010-2016

**Supplementary Table 3. Trends in prevalence of DKA at type 1 diabetes diagnosis by race and ethnicity in the SEARCH for Diabetes in Youth study (2010-2016)**

	Non-Hispanic White			Hispanic			African American			Other**		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	1828	36.85	35.51-38.19	545	43.57	40.82-46.31	411	39.79	36.80-42.77	141	39.72	34.63-44.81
2010	216	34.89	31.14-38.65	57	38.51	30.67-46.35	33	30.00	21.44-38.56	17	47.22	30.91-63.53
2011	262	36.19	32.69-39.69	70	42.42	34.88-49.97	52	36.88	28.92-44.84	14	26.92	14.87-38.98
2012	264	36.77	33.24-40.30	73	48.67	40.67-56.67	60	42.86	34.66-51.05	26	44.83	32.03-57.63
2013	246	34.31	30.83-37.78	77	40.74	33.74-47.75	55	35.26	27.76-42.75	19	42.22	27.79-56.65
2014	293	39.33	35.82-42.84	76	42.70	35.43-49.96	66	45.21	37.13-53.28	22	44.00	30.24-57.76
2015	256	36.21	32.67-39.75	91	47.15	40.11-54.19	78	47.56	39.92-55.20	16	31.37	18.64-44.11
2016	291	39.81	36.26-43.36	101	44.30	37.85-50.75	67	38.07	30.89-45.24	27	42.86	30.64-55.08
P trend*		0.1120			0.2855			0.1641			0.5269	

\* P-value for trend is generated by creating 4 equal time-periods; Includes Asian/Pacific Islander, American Indian, other racial groups

\*\*n=1479 with missing data on race/ethnicity for the period 2010-2016

**Supplementary Table 4. Trends in prevalence of DKA at type 1 diabetes diagnosis by insurance status in the SEARCH for Diabetes in Youth study (2010-2016)**

	Private			Medicaid/Medicare/ Other/None		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	1462	34.76	33.32-36.20	1061	44.21	42.22-46.20
2010	159	31.93	27.83-36.02	101	42.80	36.48-49.11
2011	209	34.66	30.86-38.46	138	41.44	36.15-46.73
2012	216	35.01	31.24-38.77	158	45.93	40.66-51.20
2013	197	31.67	28.02-35.33	148	40.22	35.21-45.23
2014	230	38.21	34.32-42.09	167	45.14	40.06-50.21
2015	203	34.06	30.26-37.87	159	45.95	40.70-51.20
2016	248	37.13	33.46-40.79	190	47.15	42.27-52.02
P trend*		0.0885			0.3512	

\* P-value for trend is generated by creating 4 equal time-periods

\*\*n=1,006 with missing data on insurance status at diagnosis for the period 2010-2016

**Supplementary Table 5. Trends in prevalence of DKA at type 1 diabetes diagnosis by season in the SEARCH for Diabetes in Youth study (2010-2016)**

	Summer			Fall			Winter			Spring		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	673	38.48	36.20-40.76	692	38.88	36.61-41.14	824	39.02	36.93-41.10	740	37.54	35.41-39.68
2010	72	35.64	29.04-42.25	83	36.73	30.44-43.01	96	37.50	31.57-43.43	73	31.33	25.37-37.29
2011	107	40.07	34.20-45.95	85	33.07	27.32-38.83	111	38.95	33.29-44.61	96	34.66	29.05-40.26
2012	87	35.80	29.77-41.83	93	40.97	34.57-47.37	128	40.38	34.98-45.78	115	41.22	35.44-46.99
2013	95	37.70	31.71-43.68	103	39.62	33.67-45.56	109	34.49	29.25-39.73	90	32.03	26.57-37.48
2014	107	39.63	33.80-45.46	112	43.41	37.36-49.46	127	44.25	38.50-50.00	112	36.72	31.31-42.13
2015	94	36.02	30.19-41.84	106	40.15	34.24-46.06	117	37.86	32.46-43.27	125	44.33	38.53-50.12
2016	111	43.70	37.60-49.80	110	38.19	32.58-43.81	136	39.77	34.58-44.95	129	41.08	35.64-46.52
P trend*		0.4912			0.2852			0.4984			0.0102	

\* P-value for trend is generated by creating 4 equal time-periods

\*\*n=1491 with missing data on season for the period 2010-2016

**Supplementary Table 6. Trends in prevalence of DKA at type 1 diabetes diagnosis by clinical site in the SEARCH for Diabetes in Youth study (2010-2016)**

	SC			OH			CO			CA			WA		
Incident year(s)	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI	N	Prevalence per 100 cases	95% CI
2010-2016**	500	31.49	29.20-33.77	325	33.78	30.79-36.77	1078	44.66	42.67-46.64	406	39.42	36.43-42.40	620	38.32	35.95-40.69
2010	54	25.59	19.70-31.48	39	27.86	20.43-35.28	115	44.75	38.67-50.83	60	46.51	37.90-55.12	56	31.11	24.35-37.87
2011	60	26.79	20.99-32.59	48	34.04	26.22-41.86	143	42.18	36.93-47.44	48	35.82	27.70-43.94	100	40.32	34.22-46.43
2012	79	37.09	30.60-43.58	46	34.07	26.08-42.07	157	46.31	41.00-51.62	55	39.57	31.44-47.70	86	35.83	29.77-41.90
2013	69	29.61	23.75-35.48	49	35.00	27.10-42.90	135	38.57	33.47-43.67	61	37.65	30.19-45.12	83	37.05	30.73-43.38
2014	77	32.49	26.53-38.45	46	33.82	25.87-41.78	161	47.63	42.31-52.96	63	42.86	34.86-50.86	111	42.37	36.38-48.35
2015	82	36.28	30.01-42.55	51	38.64	30.33-46.94	166	42.78	37.86-47.71	65	43.33	35.40-51.26	78	35.45	29.13-41.78
2016	79	32.38	26.51-38.25	46	33.33	25.47-41.20	201	49.88	44.99-54.76	54	31.95	24.92-38.98	106	43.44	37.22-49.66
P trend*		0.0478			0.2338			0.2621			0.6913			0.2200	

\* P-value for trend is generated by creating 4 equal time-periods

\*\*n=1491 with missing data on search site for the period 2010-2016

**Supplementary Table 7. Demographic characteristics of registered cases\* according to missing covariate data for complete case analysis**

\*Excludes n=131 with missing documentation of DKA status

Characteristic	Excluded		Included	
	N	Count (%)	N	Count (%)
Age at diagnosis (years)	1490		6121	
0-4		191 (12.8)		998 (16.3)
5-9		432 (29.0)		1968 (32.2)
10-14		571 (38.3)		2253 (36.8)
≥15		296 (19.9)		902 (14.7)
Sex	1491		6121	
Female		681 (45.7)		2812 (45.9)
Male		810 (54.3)		3309 (54.1)
Race/ethnicity	1479		6121	
NHW		890 (60.2)		4071 (66.5)
Other		589 (39.8)		2050 (33.5)
SEARCH site	1491		6121	
South Carolina		322 (21.6)		1266 (20.7)
Ohio		161 (10.8)		801 (13.1)
Colorado		316 (21.2)		2098 (34.3)
California		301 (20.2)		729 (11.9)
Washington		391 (26.2)		1227 (20.0)