Preventive Care Utilization by Patients Who Use Virtual Urgent Care

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BACKGROUND

- Use of direct-to-patient (DTP) telemedicine is widespread but concerns about fragmentation of care occur when patients use DTP telemedicine for episodic care instead of a medical home.
- It is unknown if DTP telemedicine decreases use of primary care services leading to missed preventive screenings.
- We evaluated preventive services in patients using DTP, characterizing factors associated with documented screenings and immunizations.
- This may help develop strategies for use of DTP telemedicine platforms to improve health promotion for patients at high risk of missing preventive services.

METHODS

- Virtual urgent care (VUC) encounters via DTP telemedicine completed between July 2018 through December 2019 were evaluated.
- Patients with available preventive services data seen within a primary care practice 6 months before or after VUC were. (Fig 1)
- Recommended preventive services based on United States Preventive Services Task Force recommendations or Centers for Disease Control and Prevention immunization schedules.
  - Cervical cancer screening (pap/HPV test women 21-65 years)
  - Mammogram (at least biennial women 50-74 years old)
  - Gonorrhea/Chlamydia screening (women 18-24 years)
- Chi-squares comparing documented preventive services stratified by age, race, primary insurance, number of virtual and primary care visits.
- Logistic regressions predicting having recommended preventive services were performed with the same variables.

Figure 1. Inclusion Criteria

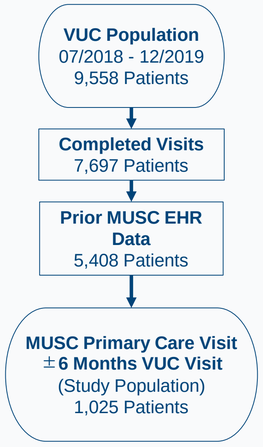

Table 1. Demographics

Variable	All (N=1025)
Age (Mean ± Std)	39.7 ± 13.3
Age Group	
<18	26 (2.5%)
18-24	56 (5.5%)
25-50	714 (69.7%)
51-64	188 (18.3%)
>=65	41 (4.0%)
Gender	
Male	187 (18.2%)
Female	838 (81.8%)
Race	
Black	209 (20.4%)
White	768 (74.9%)
Other/Missing	48 (4.7%)
Primary Insurance	
Commercial	811 (79.1%)
Other/Missing	214 (20.9%)

RESULTS

Table 2. Provision of Preventive Services by number of Virtual Urgent Care and Primary Care Virtual Urgent Care Visits

		TDap Immunization (N=1024, 99.90%)			Influenza Immunization (N=1023, 99.80%)			Mammogram (N=195, 19.02%)			Pap Smear (N=734, 71.61%)			Gonorrhea/Chlamydia Screen (N=56, 5.46%)		
Variable	**All N=1025**	**Yes N=609, 59.5%**	**No N=415, 40.5%**	**p value**	**Yes N=680, 66.5%**	**No N=343, 33.5%**	**p value**	**Yes N=165, 84.6%**	**No N=30, 15.4%**	**p value**	**Yes N=510, 69.5%**	**No N=224, 30.5%**	**p value**	**Yes (N=27, 48.2%)**	**No (N=29, 51.8%)**	**p value**
Virtual Care Visits (Mean ± Std)	1.92 ±1.54	1.95 ±1.61	1.88 ±1.43	0.4480	2.05 ±1.62	1.68 ±1.36	**0.0002**	1.68 ±1.13	1.77 ±1.14	0.6961	2.08 ±1.76	2.02 ±1.54	0.6497	1.74 ±1.79	1.72 ±1.16	0.9676
Primary Care Visit (±6 Months)	1.97 ±1.48	2.12 ±1.63	1.74 ±1.21	**<.0001**	2.11 ±1.62	1.69 ±1.14	**<.0001**	2.33 ±1.89	1.63 ±1.00	**0.0038**	1.98 ±1.43	1.83 ±1.63	**0.2337**	2.67 ±1.88	1.45 ±0.74	**0.0035**

Table 3. Logistic Regressions Predicting Provision of Preventive Services (*p<.05)

	Tdap Immunization (N=1024) Yes=609, 59.5% No=415, 40.5%	Influenza Immunization (N=1023) Yes=680, 66.5% No=343, 33.5%	Mammogram (N=195) Yes=165, 84.6% No=30, 15.4%	Pap Smear (N=734) Yes=510, 69.5% No=224, 30.5%	Gonorrhea/Chlamydia Screen (N=56) Yes=27, 48.5% No=29, 51.8%
Variable	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**
Age (unit =10)	1.023 (0.928, 1.127)	**1.195** (1.077, 1.326)*	1.128 (0.582, 2.186)	0.893 (0.769, 1.037)	1.220 (0.826, 1.803)
Gender (ref=Female)					
Male	0.847 (0.609, 1.179)	0.682 (0.485, 0.957)*			
Race (ref=White)					
Black	0.956 (0.691, 1.323)	0.724 (0.517, 1.014)	**4.644** (1.038, 20.774)*	0.885 (0.604, 1.296)	1.660 (0.273, 10.089)
Other/Missing	0.605 (0.334, 1.094)	1.072 (0.568, 2.023)	0.511 (0.089, 2.922)	0.521 (0.252, 1.079)	2.312 (0.118, 45.365)
Primary Insurance (ref=Commercial)					
Other/Missing	**1.546** (1.117, 2.140)*	1.229 (0.875, 1.726)	1.367 (0.530, 3.520)	1.104 (0.732, 1.664)	1.952 (0.444, 8.573)
Virtual Care Visit (unit=1)	1.023 (0.939, 1.114)	**1.217** (1.092, 1.357)*	0.920 (0.653, 1.296)	1.006 (0.914, 1.107)	1.005 (0.689, 1.466)
Primary Care Visit±6 months (unit=1)	**1.209** (1.093,1.336)*	**1.252** (1.120, 1.399)*	1.415 (0.958, 2.090)	1.085 (0.967, 1.218)	**2.604** (1.299, 5.233)*
	AUC = 0.582 (0.546, 0.617)	AUC = 0.638 (0.603, 0.673)	AUC = 0.701 (0.603, 0.800)	AUC = 0.564 (0.518, 0.609)	AUC = 0.752 (0.621, 0.882)

CONCLUSIONS

- Primary care patients utilizing VUC with documented preventive services showed no difference in the number of virtual care visits (except for influenza vaccine) but had on average more primary care visits (Table 2)
- There were higher odds of influenza immunization with increasing VUC and primary care visits (Table 3)
- More primary visits within 6 months of VUC visits were associated with higher odds of having Tdap and STI screening.
- Further studies comparing matched primary care patients participating in VUC with those who do not will be useful in determining the impact of DTP virtual care on preventive services.