

## DIALYSIS RELATED-INFECTION OVERVIEW

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### BACKGROUND

According to the National Institute of Diabetes and Digestive and Kidney Diseases 2012 figures, more than 20 million people aged 20 and older have chronic kidney disease in the United States. In 2009, more than 871,000 patients in the United States received chronic dialysis treatment<sup>13</sup>.

Surveillance for dialysis-related infections in Colorado occurs within outpatient dialysis centers only and excludes peritoneal and home dialysis. The outpatient facilities monitored may be dedicated, stand-alone facilities, hospital-based or affiliated units that primarily serve this patient population. The reporting of dialysis related infections began in March 2010, and currently there are 71 dialysis centers reporting to NHSN.

Dialysis centers in Colorado monitor patients for any of three specific events that must be reported: 1) an outpatient start of an intravenous antibiotic, 2) a positive blood culture, or 3) pus, redness or increased swelling at the vascular access site. This report depicts counts and rates for two types of dialysis related infections: access-related blood stream infections (ARB) and local access infections (LAI). An ARB, which poses more serious health implications and requires higher levels of care, is determined by the presence of a microorganism identified in a blood culture, and the source of infection is reported as the vascular access site. An LAI is defined as the presence of pus, redness or swelling of the vascular access site without the presence of an ARB. Although an LAI is not as severe as an ARB, antibiotics typically are given in either case.

Each table below lists the dialysis center's name, city, number of dialysis patients per month (patient months), numbers and rates of ARB and LAI, and comparisons to the national average (for ARB only). Currently, no national averages have been established for LAI. The infection rate used is the number of infections per 100 patient-months. The three categories that indicate how a Colorado dialysis center's infection rates compare to national infection rates are:

1. Statistically fewer infections than expected based on national infection rates (**better**);
2. Statistically similar infections as expected based on the national infection rates (**same**); or
3. Statistically more infections than expected based on national infection rates (**worse**).

### RESULTS

Tables 22 and 23 show the number and rates of ARB and LAI for each outpatient dialysis treatment center in Colorado. The reporting period is August 1, 2012 through July 31, 2015. This year, while we used a more recent national ARB rate (from 2014 data) for the national comparison, Colorado's aggregate ARB rate was similar to the national average.

Seventy one dialysis treatment centers submitted dialysis infection data into NHSN this past year. While the statewide ARB rate was similar to the national average this past year, there were more facilities having zero ARB infections (15 this year versus 10 last year). Three centers

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had ARB rates worse than the national average (compared to six last year) and one had a better rate. The facility-specific LAI counts and rates presented in Table 22 below show eight facilities with zero LAI (compared to six last year). While the statewide LAI rate is 0.9 per 100 patient months, national LAI rates are not yet available to provide comparisons.

TABLE 23: Number and Rates of Dialysis Local Access Infections in Outpatient Dialysis Centers - Colorado, August 2012 – July 2015

Dialysis-Related Infections: Local Access Infections: August 1, 2012 – July 31, 2015										
Dialysis Center and City		August 2012- July 2013			August 2013-July 2014			August 2014- July 2015		
		No. of Patient Months	No. of Infections	Rate	No. of Patient Months	No. of Infections	Rate	No. of Patient Months	No. of Infections	Rate
AR Kidney Ctr Of Arvada	Arvada	1,059	16	1.5	1,101	28	2.5	1,162	14	1.2
AR Kidney Ctr Of Bear Creek	Lakewood	310	9	2.9	366	11	3	428	6	1.4
AR Kidney Ctr Of Lafayette	Lafayette	543	1	0.2	548	0	0	607	1	0.2
AR Kidney Ctr Of Lakewood	Lakewood	639	11	1.7	910	27	3	904	8	0.9
AR Kidney Ctr Of Longmont	Longmont	897	4	0.4	980	5	0.5	963	11	1.1
AR Kidney Ctr Of Northridge	Westminster	Not yet operating			80	1	1.3	243	2	0.8
AR Kidney Ctr Of Parker	Parker	Not yet operating			101	2	2	281	7	2.5
AR Kidney Ctr On Main	Longmont	341	7	2.1	363	7	1.9	358	6	1.7
AR Kidney Ctr Westminster	Westminster	1,340	17	1.3	1,368	26	1.9	1,361	19	1.4
AR Thornton Kidney Ctr	Thornton	435	2	0.5	535	14	2.6	573	8	1.4
Children's Hospital Colorado	Denver	194	0	0	114	2	1.8	87	5	5.7
Davita Alamosa	Alamosa	678	12	1.8	567	6	1.1	569	8	1.4
Davita Arvada	Arvada	376	8	2.1	406	9	2.2	289	5	1.7
Davita Aurora	Aurora	1,549	17	1.1	1,456	12	0.8	1,437	8	0.6
Davita Belcaro	Denver	644	16	2.5	596	1	0.2	581	2	0.3
Davita Black Canyon	Montrose	258	6	2.3	277	6	2.2	316	1	0.3
Davita Boulder	Boulder	280	4	1.4	287	7	2.4	271	0	0
Davita Brighton	Brighton	519	10	1.9	587	12	2	650	12	1.8
Davita Castle Rock (Red Hawk)	Castle Rock	77	2	2.6	86	2	2.3	197	2	1
Davita Commerce City	Commerce City	627	8	1.3	458	4	0.9	472	4	0.8
Davita Cortez	Cortez	697	5	0.7	671	11	1.6	658	1	0.2
Davita Denver	Denver	813	29	3.6	806	25	3.1	777	16	2.1
Davita Durango	Durango	373	15	4	390	6	1.5	350	2	0.6
Davita East Aurora	Aurora	1,149	18	1.6	1,068	12	1.1	990	7	0.7
Davita Englewood	Englewood	535	11	2.1	545	4	0.7	584	3	0.5
Davita Grand Junction	Grand Junction	745	18	2.4	753	13	1.7	751	8	1.1
Davita Lakewood	Lakewood	1,025	24	2.3	994	26	2.6	1,087	28	2.6

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Davita Lakewood Crossing	Lakewood	1,071	21	2	1,070	15	1.4	984	18	1.8
Davita Littleton	Littleton	718	10	1.4	698	4	0.6	664	8	1.2
Davita Lonetree	Lonetree	350	2	0.6	338	5	1.5	334	1	0.3
Davita Longmont	Longmont	256	4	1.6	242	5	2.1	258	1	0.4
Davita Loveland Central	Loveland	36	***	***	162	1	0.6	206	0	0
Davita Lowry	Denver	1,023	11	1.1	1,018	15	1.5	1,000	7	0.7
Davita Mesa County	Grand Junction	328	6	1.8	256	14	5.5	256	4	1.6
Davita North CO Springs	CO Springs	142	0	0	219	2	0.9	293	0	0
Davita North Metro	Westminster	383	7	1.8	489	13	2.7	482	5	1
Davita Northeastern CO	Sterling	412	7	1.7	379	2	0.5	401	5	1.2
Davita Parker	Parker	398	13	3.3	429	12	2.8	507	9	1.8
Davita Pikes Peak	CO Springs	1,013	10	1	965	8	0.8	980	6	0.6
Davita Printers Place	CO Springs	193	2	1	199	0	0	319	2	0.6
Davita Sable	Aurora	423	9	2.1	810	21	2.6	1,035	10	1
Davita South Denver	Denver	618	11	1.8	536	12	2.2	463	2	0.4
Davita Southwest Denver	Denver	268	6	2.2	364	7	1.9	392	5	1.3
Davita Thornton	Thornton	855	9	1.1	856	11	1.3	865	3	0.3
Davita West Lakewood	Lakewood	Not yet operating			51	0	0	171	0	0
Davita Westminster	Westminster	527	11	2.1	439	4	0.9	341	1	0.3
Denver Women's Correctional Facility	Denver	269	0	0	290	0	0	288	0	0
Dialysis Clinic Inc Grand Junction	Grand Junction	252	1	0.4	321	2	0.6	330	3	0.9
Dialysis Clinic Inc Montrose	Montrose	399	7	1.8	422	6	1.4	390	5	1.3
DSI Renal Pueblo	Pueblo	500	5	1	489	3	0.6	496	1	0.2
FMC Canon City	Canon city	430	2	0.5	442	1	0.2	442	4	0.9
FMC Denver Central	Denver	1,156	18	1.6	959	13	1.4	821	5	0.6

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FMC East Denver	Denver	1,200	7	0.6	1,273	11	0.9	1,168	16	1.4
FMC Fort Collins	Ft Collins	893	17	1.9	783	8	1	702	4	0.6
FMC Greeley	Greeley	1,405	12	0.9	1,422	4	0.3	1,173	1	0.1
FMC La Junta	La junta	453	3	0.7	423	0	0	353	0	0
FMC Lamar	Lamar	280	0	0	291	1	0.3	252	2	0.8
FMC Loveland	Loveland	653	10	1.5	585	1	0.2	519	6	1.2
FMC North Greeley	Greeley	Not yet operating			Not yet operating			366	1	0.3
FMC Pavillion	Denver	184	1	0.5	578	5	0.9	864	6	0.7
FMC Pueblo	Pueblo	709	11	1.6	701	3	0.4	699	2	0.3
FMC Pueblo South	Pueblo	1,012	7	0.7	1,049	5	0.5	985	5	0.5
FMC Pueblo West	Pueblo	277	2	0.7	291	0	0	294	0	0
FMC Rocky Mountain	Denver	1,010	11	1.1	886	7	0.8	827	10	1.2
FMC South Denver	Denver	Not yet operating			4	***	***	87	3	3.4
FMC Stapleton	Denver	522	3	0.6	546	3	0.5	551	4	0.7
FMC Walsenburg	Walsenburg	158	2	1.3	251	4	1.6	214	1	0.5
FMC West Hampden	Denver	26	***	***	52	0	0	94	0	0
Liberty Colorado Springs Central	CO Springs	1,120	15	1.3	1,113	18	1.6	1,130	10	0.9
Liberty Colorado Springs North	CO Springs	457	0	0	495	0	0	560	4	0.7
Liberty Colorado Springs South	CO Springs	677	0	0	790	5	0.6	895	10	1.1

Note: AR=American Renal, FMC=Fresenius Medical Care. Facility dialysis-related infection rates are per 100 patient months.

Data are limited to the following access types: fistula, graft, tunneled central line, and non-tunneled central line.

Infection data for dialysis centers with fewer than 50 patients in a 12-month period are suppressed to protect confidential health information. These dialysis centers have met the reporting requirements.

\*\*\* Indicates value not shown due to suppression of infection data.

Source: National Healthcare Safety Network (NHSN) Database.