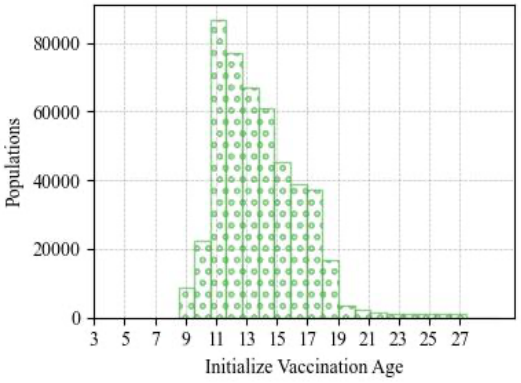
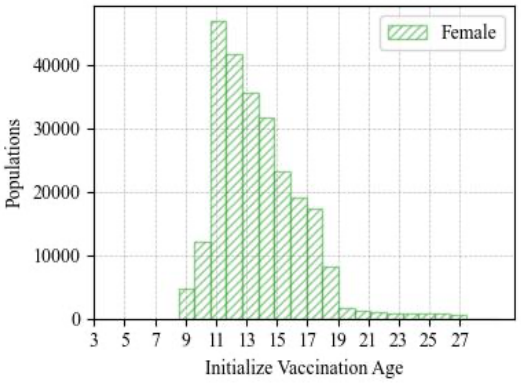
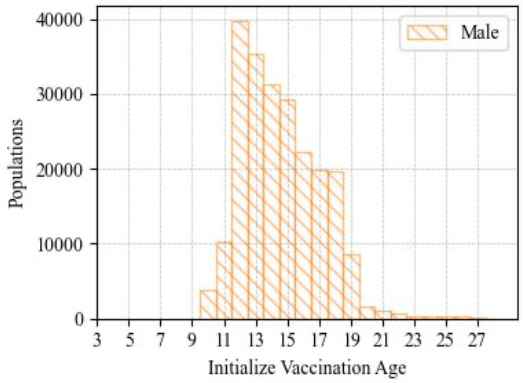
Figure A. The age distributions of HPV vaccinated patients among different genders, races, and ethnicities groups.



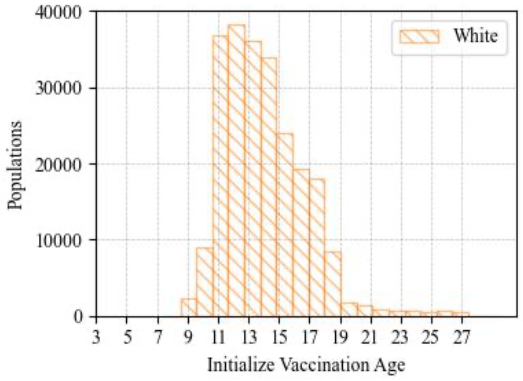
(A) All patients who have started HPV vaccination.



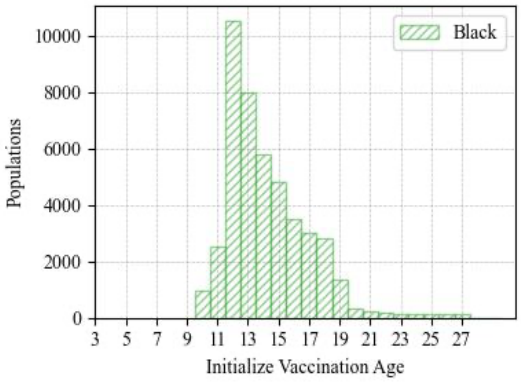
(B) Female patients who have started HPV vaccination.



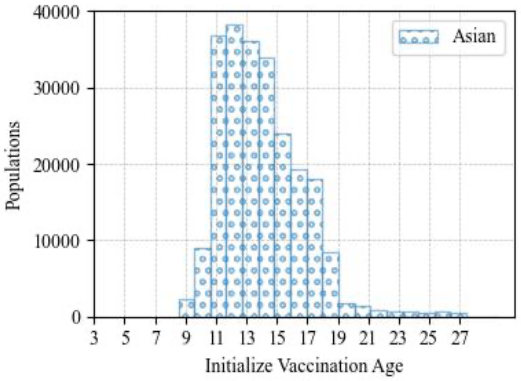
(C) Male patients who have started HPV vaccination.



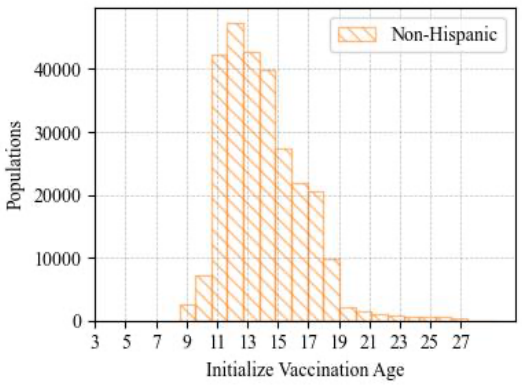
(D) White people who have started HPV vaccination.



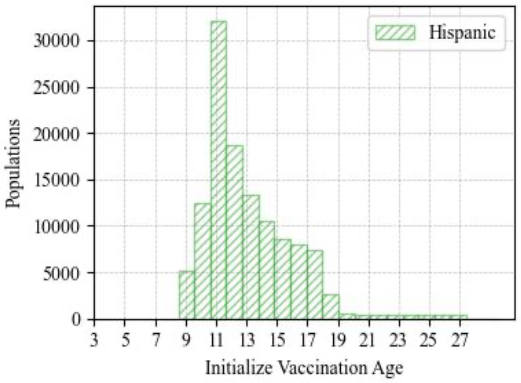
(E) Black people who have started HPV vaccination.



(F) Asian people who have started HPV vaccination.

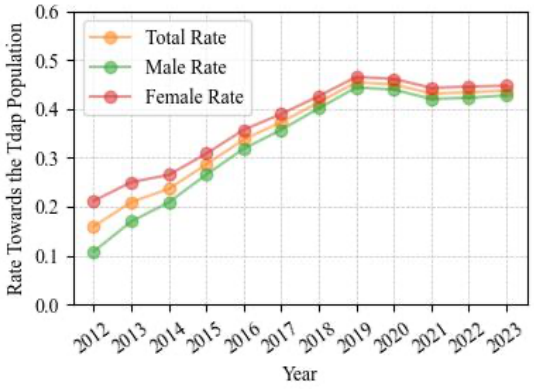


(G) Non-Hispanic people who have started HPV vaccination.

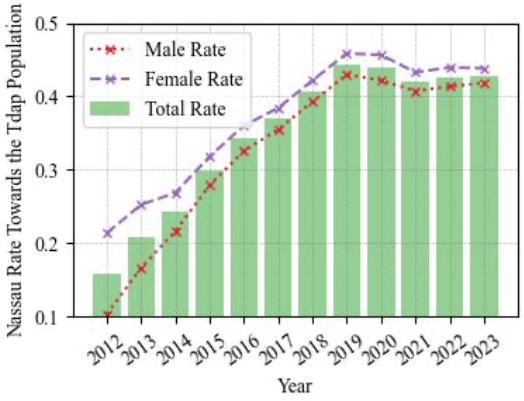


(H) Hispanic people who have started HPV vaccination.

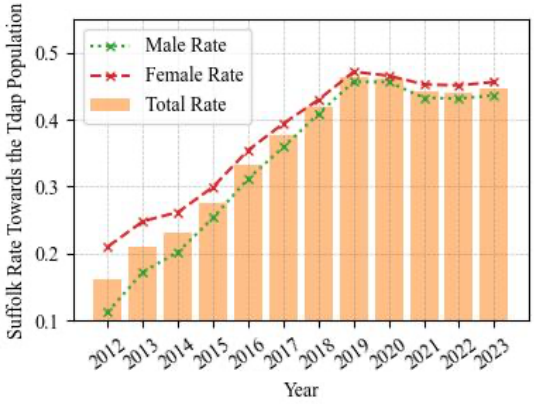
Figure B. The HPV vaccine initialized rate on the Long Island among 9- to 13-year-old kids. The rate here was calculated by the number of kids who already initialized the HPV vaccination divided by the number of kids either receive the HPV vaccination or Tdap vaccination.



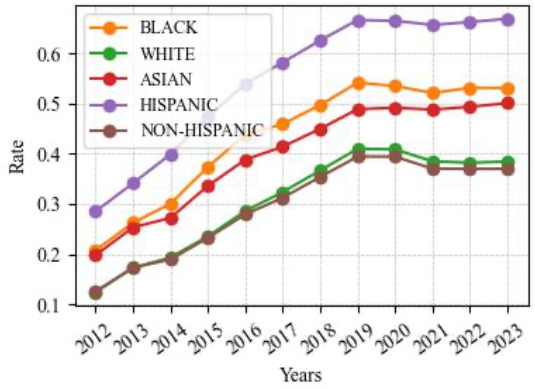
(A) Gender Disparities of the Rate in Kids (9-13).



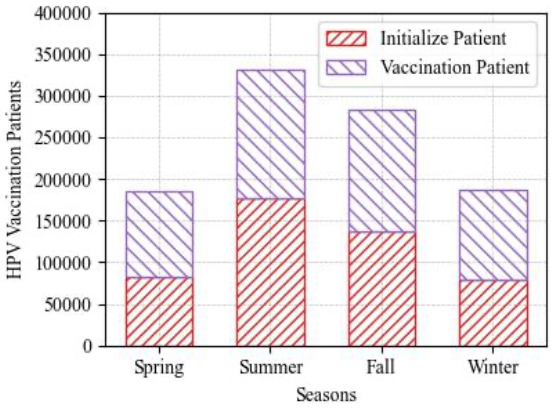
(B) Rate among Kids in Different Races Group (9-13).



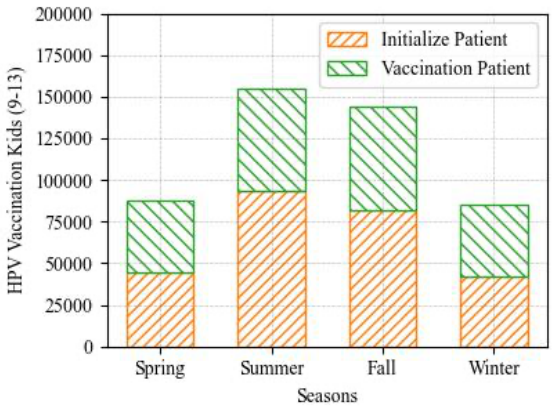
(C) Rate among Suffolk Residents Gender Disparities (9-13).



(D) Rate among Nassau Kids Gender Disparities (9-13).

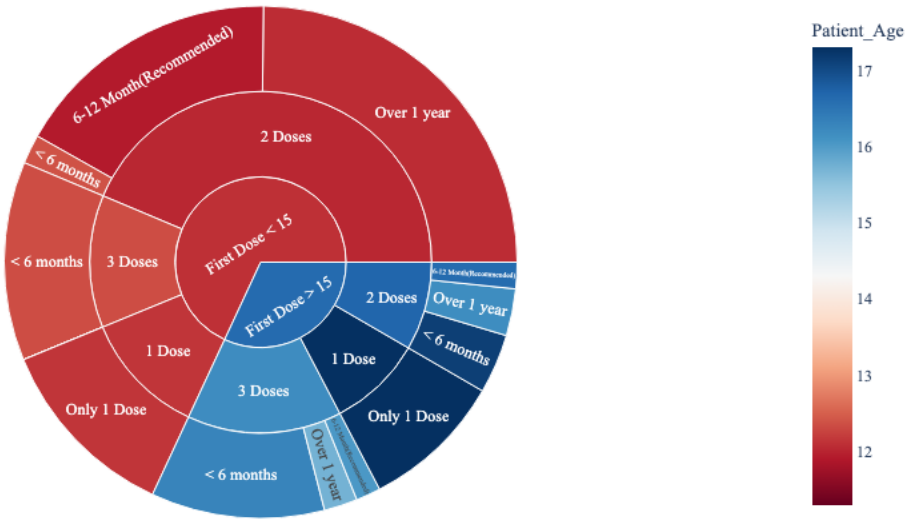


(E) HPV Vaccinated Patients Seasonal Preference.

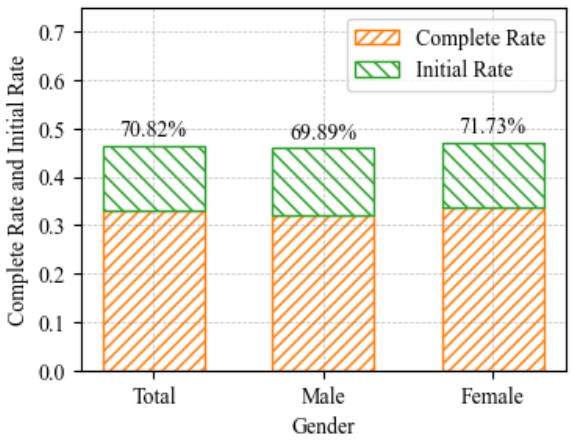


(F) HPV Vaccinated Kids (9-13) Seasonal Preference

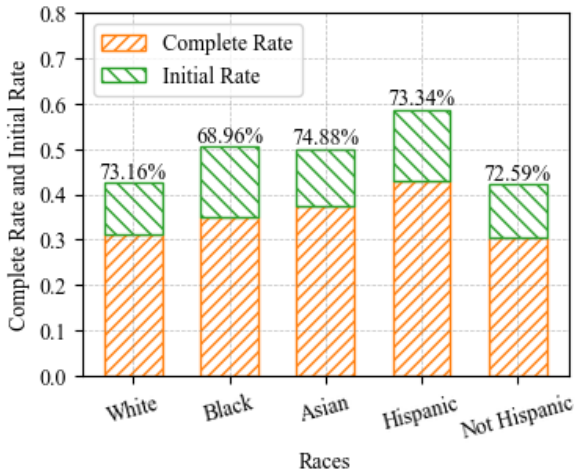
Figure C. The completeness of the HPV vaccinated individuals on the Long Island, New York State, 2012-2023. The figures are generated according to the CDC HPV vaccination guidelines.



(D) The Nested Pie Chart shows the HPV Vaccination Patients Doses Schedule and Completeness Portion.

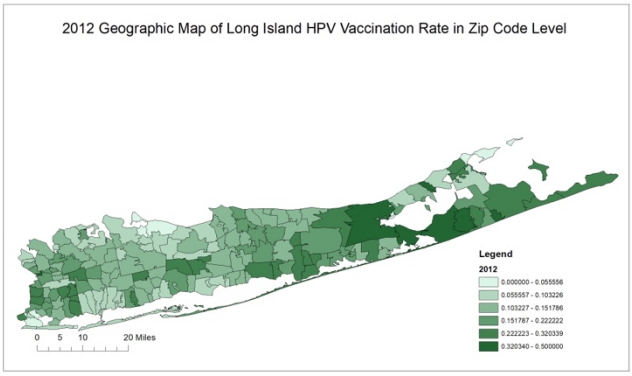


(E) Gender Disparity of Completeness

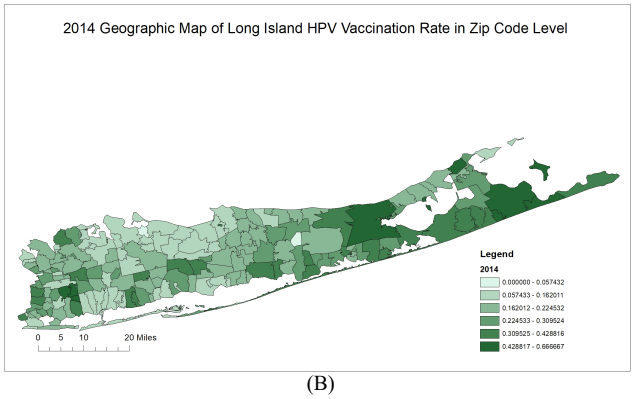


(F) Race Disparity of Completeness

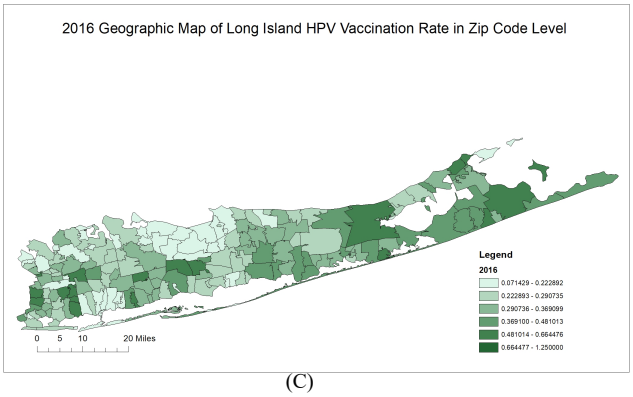
Figure D. The Geographical maps of the HPV Vaccination Rate on Long Island among 9- to 13-year-old kids in zip code level. The rate was calculated by the number of kids who already initialized the HPV vaccination divided by the number of kids either receive the HPV vaccination or Tdap vaccination.



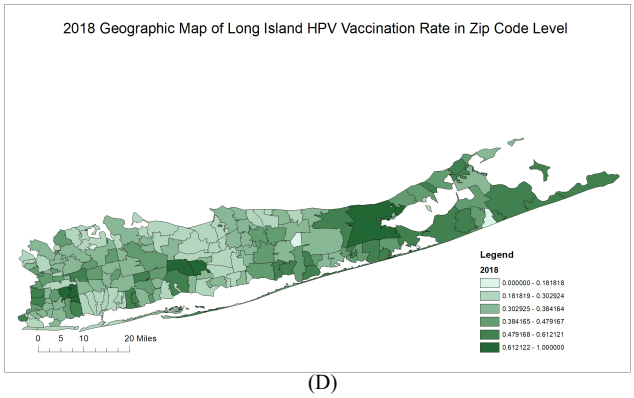
(A)



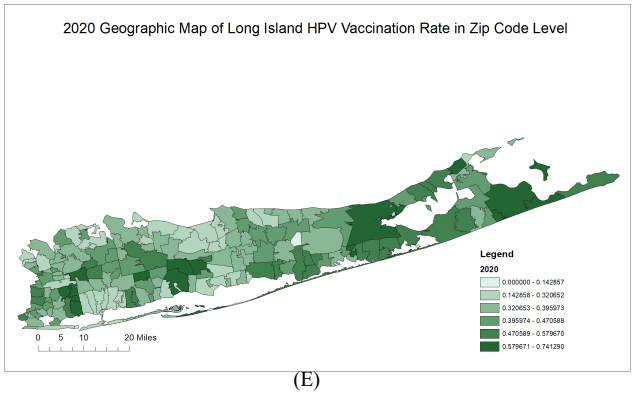
(B)



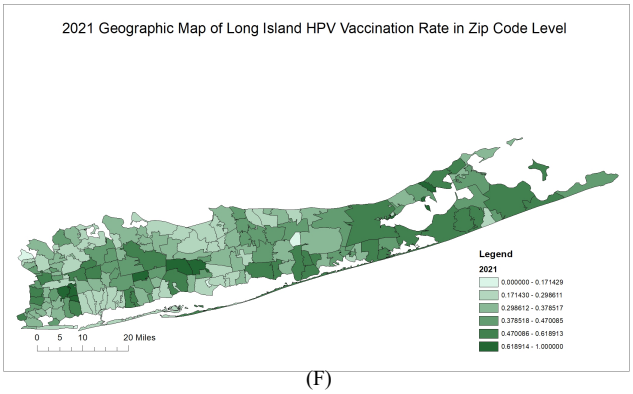
(C)



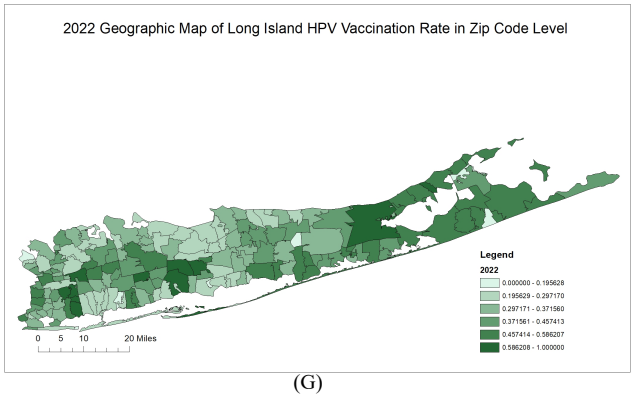
(D)



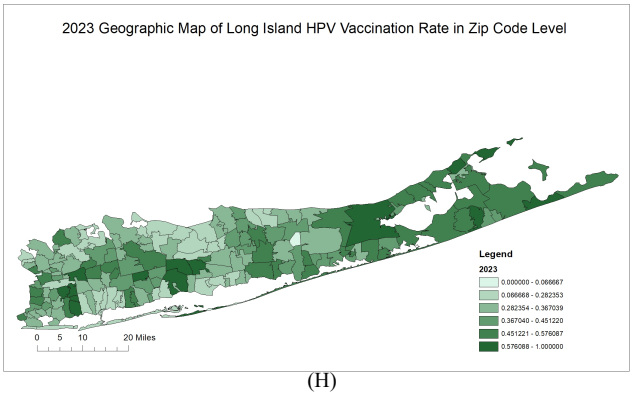
(E)



(F)



(G)



(H)

Table A. Summary of Aggregation Information of HPV Vaccination Patients on the Long Island. (The patients from the entire NYSIIS database) [1]														P value	
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Linear	Overall
Gender	Male	20574	38493	56711	77367	99946	120951	142650	163788	179135	193555	209654	225007	<0.0005	<0.0005
	Female	55221	70823	86802	106035	126958	146873	166948	187044	202339	216664	232859	248334	<0.0005	<0.0005
Age	9-14[2]	16458	23004	28215	36383	44374	49557	54729	58983	56735	52808	51848	51522	<0.0005	<0.0005
	14-26	59331	86296	115183	146644	181202	214563	246876	277885	302238	322171	338127	348376	<0.0005	<0.0005
	>=26	162	239	410	725	1728	4148(1)[4]	8468	14473(3)	23030(1)	25799(3)	53149(3)	74101(6)	<0.0005	<0.0005
Race and Ethnic	White	32635	49774	66838	86873	109218	130939	152995	174070	190051	203714	218956	233244	<0.0005	<0.0005
	Black	6643	9529	12635	16727	21117	25031	28954	32860	35569	38436	41532	44677	<0.0005	<0.0005
	Asian	3990	5803	7830	10642	13637	16675	20017	23285	25957	28451	31613	34801	<0.0005	<0.0005
	Hispanic	14329	21043	29631	39846	51594	61855	72568	84262	92393	101611	112155	122192	<0.0005	<0.0005
	Non-Hispanic	38598	58515	78026	101732	127471	152483	177657	201188	219371	234853	252642	269436	<0.0005	<0.0005
Total		75954	109540	143808	183751	227304	268268	310072	351339	381998	410773	443121	473995	<0.0005	<0.0005

1. The absolute numbers here represent the number of individuals who in the specific group already initialized the HPV vaccination doses series.
2. Kids with age 9- to 13-year-old are the targeted population to study in this paper.
3. HPV vaccination is not recommended for everyone older than age 26 years.
4. The number in the bracket shows the newly added patients who initialized the HPV vaccination at that year.
5. We use OLS regression to test the linear trend of the 12 years change and for the overall column, F test was utilized to evaluate the overall difference.