

DIALYSIS RELATED-INFECTION OVERVIEW

BACKGROUND

According to the National Institute of Diabetes and Digestive and Kidney Diseases 2010 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.⁸

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; 70 submitted data to NHSN in the last reporting period.

**Statewide,
Colorado's ARB rates
have been better
than the national
rate for the last three
reporting years.**

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 of vascular access infections for each dialysis center and includes two types of dialysis related infections: local access infections (LAI) and access-related blood stream infections (ARB). An LAI is defined as the presence of pus, redness or swelling of the vascular access site without the presence of an ARB. 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. 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, numbers and rates of ARB and LAI, and for ARB only, comparisons to the national average. 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 (**better**) infections than expected based on national infection rates;
2. Statistically similar (**same**) infections as expected based on the national infection rates; or
3. Statistically more (**worse**) infections than expected based on national infection rates.

RESULTS

Table 21 and 22 shows the number and rates of ARB and LAI for each DTC in Colorado. The reporting period is Aug. 1, 2011 through July 31, 2013.

Seventy dialysis treatment centers submitted DRI data into NHSN this past year. Six reported zero ARB infections; four centers had ARB rates better than the national rate and one had rates that were worse. Table 7 shows statewide, Colorado's ARB rates have been better than the national rate for the last three reporting years. The facility-specific LAI counts and rates presented in Table 22 below show

6 facilities with zero LAI; however, since no national rate for LAI has been established, comparisons are not yet available.

TABLE 21: Dialysis Access-Related Bloodstream Infections, Aug. 1, 2010 – July 31, 2013

| Dialysis Access-Related Bloodstream infections: Aug. 1, 2010 – July 31, 2013 | | | | | | | | | | | | | |
|--|---------------|------------------------|-----------------|------|---------------------|-----------------------|-----------------|------|---------------------|------------------------|-----------------|------|---------------------|
| Dialysis Center and City | | August 2010- July 2011 | | | | August 2011-July 2012 | | | | August 2012- July 2013 | | | |
| | | # of Patients | Infection Count | Rate | National Comparison | # of Patients | Infection Count | Rate | National Comparison | # of Patients | Infection Count | Rate | National Comparison |
| AR Kidney Center Of Arvada | Arvada | 948 | 6 | 0.6 | Same | 930 | 2 | 0.2 | Same | 1,059 | 4 | 0.4 | Same |
| AR Kidney Center Of Lafayette | Lafayette | 474 | 1 | 0.2 | Same | 547 | 2 | 0.4 | Same | 543 | 1 | 0.2 | Same |
| AR Kidney Center Of Lakewood | Lakewood | 807 | 2 | 0.2 | Same | 781 | 3 | 0.4 | Same | 639 | 1 | 0.2 | Same |
| AR Kidney Center Of Longmont | Longmont | 944 | 7 | 0.7 | Better | 1,001 | 12 | 1.2 | Same | 897 | 7 | 0.8 | Same |
| AR Kidney Center Westminster | Westminster | 1,319 | 6 | 0.5 | Better | 1,358 | 6 | 0.4 | Same | 1,340 | 5 | 0.4 | Same |
| AR Kidney Center On Main | Longmont | Not yet operating | | | | 74 | 0 | 0 | Same | 341 | 2 | 0.6 | Same |
| AR Kidney Center Of Bear Creek | Lakewood | Not yet operating | | | | 244 | 2 | 0.8 | Same | 310 | 1 | 0.3 | Same |
| AR Thornton Kidney Center | Thornton | Not yet operating | | | | 202 | 1 | 0.5 | Same | 435 | 2 | 0.5 | Same |
| Children's Hospital Colorado | Aurora | Not yet operating | | | | 99 | 8 | 8.1 | Worse | 194 | 4 | 2.1 | Same |
| Davita Alamosa Dialysis | Alamosa | 545 | 3 | 0.6 | Same | 541 | 0 | 0 | Same | 675 | 4 | 0.6 | Same |
| Davita Arvada Dialysis | Arvada | 490 | 0 | 0 | Same | 366 | 2 | 0.5 | Same | 376 | 3 | 0.8 | Same |
| Davita Aurora Dialysis | Aurora | 1,707 | 0 | 0 | Better | 1,478 | 21 | 1.4 | Worse | 1,551 | 18 | 1.2 | Worse |
| Davita Belcaro Dialysis | Denver | 745 | 9 | 1.2 | Same | 698 | 5 | 0.7 | Same | 646 | 3 | 0.5 | Same |
| Davita Black Canyon Dialysis | Montrose | 74 | 0 | 0 | Same | 191 | 2 | 1.0 | Same | 260 | 1 | 0.4 | Same |
| Davita Boulder Dialysis | Boulder | 357 | 2 | 0.6 | Same | 280 | 0 | 0 | Same | 280 | 0 | 0 | Same |
| Davita Brighton Dialysis | Brighton | 570 | 9 | 1.6 | Worse | 562 | 0 | 0 | Better | 521 | 3 | 0.6 | Same |
| Davita Commerce City Dialysis | CommerceCty | 657 | 1 | 0.2 | Same | 627 | 2 | 0.3 | Same | 627 | 5 | 0.8 | Same |
| Davita Cortez Dialysis | Cortez | 748 | 0 | 0 | Better | 801 | 1 | 0.1 | Same | 695 | 2 | 0.3 | Same |
| Davita Denver Dialysis | Denver | 880 | 5 | 0.6 | Better | 825 | 3 | 0.4 | Same | 817 | 2 | 0.2 | Same |
| Davita Durango Dialysis | Durango | 384 | 0 | 0 | Same | 342 | 1 | 0.3 | Same | 368 | 1 | 0.3 | Same |
| Davita East Aurora Dialysis | Aurora | 1,335 | 5 | 0.4 | Same | 1,280 | 12 | 0.9 | Same | 1,149 | 4 | 0.3 | Same |
| Davita Englewood Dialysis | Englewood | 605 | 2 | 0.3 | Better | 590 | 4 | 0.7 | Same | 539 | 5 | 0.9 | Same |
| Davita Fountain Dialysis | Fountain | 422 | 3 | 0.7 | Same | 407 | 1 | 0.2 | Same | 431 | 0 | 0 | Same |
| Davita Grand Junction | Grnd Junction | 855 | 10 | 1.2 | Same | 715 | 2 | 0.3 | Same | 745 | 5 | 0.7 | Same |
| Davita Lakewood Crossing | Lakewood | 1,219 | 7 | 0.6 | Same | 1,225 | 11 | 0.9 | Same | 1,040 | 6 | 0.6 | Same |
| Davita Lakewood Dialysis | Lakewood | 1,057 | 20 | 1.9 | Worse | 1,051 | 5 | 0.5 | Same | 1,024 | 10 | 1.0 | Same |
| Davita Littleton Dialysis | Littleton | 897 | 1 | 0.1 | Better | 883 | 0 | 0 | Better | 718 | 1 | 0.1 | Better |
| Davita Lonetree-Skyridge | Lone tree | 552 | 4 | 0.7 | Same | 471 | 0 | 0 | Same | 354 | 1 | 0.3 | Same |
| Davita Longmont Dialysis | Longmont | 420 | 4 | 1.0 | Same | 314 | 1 | 0.3 | Same | 256 | 2 | 0.8 | Same |
| Davita Lowry Dialysis | Lowry | 1,126 | 1 | 0.1 | Better | 1,066 | 13 | 1.2 | Worse | 1,023 | 6 | 0.6 | Same |
| Davita Mesa County Dialysis | Grnd Junction | 245 | 4 | 1.6 | Same | 225 | 3 | 1.3 | Same | 303 | 2 | 0.7 | Same |
| Davita North Colo Sprgs Dialysis | Colo Sprgs | 210 | 2 | 1.0 | Same | 140 | 2 | 1.4 | Same | 142 | 0 | 0 | Same |
| Davita North Metro Dialysis | Westminster | 377 | 1 | 0.3 | Same | 400 | 2 | 0.5 | Same | 383 | 2 | 0.5 | Same |
| Davita Northeastern Colo Dialysis | Sterling | 406 | 16 | 3.9 | Same | 368 | 2 | 0.5 | Same | 412 | 3 | 0.7 | Same |
| DaVita Parker Dialysis | Parker | 288 | 0 | 0 | Same | 325 | 2 | 0.6 | Same | 377 | 3 | 0.8 | Same |
| Davita Pikes Peak Dialysis | Colo Sprgs | 981 | 8 | 0.8 | Same | 1,022 | 4 | 0.4 | Same | 1,004 | 11 | 1.1 | Same |
| Davita Printers Place Dialysis | Colo Sprgs | 267 | 0 | 0 | Same | 196 | 0 | 0 | Same | 195 | 1 | 0.5 | Same |

| Dialysis Access-Related Bloodstream infections: Aug. 1, 2010 – July 31, 2013 | | | | | | | | | | | | | |
|--|---------------|------------------------|-----------------|------|---------------------|-----------------------|-----------------|------|---------------------|------------------------|---------------------|------|---------------------|
| Dialysis Center and City | | August 2010- July 2011 | | | | August 2011-July 2012 | | | | August 2012- July 2013 | | | |
| | | # of Patients | Infection Count | Rate | National Comparison | # of Patients | Infection Count | Rate | National Comparison | # of Patients | Infection Count | Rate | National Comparison |
| Davita Red Hawk Dialysis | Castle Rock | Not yet operating | | | | 8 | *** | *** | *** | 77 | 1 | 1.3 | Same |
| Davita Sable Dialysis | Aurora | Not yet operating | | | | Not yet operating | | | | 418 | 4 | 1.0 | Same |
| Davita South Denver Dialysis | Denver | 778 | 2 | 0.3 | Same | 746 | 2 | 0.3 | Same | 618 | 2 | 0.3 | Same |
| Davita Southwest Denver Dialysis | Denver | *** | *** | *** | *** | 84 | 1 | 1.2 | Same | 270 | 1 | 0.4 | Same |
| Davita Thornton Dialysis | Thornton | 958 | 5 | 0.5 | Same | 982 | 6 | 0.6 | Same | 824 | 2 | 0.2 | Same |
| DaVita Westminster Dialysis | Westminster | 786 | 4 | 0.5 | Same | 700 | 1 | 0.1 | Same | 531 | 1 | 0.2 | Same |
| Denver Women's Correctional Cntr | Denver | 240 | 0 | 0 | Same | 285 | 0 | 0 | Same | 120 | Events Not Reported | | |
| Dialysis Clinic Inc. Grand Junction | Grnd Junction | 148 | 1 | 0.7 | Same | 175 | 1 | 0.6 | Same | 252 | 0 | 0 | Same |
| Dialysis Clinic Inc. Montrose | Montrose | 434 | 2 | 0.5 | Same | 381 | 1 | 0.3 | Same | 399 | 1 | 0.3 | Same |
| FMC Canon City | Canon City | 396 | 3 | 0.8 | Same | 409 | 7 | 1.7 | Same | 430 | 3 | 0.7 | Same |
| FMC Denver Central Dialysis | Denver | 1,280 | 10 | 0.8 | Same | 1,246 | 12 | 1.0 | Same | 1,156 | 7 | 0.6 | Same |
| FMC East Denver | Aurora | 1,148 | 3 | 0.3 | Same | 1,241 | 2 | 0.2 | Better | 1,200 | 3 | 0.3 | Same |
| FMC Fort Collins Dialysis | Fort Collins | 946 | 0 | 0 | Better | 973 | 0 | 0 | Better | 893 | 6 | 0.7 | Same |
| FMC Greeley | Greeley | 1,319 | 1 | 0.1 | Better | 1,365 | 0 | 0 | Better | 1,405 | 2 | 0.1 | Better |
| FMC La Junta | La Junta | 388 | 6 | 1.5 | Same | 427 | 1.0 | 0.2 | Better | 453 | 3 | 0.7 | Better |
| FMC Lamar | Lamar | 308 | 7 | 2.3 | Same | 271 | 4 | 1.5 | Same | 280 | 2 | 0.7 | Same |
| FMC Loveland Dialysis | Loveland | 708 | 12 | 1.7 | Same | 719 | 8 | 1.1 | Same | 653 | 4 | 0.6 | Same |
| FMC Pavilion | Denver | Not yet operating | | | | Not yet operating | | | | 184 | 2 | 1.1 | Same |
| FMC Pueblo | Pueblo | 804 | 1 | 0.1 | Better | 734 | 0 | 0 | Better | 709 | 2 | 0.3 | Better |
| FMC Pueblo South | Pueblo | 874 | 6 | 0.7 | Same | 923 | 5 | 0.5 | Same | 1,012 | 15 | 1.5 | Same |
| FMC Pueblo West Dialysis | Pueblo | 169 | 0 | 0 | Same | 290 | 1 | 0.3 | Same | 277 | 1 | 0.4 | Same |
| FMC Rocky Mountain Dialysis | Denver | 1,126 | 11 | 1.0 | Same | 1,085 | 11 | 1.0 | Same | 1,010 | 10 | 1.0 | Same |
| FMC Stapleton Dialysis | Denver | 552 | 5 | 0.9 | Better | 527 | 3 | 0.6 | Same | 522 | 3 | 0.6 | Same |
| FMC Walsenburg | Walsenburg | 171 | 0 | 0 | Same | 147 | 3 | 2.0 | Same | 158 | 3 | 1.9 | Same |
| FMC West Hampden | Englewood | Not yet operating | | | | Not yet operating | | | | 26 | *** | *** | *** |
| Liberty Dialysis - Castle Rock | Castle Rock | 97 | 0 | 0 | Same | 132 | 0 | 0 | Same | 135 | 1 | 0.7 | Same |
| Liberty Dialysis Colo Sprgs Central | Colo Sprgs | 788 | 3 | 0.4 | Same | 1,132 | 6 | 0.5 | Same | 1,120 | 7 | 0.6 | Same |
| Liberty Dialysis Colo Sprgs North | Colo Sprgs | 433 | 3 | 0.7 | Same | 460 | 0 | 0 | Better | 457 | 2 | 0.4 | Same |
| Liberty Dialysis Colo Sprgs South | Colo Sprgs | 540 | 9 | 1.7 | Same | 570 | 3 | 0.5 | Same | 677 | 1 | 0.1 | Same |
| Liberty Dialysis Pueblo | Pueblo | 533 | 2 | 0.4 | Same | 536 | 3 | 0.6 | Same | 500 | 3 | 0.6 | Same |
| Reliant Renal Care - Colo Sprgs | Colo Sprgs | 190 | 1 | 0.5 | Same | 170 | 1 | 0.6 | Same | 60 | 0 | 0 | Same |
| Reliant Renal Care - Trinidad | Trinidad | 186 | 0 | 0 | Same | 156 | 0 | 0 | Same | 64 | 0 | 0 | Same |
| UC Hospital Chronic Dialysis Unit | Denver | 417 | 1 | 0.2 | Same | 389 | 4 | 1.0 | Same | 299 | 2 | 0.7 | Same |

Note: AR=American Renal, FMC=Fresenius Medical Care. Dialysis infection rates are per 100 patient months. National comparison based on data collected and reported by NHSN from Jan-Dec 2006.