

Fact Sheet Supplement:

Identifying VA Health Care Utilization Using Cerner Electronic Health Record Data

Cooperative Studies Program Epidemiology Analytics Resource (CSPEAR)

Cooperative Studies Program
Office of Research and Development
Department of Veterans Affairs

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VA



U.S. Department of Veterans Affairs

Veterans Health Administration
Cooperative Studies Program

Contributions

This fact sheet is a result of the efforts of the Seattle Epidemiologic Research and Information Center.

Data Analysis

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About CSPEAR

CSPEAR translates VA electronic health record data into brief, scientifically-reliable reports on the health status of Veterans. CSPEAR is a collaborative effort of the Cooperative Studies Program's national network of Epidemiology Centers.

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Website: <https://www.vacsp.research.va.gov/CSPEC/Studies/CSPEAR/Main.asp>

1 Introduction

The Department of Veterans Affairs (VA) is implementing a new electronic health record (EHR) system as part of the Electronic Health Record Modernization program - transitioning to the Cerner Millennium EHR.^{1,2} The new system will connect VA with the Department of Defense, the U.S. Coast Guard and participating community care providers within a single EHR. Cerner Millennium EHR data collected at VA sites that have transitioned to the new system are available in the VA Corporate Data Warehouse (CDW) environment.^{1,2,3} The CDWork2 database contains this data in the Millennium data model but lightly transformed to incorporate basic CDW standards.^{3,4} CSPEAR aims to understand data in CDWork2 to guide further analyses using data from the new EHR system. Mann-Grandstaff VA Medical Center (VAMC) in Spokane, WA, was the first to convert to Cerner Millennium in October 2020. At the time of this analysis in October 2022, five VAMCs had transitioned to the new EHR system.

2 Methods

Population

Veterans with valid, matching social security numbers and birth dates in both VistA and Cerner EHR systems at the five VAMCs that transitioned to the Cerner EHR system before October 2022 (Spokane, Washington; Walla Walla, Washington; Columbus, Ohio; Roseburg, Oregon; White City, Oregon). Veterans were also selected from four comparison VAMCs that did not transition to Cerner before October 2022 (Boise, Idaho; Portland, Oregon; Indianapolis, Indiana;

Northern Indiana HCS). Comparison VAMCs were selected based on their geographic proximity to the VAMCs that had transitioned to Cerner. Veterans were age 18-110 on the day that the five VAMCs had transitioned to Cerner, and Veterans were age 18-110 on October 31, 2020 for the four comparison VAMCs. The transition date for each of the VAMCs that transitioned to Cerner are listed below:

- Spokane, Washington – station number 668: October 24, 2020
- Walla Walla, Washington – station number 687: March 26, 2022
- Columbus, Ohio – station number 757: April 30, 2022
- Roseburg, Oregon – station number 653: June 11, 2022
- White City, Oregon – station number 692: June 11, 2022

Data Source

Data were pulled from the CDW including Cerner EHR data that has been syndicated to the CDW in the CDWork2 database.

Analyses

Health care utilization at the five VAMCs that have transitioned to Cerner was counted in the two years before transition and up to two years after transition. For the four comparison VAMCs, health care utilization was counted October 2018-October 2022. This analysis reflects only health care utilization at VA facilities and not utilization from non-VA facilities. When utilization counts are presented graphically, the counts are represented as ratios of the median monthly count of utilization for that VAMC across all months presented.

Project Approval

This work was conducted under CSPEAR's operational access to VA data.

Notes

This work was conducted under CSPEAR's operational access to VA data. This material is the result of work supported with resources and the use of facilities at the VA Cooperative Studies Program Epidemiology Centers in Seattle, WA. The contents do not represent the views of VA or the US Government.

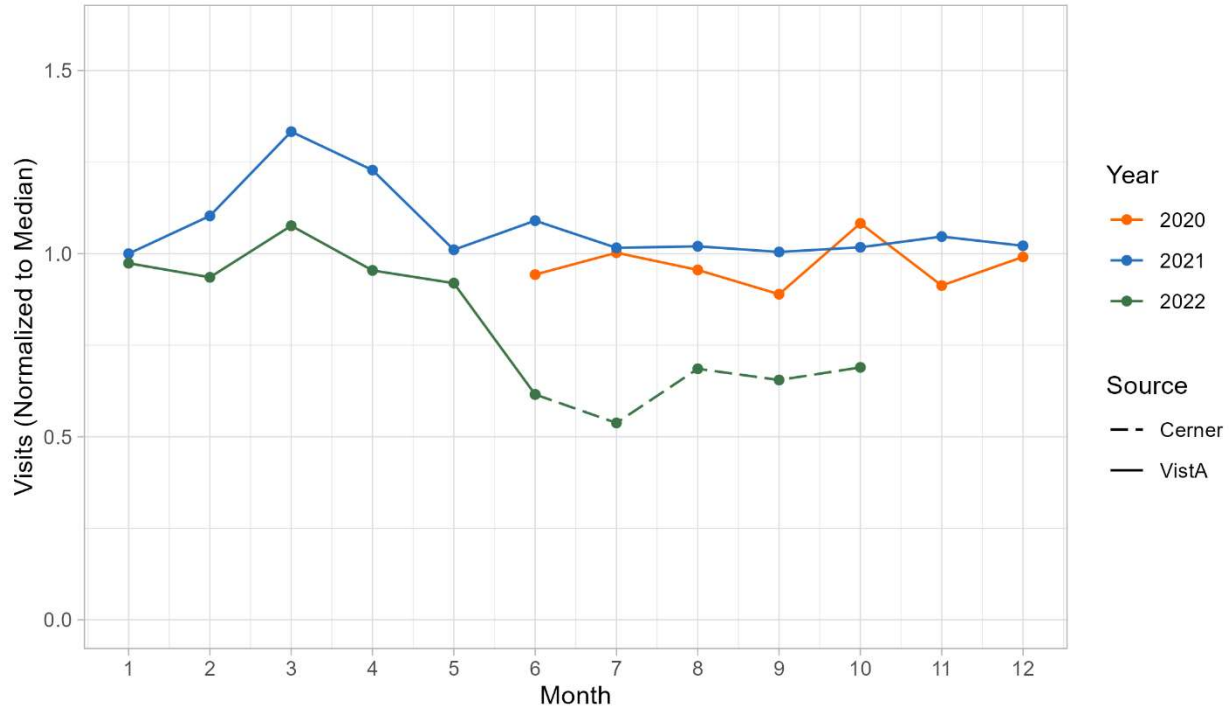
3 Results

3.1 Results: Figures

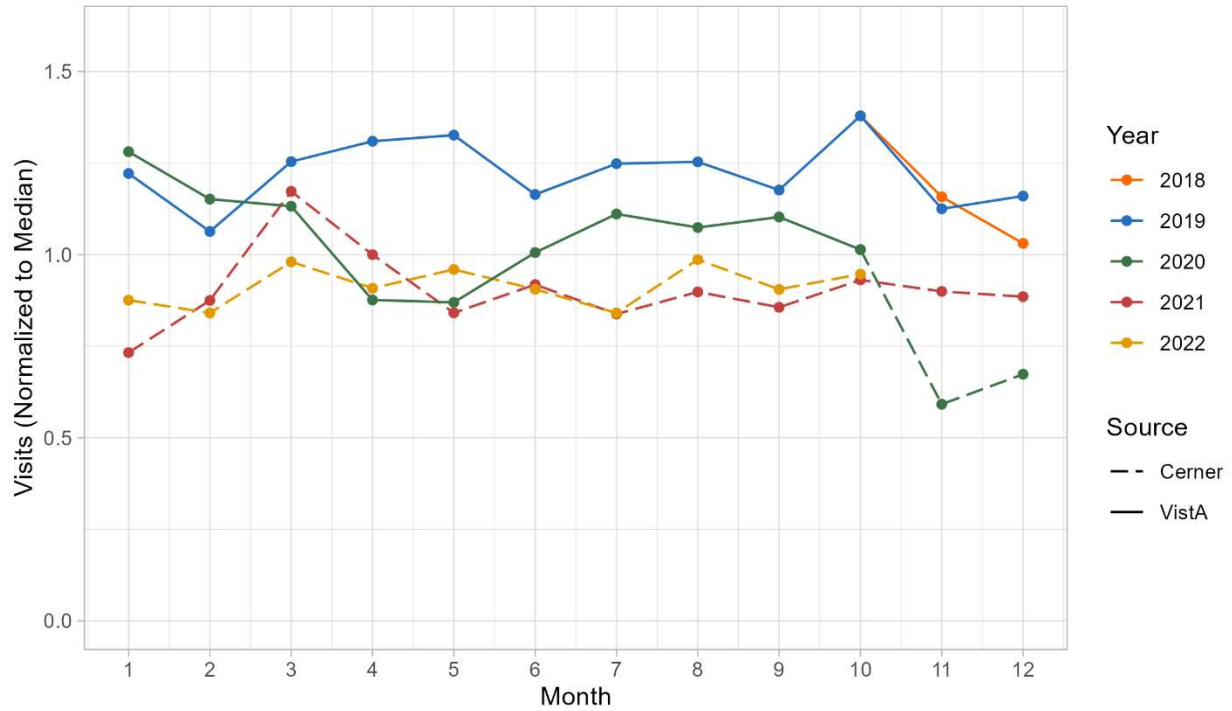
Outpatient

VAMCs Transitioned to Cerner

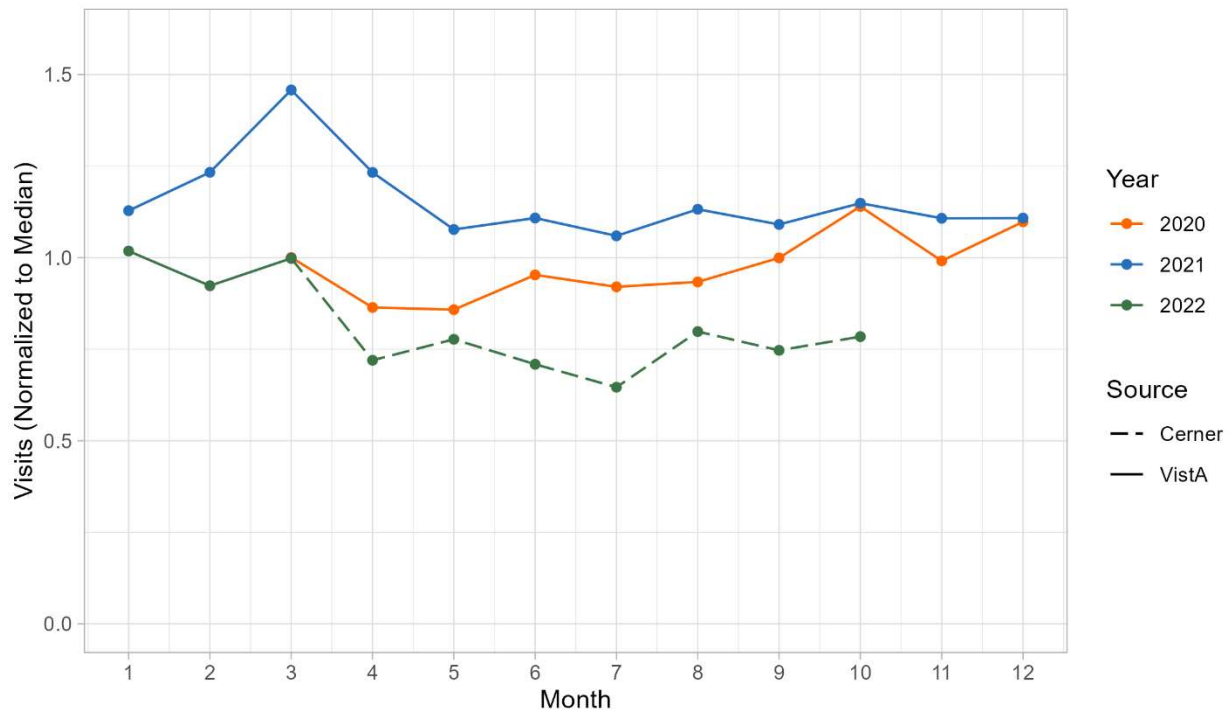
Outpatient Visits: 653 - Roseburg, OR



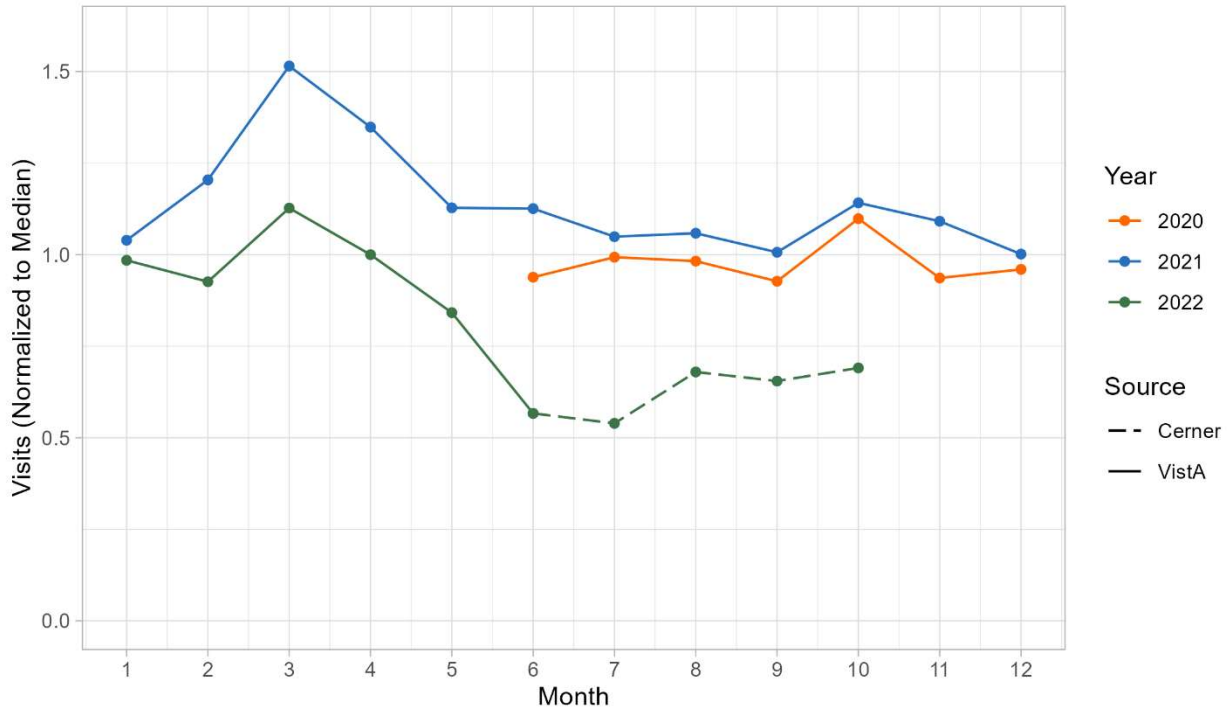
Outpatient Visits: 668 - Spokane, WA



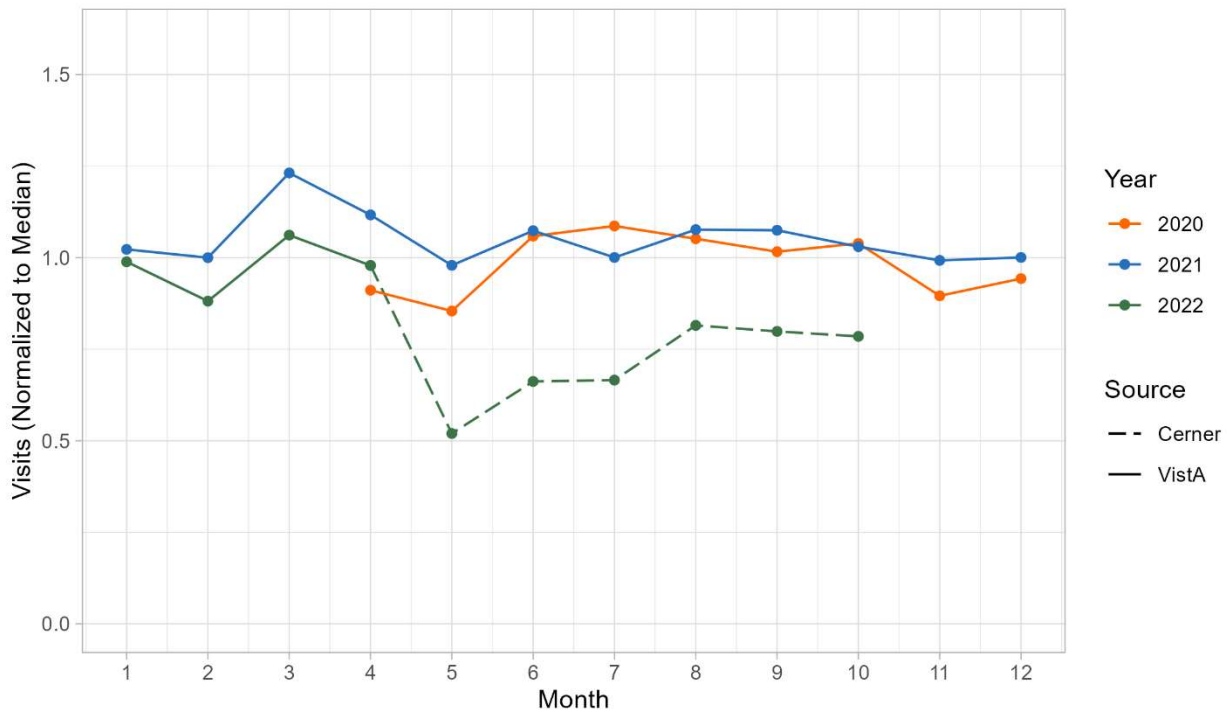
Outpatient Visits: 687 - Walla Walla, WA



Outpatient Visits: 692 - White City, OR

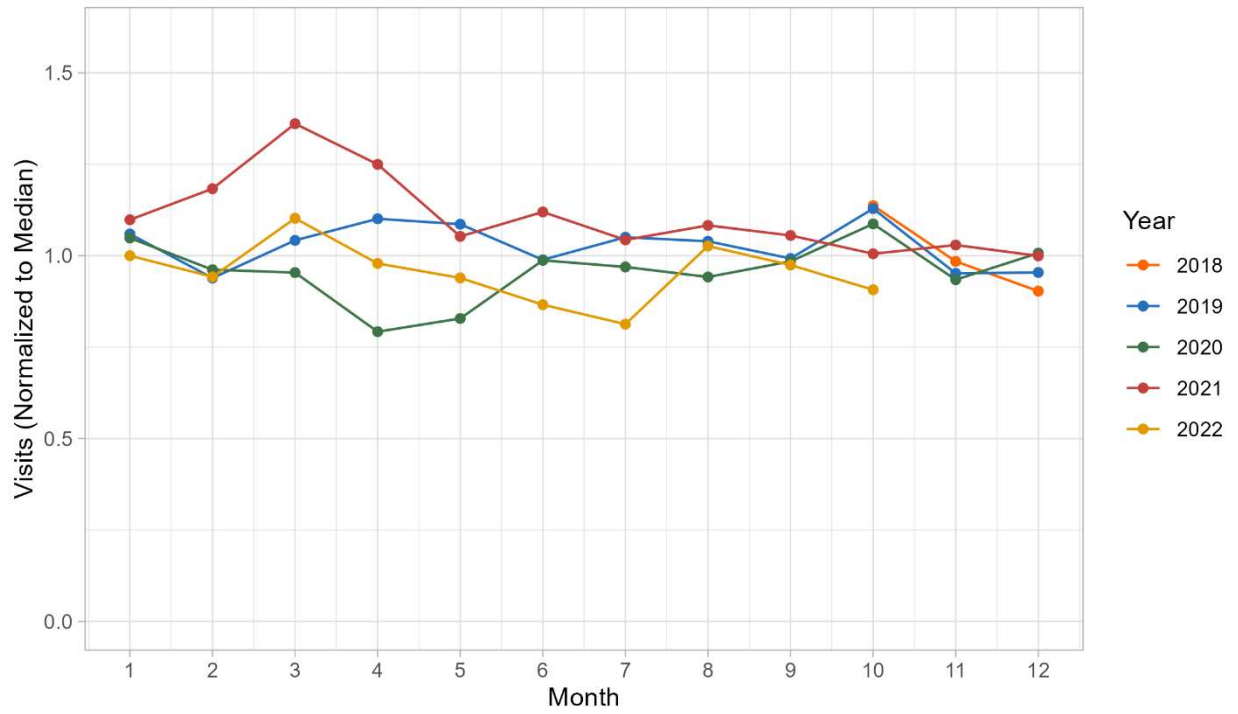


Outpatient Visits: 757 - Columbus, OH

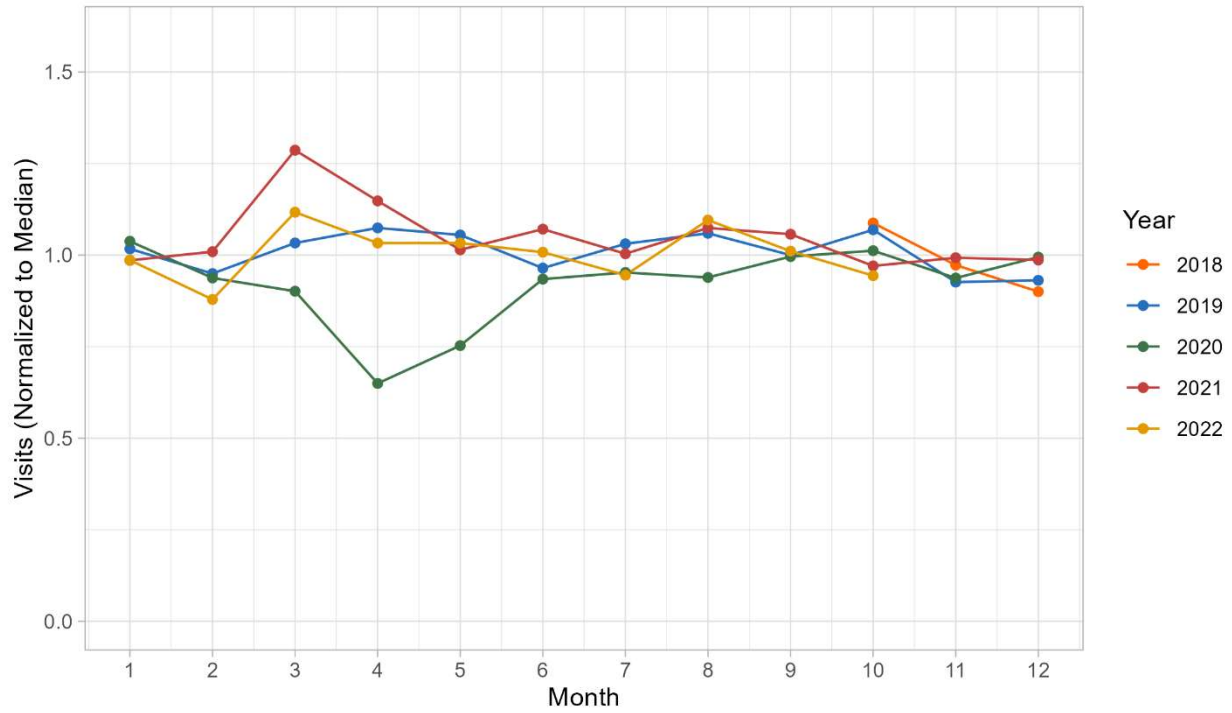


Comparison VAMCs

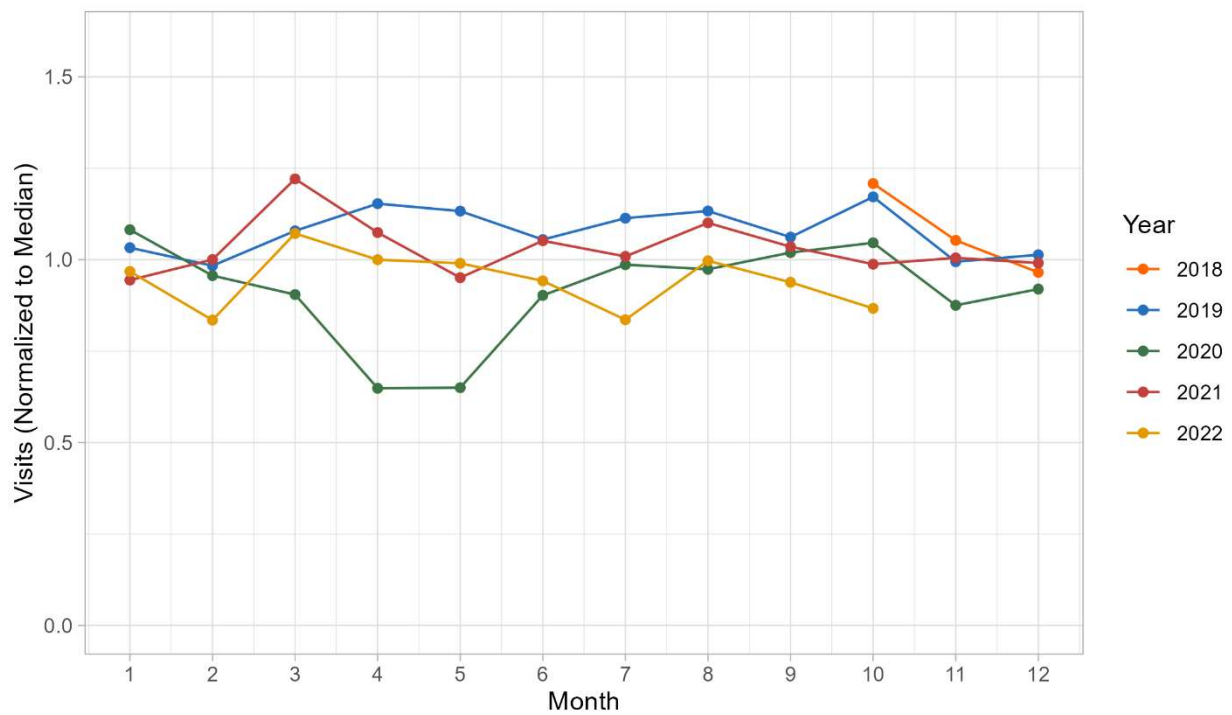
Outpatient Visits: 531 - Boise, ID



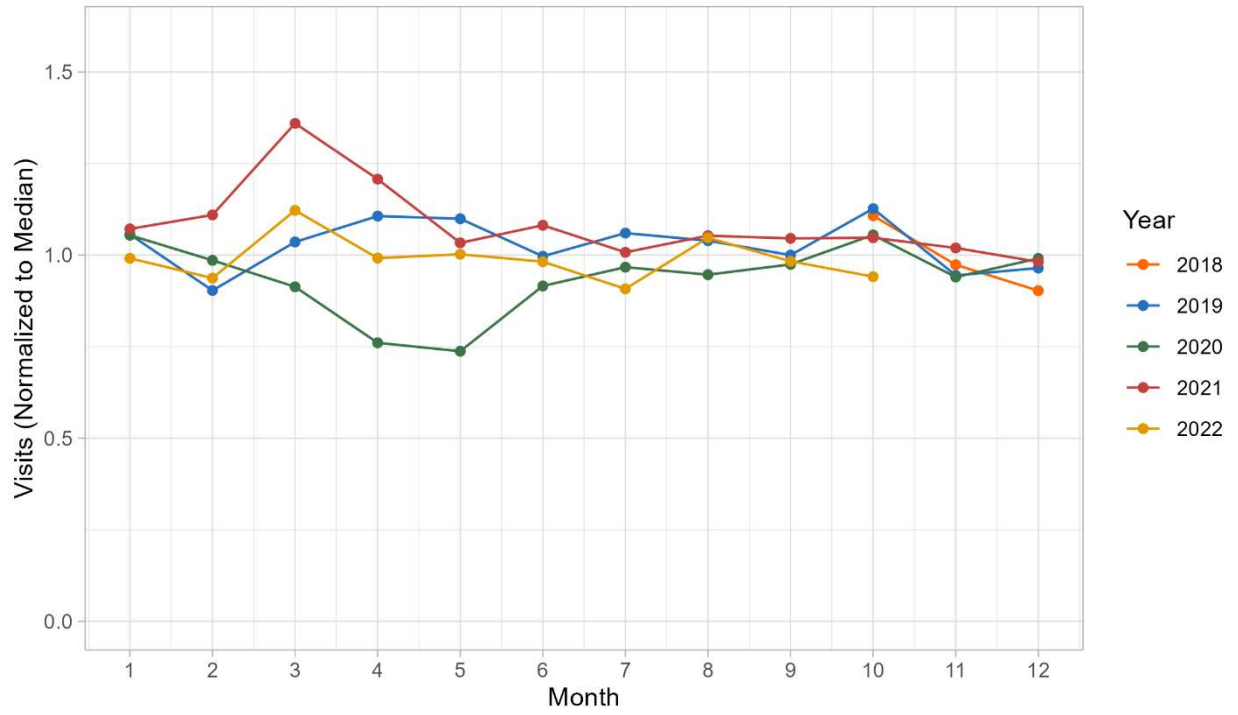
Outpatient Visits: 583 - Indianapolis, IN



Outpatient Visits: 610 - Northern Indiana HCS



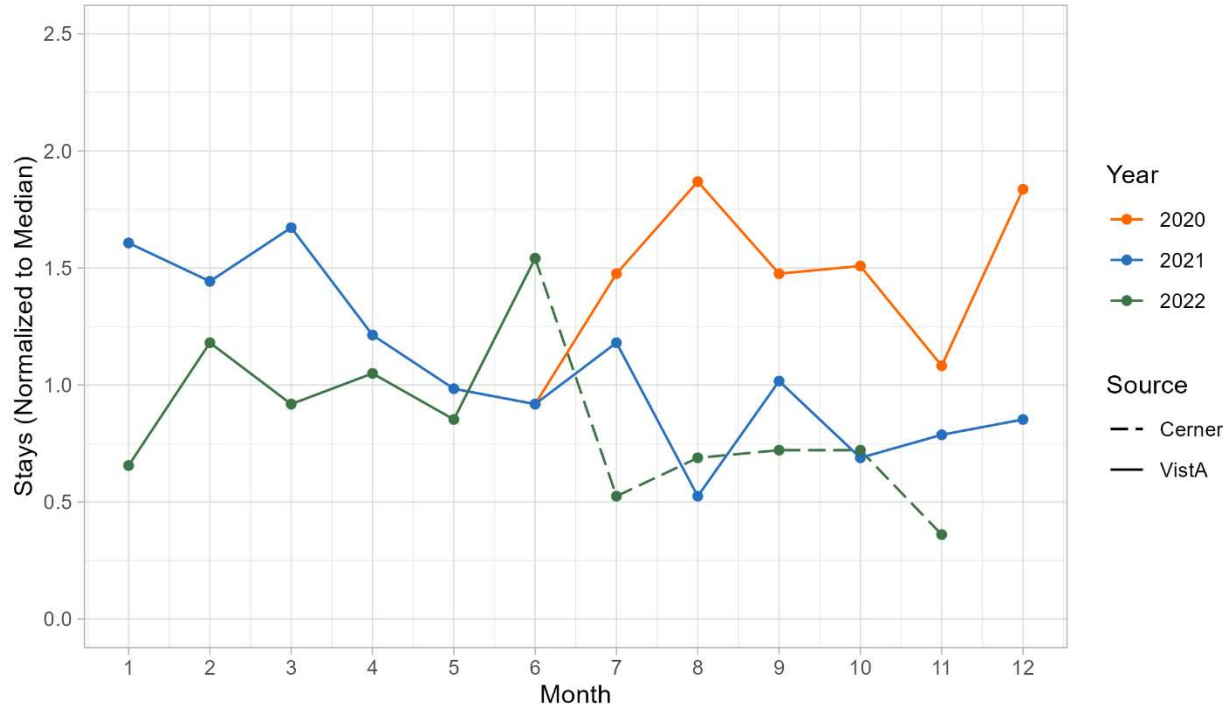
Outpatient Visits: 648 - Portland, OR



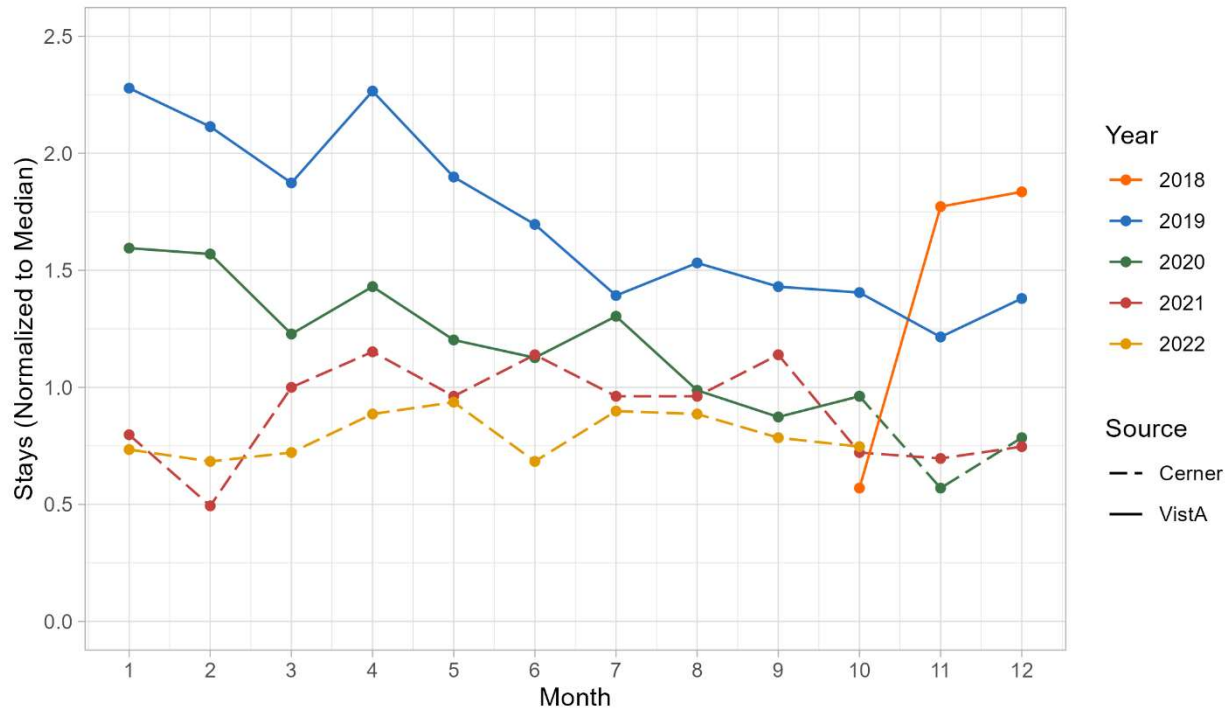
Inpatient

VAMCs Transitioned to Cerner

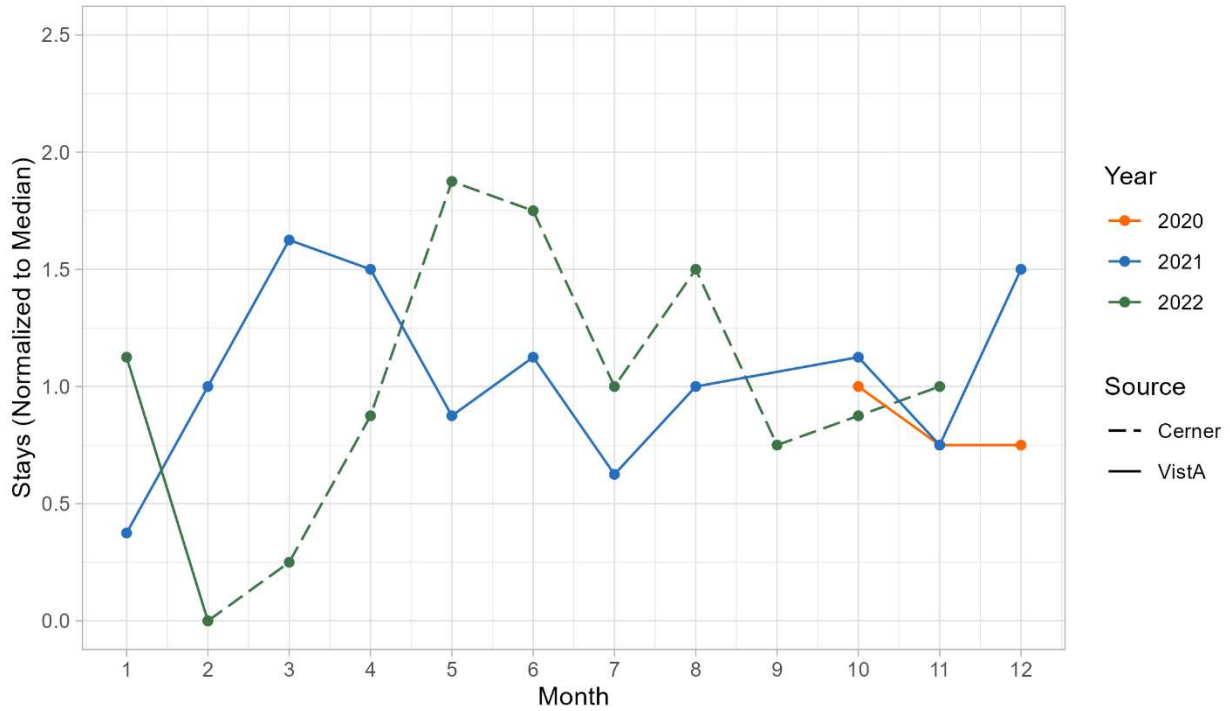
Inpatient Admissions: 653 - Roseburg, OR



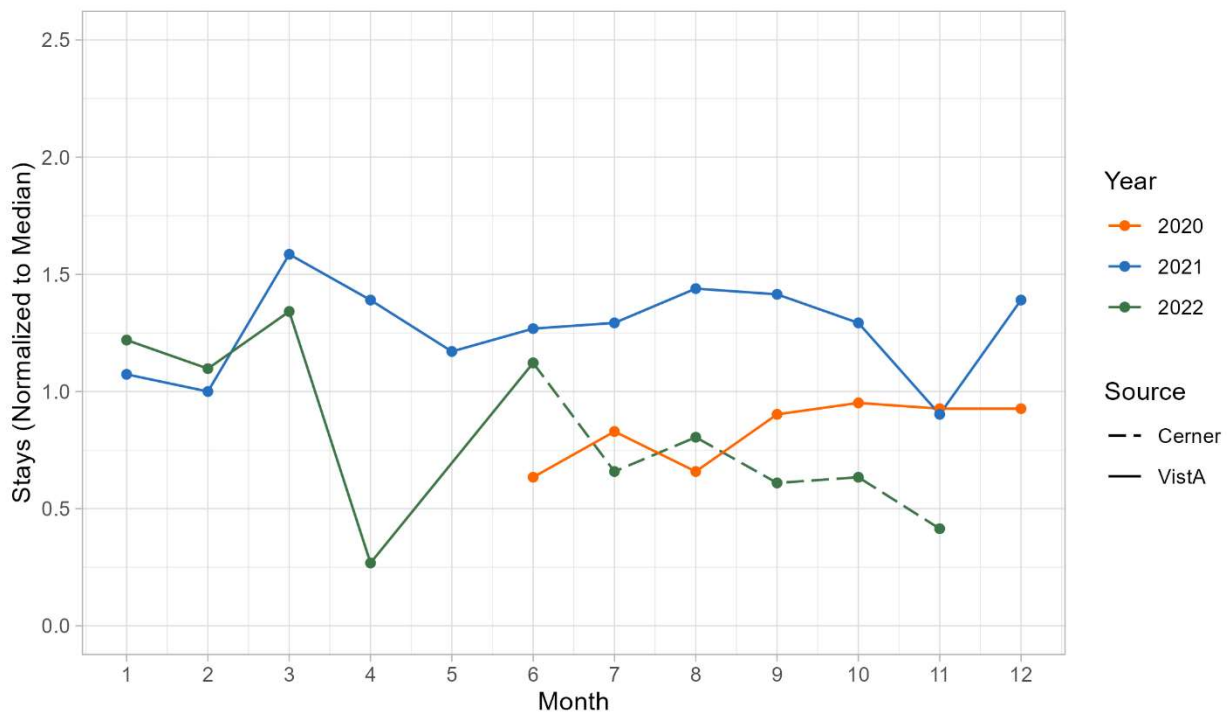
Inpatient Admissions: 668 - Spokane, WA



Inpatient Admissions: 687 - Walla Walla, WA

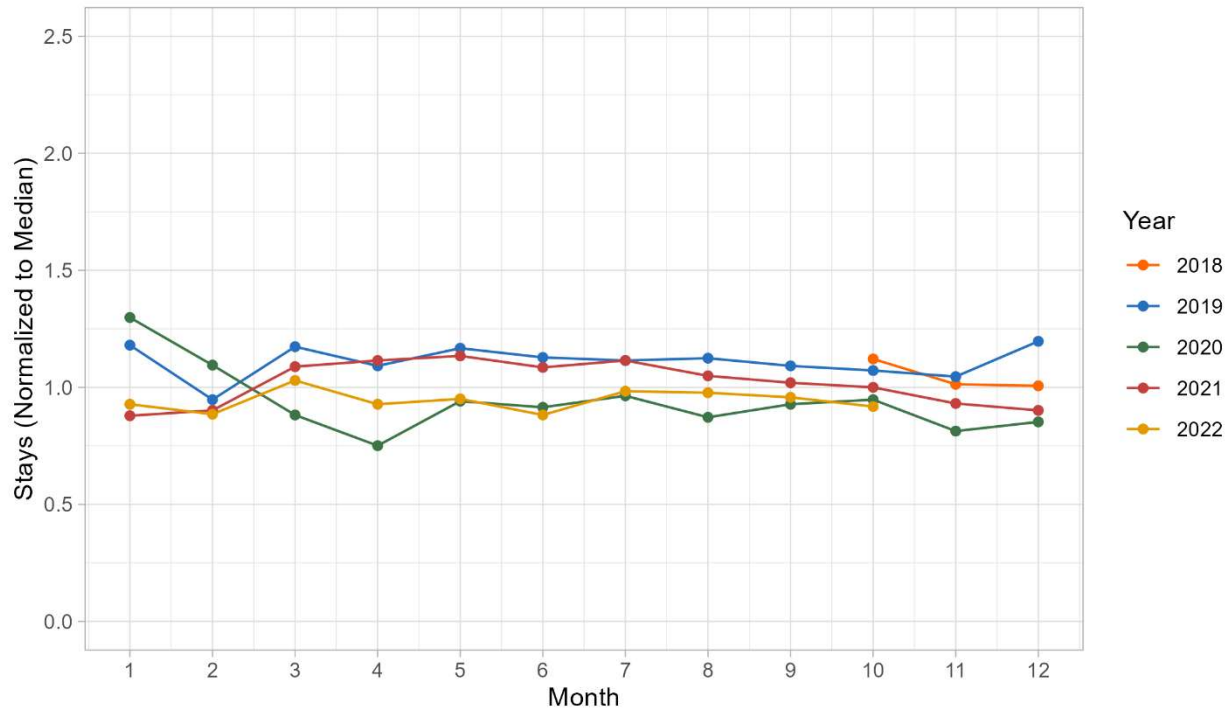


Inpatient Admissions: 692 - White City, OR

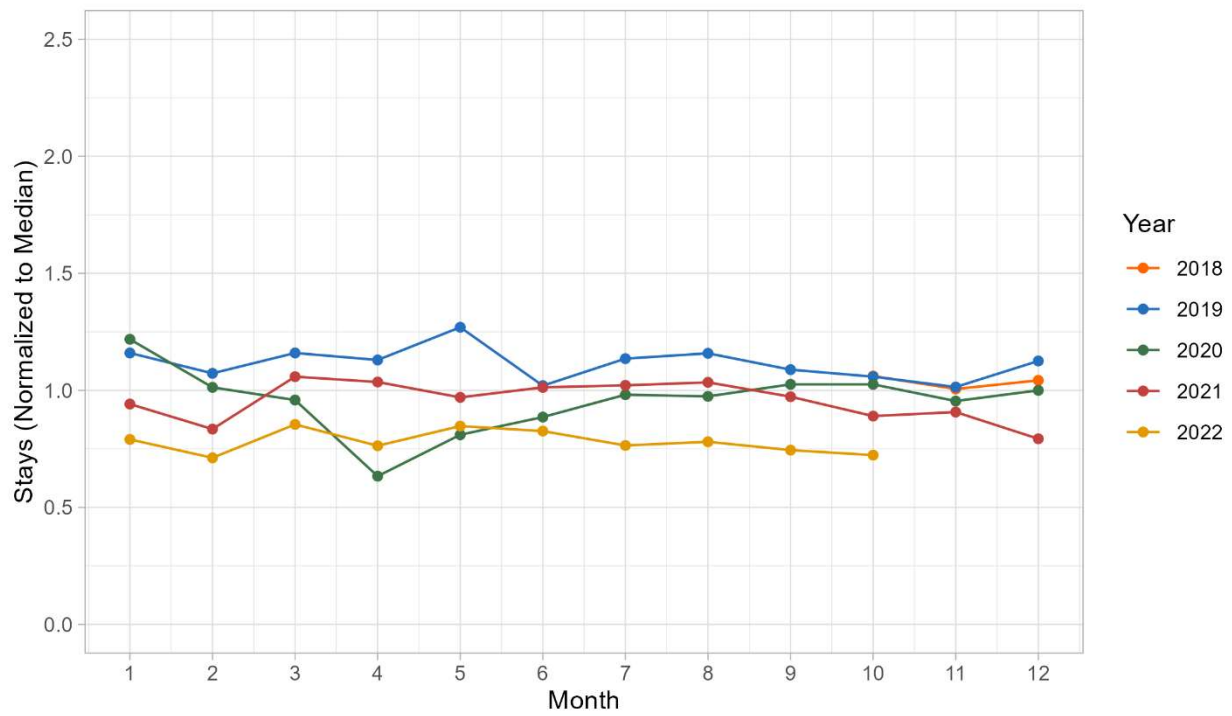


Comparison VAMCs

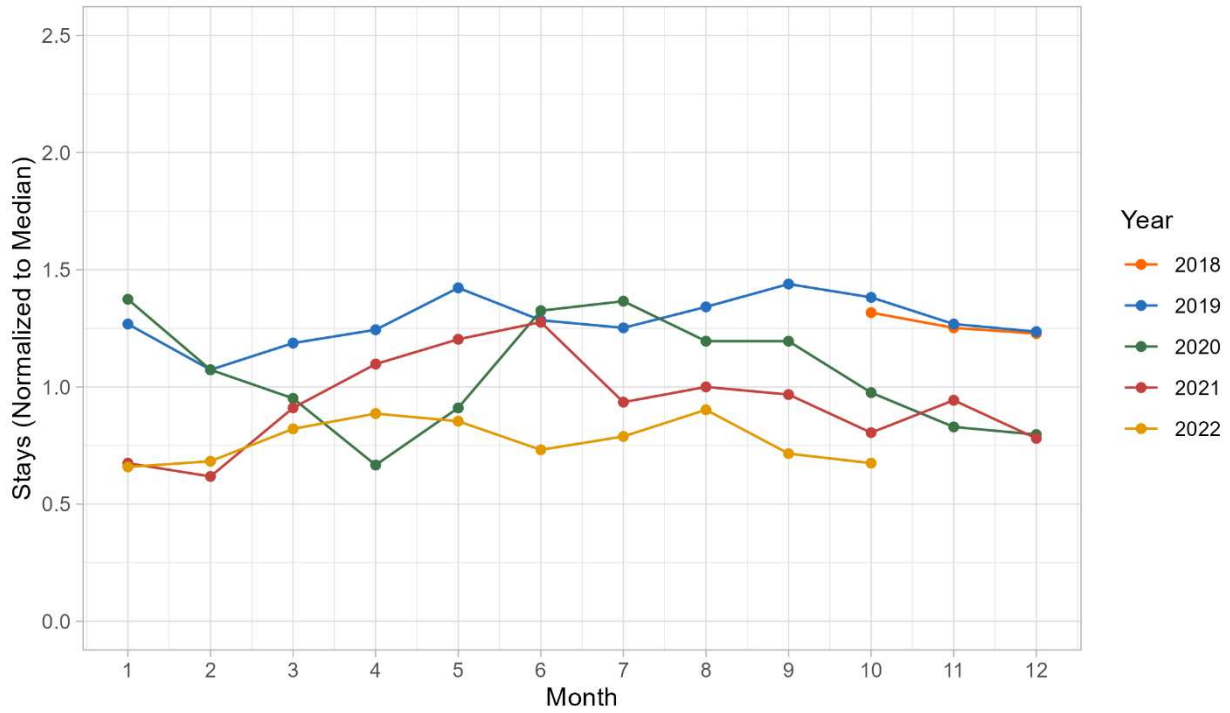
Inpatient Admissions: 531 - Boise, ID



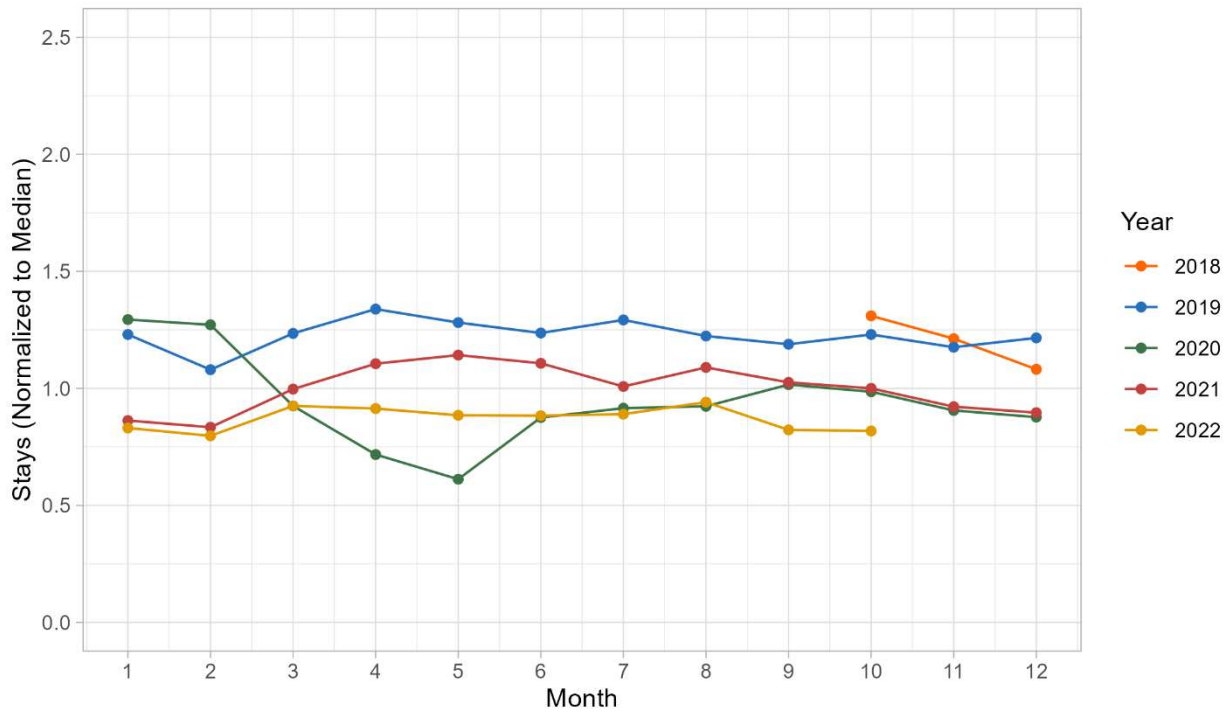
Inpatient Admissions: 583 - Indianapolis, IN



Inpatient Admissions: 610 - Northern Indiana HCS



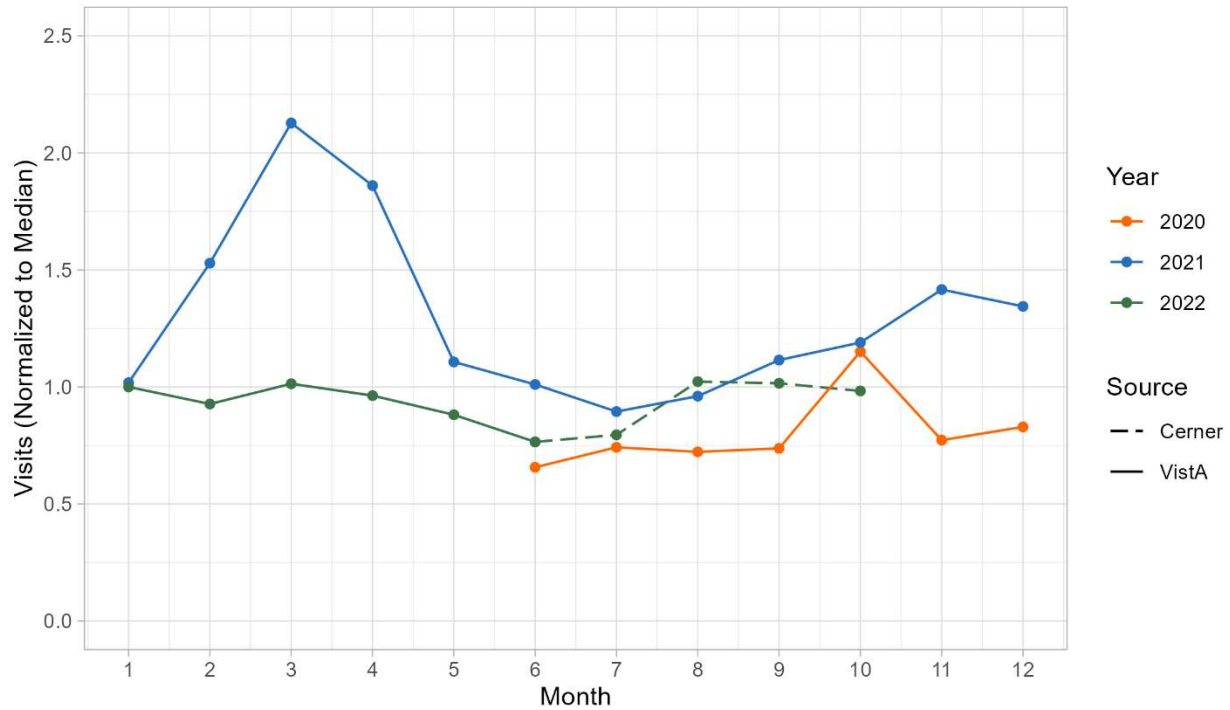
Inpatient Admissions: 648 - Portland, OR



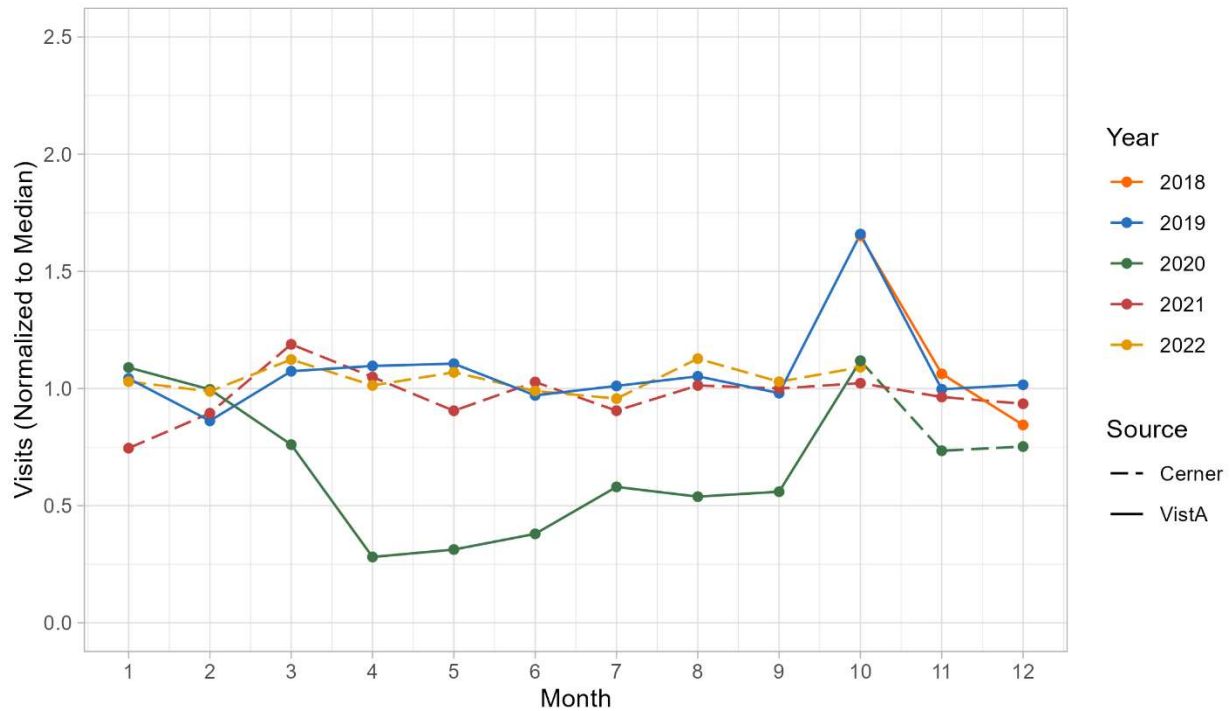
Primary Care

VAMCs Transitioned to Cerner

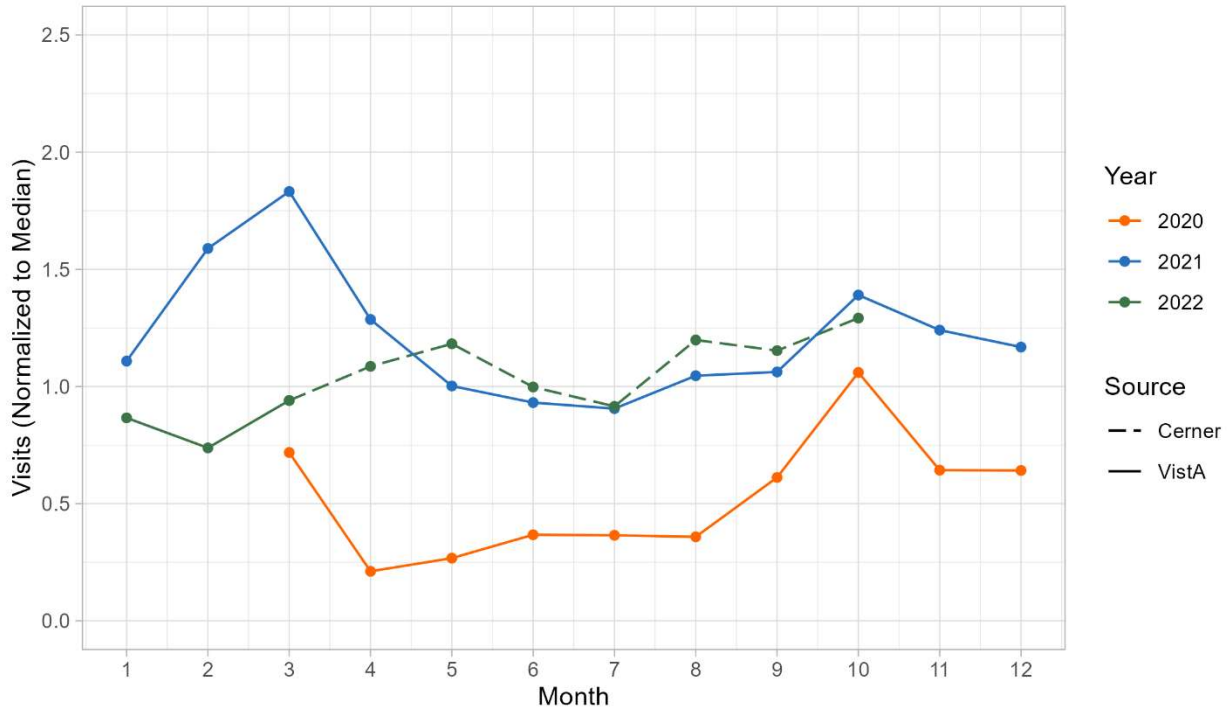
Primary Care Visits: 653 - Roseburg, OR



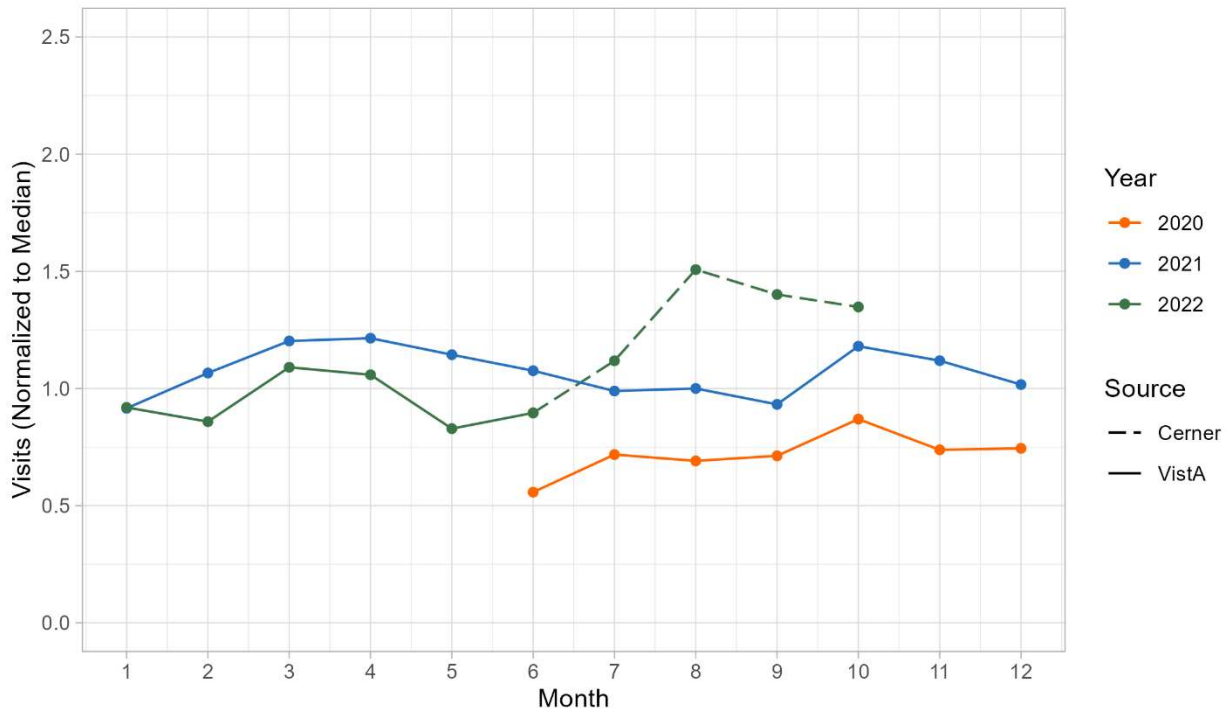
Primary Care Visits: 668 - Spokane, WA



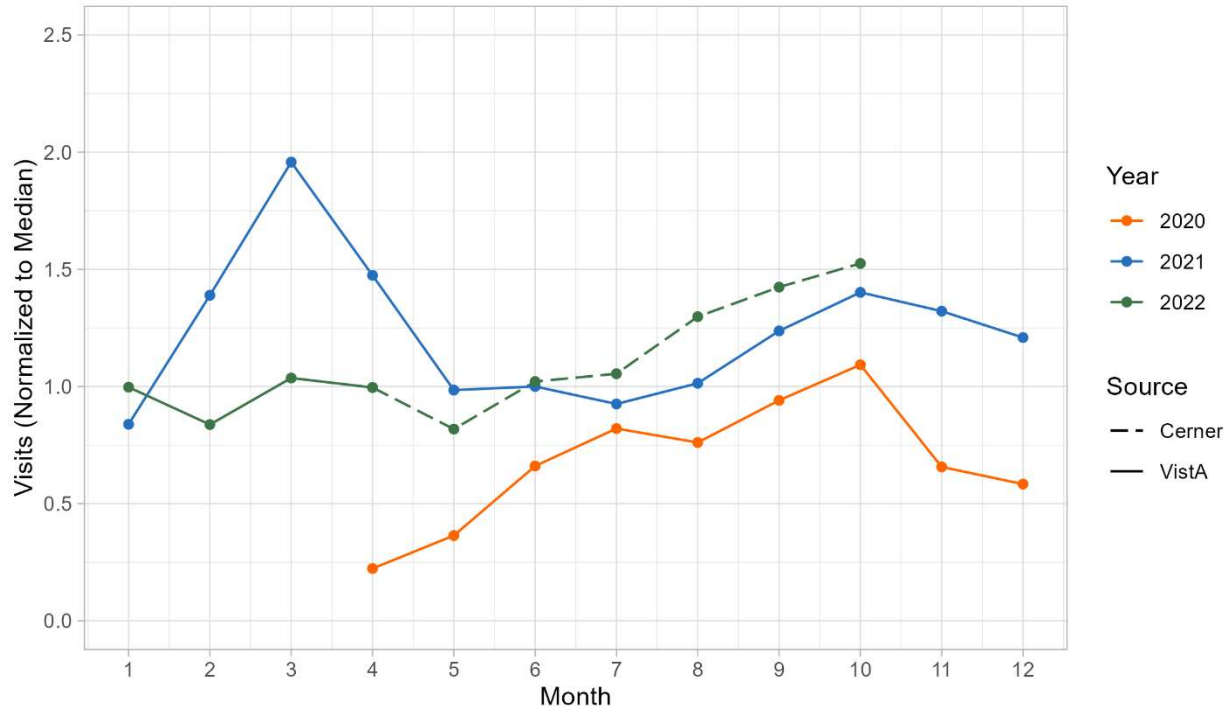
Primary Care Visits: 687 - Walla Walla, WA



Primary Care Visits: 692 - White City, OR

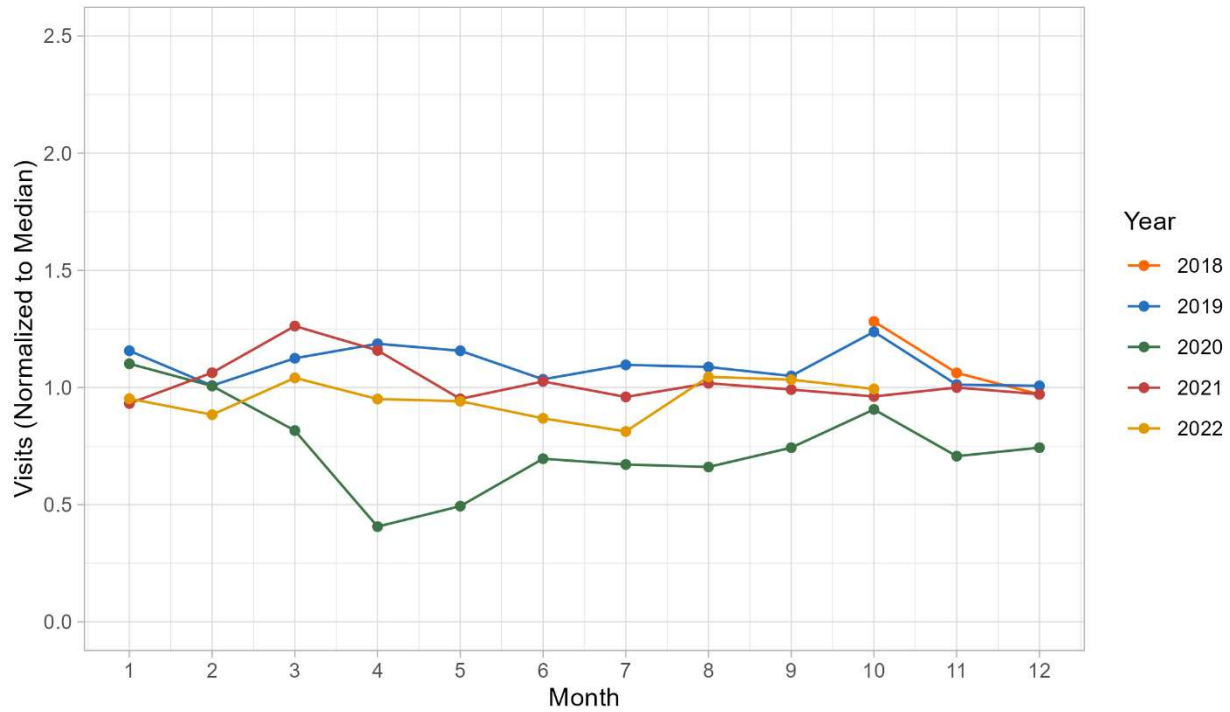


Primary Care Visits: 757 - Columbus, OH

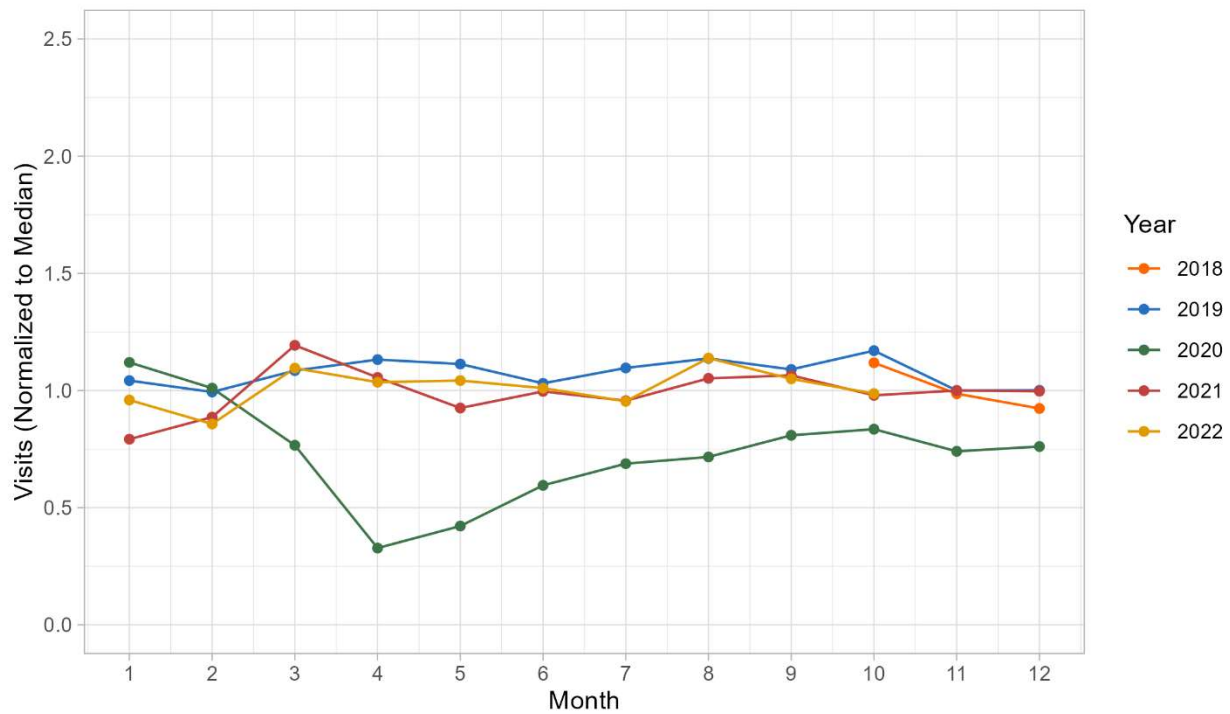


Comparison VAMCs

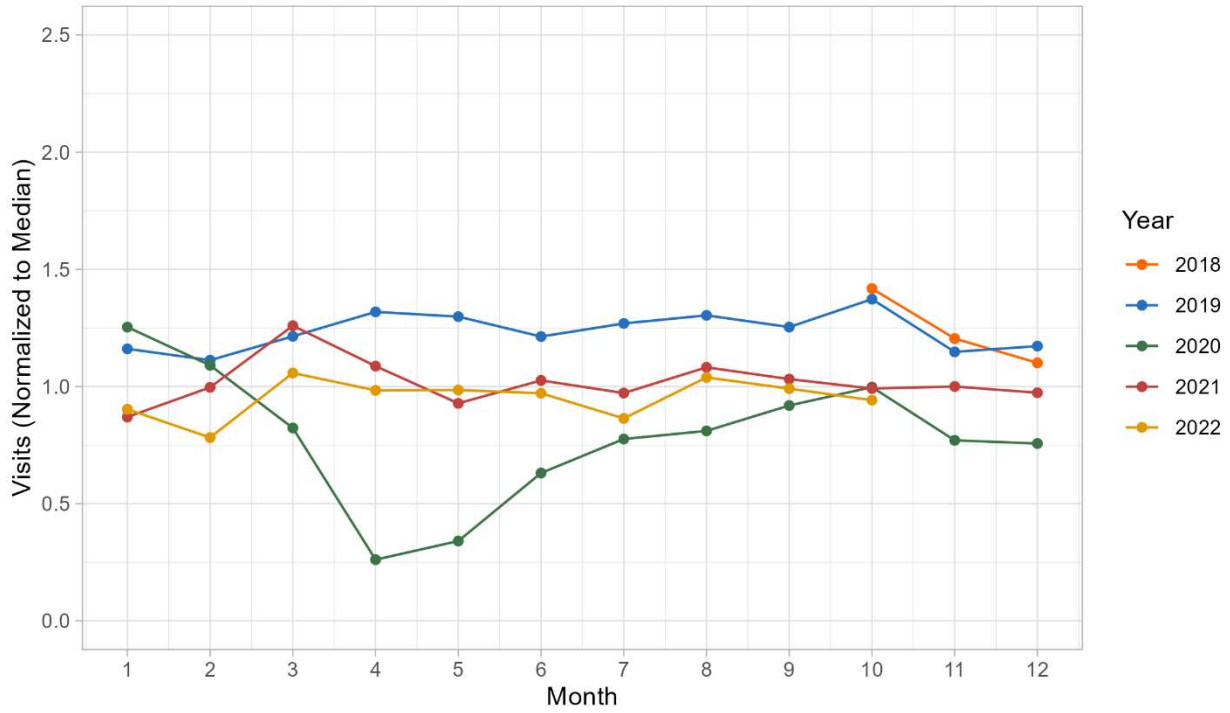
Primary Care Visits: 531 - Boise, ID



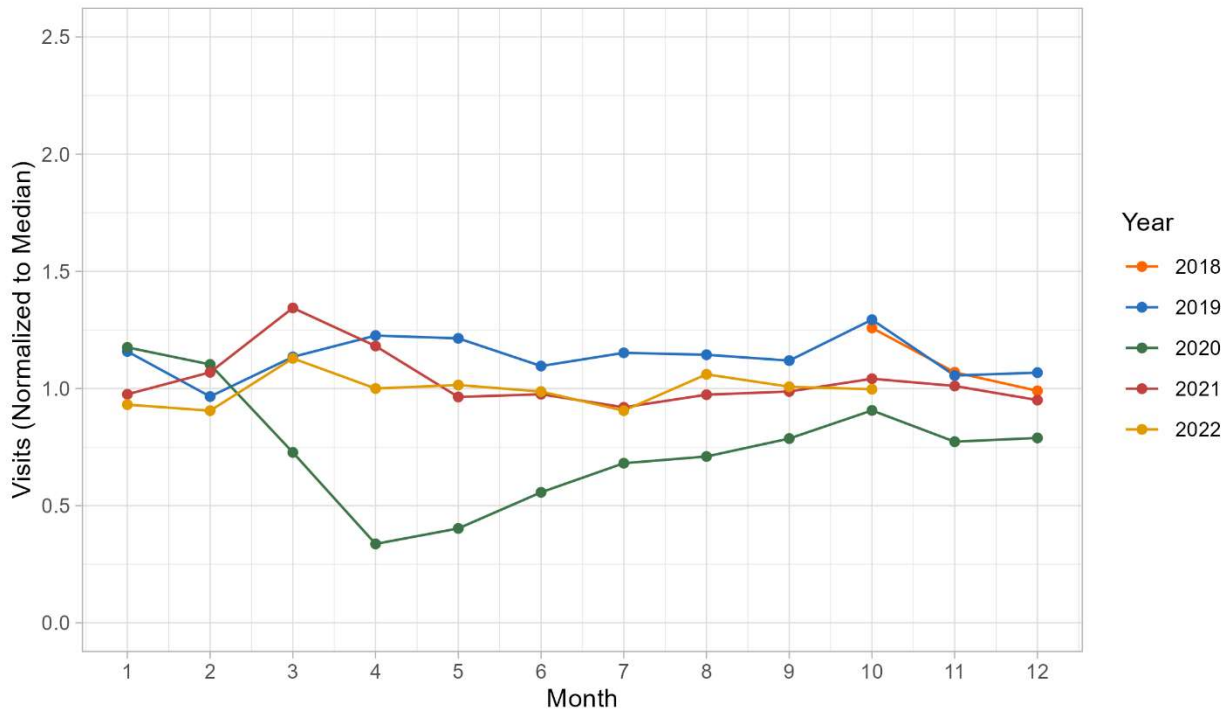
Primary Care Visits: 583 - Indianapolis, IN



Primary Care Visits: 610 - Northern Indiana HCS



Primary Care Visits: 648 - Portland, OR



3.2 Results: Tables

Note: A “+” sign indicates that the transition to the Cerner EHR occurred during this month and the two numbers specify the utilization counts from Vista before the transition and the utilization counts from Cerner after the transition.

Outpatient

VAMCs Transitioned to Cerner

653 - Roseburg, OR

Month	2020	2021	2022
1	-	22,862	22,265
2	-	25,221	21,387
3	-	30,480	24,605
4	-	28,079	21,815
5	-	23,105	21,020
6	21,556	24,922	7,312+6,761
7	22,921	23,225	12,293
8	21,847	23,322	15,675
9	20,330	22,969	14,975
10	24,757	23,259	15,762
11	20,873	23,929	-
12	22,659	23,354	-

668 - Spokane, WA

Month	2018	2019	2020	2021	2022
1	-	31,308	32,832	18,774	22,446
2	-	27,251	29,514	22,426	21,550
3	-	32,139	29,015	30,056	25,126
4	-	33,564	22,456	25,627	23,281
5	-	33,994	22,289	21,555	24,591
6	-	29,839	25,775	23,534	23,206

Month	2018	2019	2020	2021	2022
7	-	31,996	28,474	21,472	21,549
8	-	32,124	27,527	23,021	25,285
9	-	30,151	28,262	21,946	23,196
10	35,343	35,341	22,743+3,238	23,856	24,264
11	29,675	28,837	15,161	23,055	-
12	26,417	29,733	17,259	22,687	-

687 - Walla Walla, WA

Month	2020	2021	2022
1	-	13,761	12,417
2	-	15,039	11,260
3	12,203	17,781	10,848+1,327
4	10,537	15,036	8,779
5	10,464	13,135	9,478
6	11,622	13,517	8,646
7	11,225	12,922	7,881
8	11,389	13,808	9,735
9	12,189	13,302	9,110
10	13,901	14,010	9,566
11	12,089	13,508	-
12	13,391	13,514	-

692 - White City, OR

Month	2020	2021	2022
1	-	13,404	12,699

Month	2020	2021	2022
2	-	15,531	11,944
3	-	19,541	14,538
4	-	17,390	12,897
5	-	14,547	10,855
6	12,103	14,519	3,329+3,978
7	12,809	13,531	6,956
8	12,670	13,652	8,765
9	11,960	12,982	8,446
10	14,164	14,723	8,908
11	12,075	14,074	-
12	12,378	12,917	-

757 - Columbus, OH

Month	2020	2021	2022
1	-	42,389	40,987
2	-	41,450	36,529
3	-	51,041	44,002
4	37,766	46,292	40,522+46
5	35,410	40,582	21,547
6	43,892	44,502	27,439
7	45,039	41,472	27,592
8	43,594	44,626	33,783
9	42,125	44,553	33,106
10	43,068	42,694	32,542
11	37,132	41,142	-

Month	2020	2021	2022
12	39,081	41,474	-

Comparison VAMCs

531 - Boise, ID

Month	2018	2019	2020	2021	2022
1	-	35,159	34,797	36,447	33,186
2	-	31,156	31,915	39,265	31,266
3	-	34,579	31,655	45,166	36,582
4	-	36,539	26,289	41,476	32,483
5	-	36,045	27,488	34,936	31,169
6	-	32,814	32,767	37,156	28,739
7	-	34,862	32,166	34,619	26,972
8	-	34,496	31,255	35,937	34,066
9	-	32,934	32,669	35,022	32,338
10	37,731	37,460	36,074	33,362	30,096
11	32,670	31,582	31,006	34,157	-
12	29,974	31,665	33,421	33,170	-

648 - Portland, OR

Month	2018	2019	2020	2021	2022
1	-	77,275	77,108	78,367	72,497
2	-	66,073	72,093	81,163	68,543
3	-	75,761	66,805	99,449	82,071
4	-	80,929	55,622	88,307	72,537
5	-	80,401	53,936	75,587	73,307

Month	2018	2019	2020	2021	2022
6	-	72,901	66,970	79,099	71,826
7	-	77,535	70,729	73,695	66,392
8	-	76,020	69,228	77,021	76,593
9	-	73,138	71,280	76,470	71,902
10	81,005	82,417	77,166	76,602	68,830
11	71,202	69,084	68,753	74,566	-

583 - Indianapolis, IN

Month	2018	2019	2020	2021	2022
1	-	61,588	62,849	59,692	59,722
2	-	57,504	56,782	61,122	53,225
3	-	62,561	54,585	77,911	67,656
4	-	65,059	39,337	69,521	62,552
5	-	63,889	45,597	61,434	62,548
6	-	58,409	56,590	64,853	61,041
7	-	62,428	57,683	60,781	57,249
8	-	64,169	56,863	65,059	66,356
9	-	60,560	60,320	64,015	61,212
10	65,872	64,747	61,290	58,771	57,158
11	58,907	56,096	56,766	60,121	-
12	54,516	56,384	60,228	59,758	-

610 - Northern Indiana HCS

Month	2018	2019	2020	2021	2022
1	-	39,388	41,264	36,010	36,913
2	-	37,506	36,913	38,150	31,842

Month	2018	2019	2020	2021	2022
3	-	41,148	34,502	46,564	40,874
4	-	43,982	24,730	40,971	38,137
5	-	43,206	24,792	36,262	37,764
6	-	40,235	34,417	40,111	35,927
7	-	42,468	35,927	38,480	31,877
8	-	43,214	37,138	41,975	38,025
9	-	40,491	38,881	39,491	35,782
10	46,081	44,689	39,902	37,670	33,063
11	40,156	37,928	33,379	38,327	-
12	36,818	38,648	35,074	37,791	-

Inpatient

VAMCs Transitioned to Cerner

653 - Roseburg, OR

Month	2020	2021	2022
1	-	49	20
2	-	44	36
3	-	51	28
4	-	37	32
5	-	30	26
6	28	28	2+45
7	45	36	16
8	57	16	21
9	45	31	22
10	46	21	22
11	33	24	-

Month	2020	2021	2022
12	56	26	-

668 - Spokane, WA

Month	2018	2019	2020	2021	2022
1	-	180	126	63	58
2	-	167	124	39	54
3	-	148	97	79	57
4	-	179	113	91	70
5	-	150	95	76	74
6	-	134	89	90	54
7	-	110	103	76	71
8	-	121	78	76	70
9	-	113	69	90	62
10	45	111	57+19	57	59
11	140	96	45	55	-
12	145	109	62	59	-

687 - Walla Walla, WA

Month	2020	2021	2022
1	-	3	9
2	-	8	0
3	-	13	2
4	-	12	7
5	-	7	15
6	-	9	14

Month	2020	2021	2022
7	-	5	8
8	-	8	12
9	-	0	6
10	8	9	7
11	6	6	-
12	6	12	-

692 - White City, OR

Month	2020	2021	2022
1	-	44	50
2	-	41	45
3	-	65	55
4	-	57	11
5	-	48	0
6	26	52	3+43
7	34	53	27
8	27	59	33
9	37	58	25
10	39	53	26
11	38	37	-
12	38	57	-

Comparison VAMCs

531 - Boise, ID

Month	2018	2019	2020	2021	2022
1	-	360	396	268	283
2	-	289	334	275	270
3	-	358	269	332	314
4	-	333	229	340	283
5	-	356	287	346	290
6	-	344	279	331	269
7	-	340	294	340	300
8	-	343	266	320	298
9	-	333	283	311	292
10	342	327	289	305	280
11	309	319	248	284	-
12	307	365	260	275	

648 - Portland, OR

Month	2018	2019	2020	2021	2022
1	-	770	810	540	520
2	-	676	796	522	499
3	-	773	579	624	579
4	-	838	449	692	572
5	-	802	383	715	554
6	-	774	548	693	553
7	-	809	573	631	557
8	-	766	578	682	589

Month	2018	2019	2020	2021	2022
9	-	744	636	642	515
10	820	770	617	626	512
11	759	736	567	577	-
12	677	761	549	561	-

583 - Indianapolis, IN

Month	2018	2019	2020	2021	2022
1	-	813	854	660	554
2	-	752	710	585	499
3	-	813	672	742	599
4	-	792	444	726	535
5	-	890	568	680	594
6	-	715	621	710	579
7	-	796	688	716	536
8	-	812	683	725	547
9	-	763	719	682	522
10	744	742	719	624	507
11	705	711	669	636	-
12	731	789	701	556	-

610 - Northern Indiana HCS

Month	2018	2019	2020	2021	2022
1	-	156	169	83	81
2	-	132	132	76	84
3	-	146	117	112	101

Month	2018	2019	2020	2021	2022
4	-	153	82	135	109
5	-	175	112	148	105
6	-	158	163	157	90
7	-	154	168	115	97
8	-	165	147	123	111
9	-	177	147	119	88
10	162	170	120	99	83
11	154	156	102	116	-
12	151	152	98	96	-

Primary Care

VAMCs Transitioned to Cerner

653 - Roseburg, OR

Month	2020	2021	2022
1	-	4,565	4,483
2	-	6,854	4,156
3	-	9,538	4,544
4	-	8,340	4,317
5	1,084	4,962	3,950
6	2,943	4,530	1,464+1,966
7	3,327	4,011	3,565
8	3,239	4,306	4,585
9	3,306	4,998	4,553
10	5,160	5,333	4,406
11	3,464	6,348	-

Month	2020	2021	2022
12	3,717	6,026	-

668 - Spokane, WA

Month	2018	2019	2020	2021	2022
1	-	6,278	6,559	4,487	6,196
2	-	5,190	5,996	5,385	5,947
3	-	6,464	4,578	7,155	6,764
4	-	6,599	1,692	6,315	6,099
5	-	6,658	1,883	5,448	6,436
6	-	5,843	2,286	6,186	5,957
7	-	6,086	3,492	5,450	5,760
8	-	6,333	3,242	6,099	6,786
9	1,472	5,901	3,369	6,020	6,194
10	9,942	9,987	5,677+1,056	6,156	6,567
11	6,397	6,001	4,421	5,801	-
12	5,083	6,115	4,529	5,628	-

687 - Walla Walla, WA

Month	2020	2021	2022
1	-	3,570	2,790
2	532	5,118	2,377
3	2,314	5,901	2,525+504
4	681	4,142	3,498
5	862	3,228	3,808
6	1,183	3,000	3,214

Month	2020	2021	2022
7	1,176	2,917	2,948
8	1,155	3,369	3,860
9	1,971	3,421	3,714
10	3,414	4,478	4,161
11	2,071	3,996	-
12	2,067	3,763	-

692 - White City, OR

Month	2020	2021	2022
1	-	1,689	1,696
2	-	1,967	1,584
3	-	2,219	2,012
4	-	2,241	1,953
5	576	2,111	1,529
6	1,029	1,985	394+1,259
7	1,325	1,825	2,063
8	1,275	1,845	2,781
9	1,315	1,720	2,585
10	1,604	2,178	2,487
11	1,362	2,064	-
12	1,374	1,876	-

757 - Columbus, OH

Month	2020	2021	2022
1	-	5,758	6,846

Month	2020	2021	2022
2	-	9,539	5,751
3	162	13,440	7,115
4	1,533	10,122	6,834+2
5	2,499	6,761	5,618
6	4,537	6,866	7,011
7	5,634	6,354	7,240
8	5,226	6,961	8,911
9	6,460	8,494	9,778
10	7,502	9,624	10,471
11	4,509	9,073	-
12	4,007	8,300	-

Comparison VAMCs

531 - Boise, ID

Month	2018	2019	2020	2021	2022
1	-	25,454	24,236	20,506	20,955
2	-	22,184	22,148	23,393	19,452
3	-	24,751	17,961	27,777	22,911
4	-	26,114	8,943	25,487	20,920
5	-	25,455	10,868	20,937	20,719
6	-	22,776	15,318	22,574	19,110
7	-	24,130	14,776	21,120	17,876
8	-	23,932	14,544	22,407	23,006
9	-	23,088	16,356	21,812	22,743
10	28,202	27,237	19,945	21,166	21,866

Month	2018	2019	2020	2021	2022
11	23,375	22,272	15,558	22,006	-
12	21,364	22,163	16,358	21,373	-

648 - Portland, OR

Month	2018	2019	2020	2021	2022
1	-	52,961	53,755	44,604	42,587
2	-	44,164	50,428	48,890	41,399
3	-	51,899	33,261	61,456	51,617
4	-	56,062	15,402	54,016	45,733
5	-	55,518	18,428	44,079	46,413
6	-	50,116	25,472	44,608	45,135
7	-	52,693	31,154	42,066	41,407
8	-	52,317	32,465	44,525	48,501
9	-	51,179	35,965	45,147	46,077
10	57,558	59,159	41,453	47,638	45,588
11	48,896	48,264	35,353	46,227	-
12	45,278	48,828	36,084	43,476	-

583 - Indianapolis, IN

Month	2018	2019	2020	2021	2022
1	-	42,049	45,180	31,959	38,704
2	-	40,085	40,749	35,766	34,576
3	-	43,767	30,914	48,124	44,192
4	-	45,665	13,218	42,589	41,772
5	-	44,902	17,014	37,327	42,056

Month	2018	2019	2020	2021	2022
6	-	41,578	24,016	40,182	40,755
7	-	44,227	27,748	38,586	38,476
8	-	45,863	28,906	42,433	45,925
9	-	43,968	32,630	42,953	42,345
10	45,113	47,199	33,687	39,511	39,813
11	39,789	40,350	29,873	40,344	-
12	37,254	40,378	30,697	40,222	-

610 - Northern Indiana HCS

Month	2018	2019	2020	2021	2022
1	-	26,745	28,881	20,040	20,803
2	-	25,628	25,123	22,955	18,024
3	-	27,973	18,965	29,014	24,370
4	-	30,377	6,016	25,045	22,664
5	-	29,911	7,848	21,386	22,694
6	-	27,953	14,534	23,640	22,379
7	-	29,240	17,880	22,397	19,904
8	-	30,037	18,675	24,927	23,936
9	-	28,885	21,173	23,771	22,832
10	32,669	31,628	22,979	22,837	21,694
11	27,755	26,444	17,749	23,042	-
12	25,367	27,013	17,437	22,428	-

4 References and Resources

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