

Chapter 10: Dialysis Providers

- In 2014 the two largest dialysis organizations, Fresenius and DaVita, collectively treated 69% of patients in 65% of all dialysis units (Figure 10.2).
- Nearly 90% of all dialysis patients in 2014 received hemodialysis; Hospital-based providers treated the highest proportion of peritoneal dialysis (PD) patients at 21%, more than double the PD national average of 10% (Figure 10.3).
- Overall, dialysis providers of all types experienced a 12% decline in Standardized Mortality Ratios (SMR) between 2011 and 2014, while Standardized Hospitalization Ratios (SHR) essentially did not change in the same period (Tables 10.1 and 10.3).
- To highlight the complex differences between the demographic groups, beginning with the 2015 Annual Data Report (ADR) we have included sex-, race-, and ethnicity-specific breakdowns of patient outcomes for home-based dialysis modality, hemodialysis (HD) vascular access types, and kidney transplant waitlist participation, (Tables 10.4 and 10.5).
- In this 2016 ADR, we no longer classify dialysis providers solely according to number of dialysis facilities under their ownership. This is in recognition of the fact that the two major chains are disproportionately large, and that mergers and acquisitions have resulted in a constantly evolving landscape of the dialysis provider community. We also no longer describe the group of relatively smaller, for-profit dialysis providers as Small Dialysis Organizations. We now collectively refer to this heterogeneous group as Other Dialysis Organizations, or Others.

Introduction

This chapter focuses on the provider organizations dedicated to delivering care to dialysis patients. Particularly during the last two decades, there has been continued growth in the for-profit Large Dialysis Organizations (LDOs). Two LDOs in particular, Fresenius Medical Care (Fresenius) and DaVita Healthcare Partners, Inc. (DaVita), now dominate as providers of dialysis services in the United States (U.S.), with nearly two-thirds of facilities; their industry dominance is also growing on an international level. In contrast, there has been little to no growth in the provision of dialysis services by all other dialysis organizations that include not-for-profit organizations such as Dialysis Clinics, Inc. (DCI), Independent, or Hospital-based dialysis facilities, and all Other smaller for-profit dialysis organizations. For the 2016 ADR, we have avoided any formal classification of dialysis providers solely by size, given the disproportionate size of the two largest dialysis

providers, the heterogeneity in their ownership type, and the evolving nature of mergers and acquisitions in the provider community.

This chapter begins with a description of growth in dialysis facilities by the type of provider organization, followed by updated coverage of three key areas of clinical practice related to care of patients on dialysis. These include (i) choice of dialysis modality, (ii) patterns of vascular access type for both incident and prevalent dialysis patients, and (iii) the proportion of patients younger than age 70 who are wait-listed for kidney transplantation. We conclude the chapter with an analysis of standardized mortality and hospitalization ratios (SMRs and SHRs) by provider ‘type’, namely, LDOs, DCI, Independent and Hospital-based providers, and Others.

In the 2015 ADR, we introduced a new approach used to calculate and present the standardized measures of major dialysis clinical outcomes. This methodology constituted a departure from previous

ADRs, but was designed to facilitate comparison of the SMR and the SHR across years. We computed these measures without adjusting for calendar years. Consequently, the measures are no longer standardized to a national norm annually, but instead are compared with the aggregated national population across the entire reporting period (i.e., four years). This method facilitates identification of short-term-change trends in the standardized measures, and enables comparisons of these measures from different types of providers across calendar years within the reporting period. To emphasize the variation in some key clinical practices at the level of the individual dialysis facilities, we also display facility-level variation in choice of dialysis modality, vascular access type, and wait-listing for a kidney transplant.

Methods

This chapter uses multiple data sources including data from the Centers for Medicare & Medicaid Services (CMS), the Centers for Disease Control and Prevention (CDC), and the United States Census. Details of data sources are described in the

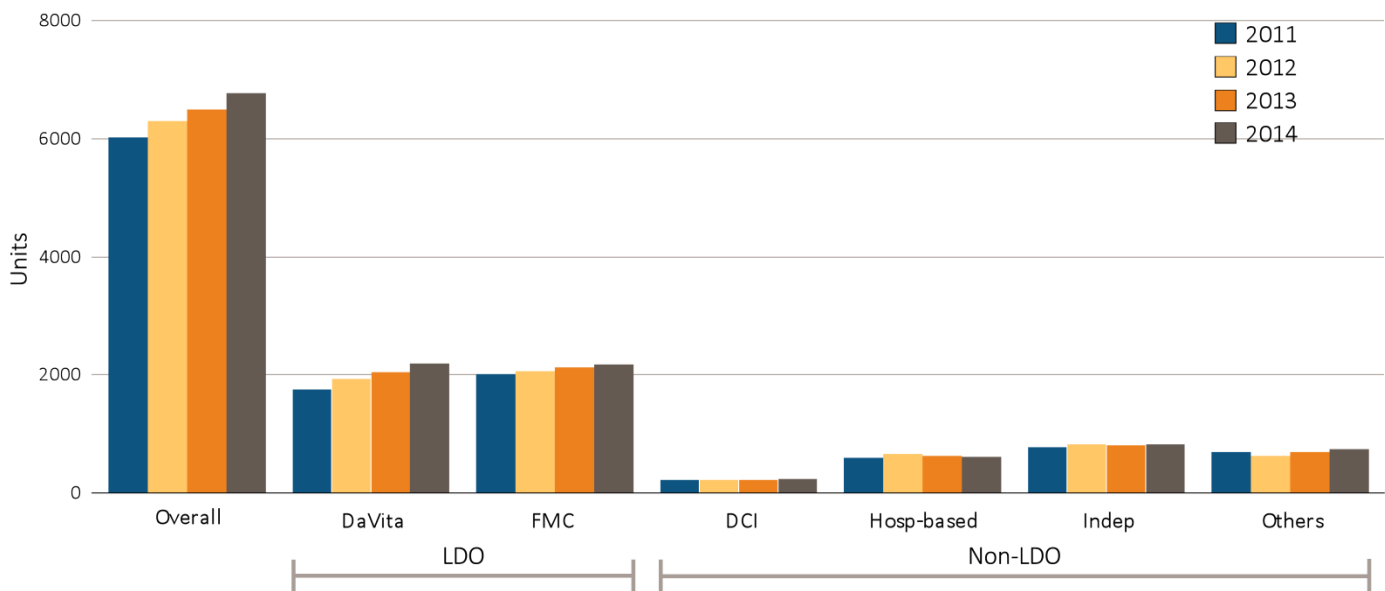
Data Sources section of the *ESRD Analytical Methods* chapter.

See the *ESRD Analytical Methods* chapter for an explanation of the methods used to generate figures and tables in this chapter.

Provider Growth

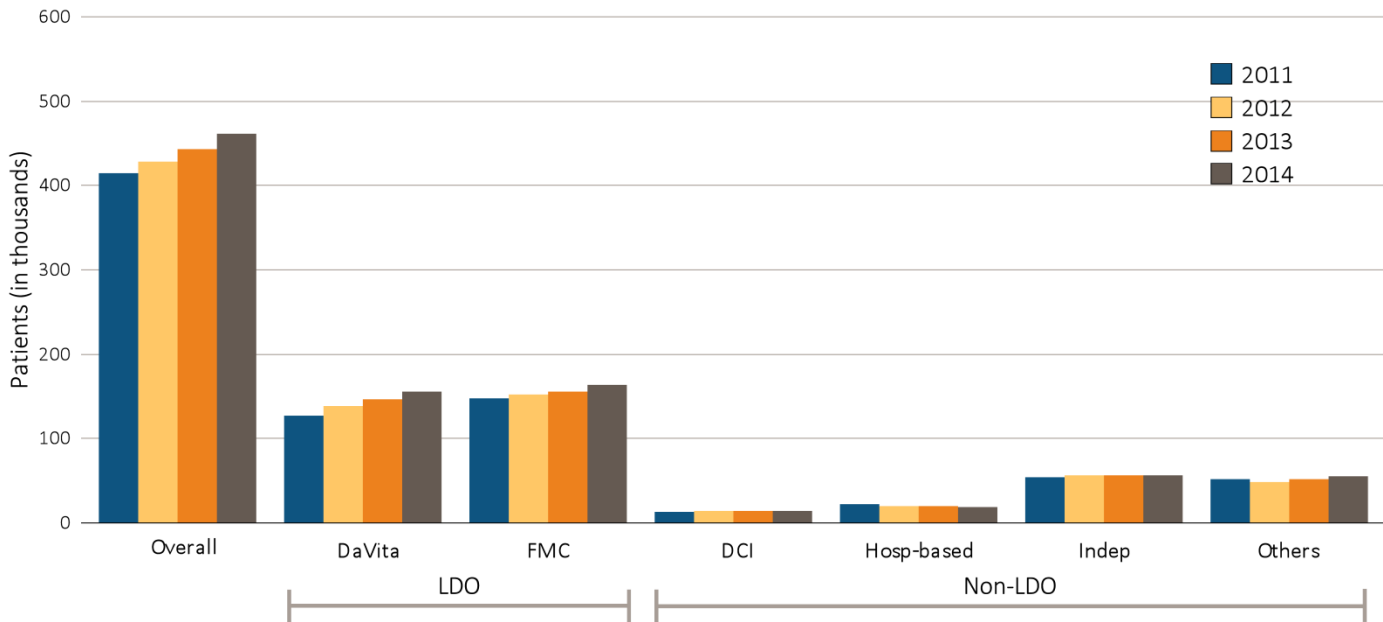
At the end of 2014, there were 6,757 dialysis units (Figure 10.1) and 460,675 dialysis patients (Figure 10.2) in the U.S. Together the two LDOs, DaVita and Fresenius, treated 317,587 of these patients (69%) in 4,362 dialysis units (65%). DCI treated 14,287 (3%) patients in 230 (3%) units, Independent and Hospital-based providers treated 55,768 (12%) and 18,350 (4%) patients, respectively, in 814 (12%) and 611 (9%) units, and all Other provider organizations collectively treated 54,683 patients (12%) in 740 units (11%). Nationwide, 748 dialysis units were added during the four-year period from 2011 to 2014, with most affiliated with the LDOs; DaVita experienced the largest growth in both facilities and patients. Fresenius and DaVita accounted for 609 (81%) of the new units.

vol 2 Figure 10.1 Dialysis unit counts, by unit affiliation, 2011–2014



Data source: Special analyses, USRDS ESRD Database. Abbreviations: DCI, Dialysis Clinic, Inc.; FMC, Fresenius; Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; Others, other dialysis organizations. Note: the number of dialysis units in 2011 has been updated for DaVita from 1681 as reported in the 2015 ADR to 1745; and from 750 in 2015 to 686 currently for Others.

vol 2 Figure 10.2 Dialysis patient counts, by unit affiliation, 2011–2014



Data source: Special analyses, USRDS ESRD Database. Abbreviations: DCI, Dialysis Clinic, Inc.; FMC, Fresenius; Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; Others, other dialysis organizations.

Key Dialysis Clinical Practices

CHOICE OF DIALYSIS MODALITY

In 2014, nearly 90% of all dialysis patients received in-center hemodialysis, a pattern consistently observed across most providers. The panels of figure 10.3 show the proportion of patients engaging in home dialysis therapies, by provider type. While the majority of provider types utilized in-center HD as the dominant modality, Hospital-based providers had the lowest proportion of patients on HD at 77% and the highest proportion of PD patients at 21%, more than double the national average. Nationwide, the prevalence of PD increased from 9% in 2011 to 10% in 2014. The largest increase in uptake of PD appeared to be among patients of Asian descent, from 12% to 14%; this was particularly true for Hospital-based facilities, with growth from 29% to 39%. This trend may in part

be due to lower rates of obesity or greater acceptance of PD by this patient subgroup, and requires further investigation. For additional information on trends in the modality of dialysis see Volume 2, Chapter 1, *Incidence, Prevalence, Patient Characteristics, and Modalities*.

Home dialysis therapies have been associated with greater patient independence and improved quality of life. Younger, more educated patients and those with fewer comorbid conditions and greater access to care tend to adopt these treatments more frequently, making comparisons of survival between in-center and home dialysis fraught with a high degree of confounding-by-indication. Home hemodialysis remains uncommon in all racial and ethnic groups and types of facilities, representing fewer than 2% of all ESRD patients in 2014.

vol 2 Figure 10.3 Prevalence of home-based dialysis modality, by unit affiliation, 2011–2014

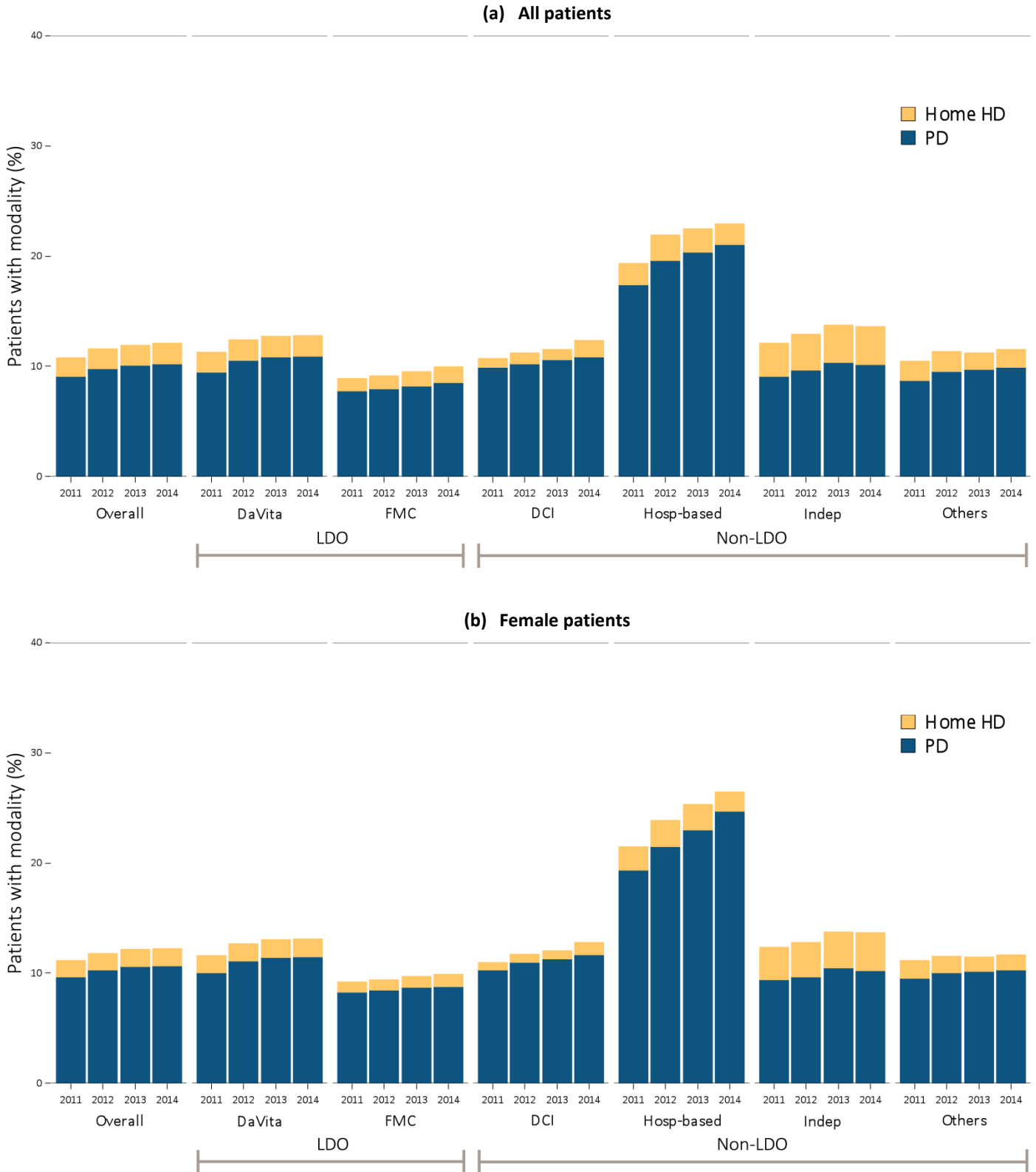


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vol 2 Figure 10.3 Prevalence of home-based dialysis modality, by unit affiliation, 2011–2014
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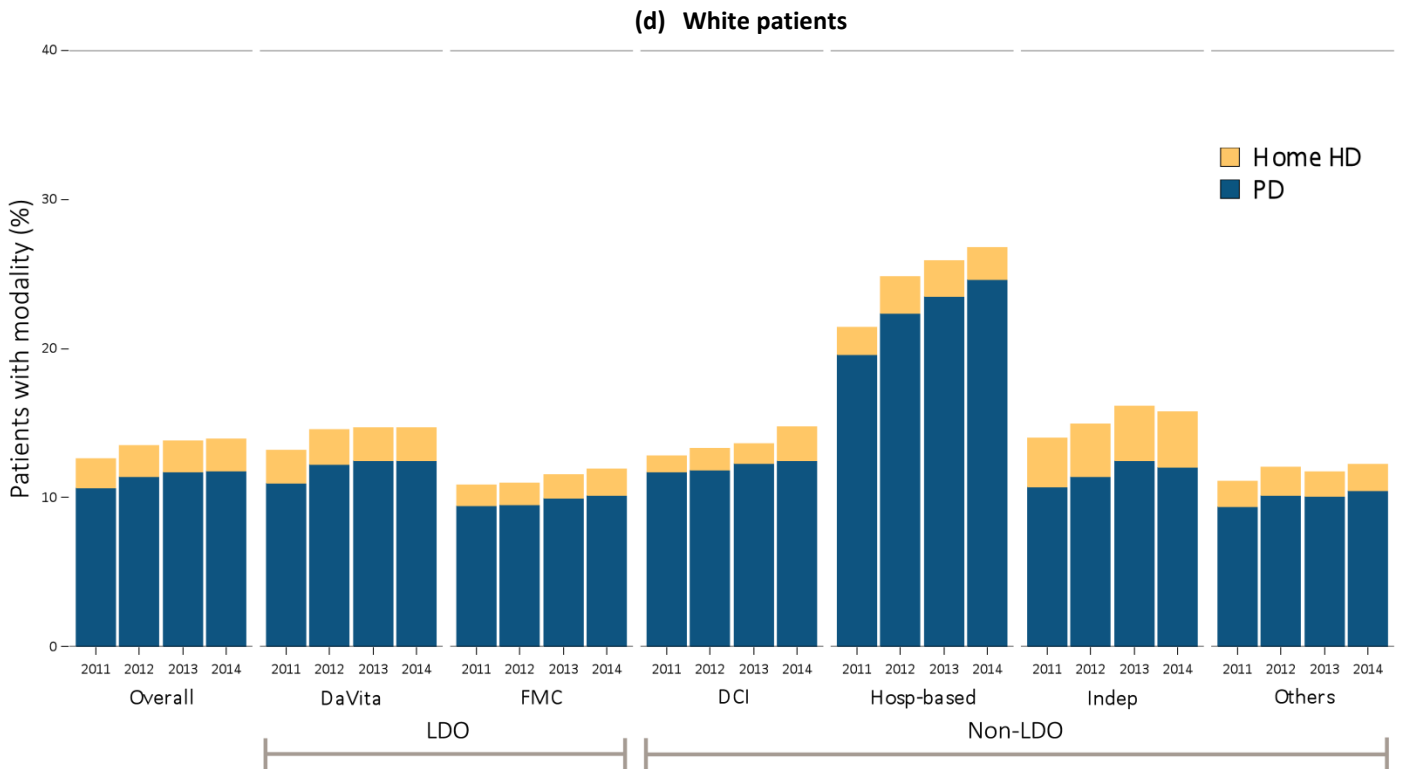
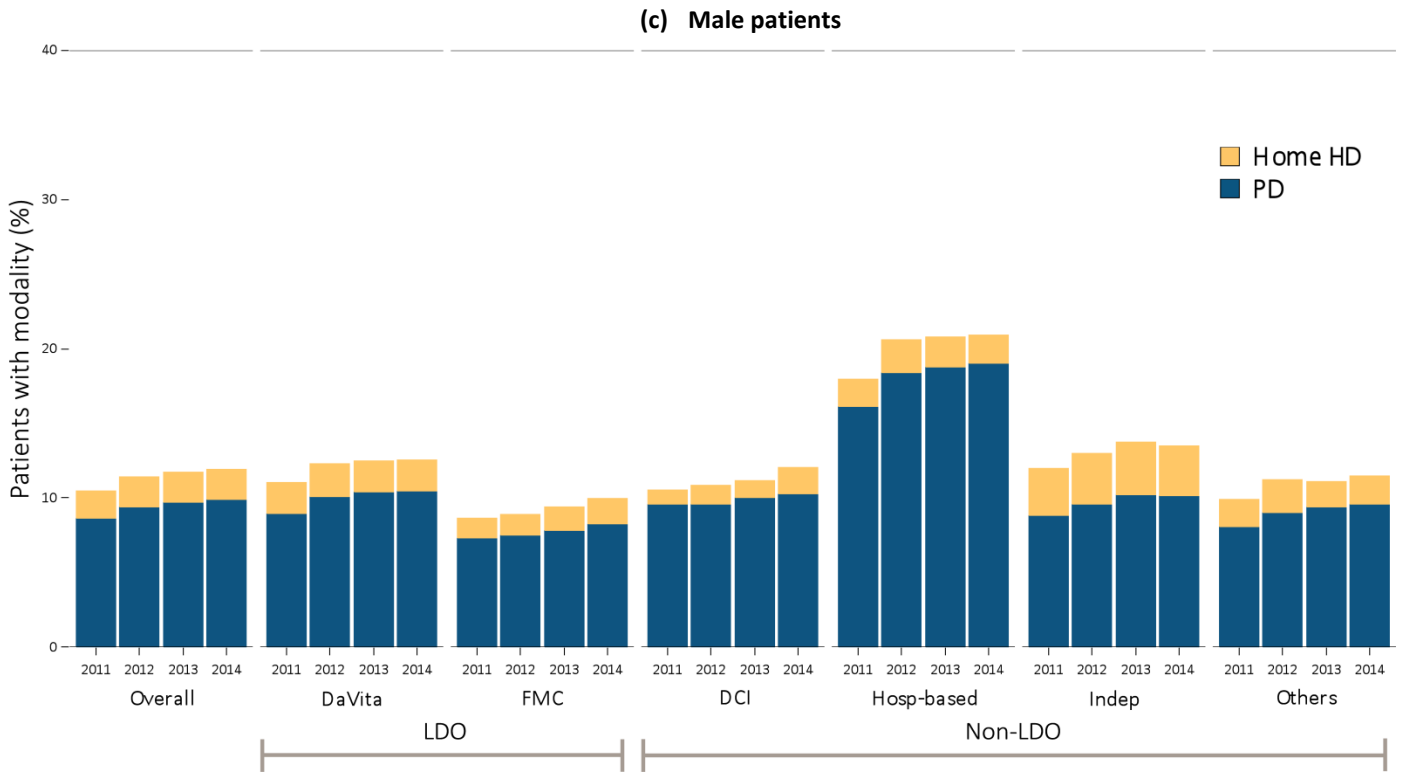


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vol 2 Figure 10.3 Prevalence of home-based dialysis modality, by unit affiliation, 2011–2014 (continued)

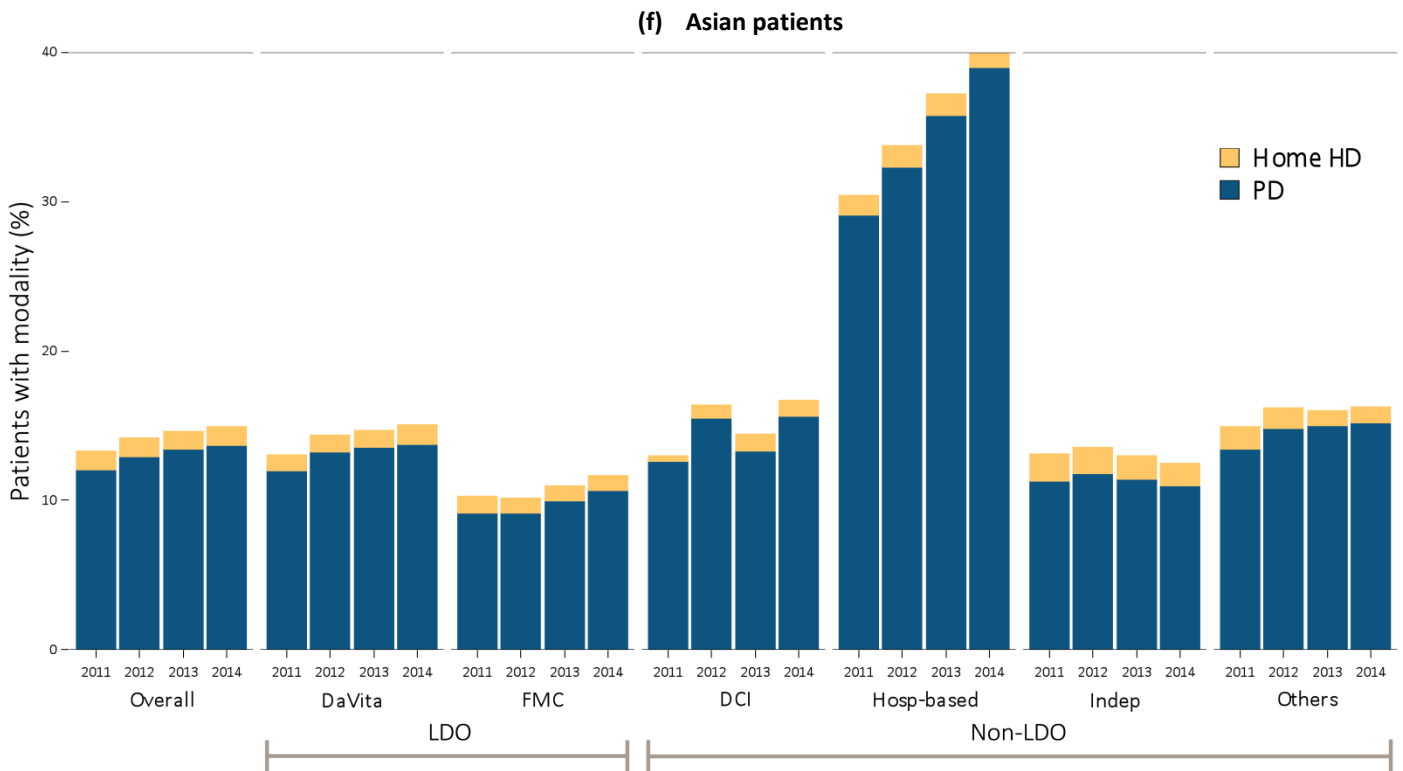
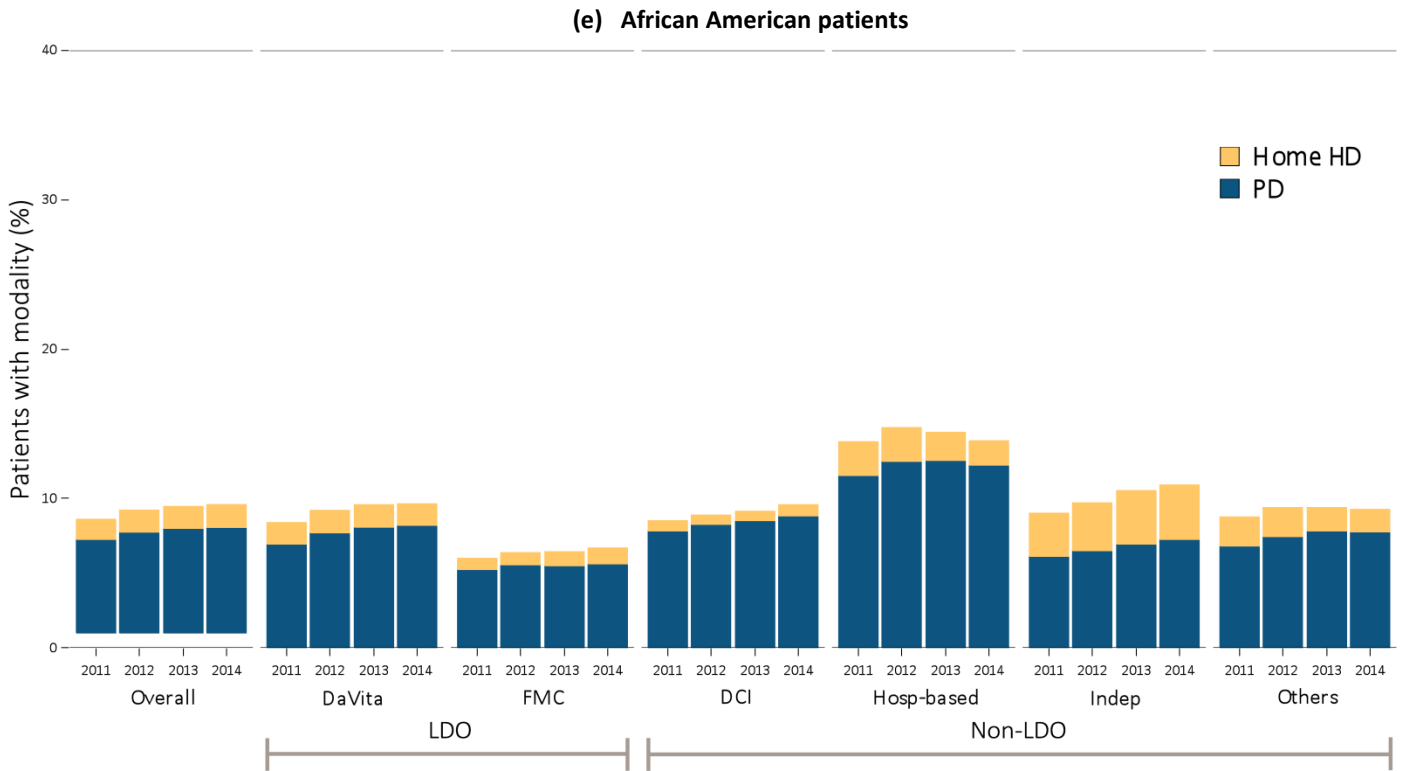
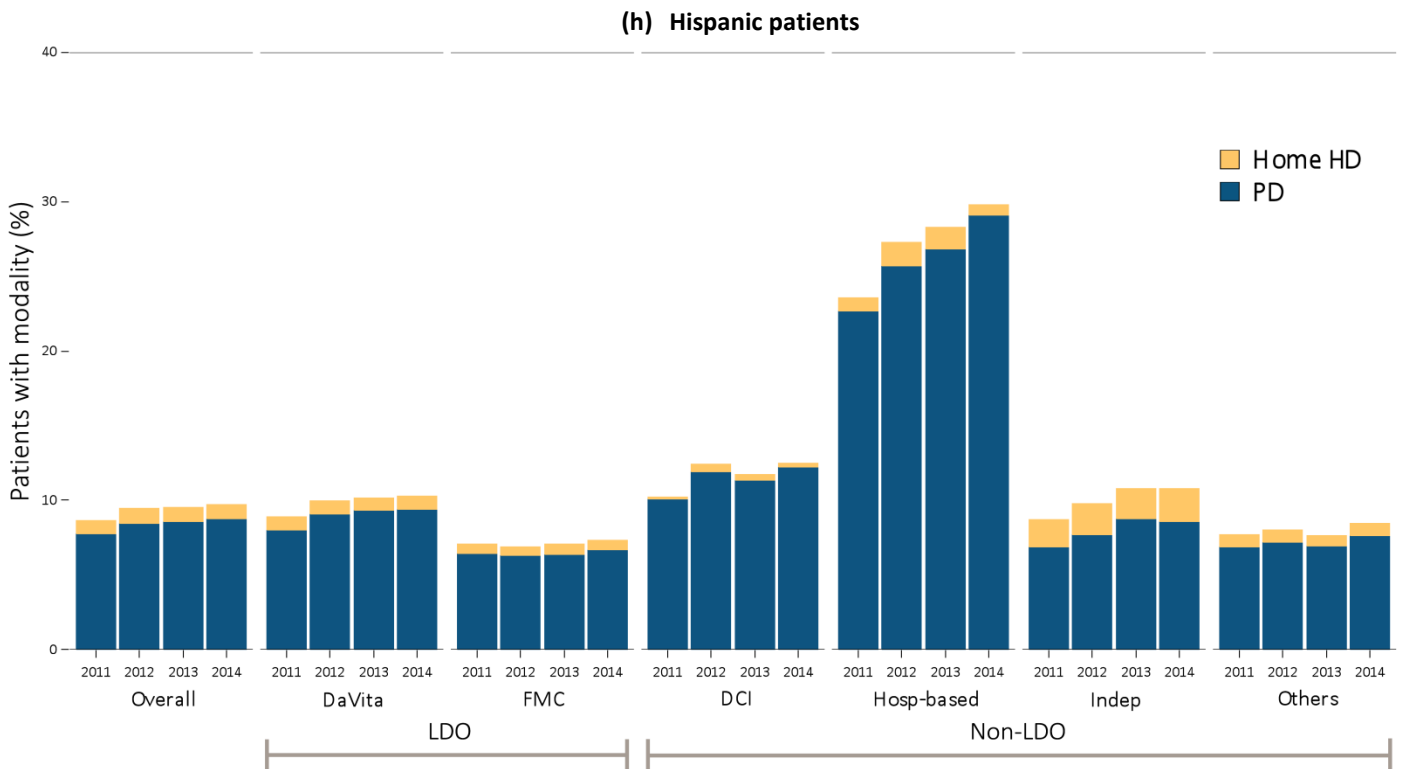
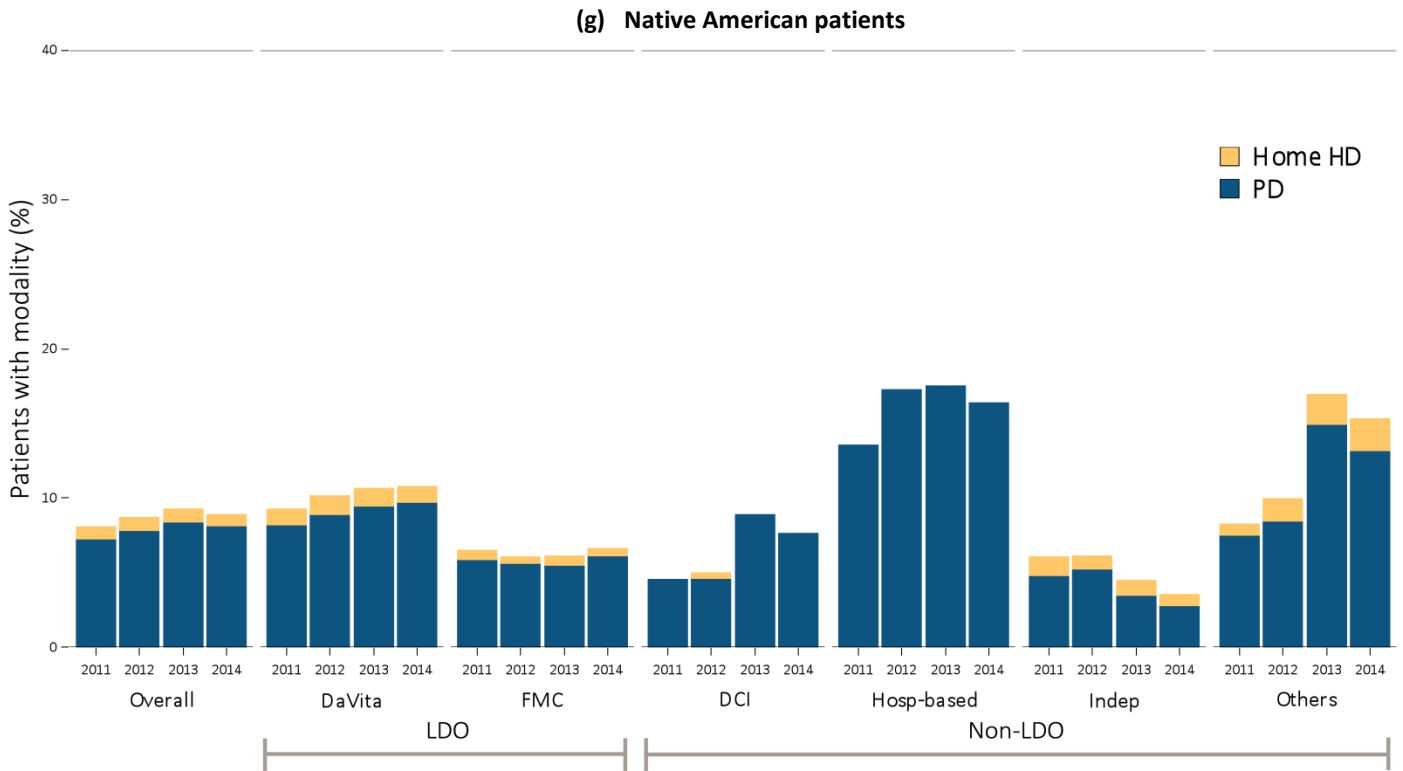


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vol 2 Figure 10.3 Prevalence of home-based dialysis modality, by unit affiliation, 2011–2014
(continued)



Data source: Special analyses, USRDS ESRD Database. Abbreviations: HD, hemodialysis; Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; LDO, large dialysis organizations; PD, peritoneal dialysis; Others, other dialysis organizations.

Type of Vascular Access

In 2014, 62% of prevalent HD patients in the U.S. received their treatment via an arteriovenous (AV) fistula and 17% via an indwelling catheter (Figures 10.5 a-h). Fistula use was highest among LDOs at 62%; catheter use was highest among Hospital-based providers, at 27%. During their first 30 days of ESRD, most incident patients (56%) received dialysis via a

catheter. Of the dialysis organizations, DaVita had the highest proportion of incident patients with a fistula alone (39%), compared with the 38% in DCI, 37% in Fresenius, 30% of Hospital-based, 32% of Independents, and 34% of all Others (Figure 10.4a). The by-provider distributions of vascular access types for both incident and prevalent patients are presented by sex, race, and ethnicity in Figures 10.4a-h and 10.5a-h.

vol 2 Figure 10.4 Prevalence of vascular access types among incident hemodialysis patients, by unit affiliation, 2014

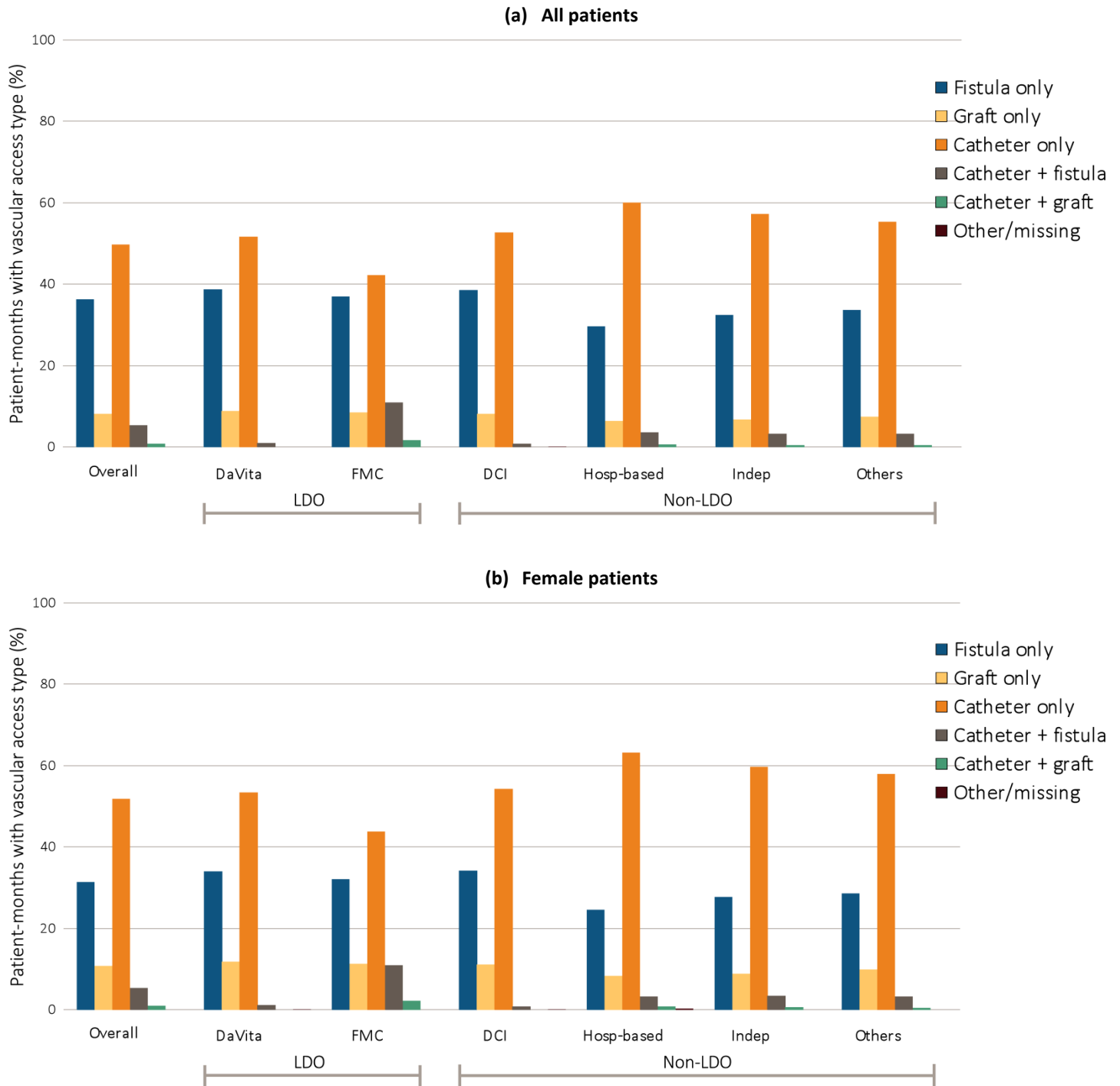


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vol 2 Figure 10.4 Prevalence of vascular access types among incident hemodialysis patients, by unit affiliation, 2014 (continued)

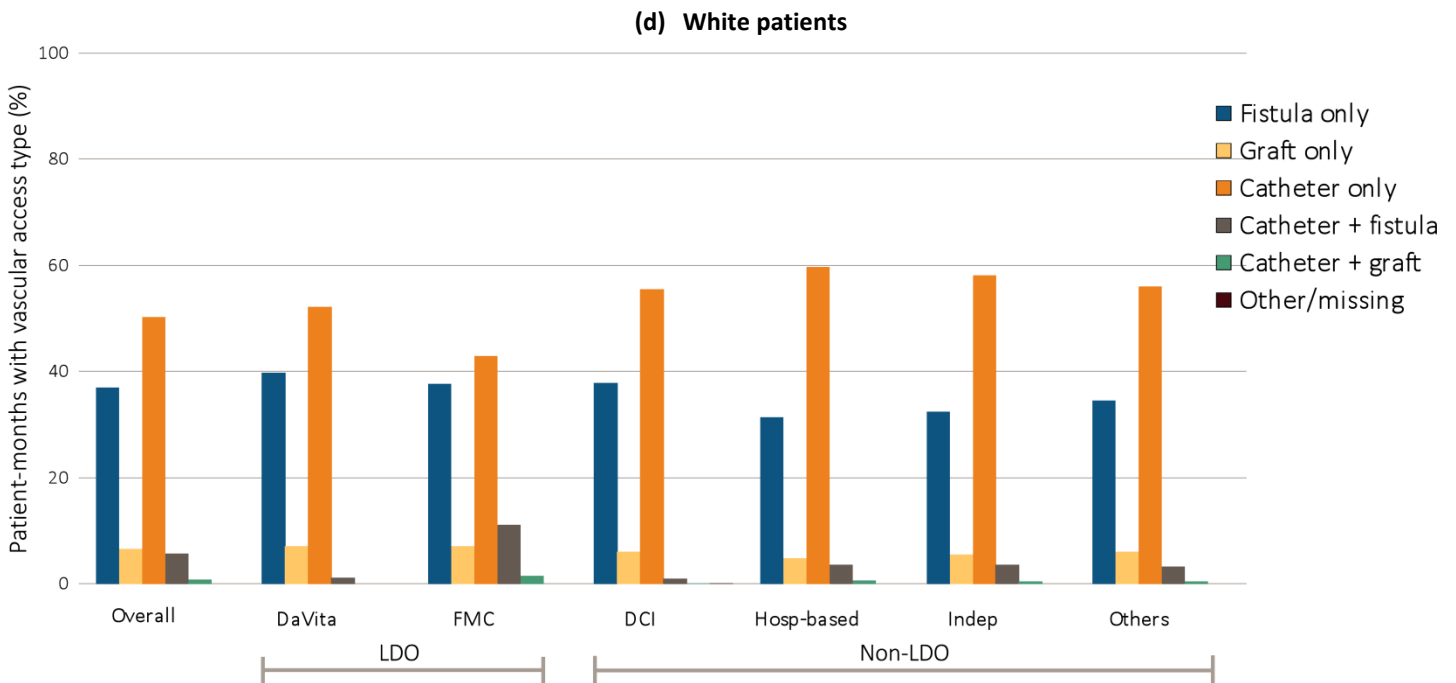
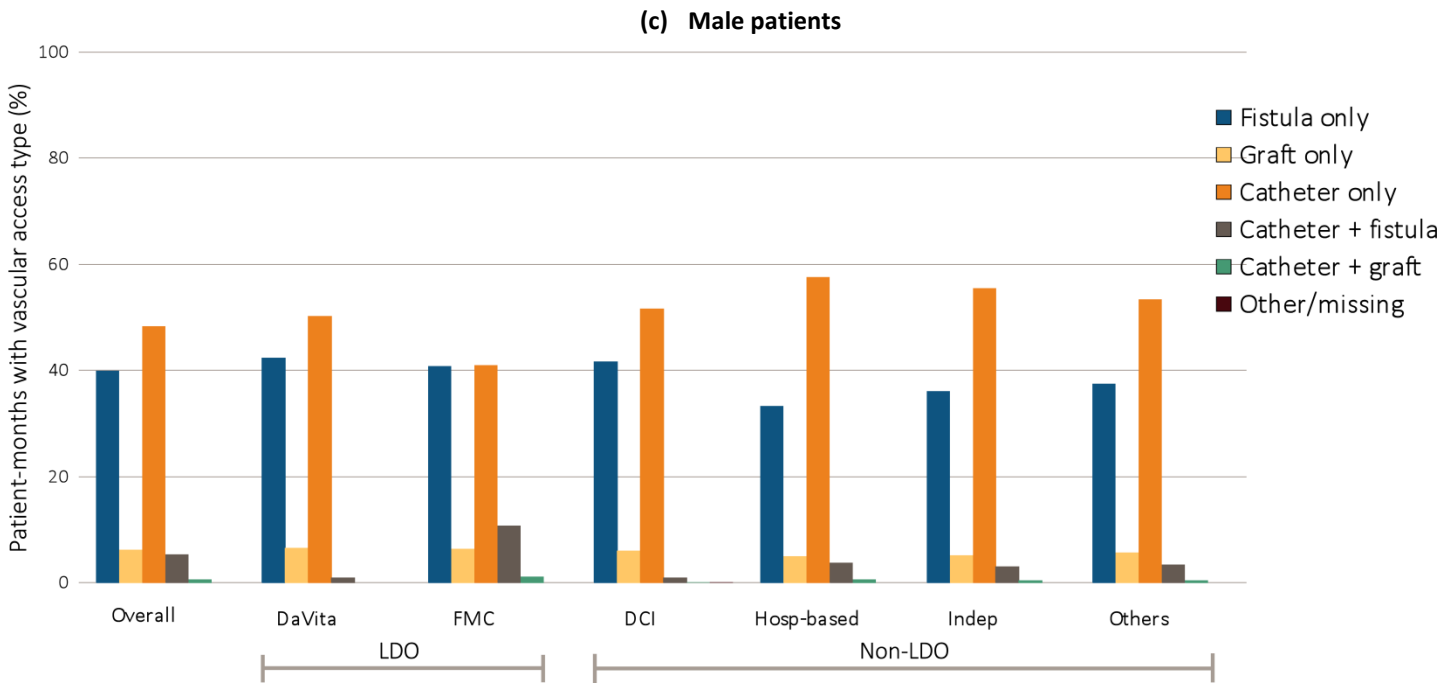


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vol 2 Figure 10.4 Prevalence of vascular access types among incident hemodialysis patients, by unit affiliation, 2014 (continued)

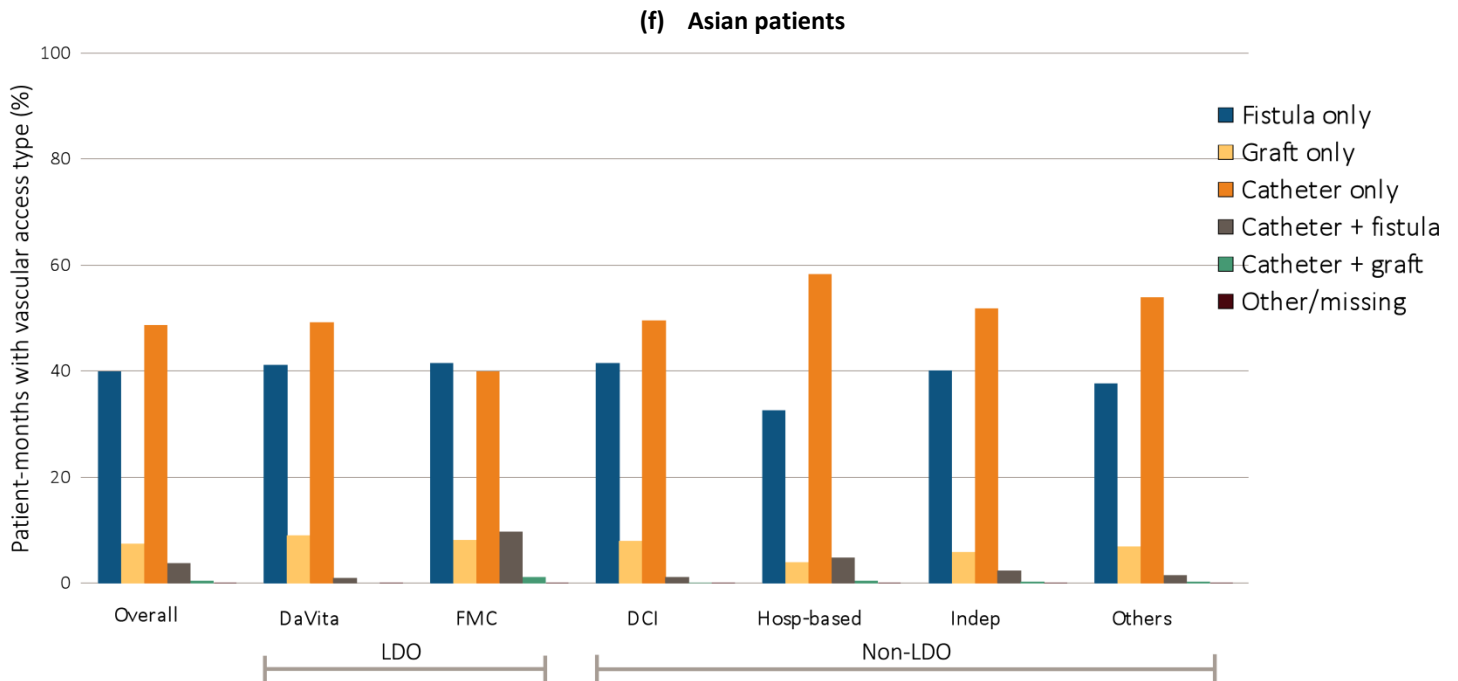
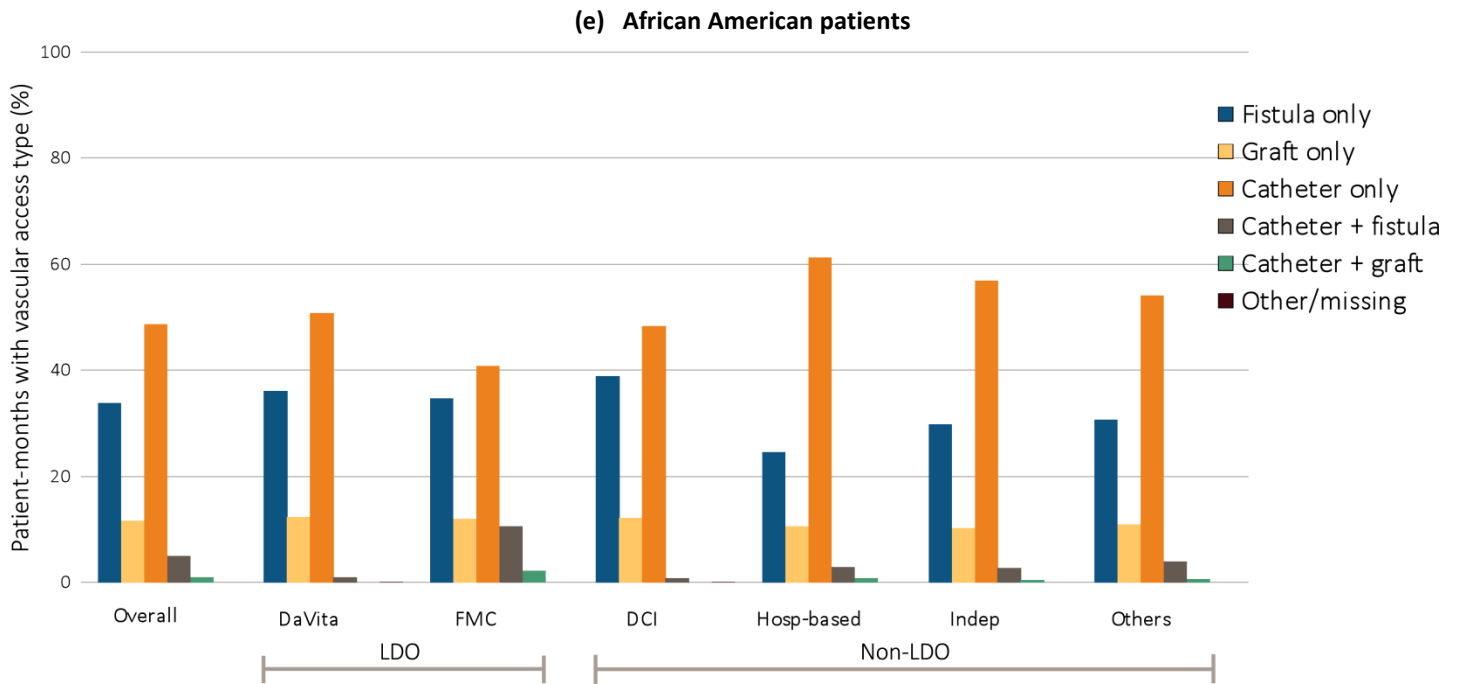
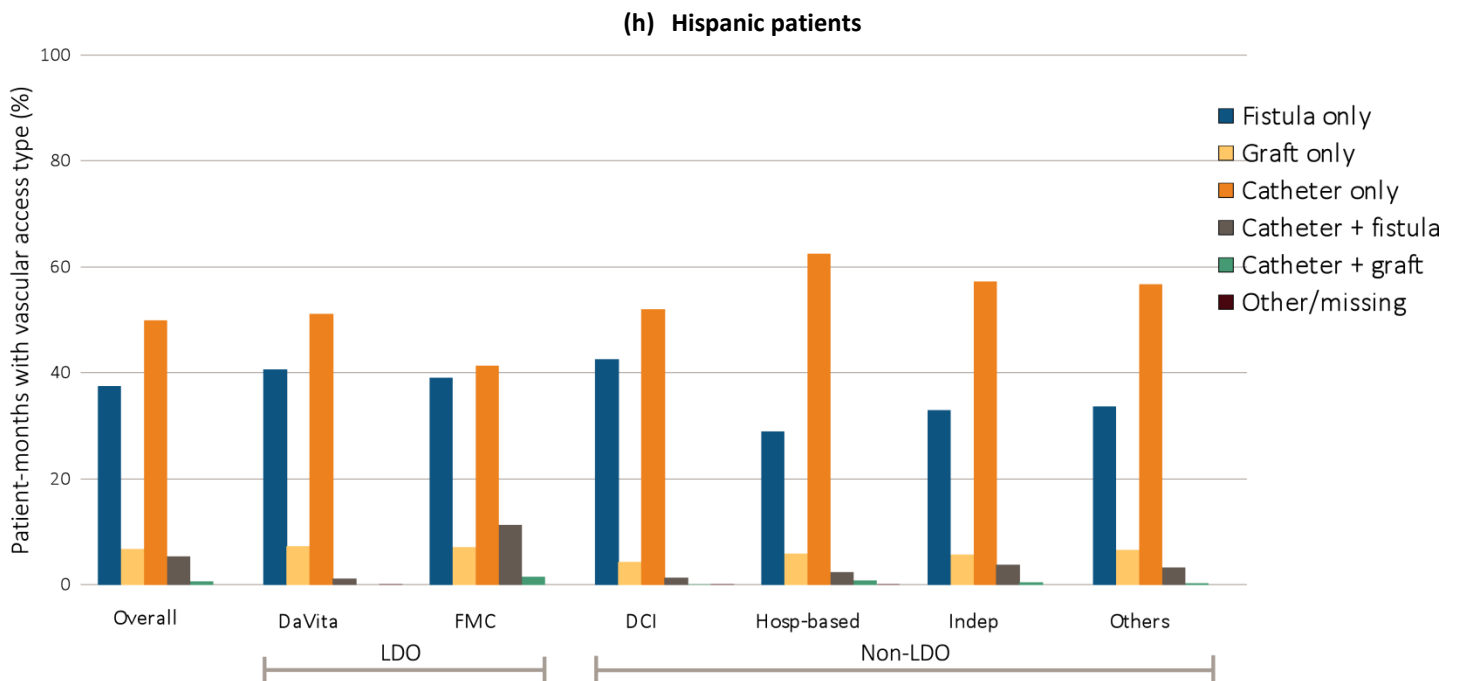
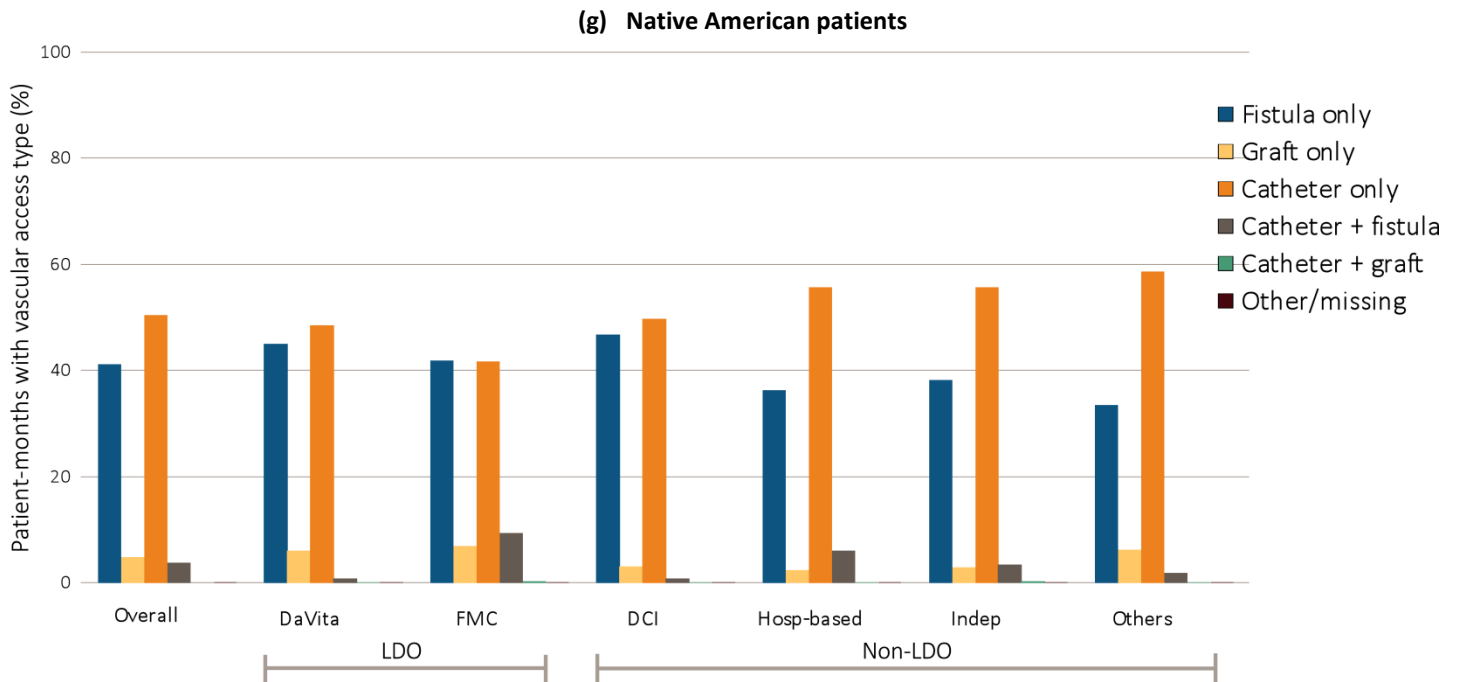


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vol 2 Figure 10.4 Prevalence of vascular access types among incident hemodialysis patients, by unit affiliation, 2014 (continued)



Data source: Special analyses, USRDS ESRD Database. Abbreviations: Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; LDO, large dialysis organizations; Others, other dialysis organizations.

vol 2 Figure 10.5 Prevalence of vascular access types among prevalent hemodialysis patients, by unit affiliation, 2014

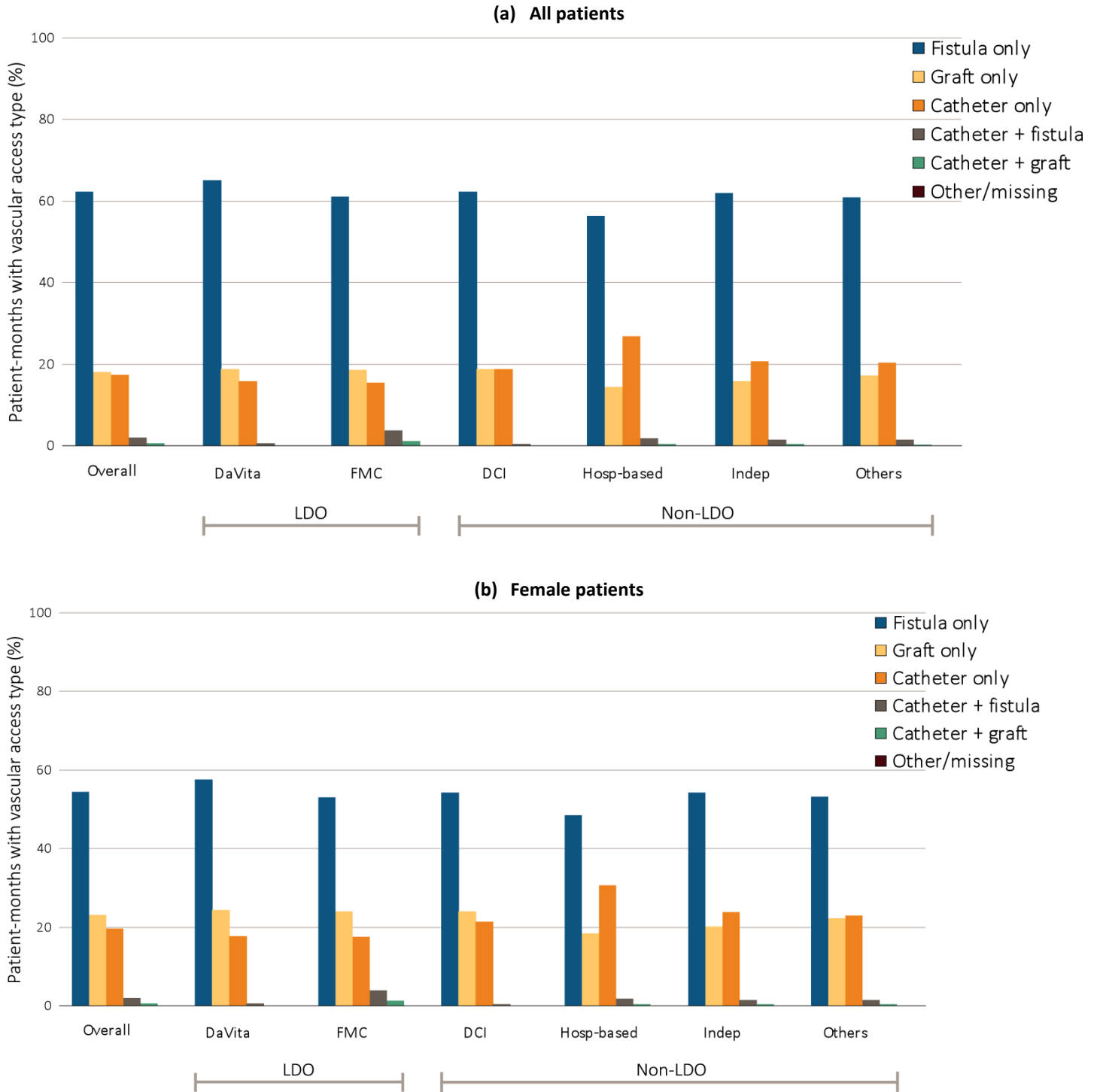


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vol 2 Figure 10.5 Prevalence of vascular access types among prevalent hemodialysis patients, by unit affiliation, 2014 (continued)

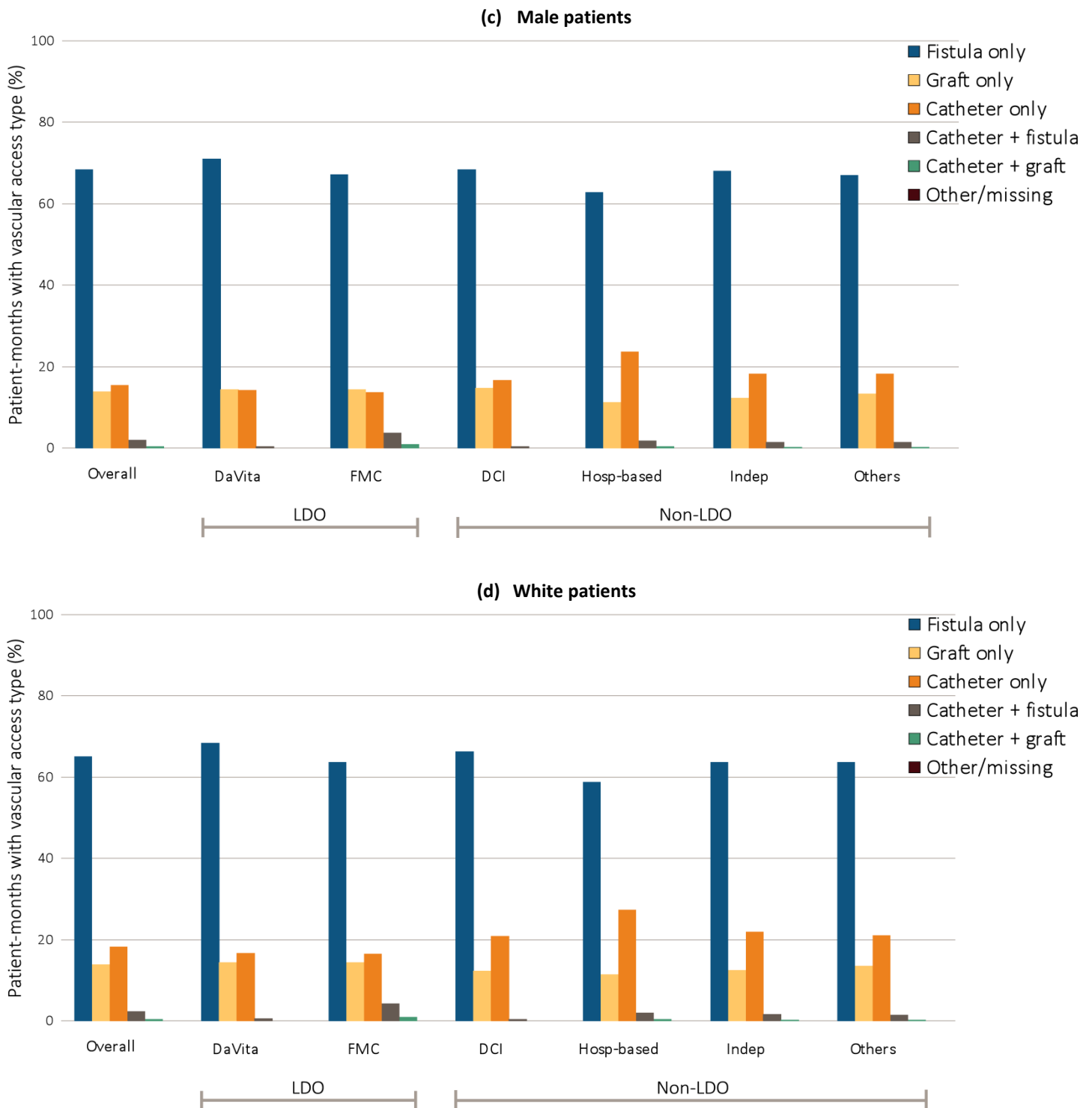


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vol 2 Figure 10.5 Prevalence of vascular access types among prevalent hemodialysis patients, by unit affiliation, 2014 (continued)

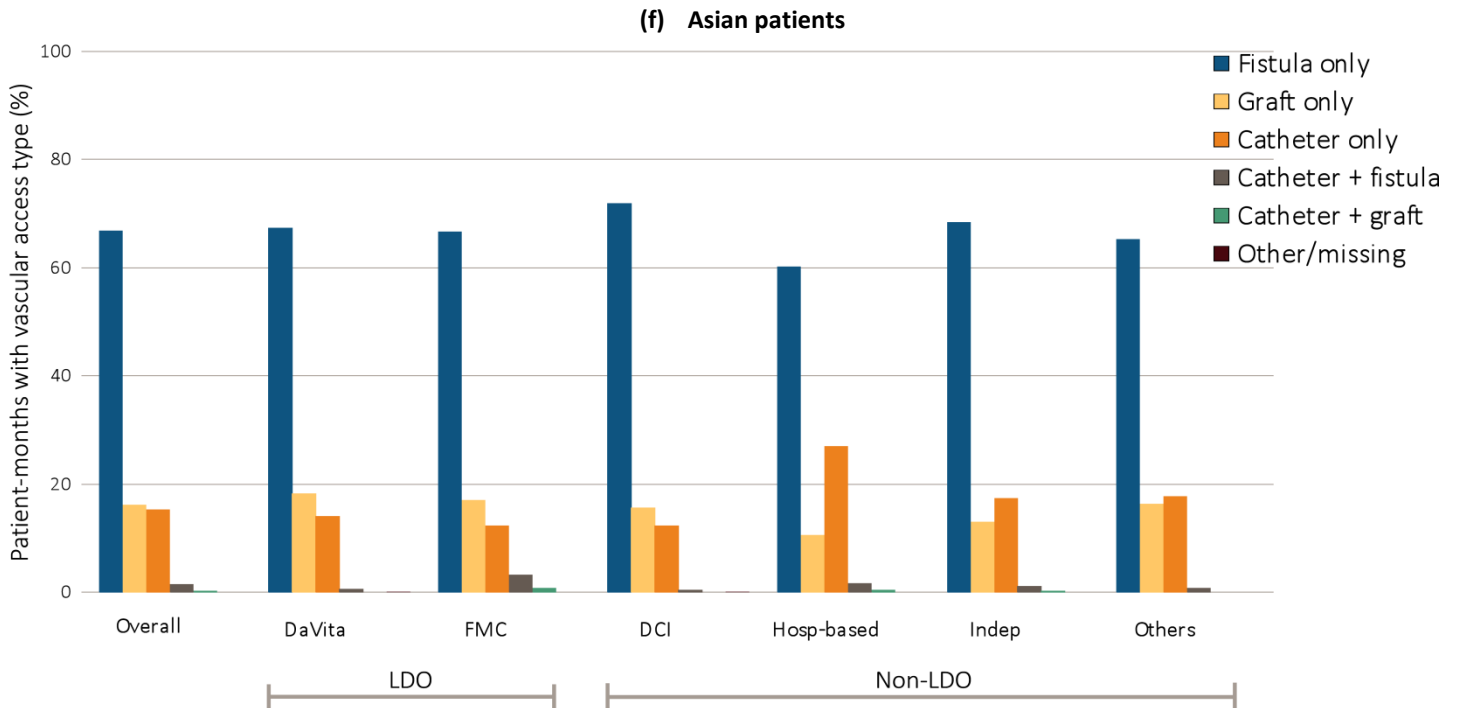
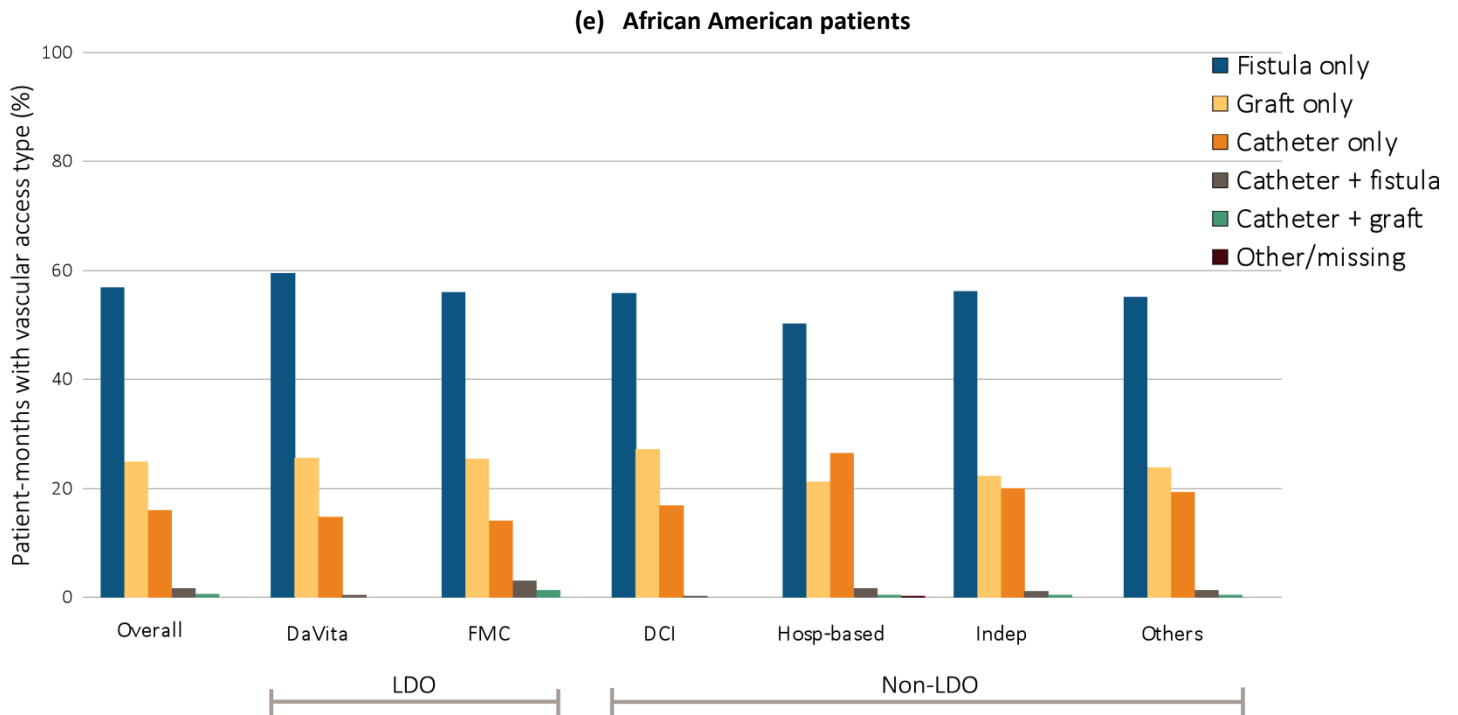
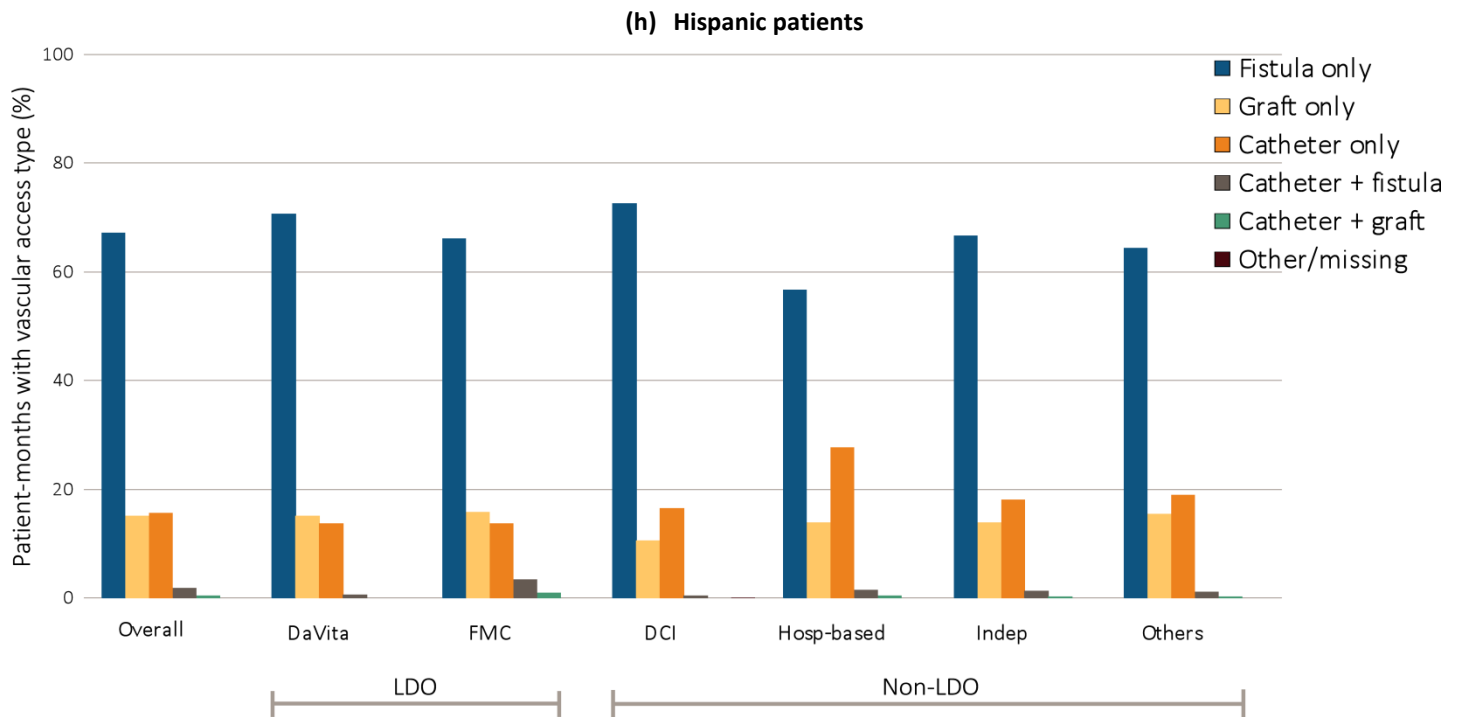
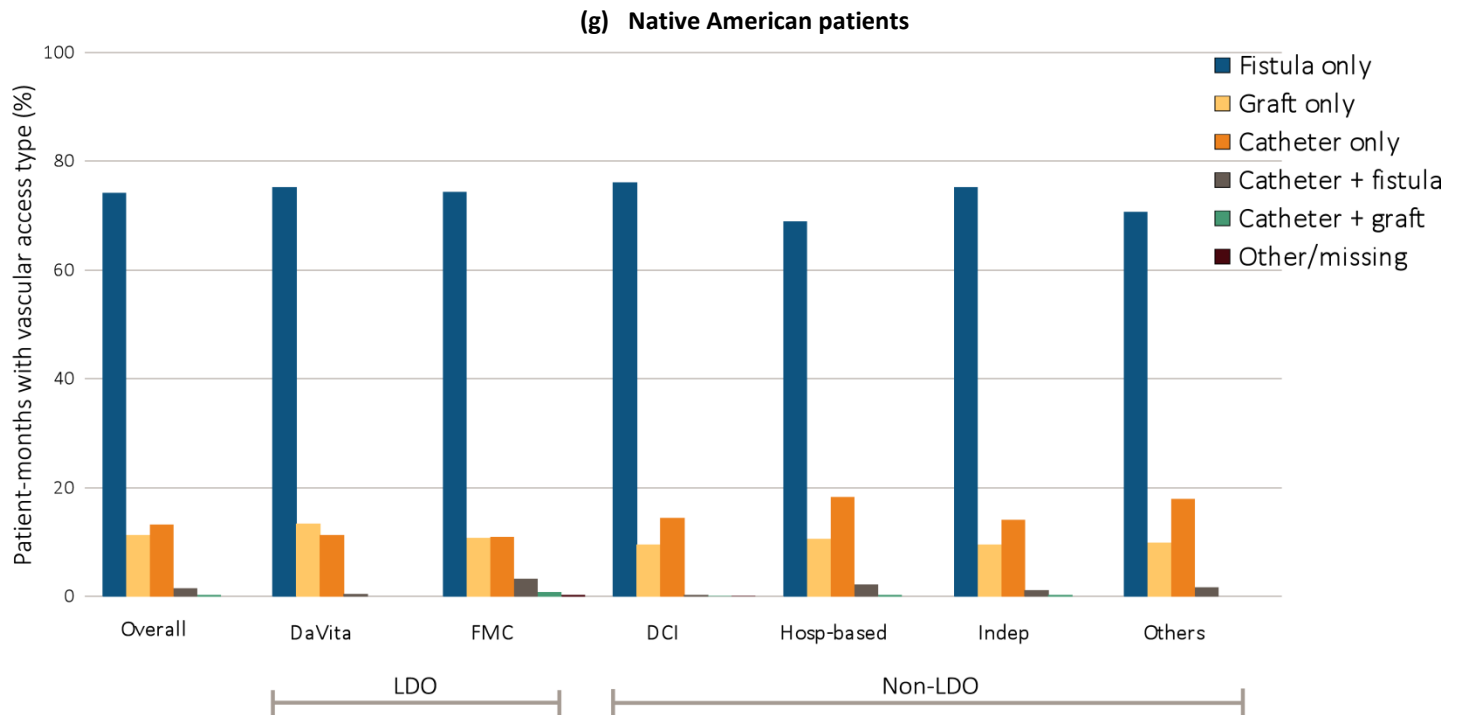


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vol 2 Figure 10.5 Prevalence of vascular access types among prevalent hemodialysis patients, by unit affiliation, 2014 (continued)

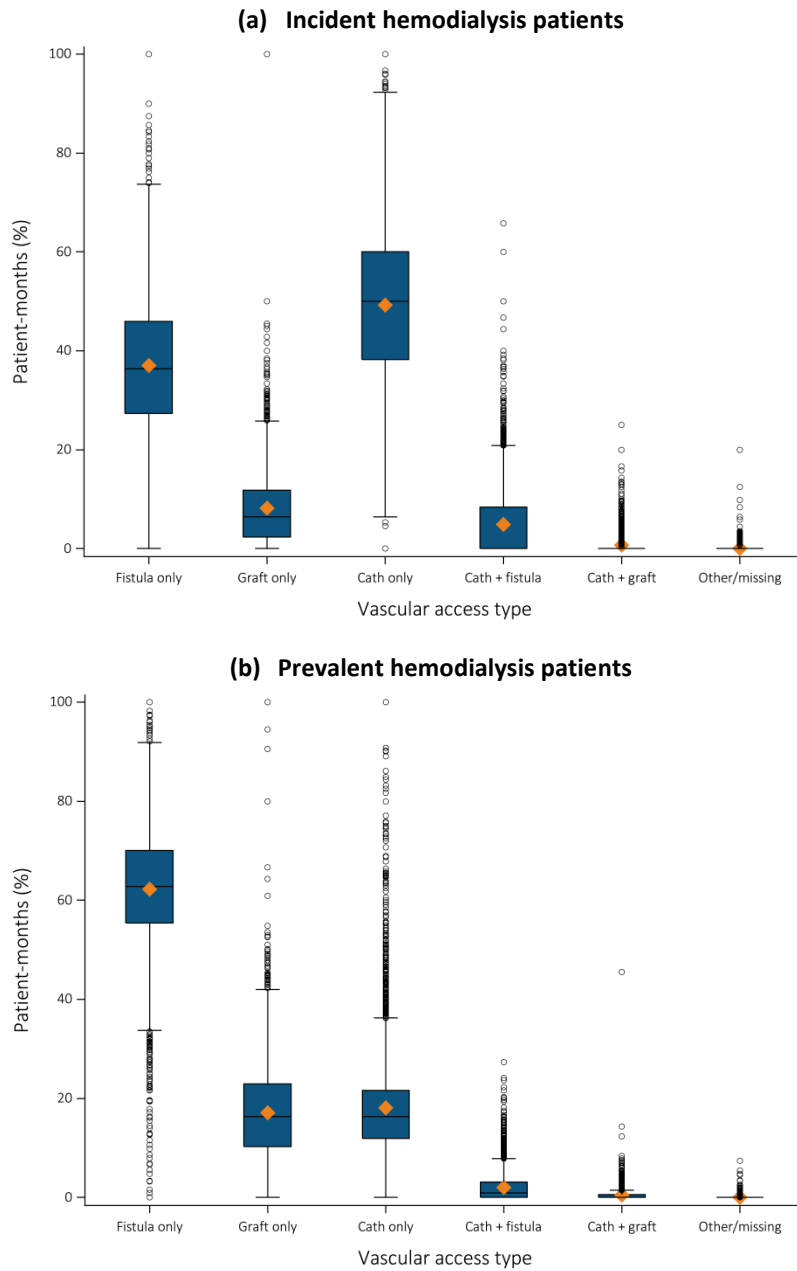


Data source: Special analyses, USRDS ESRD Database. Period prevalent hemodialysis patients. Abbreviations: Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; LDO, large dialysis organizations; Others, other dialysis organizations.

In 2014, although catheter alone was the most common vascular access type among patients in their first 30 days of dialysis (Figure 10.6a), considerable variation was observed with respect to the long-term distribution of the types in use at dialysis facilities. More than three-quarters of facilities successfully achieved the use of an AV fistula in the majority of

their prevalent patients (Figure 10.6b). More than 15% of facilities achieved at least 70% fistula prevalence, with the top 5% of facilities in the nation achieving AV fistula use in more than 90% of their patients. Conversely, 5% of facilities had 30% or fewer of their prevalent patients using a fistula.

vol 2 Figure 10.6 Facility-level distribution of vascular access type among HD patients during the first 30 days of dialysis, 2014



Data source: Special analyses, USRDS ESRD Database. The orange diamonds represent the average facility-level rate of each type of vascular access. The bars within each box represent the median. The boxes represent the interquartile range. The vertical lines are capped at the 5th and 95th percentile of these facility-level rates. Abbreviation: Cath, catheter.

Wait-listing for Kidney Transplantation

Kidney transplantation is the modality of choice for most individuals with ESRD, and is associated with the highest quality of life and survival. Nationally, the percentage of patients on a kidney transplant waiting list remained fairly consistent between 2011 and 2014, with 24% of patients younger than age 70 on a waiting list (Figure 10.7a). We limited this measure to patients younger than age 70 in order to be comparable to the *Healthy People 2020* goals (see Volume. 2, Chapter 2, *Healthy People 2020*). Hospital-based dialysis

providers had the highest rates of wait-listed patients in 2014, at 29%.

The overall percentages of patients on a kidney transplant waiting list in 2014 varied substantially by race and ethnicity, ranging from 18% among Native American patients to 35% among Asian patients. Within all racial and ethnic groups except Asian patients, Hospital-based facilities again had the highest percentages of patients on a transplant waiting list; for Asian patients those receiving treatment at DCI facilities were most likely to be on a transplant waiting list.

vol 2 Figure 10.7 Percentage of patients younger than 70 on a kidney transplant waiting list, by unit affiliation, 2011–2014

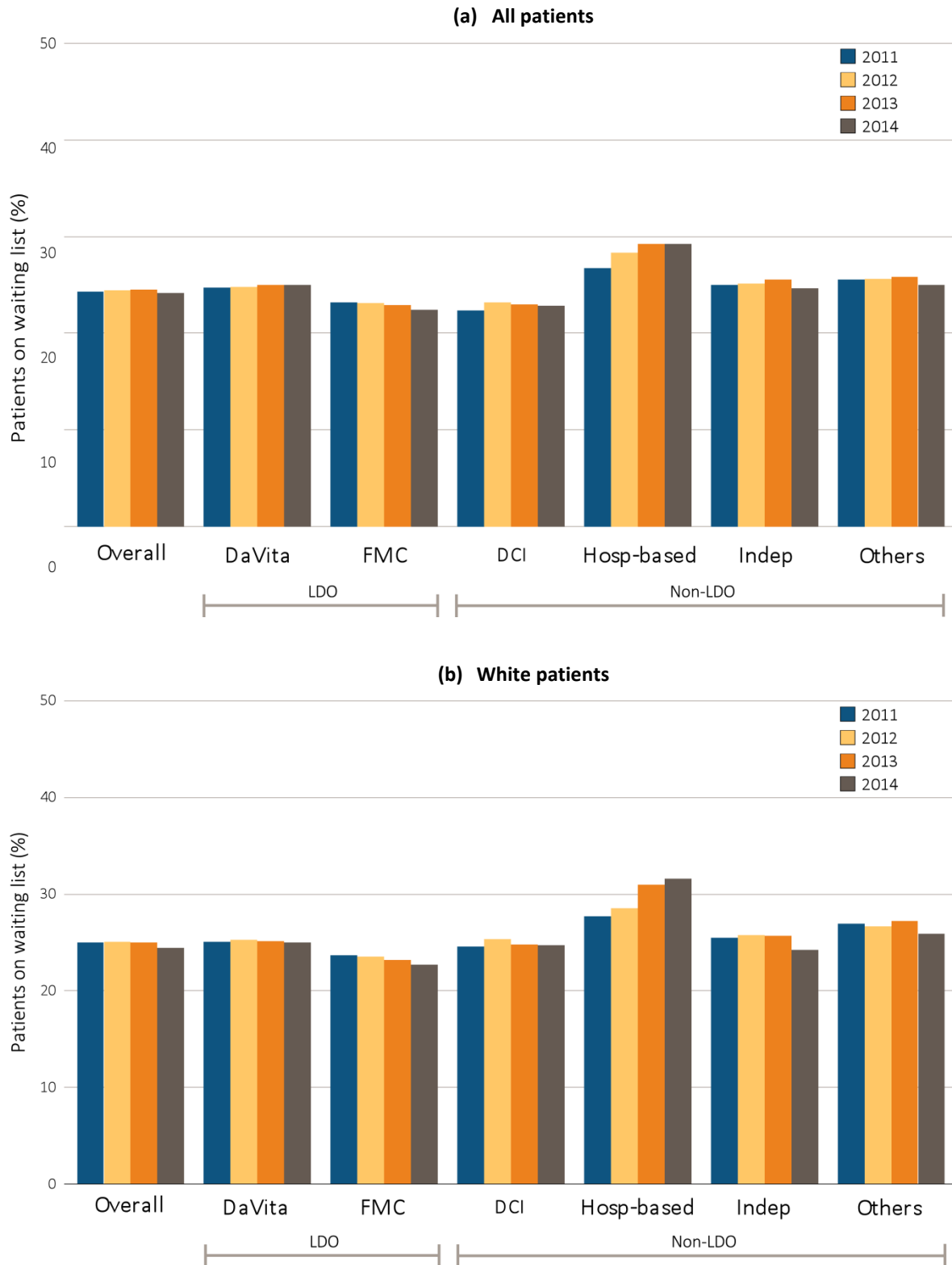


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vol 2 Figure 10.7 Percentage of patients younger than 70 on a kidney transplant waiting list, by unit affiliation, 2011–2014 (continued)

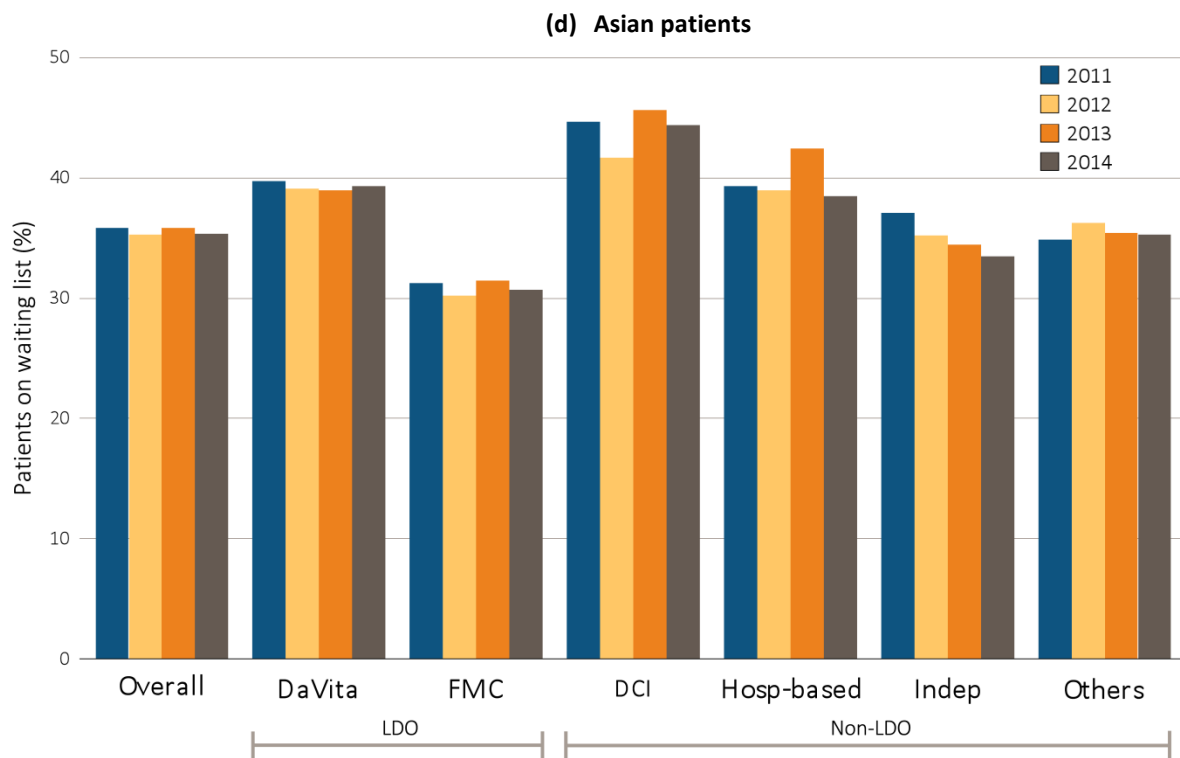
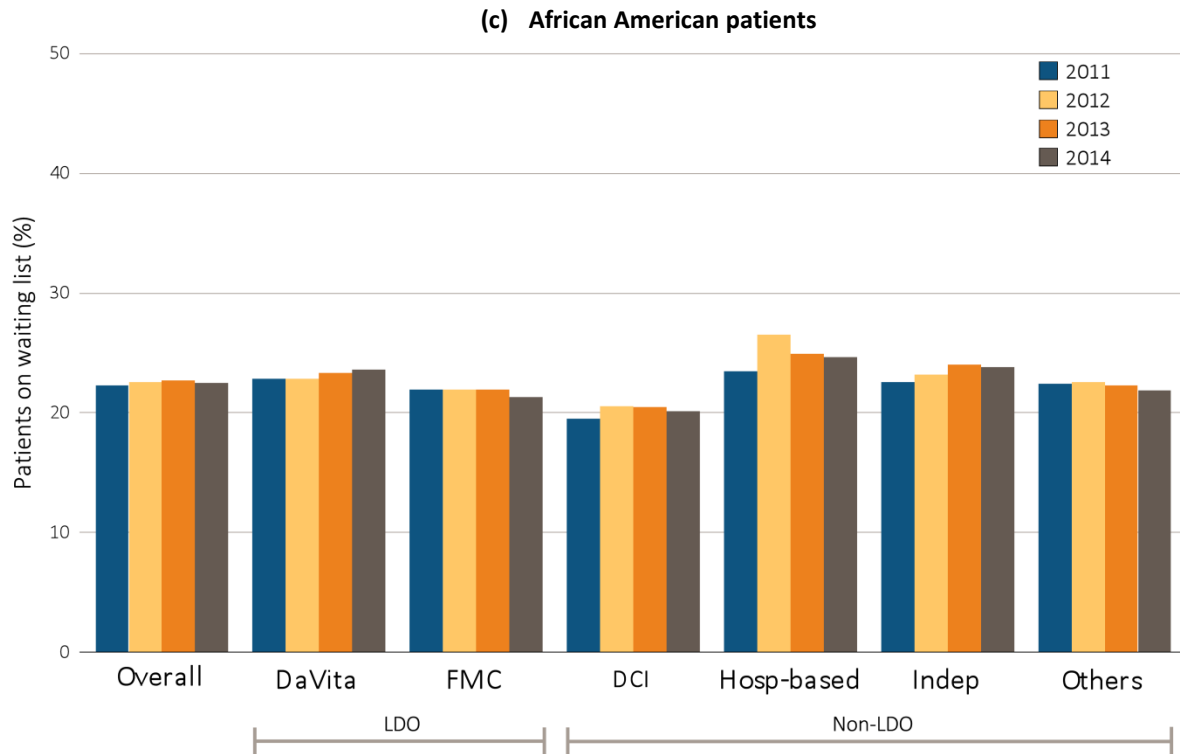
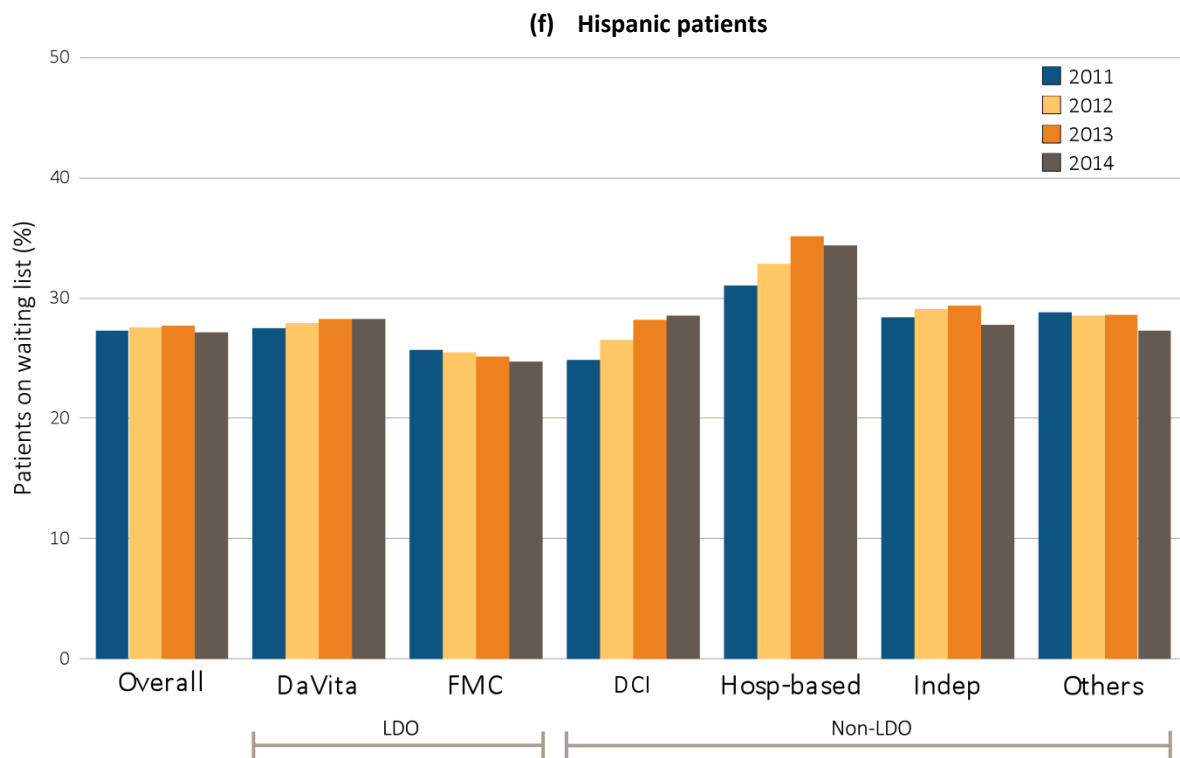
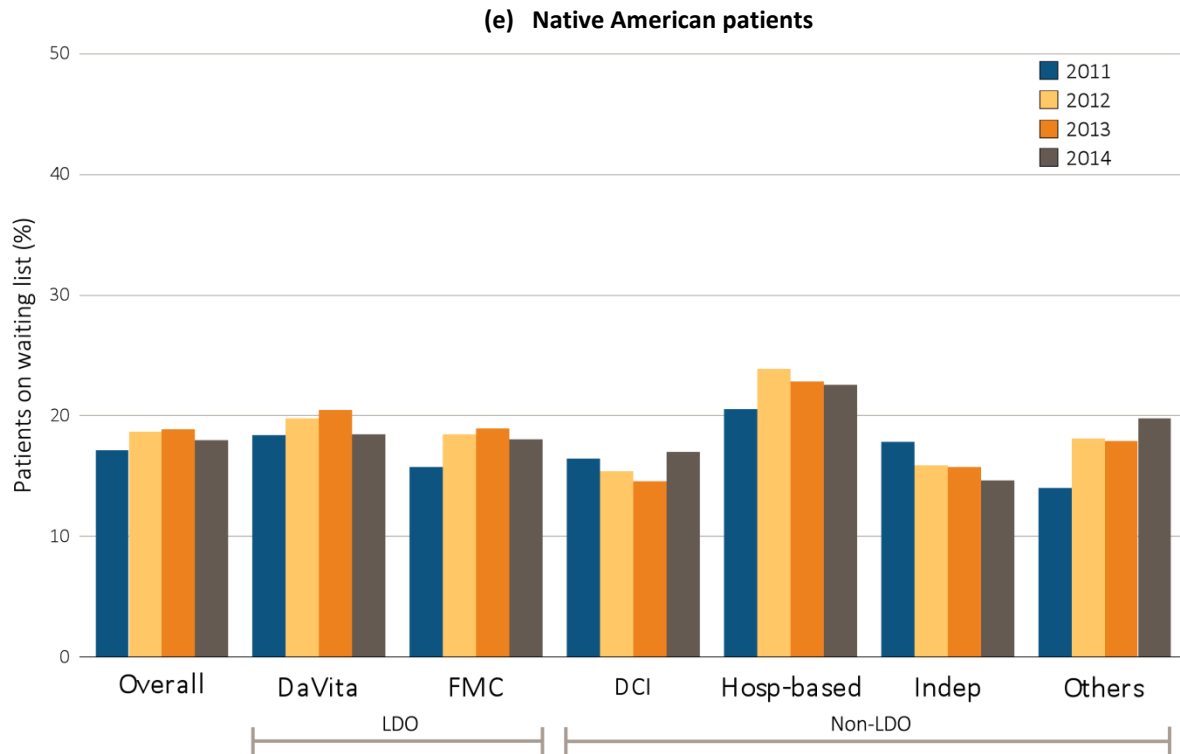


Figure 10.7 continued on next page.

vol 2 Figure 10.7 Percentage of patients younger than 70 on a kidney transplant waiting list, by unit affiliation, 2011–2014 (continued)



Data source: Special analyses, USRDS ESRD Database. Dialysis patients younger than 70 years on December 31. Abbreviations: Hosp-based, hospital-based dialysis centers; Indep, independent dialysis providers; LDO, large dialysis organizations; Others, other dialysis organizations.

Standardized Measures of Clinical Outcomes

Standardized measures of the major clinical outcomes include the Standardized Mortality Ratio (SMR) and the Standardized Hospitalization Ratio (SHR). These measures were designed to compare the risk-adjusted mortality and hospitalization rates of each provider or organization to the overall mortality and hospitalization of all U.S. dialysis patients. Specifically, the SMR and SHR are calculated as the ratio of two numbers: the numerator (“observed”) is the actual number of events for the patients of a provider or organization over the specified period, and the denominator (“expected”) is the number of events that would have been expected to occur for the same patients if they received care during the same reporting period from a provider or organization conforming to the national norm (e.g., 2011–2014). The degree to which the provider’s SMR or SHR varies from 1.00 is the degree to which it exceeds (>1.00) or is less than (<1.00) the national rates for patients with

the same characteristics as those in that provider. For example, an SMR=1.10 would indicate that the provider’s death rates exceed national death rates by 10%.

STANDARDIZED MORTALITY RATIOS

All provider types experienced substantial declines in SMRs between 2011 and 2014 (Table 10.1). During this time, Hispanic patients experienced smaller decreases in SMR compared with the overall population. For Hispanic patients, SMR fell 7% overall in the 4-year period, compared with 12% for all patients.

Compared with the overall dialysis population, the decrease in SMR between 2011 and 2014 was of greater magnitude in the White, Black/African American, and Native American cohorts (Table 10.1). Among Black patients, overall SMR decreased significantly for provider types, by 12%. Asian patients experienced an average decrease in SMR of 9%.

vol 2 Table 10.1 All-cause Standardized Mortality Ratio, by unit affiliation, 2011–2014

Affiliation		2011	2012	2013	2014	
All patients	Overall	1.08 (1.07-1.09)	1.00 (0.99-1.00)	0.98 (0.98-0.99)	0.96 (0.95-0.96)	
	LDO	DaVita	1.09 (1.08-1.10)	0.99 (0.98-1.01)	1.00 (0.99-1.01)	0.97 (0.96-0.98)
		Fresenius	1.08 (1.07-1.10)	1.00 (0.99-1.01)	0.98 (0.97-0.99)	0.94 (0.93-0.95)
	DCI	0.99 (0.96-1.03)	0.95 (0.92-0.98)	0.92 (0.89-0.96)	0.88 (0.85-0.91)	
	Hospital-based	1.03 (1.00-1.06)	0.96 (0.93-0.98)	0.97 (0.94-1.00)	0.90 (0.87-0.93)	
	Independent	1.11 (1.09-1.13)	1.02 (1.01-1.04)	1.00 (0.98-1.01)	0.98 (0.97-1.00)	
	Others	1.10 (1.08-1.12)	1.02 (1.00-1.03)	1.00 (0.98-1.02)	0.97 (0.96-0.99)	
White patients	Overall	1.20 (1.19-1.21)	1.11 (1.10-1.12)	1.11 (1.10-1.12)	1.07 (1.06-1.08)	
	LDO	DaVita	1.22 (1.20-1.24)	1.11 (1.10-1.13)	1.12 (1.11-1.13)	1.09 (1.08-1.11)
		Fresenius	1.21 (1.19-1.22)	1.11 (1.10-1.13)	1.10 (1.09-1.12)	1.06 (1.04-1.07)
	DCI	1.15 (1.10-1.20)	1.11 (1.06-1.16)	1.07 (1.03-1.12)	1.01 (0.97-1.06)	
	Hospital-based	1.13 (1.09-1.17)	1.04 (1.00-1.08)	1.11 (1.07-1.15)	1.00 (0.96-1.04)	
	Independent	1.22 (1.19-1.24)	1.14 (1.12-1.16)	1.12 (1.10-1.15)	1.09 (1.07-1.11)	
	Others	1.21 (1.18-1.23)	1.10 (1.08-1.13)	1.11 (1.09-1.13)	1.07 (1.05-1.09)	
Black/African American patients	Overall	0.93 (0.92-0.94)	0.85 (0.84-0.86)	0.83 (0.82-0.84)	0.81 (0.80-0.82)	
	LDO	DaVita	0.92 (0.90-0.94)	0.83 (0.82-0.85)	0.84 (0.83-0.86)	0.81 (0.79-0.83)
		Fresenius	0.92 (0.90-0.93)	0.84 (0.82-0.86)	0.82 (0.80-0.83)	0.77 (0.76-0.79)
	DCI	0.81 (0.76-0.86)	0.76 (0.72-0.81)	0.76 (0.72-0.81)	0.74 (0.70-0.79)	
	Hospital-based	0.93 (0.88-0.99)	0.93 (0.88-0.99)	0.81 (0.76-0.86)	0.82 (0.77-0.87)	
	Independent	0.99 (0.96-1.02)	0.88 (0.85-0.91)	0.83 (0.80-0.86)	0.86 (0.83-0.89)	
	Others	0.97 (0.94-1.01)	0.90 (0.87-0.93)	0.83 (0.81-0.86)	0.83 (0.81-0.86)	
Asian patients	Overall	0.74 (0.72-0.77)	0.69 (0.66-0.71)	0.65 (0.63-0.67)	0.65 (0.64-0.67)	
	LDO	DaVita	0.82 (0.77-0.87)	0.74 (0.70-0.78)	0.65 (0.61-0.68)	0.67 (0.63-0.70)
		Fresenius	0.74 (0.70-0.78)	0.68 (0.65-0.72)	0.66 (0.62-0.70)	0.72 (0.68-0.77)
	DCI	0.59 (0.44-0.78)	0.70 (0.53-0.90)	0.58 (0.44-0.75)	0.61 (0.47-0.79)	
	Hospital-based	0.82 (0.71-0.94)	0.59 (0.50-0.70)	0.65 (0.55-0.77)	0.65 (0.55-0.77)	
	Independent	0.76 (0.70-0.83)	0.76 (0.70-0.82)	0.70 (0.65-0.75)	0.65 (0.61-0.70)	
	Others	0.82 (0.75-0.89)	0.71 (0.65-0.77)	0.71 (0.66-0.76)	0.70 (0.66-0.76)	
Native American patients	Overall	0.93 (0.88-0.99)	0.87 (0.82-0.93)	0.80 (0.75-0.85)	0.82 (0.77-0.87)	
	LDO	DaVita	0.89 (0.80-0.98)	0.81 (0.73-0.90)	0.72 (0.65-0.81)	0.78 (0.70-0.86)
		Fresenius	1.15 (1.02-1.29)	1.13 (1.00-1.26)	0.80 (0.69-0.92)	0.83 (0.73-0.95)
	DCI	0.80 (0.60-1.05)	0.75 (0.57-0.97)	0.79 (0.61-1.02)	0.67 (0.51-0.86)	
	Hospital-based	0.88 (0.70-1.08)	0.79 (0.64-0.97)	0.76 (0.61-0.94)	0.69 (0.55-0.85)	
	Independent	1.04 (0.90-1.21)	0.70 (0.61-0.81)	0.84 (0.74-0.96)	0.87 (0.77-0.98)	
	Others	0.64 (0.52-0.77)	1.24 (1.01-1.51)	0.92 (0.72-1.16)	1.21 (0.99-1.46)	
Hispanic patients	Overall	0.82 (0.80-0.83)	0.79 (0.78-0.80)	0.76 (0.75-0.77)	0.75 (0.74-0.76)	
	LDO	DaVita	0.80 (0.77-0.82)	0.76 (0.73-0.78)	0.76 (0.74-0.78)	0.75 (0.73-0.77)
		Fresenius	0.84 (0.81-0.86)	0.79 (0.77-0.81)	0.74 (0.72-0.77)	0.75 (0.73-0.77)
	DCI	0.69 (0.58-0.82)	0.82 (0.70-0.95)	0.80 (0.68-0.93)	0.73 (0.63-0.84)	
	Hospital-based	0.88 (0.80-0.96)	0.78 (0.71-0.86)	0.71 (0.63-0.78)	0.68 (0.61-0.75)	
	Independent	0.84 (0.80-0.88)	0.89 (0.86-0.93)	0.86 (0.82-0.90)	0.78 (0.75-0.81)	
	Others	0.88 (0.84-0.92)	0.82 (0.79-0.86)	0.81 (0.77-0.84)	0.77 (0.74-0.80)	

Data source: Special analyses, USRDS ESRD Database. Period prevalent dialysis patients; 95% confidence intervals are shown in parentheses. The overall measure is adjusted for patient age, race, ethnicity, sex, diabetes, duration of ESRD, nursing home status, patient comorbidities at incidence, body mass index (BMI) at incidence, and population death rates. The race-specific measures are adjusted for all the above characteristics except patient race. The Hispanic-specific measure is adjusted for all the above characteristics except patient ethnicity. Abbreviations: DCI, Dialysis Clinic, Inc.; LDO, large dialysis organizations; Others, other dialysis organizations.

Table 10.1 presents data with which to compare a dialysis unit’s performance on the SMR across multiple years. Table 10.2 provides an alternate perspective for 2014 only. This second example is

designed to provide a simpler and more direct comparison of a given provider type to other providers and to the national value in a single year.

vol 2 Table 10.2 All-cause Standardized Mortality Ratio, by unit affiliation, 2014

Affiliation	All (National Average)	White	Black/African American	Asian	Native American	Hispanic
Overall	1.00 (0.99-1.01)	1.12 (1.11-1.13)	0.85 (0.84-0.86)	0.70 (0.68-0.72)	0.86 (0.81-0.91)	0.79 (0.77-0.80)
LDOs						
DaVita	1.02 (1.01-1.03)	1.14 (1.13-1.16)	0.85 (0.83-0.86)	0.71 (0.67-0.75)	0.82 (0.74-0.90)	0.79 (0.77-0.81)
Fresenius	0.98 (0.97-0.99)	1.10 (1.09-1.12)	0.81 (0.79-0.82)	0.77 (0.73-0.82)	0.88 (0.76-1.00)	0.79 (0.77-0.81)
DCI	0.92 (0.89-0.95)	1.06 (1.01-1.10)	0.78 (0.73-0.82)	0.66 (0.51-0.84)	0.70 (0.54-0.90)	0.77 (0.66-0.89)
Hospital-based	0.94 (0.91-0.97)	1.04 (1.00-1.08)	0.86 (0.80-0.91)	0.69 (0.58-0.81)	0.72 (0.58-0.89)	0.71 (0.63-0.79)
Independent	1.03 (1.01-1.04)	1.14 (1.11-1.16)	0.90 (0.87-0.93)	0.70 (0.65-0.75)	0.92 (0.81-1.03)	0.82 (0.78-0.85)
Others	1.02 (1.00-1.04)	1.12 (1.09-1.14)	0.87 (0.84-0.90)	0.75 (0.70-0.80)	1.27 (1.05-1.54)	0.81 (0.78-0.85)

Data source: Special analyses, USRDS ESRD Database. Period prevalent dialysis patients; 95% confidence intervals are shown in parentheses. The overall measure is adjusted for patient age, race, ethnicity, sex, diabetes, duration of ESRD, nursing home status, patient comorbidities at incidence, body mass index (BMI) at incidence, and population death rates. The race-specific measures are adjusted for all the above characteristics except patient race. The Hispanic-specific measure is adjusted for all the above characteristics except patient ethnicity. Abbreviations: DCI, Dialysis Clinic, Inc.; LDO, large dialysis organizations; Others, other dialysis organizations.

Standardized Hospitalization Ratios

All types of providers experienced relatively flat change trends in SHRs between 2011 and 2014 (Table 10.3). Hospital-based dialysis providers exhibited the lowest SHR, at 0.92. In 2014 only, units owned by DaVita had the highest SHRs at 1.03 (Table 10.4).

For patients overall, the SHRs remained the same at 1.00 between 2011 and 2014. Patients of White and Black race experienced SHR to a similar degree as those in the overall population (Table 10.3).

vol 2 Table 10.3 All-cause Standardized Hospitalization Ratio, by unit affiliation, 2011–2014

Affiliation		2011	2012	2013	2014	
All patients	Overall	1.00 (1.00-1.00)	0.99 (0.99-1.00)	1.01 (1.00-1.01)	1.00 (1.00-1.00)	
	LDO	DaVita	0.99 (0.99-1.00)	0.99 (0.99-0.99)	1.03 (1.02-1.03)	1.03 (1.03-1.03)
		Fresenius	0.98 (0.98-0.99)	0.97 (0.97-0.98)	0.99 (0.99-0.99)	0.96 (0.96-0.96)
	DCI	0.92 (0.91-0.93)	0.88 (0.88-0.89)	0.93 (0.92-0.93)	0.93 (0.92-0.94)	
	Hospital-based	0.95 (0.94-0.95)	0.97 (0.97-0.98)	0.92 (0.92-0.93)	0.92 (0.92-0.93)	
	Independent	1.03 (1.03-1.04)	1.04 (1.03-1.04)	1.00 (0.99-1.00)	0.99 (0.98-0.99)	
	Others	1.01 (1.01-1.02)	1.00 (0.99-1.00)	0.99 (0.98-0.99)	1.01 (1.00-1.01)	
White patients	Overall	1.01 (1.01-1.01)	1.02 (1.01-1.02)	1.03 (1.03-1.03)	1.02 (1.02-1.02)	
	LDO	DaVita	1.02 (1.02-1.03)	1.02 (1.01-1.02)	1.05 (1.05-1.05)	1.05 (1.05-1.06)
		Fresenius	1.01 (1.01-1.02)	1.01 (1.00-1.01)	1.03 (1.03-1.03)	0.99 (0.99-1.00)
	DCI	0.97 (0.96-0.98)	0.95 (0.94-0.96)	0.97 (0.96-0.98)	0.99 (0.98-1.00)	
	Hospital-based	0.90 (0.89-0.91)	0.94 (0.93-0.95)	0.93 (0.92-0.94)	0.91 (0.90-0.92)	
	Independent	1.03 (1.03-1.04)	1.05 (1.05-1.06)	1.01 (1.01-1.02)	0.99 (0.98-0.99)	
	Others	0.99 (0.99-1.00)	0.99 (0.99-1.00)	1.01 (1.00-1.01)	1.02 (1.01-1.02)	
Black/African American patients	Overall	1.01 (1.00-1.01)	1.00 (1.00-1.00)	1.00 (1.00-1.00)	1.00 (1.00-1.00)	
	LDO	DaVita	0.99 (0.98-0.99)	0.99 (0.99-1.00)	1.02 (1.02-1.03)	1.04 (1.03-1.04)
		Fresenius	0.96 (0.96-0.96)	0.96 (0.96-0.96)	0.96 (0.95-0.96)	0.93 (0.93-0.94)
	DCI	0.87 (0.86-0.89)	0.84 (0.83-0.86)	0.91 (0.90-0.92)	0.91 (0.90-0.92)	
	Hospital-based	1.10 (1.08-1.11)	1.13 (1.11-1.14)	0.97 (0.96-0.98)	0.99 (0.98-1.01)	
	Independent	1.07 (1.06-1.07)	1.05 (1.05-1.06)	1.02 (1.01-1.02)	1.03 (1.02-1.03)	
	Others	1.10 (1.09-1.11)	1.05 (1.04-1.06)	0.99 (0.99-1.00)	1.02 (1.02-1.03)	
Asian patients	Overall	0.76 (0.75-0.77)	0.72 (0.72-0.73)	0.75 (0.75-0.76)	0.76 (0.75-0.76)	
	LDO	DaVita	0.71 (0.70-0.72)	0.71 (0.70-0.72)	0.74 (0.73-0.75)	0.74 (0.73-0.75)
		Fresenius	0.75 (0.74-0.77)	0.70 (0.69-0.71)	0.78 (0.77-0.79)	0.73 (0.72-0.74)
	DCI	1.07 (1.01-1.12)	0.74 (0.69-0.79)	0.69 (0.65-0.74)	0.68 (0.64-0.72)	
	Hospital-based	0.58 (0.55-0.61)	0.58 (0.55-0.62)	0.68 (0.65-0.71)	0.60 (0.57-0.64)	
	Independent	0.86 (0.85-0.88)	0.80 (0.79-0.82)	0.76 (0.75-0.78)	0.82 (0.81-0.84)	
	Others	0.72 (0.70-0.74)	0.66 (0.65-0.68)	0.67 (0.66-0.68)	0.71 (0.70-0.73)	
Native American patients	Overall	0.80 (0.78-0.81)	0.73 (0.71-0.74)	0.78 (0.77-0.79)	0.75 (0.74-0.76)	
	LDO	DaVita	0.77 (0.75-0.79)	0.71 (0.69-0.73)	0.83 (0.82-0.85)	0.71 (0.69-0.73)
		Fresenius	0.96 (0.93-0.98)	0.74 (0.71-0.76)	0.73 (0.71-0.75)	0.84 (0.82-0.87)
	DCI	0.69 (0.65-0.74)	0.47 (0.43-0.52)	0.72 (0.68-0.76)	0.48 (0.44-0.51)	
	Hospital-based	0.90 (0.86-0.94)	0.84 (0.81-0.89)	0.89 (0.85-0.93)	0.95 (0.91-0.99)	
	Independent	0.69 (0.66-0.72)	0.66 (0.64-0.69)	0.70 (0.67-0.72)	0.64 (0.61-0.66)	
	Others	0.60 (0.58-0.63)	0.86 (0.81-0.91)	0.78 (0.74-0.82)	0.91 (0.86-0.96)	
Hispanic patients	Overall	0.89 (0.88-0.89)	0.89 (0.89-0.89)	0.89 (0.88-0.89)	0.90 (0.90-0.90)	
	LDO	DaVita	0.88 (0.87-0.88)	0.87 (0.86-0.87)	0.90 (0.90-0.91)	0.90 (0.90-0.91)
		Fresenius	0.84 (0.83-0.85)	0.86 (0.85-0.87)	0.84 (0.83-0.84)	0.83 (0.82-0.84)
	DCI	0.84 (0.81-0.87)	0.85 (0.82-0.88)	0.83 (0.80-0.86)	0.97 (0.94-1.00)	
	Hospital-based	0.85 (0.83-0.88)	0.87 (0.85-0.89)	0.82 (0.80-0.84)	1.00 (0.98-1.03)	
	Independent	1.05 (1.04-1.06)	1.00 (0.99-1.01)	0.96 (0.96-0.97)	0.97 (0.96-0.98)	
	Others	0.83 (0.82-0.84)	0.83 (0.82-0.84)	0.85 (0.84-0.86)	0.89 (0.88-0.90)	

Data source: Special analyses, USRDS ESRD Database. Period prevalent dialysis patients with Medicare as primary payer; 95% confidence intervals are shown in parentheses. Adjusted for patient age, race, ethnicity, sex, diabetes, duration of ESRD, nursing home status, patient comorbidities at incidence, and body mass index (BMI) at incidence. The race-specific measures are adjusted for all the above characteristics except patient race. The Hispanic-specific measure is adjusted for all the above characteristics except patient ethnicity. Abbreviations: DCI, Dialysis Clinic, Inc.; LDO, large dialysis organizations; Others, other dialysis organizations.

Similar to the SMR presentation, Table 10.4 displays the 2014-only SHR, which is constructed to provide a simpler and more direct comparison of a given provider type to the national value in a given year,

versus comparing a provider type’s performance on the SHR across years, as Table 10.3 is designed to facilitate.

vol 2 Table 10.4 All-cause standardized hospitalization ratio, by unit affiliation, 2014

Affiliation	All (National Average)	White	Black/African American	Asian	Native American	Hispanic
Overall	1.00 (1.00-1.00)	1.02 (1.02-1.02)	1.00 (1.00-1.01)	0.76 (0.75-0.77)	0.75 (0.74-0.77)	0.91 (0.90-0.91)
LDO						
DaVita	1.03 (1.03-1.03)	1.05 (1.05-1.05)	1.04 (1.03-1.04)	0.74 (0.73-0.76)	0.71 (0.69-0.73)	0.91 (0.90-0.92)
Fresenius	0.96 (0.96-0.96)	0.99 (0.99-0.99)	0.93 (0.93-0.94)	0.73 (0.72-0.74)	0.85 (0.82-0.87)	0.83 (0.83-0.84)
DCI	0.93 (0.93-0.94)	0.99 (0.98-1.00)	0.91 (0.90-0.92)	0.68 (0.64-0.72)	0.48 (0.44-0.52)	0.97 (0.94-1.00)
Hospital-based	0.93 (0.92-0.93)	0.91 (0.90-0.92)	1.00 (0.98-1.01)	0.61 (0.57-0.64)	0.95 (0.91-1.00)	1.01 (0.98-1.03)
Independent	0.99 (0.98-0.99)	0.99 (0.98-0.99)	1.03 (1.02-1.03)	0.83 (0.81-0.84)	0.64 (0.61-0.66)	0.98 (0.97-0.99)
Others	1.01 (1.00-1.01)	1.02 (1.01-1.02)	1.02 (1.02-1.03)	0.72 (0.70-0.73)	0.91 (0.86-0.96)	0.89 (0.88-0.90)

Data source: Special analyses, USRDS ESRD Database. Period prevalent dialysis patients with Medicare as primary payer; 95% confidence intervals are shown in parentheses. Adjusted for patient age, race, ethnicity, sex, diabetes, duration of ESRD, nursing home status, patient comorbidities at incidence, and body mass index (BMI) at incidence. The race-specific measures are adjusted for all the above characteristics except patient race. The Hispanic-specific measure is adjusted for all the above characteristics except patient ethnicity. Abbreviations: DCI, Dialysis Clinic, Inc.; LDO, large dialysis organizations; Others, other dialysis organizations.

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Notes