

Virtual Transition of Care Clinic Associated with Fewer Unplanned Readmissions

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Virtual Transition of Care Clinic Associated with Fewer Unplanned Readmissions

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Abstract

Background: Readmissions to the hospital are a significant burden on patients, providers, and healthcare systems, costing an estimated \$17 billion annually. Timely follow-up within 7 days post-discharge is a protective measure to reduce readmissions but is constrained by access limitations. Transitions of care clinics have shown benefits in reducing unplanned readmissions, but physical space can be logistically and financially challenging. Virtual transitions of care (VToC) clinics present an opportunity to address these issues by improving care efficiency, reducing costs, and overcoming transportation barriers.

Objective: At UC San Diego Health, we implemented a hospitalist-led VToC clinic focused on clinical management, medication reconciliation, primary care provider (PCP) repatriation, and specialty care navigation to reduce avoidable readmissions.

Methods: Data was collected from the EHR using standard SQL queries. This included demographics (age grouped as <45, 45-64, ? 65; sex; race/ethnicity); VToC status (yes/no); PCP (UCSD or other); LACE+ score (<50, 50-70, >70); and 30-day all-cause readmission. Patient characteristics were analyzed by VToC status (yes vs no). VToC status of "no" indicates patients who were discharged from the Medicine service line to home and not seen in our clinic (because they did not meet eligibility criteria, or they could not be reached). Readmission rates were analyzed for VToC status and by LACE+ score.

Results: A total of 2,314 patients were seen in the VToC clinic between September 2021 and September 2024. The 30-day readmission rate was 14.9% for VToC patients compared to 20.1% in the benchmark group ($p < 0.001$). Regression analysis revealed that patients who did not participate in VToC had a higher odds ratio of readmission ($OR = 1.37$; 95% $CI = 1.21-1.54$; $p < 0.001$). The greatest reduction was observed among patients with moderate readmission risk (LACE+ 50-75).

Conclusions: This study demonstrates that VToC clinics are a feasible and effective tool for improving post-discharge care, reducing readmissions, and enhancing care coordination, while promoting the quadruple aim of improving health outcomes, patient experience, cost-efficiency, and care equity. Clinical Trial: n/a

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Original Manuscript

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Abstract:

Readmissions to the hospital are a significant burden on patients, providers, and healthcare systems, costing an estimated \$17 billion annually. Timely follow-up within 7 days post-discharge is a protective measure to reduce readmissions but is constrained by access limitations. Transitions of care clinics have shown benefits in reducing unplanned readmissions, but physical space can be logistically and financially challenging. Virtual transitions of care (VToC) clinics present an opportunity to address these issues by improving care efficiency, reducing costs, and overcoming transportation barriers. At UC San Diego Health, we implemented a hospitalist-led VToC clinic focused on clinical management, medication reconciliation, primary care provider (PCP) repatriation, and specialty care navigation to reduce avoidable readmissions.

A total of 2,314 patients were seen in the VToC clinic between September 2021 and September 2024. The 30-day readmission rate was 14.9% for VToC patients compared to 20.1% in the benchmark group ($p < 0.001$). Regression analysis revealed that patients who did not participate in VToC had a higher odds ratio of readmission ($OR = 1.37$; 95% $CI = 1.21-1.54$; $p < 0.001$). The greatest reduction was observed among patients with moderate readmission risk (LACE+ 50-75). This study demonstrates that VToC clinics are a feasible and effective tool for improving post-discharge care, reducing readmissions, and enhancing care coordination, while promoting the quadruple aim of improving health outcomes, patient experience, cost-efficiency, and care equity.

Introduction

Unplanned readmission to the hospital is an undesirable outcome for patients, providers, and health systems and poses a financial burden estimated at 17 billion dollars annually.¹ Follow-up within 7 days is a well-established protective mechanism to reduce the risk of readmission and mitigate health care disparities but are limited by access challenges and physician shortages.^{2,3,4,5} Transitions of care clinics have shown benefit in readmission reduction but may be cost prohibitive and logistically challenging.^{4,5} Virtual post-discharge clinics may achieve similar benefits with less cost, and present an opportunity to enhance post-discharge access.⁶

Methods

At UC San Diego Health (UCSDH), we implemented a Hospital Medicine physician-led virtual transitions of care clinic (VToC), focused on post-discharge clinical management, medication reconciliation, PCP repatriation, and specialty care navigation, with the aim of reducing repeat hospitalization.

Based on internal pilot data showing favorable readmission impact for patients with moderate risk of readmission, we created a criteria based order to trigger referral for patients with a LACE+ index between 50 and 70 (a readmission risk prediction index based on Length of stay, Acuity of admission, Comorbidities, and Emergency department visit history).⁷ Patients with LACE+ score outside this range could be referred at provider discretion. Patients were excluded from appointment scheduling if they were discharged to a care facility or Hospice, or had an existing PCP appointment within 7 days of discharge.

The virtual clinic was supported by 12 hospitalists, 2 Medical Assistants, 1 Pharmacist and an on-demand Interpreter service. Video visits were the preferred modality, but telephone calls were used for patients who could not connect to the video platform due to device or connectivity limitations. An electronic health record (EHR) integrated handoff message was sent to the PCP and subspecialist(s) who were part of the patient's care team, giving recommendations for timing and focus of follow-up care.

Data was collected from the EHR using standard SQL queries. This included demographics (age grouped as <45, 45-64, ≥ 65; sex; race/ethnicity); VToC status (yes/no); PCP (UCSD or other); LACE+ score (<50, 50-70, >70); and 30-day all-cause readmission. Patient characteristics were analyzed by VToC status (yes vs no). VToC status of "no" indicates patients who were discharged from the Medicine service line to home and not seen in our clinic (because they did not meet eligibility criteria, or they could not be reached). Readmission rates were analyzed for VToC status and by LACE+ score. Chi-square analysis was used to compare characteristics by VToC and readmission status with a $p < 0.05$ considered significant. Logistic regression was used to assess the association of VToC status and readmission controlling for demographics and PCP and LACE+ score. All analyses were conducted with IBM SPSS Statistics (version 27.0; SPSS, Inc, Chicago, IL).

Results:

2314 patients were seen in VToC between September 1, 2021, and September 17, 2024. Table 1 shows the demographic comparisons of patients who were seen in VToC versus those who were not

for the same time period.

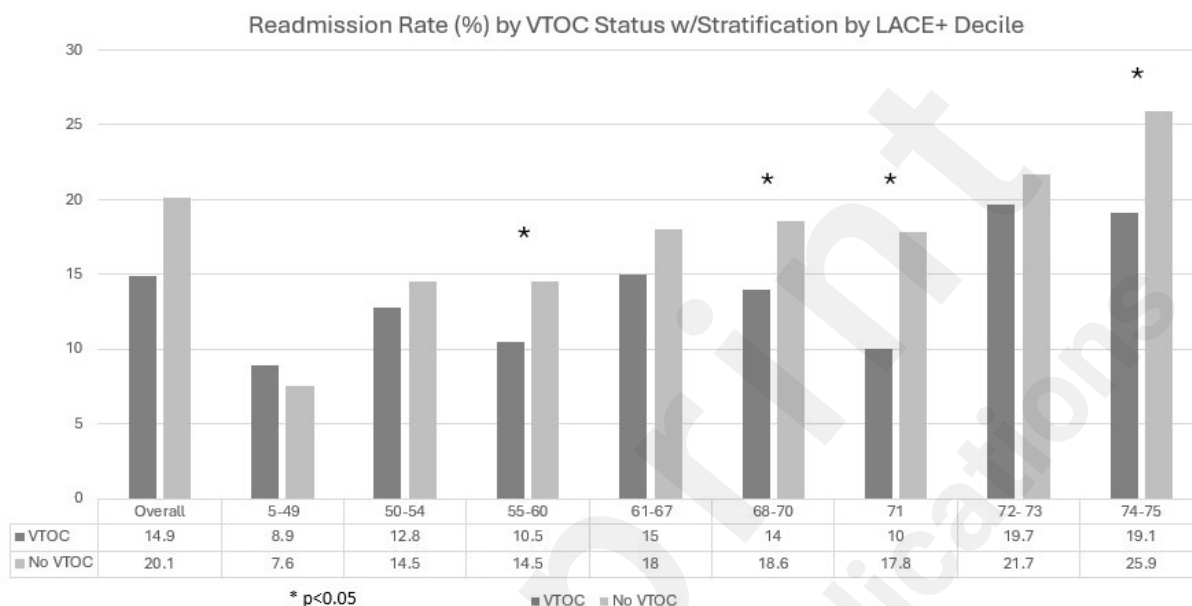
Table 1: Demographics of VToC and Non-VToC Patients

	VTOC (n=2,314)		Non-VTOC (n=23,129)		Total (n=25,443)		P-Value
	#	%	#	%	#	%	
Age Group							0.395
<45	558	(24.1)	5829	(25.2)	6387	(25.1)	
45-64	861	(37.2)	8325	(36.0)	9186	(36.1)	
65+	895	(38.7)	8975	(38.8)	9870	(38.8)	
Sex							<0.001
Female	1266	(54.7)	10943	(47.3)	12209	(48.0)	
Male	1048	(45.3)	12186	(52.7)	13234	(52.0)	
Race/Ethnicity							<0.001
NH White	870	(37.6)	9795	(42.3)	10665	(41.9)	
Hispanic	834	(36.0)	7199	(31.1)	8033	(31.6)	
NH Black/AA	213	(9.2)	2171	(9.4)	2384	(9.4)	
NH Asian/AI/AN	205	(8.9)	1949	(8.4)	2154	(8.5)	
Other/Unknown	192	(8.3)	2015	(8.7)	2207	(8.7)	
PCP							0.751
UCSD PCP	644	(27.8)	6509	(28.1)	7153	(28.1)	
Non UCSD PCP	1670	(72.2)	16620	(71.9)	18290	(71.9)	
Lace+ Score							<0.001
<50	79	(3.4)	2321	(10.0)	2400	(9.4)	
50-70	1513	(65.4)	9152	(39.6)	10665	(41.9)	
>70	722	(31.2)	11656	(50.4)	12378	(48.6)	

The overall 30-day readmission rate for patients seen in VToC clinic was 14.9% compared to 20.1% in the benchmark group ($p<0.001$). In the regression model, absence of VToC clinic was independently associated with increased odds of readmission ($OR=1.37$; 95% $CI=1.21-1.54$; $p<0.001$). Decile matching was performed to account for the difference in distribution of LACE+ in the VToC and non VToC groups. Analysis of LACE+ decile groups revealed that the impact of

readmission reduction was most pronounced among patients with LACE+ ranging between 50-75, however across most groups VTOC performed better than no VTOC (Figure 1).

Figure 1



The figure presents a bar chart comparing Readmission Rate (%) by VTOC Status with stratification by LACE + Decile. The x-axis represents different LACE+ decile groups (e.g., 5-49, 50-54, 55-60, etc), while the y-axis measures readmission rates as percentages. VTOC group is represented by dark bar and No VTOC by light bar. Across most LACE+ decile ranges, the No VTOC group consistently shows higher readmission rates compared to the VTOC group.

Discussion

We present a hospitalist-led post-discharge virtual clinic aimed at improving transitions of care for patients. For patients at moderate risk, a VTOC visit was associated with a lower rate of readmission. Our intervention group had a higher proportion of female and Hispanic patients, both of which were associated with increased odds of readmission in regression analysis.

This observational study is subject to selection bias, as clinic attendance could be influenced by patient specific factors that influence readmission. However, the stratified analysis according to the LACE + index provides strong evidence in support of the impact of the program, and the positive impact observed is consistent with broader evidence that timely post-discharge access reduces readmission risk. VTOC addresses a critical gap in the care continuum, while also providing the inherent benefits of telemedicine.^{6,8}

Results from this initiative are promising for the feasibility of telemedicine-based transitional care programs to promote the quadruple aim of improving population health, enhancing the care experience, reducing cost, and advancing care equity.⁹

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