

Cost Effective and Clinically Appropriate Methods to Deliver Dialysis Services in the Medicaid Program

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Introduction

The 2022-23 General Appropriations Act, Article II, Health and Human Services Commission (HHSC) Rider 35 (Senate Bill (S.B.) 1, 87th Legislature, Regular Session, 2021), requires HHSC to study the most cost effective and clinically appropriate methods to deliver dialysis services through the Medicaid program. This report was developed in consultation with internal and external stakeholders, including the Chronic Kidney Disease Taskforce, the Texas Diabetes Council, and the Department of State Health Services. This report reviews:

- The Medicare End-Stage Renal Disease Treatment Choices model and whether savings could be achieved through increased utilization of home dialysis,
- Value-based purchasing models for dialysis services,
- Innovative models of delivering services to persons with renal disease, including those developed under the Delivery System Reform Incentive Payment (DSRIP) Program,
- Alternatives to providing dialysis to persons under emergency Medicaid to improve cost effectiveness and quality and reduce hospitalizations, and
- How other states have modified their Medicaid programs to increase options in providing dialysis.

Patients living with kidneys that do not function sufficiently may be diagnosed with chronic kidney disease (CKD) which can progress to end-stage renal disease (ESRD). Ten percent of the nation's population of patients living with ESRD reside in Texas. Routine dialysis therapy is needed to remove toxins and waste byproducts in the blood. Dialysis treatments are mostly delivered in a hospital or dialysis clinic setting. Dialysis can also be performed in the home and patients can choose a kidney transplant to treat their disease. Home dialysis and kidney transplant have been found to reduce costs and improve quality of ESRD patients.

The most effective way to reduce costs related to CKD and ESRD is by slowing disease progression. Reducing the number of people who progress from precursor conditions such as diabetes and high blood pressure will lead to an overall cost savings in managing kidney conditions. Those who do require chronic dialysis should be managed with routine dialysis. Preventing delays in treatment can reduce or eliminate the need for costly emergency dialysis sessions and inpatient hospital admissions.

Medicaid, Medicare, and the Kidney Health program provide coverage for ESRD and dialysis in Texas. Each program has different eligibility requirements. Texas Medicaid's coverage of renal dialysis services includes inpatient services and all items and services used to furnish outpatient dialysis in an ESRD facility or in a patient's home. Patients who are not eligible for these programs may be eligible to receive financial help through their local hospital district if one is established where they reside. Hospital district programs offer free or discounted dialysis services to patients who apply and meet eligibility requirements for these programs.

This report covers dialysis service access, current and past dialysis-focused programs and projects, alternatives to emergency Medicaid utilization, and a review of dialysis service coverage by other states.

Background

Damage from acute or chronic medical conditions, most commonly diabetes and high blood pressure, can impair kidney function, resulting in CKD. As the kidneys lose their ability to effectively remove toxins and waste byproducts in the blood, CKD can progress to ESRD, which requires routine dialysis therapy as often as multiple treatments per week.

CKD and ESRD patients can live many years with appropriate dialysis services or kidney transplant. Various methods of dialysis treatment can be performed in a dialysis center, hospital, or in the home, as determined by the treating physician in consideration of patient preference and clinical appropriateness. Patients who delay receiving required dialysis treatment can become acutely ill, often requiring emergency services or hospitalization, and are at high risk of end-organ damage and death.

Recent treatment models encourage dialysis treatment in the home setting to reduce costs or improve quality of life. Also, kidney transplant is now recommended earlier in care to improve quality of life by avoiding the prolonged need for dialysis.

Connecting people with preventive services to manage precursor conditions can slow or inhibit chronic disease development, which is the most effective way to reduce chronic disease related costs.^a Effective management of diabetes and high blood pressure can prevent progression to CKD and ESRD, reducing the need for dialysis^b and resulting in overall cost savings.^c

^a National Center for Chronic Disease Prevention and Health Promotion. (2022). Health and economic costs of chronic diseases. Retrieved from <https://www.cdc.gov/chronicdisease/about/costs/index.htm>

^b Colwell, J. (2021). Getting dialysis for undocumented patients. *ACP Internist*. <https://acpinternist.org/archives/2021/02/getting-dialysis-for-undocumented-patients.htm>

^c Mody, S.H. (2004). Reducing the economic and clinical burden of CKD in the managed care setting. *Biotechnology Healthcare*, 1(5), 56-61.

Overview of Chronic Kidney Disease in the United States

According to the Centers for Disease Control and Prevention (CDC), chronic kidney disease is one of the most common chronic diseases in the United States (U.S.).^d The two most common causes of CKD are high blood pressure (hypertension) and diabetes, but can also be caused by physical injury, disease, or other disorders^e. Prevention is possible by modifying lifestyle factors such as smoking cessation, consuming a healthy diet, physical activity, and limiting alcohol use.^f

The severity of disease progression and illness is categorized by staging methodology based on how well the kidneys are clearing waste from the blood. When lab values meet certain established criteria that demonstrate the kidneys are failing, a patient can be considered to have CKD. With or without treatment CKD can progress to end-stage renal disease (ESRD), which is permanent kidney failure that requires a regular course of dialysis or a kidney transplant.

In 2018, almost fifteen percent of adults in the U.S. had lab values that indicate some level of impaired kidney functioning and possibly CKD or ESRD. CKD is categorized into stages which indicate the level of functioning, or lack thereof, of the kidneys. Stage 1 indicates mild kidney damage with function near normal. Stage 2 indicates mild kidney damage and function near normal. Stage 3a indicates mild to moderate kidney damage and impaired functioning. Stage 3b indicates moderate to severe kidney damage. Stage 4 indicates severe kidney damage with minimal kidney function. Stage 5 is the most severe stage with little to no functionality in the kidneys.^g Table 1 shows the percent of adults in the U.S. who had CKD between 2015-2018 according to stage as reported in the United States Renal Data System's Annual Data Report.

^d National Center for Chronic Disease Prevention and Health Promotion. (2022, May 6). Chronic diseases in America. Retrieved from

<https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm>

^e National Kidney Foundation. (n.d.). *What is kidney failure?*

<https://www.kidney.org/atoz/content/KidneyFailure?msclkid=f66873b4d16511ec8c580bbf01542447>

^f Mody, S.H. (2004). Reducing the economic and clinical burden of CKD in the managed care setting. *Biotechnology Healthcare*, 1(5), 56-61.

^g American Kidney Fund. (n.d.) *Stages of kidney disease*. Retrieved from <https://www.kidneyfund.org/all-about-kidneys/stages-kidney-disease>

Table 1. Prevalence of CKD by stage, 2015-2018

Group	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	All Stages
U.S. Adults with CKD	4.7%	3.3%	6.4%	0.4%	0.1%	14.9%

Table 2 shows the proportion of adults living with CKD by race in the United States. White, non-Hispanics have the majority of adults in stage 3 CKD whereas African-American/Black, non-Hispanics and Hispanic/Latinos have the majority of adults in stage 1 CKD. The African-American/Black, non-Hispanic racial group also has a higher amount of adults with CKD who are considered in stage 3 CKD than other racial groups.

Table 2. Prevalence of CKD by stage, 2015-2018

Racial Group	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
White, Non-Hispanic	3.8%	3.5%	8.0%	0.3%	0.1%
African American/Black, Non-Hispanic	5.9%	3.7%	5.4%	0.7%	0.3%
Hispanic/Latino	6.8%	2.15	2.6%	0.3%	0.1%

Table 3 shows income levels and insurance coverage of adults living with CKD. The table shows relatively stable data for the past four data collection periods, which spans fifteen years. The notable changes include the decrease in prevalence of health insurance types of adults living with CKD who are covered by Medicare, Medicare and private insurance, and Medicaid. Also, the prevalence of adults living with CKD whose family income is below the poverty level has increased.

Table 3a. Prevalence of CKD (%) by health insurance coverage, 2003-2018

Health Insurance Coverage	2003-2006	2007-2010	2011-2014	2015-2018
Not Insured	9.9%	7.7%	10.8%	11.1%
Insured	16.8%	14.8%	15.7%	15.5%

Table 3b. Prevalence of CKD (%) by health insurance type, 2003-2018

Health Insurance Type	2003-2006	2007-2010	2011-2014	2015-2018
Private	13.7%	12.3%	13.0%	13.3%
Medicare	43.5%	39.8%	37.5%	36.0%
Medicare + Private	46.9%	40.1%	36.9%	38.0%
Medicaid	25.0%	19.5%	20.9%	16.8%
Military	25.2%	20.2%	17.6%	23.9%

Table 3c. Prevalence of CKD (%) by family income/poverty ratio, 2003-2018

Family Income/Poverty Ratio	2003-2006	2007-2010	2011-2014	2015-2018
≤1	15.2%	14.5%	17.5%	17.4%
>1	14.5%	13.1%	14.2%	14.4%

Table 4 includes information on risk factors for CKD which are important to assess as they demonstrate opportunities in disease prevention and mitigation. This table shows almost seventy-two percent of adults with a diagnosis of CKD had a history of hypertension (HTN). Diabetes Mellitus (DM) was present in both adults with and without a diagnosis of CKD, though poorly controlled diabetes, as evidenced by the higher percentage of glycosylated hemoglobin, a test that measures the amount of sugar in the blood, had higher prevalence in the CKD population. Lastly, LDL cholesterol, also known as bad cholesterol, was similarly present in both populations of adults with and without CKD.

Table 4a. Prevalence of CKD Risk Factor: Hypertension, % of U.S. Adult Population, 2015-2018

Hypertension	CKD	No CKD
No	28.2%	72.4%
Yes	71.8%	27.6%

Table 4b. Prevalence of CKD Risk Factor: Diabetes, % of U.S. Adult Population, 2015-2018

Diabetes (Glycosylated Hemoglobin)	CKD	No CKD
<7%	43.0%	53.9%
7-7.9%	26.0%	25.5%
≥8%	31.0%	20.7%

Table 4c. Prevalence of CKD Risk Factor: LDL Cholesterol, % of U.S. Adult Population, 2015-2018

LDL Cholesterol	CKD	No CKD
<70 mg/dL	11.0%	8.9%
70-99 mg/dL	27.4%	29.3%
≥100 mg/dL	61.6%	61.8%

Table 5 includes information specific to Medicare beneficiaries over the age of sixty-six years with a diagnosis of CKD stratified by their risk factors of diabetes and hypertension. Most adults in this category had both diabetes and hypertension.

Prevalence of these risk factors rose with age. Examining risk factors by race and ethnicity shows white adults in this population had the highest rate of neither diabetes nor hypertension, although this was low compared to the other risk factor categories. Black adults in this population had the highest rate of hypertension as their only risk factor and having both diabetes and hypertension as risk factors. Asian adults in this population had the highest rate of diabetes as their only risk factor.

Table 5a. Prevalence of CKD (%), by presence of diabetes mellitus and hypertension in Medicare beneficiaries aged ≥66 years, overall, 2018

Group	Neither DM nor HTN	HTN Only	DM Only	HTN and DM
Overall	2.1%	15.0%	10.0%	31.0%

Table 5b. Prevalence of CKD (%), by presence of diabetes mellitus and hypertension in Medicare beneficiaries aged ≥66 years, by age range, 2018

Age Range	Neither DM nor HTN	HTN Only	DM Only	HTN and DM
66-69	1.2%	8.3%	7.1%	22.4%
70-74	1.7%	10.6%	8.1%	27.2%
75-79	2.4%	14.4%	10.5%	32.1%
80-84	3.5%	18.6%	14.1%	37.2%
85+	4.9%	24.9%	17.5%	42.1%

Table 5c. Prevalence of CKD (%), by presence of diabetes mellitus and hypertension in Medicare beneficiaries aged ≥66 years, by gender, 2018

Gender	Neither DM nor HTN	HTN Only	DM Only	HTN and DM
Male	2.2%	16.4%	10.6%	33.0%
Female	2.0%	13.9%	9.4%	29.2%

Table 5d. Prevalence of CKD (%), by presence of diabetes mellitus and hypertension in Medicare beneficiaries aged ≥66 years, by race/ethnicity, 2018

Race/Ethnicity	Neither DM nor HTN	HTN Only	DM Only	HTN and DM
White	2.2%	14.8%	10.2%	30.9%
Black	1.4%	18.7%	8.8%	34.1%
Native American	1.3%	13.1%	8.8%	29.4%
Asian	1.5%	14.7%	11.1%	30.3%
Hispanic	1.2%	14.5%	6.7%	28.9%
Other/Unknown	1.4%	9.6%	7.7%	25.1%

Comorbid conditions associated with CKD include atherosclerotic heart disease (ASHD), heart failure (HF) and diabetes (DM). Among fee-for-service Medicare beneficiaries aged 66 years or older in 2018, 71.1 percent of those with CKD had one or more of these three comorbid conditions, compared with only 32.4 percent of those without. DM, which occurred in approximately half of individuals with CKD, was roughly 2.5 times as common in patients with CKD compared with those without. This was the same for ASHD. HF was approximately 4.4 times as common among those with CKD.

Health care expenditures are higher for all people living with chronic conditions. For adults enrolled in fee-for-service (FFS) Medicare, those with CKD who did not have ESRD represented twenty-three percent of total Medicare FFS expenditures.^h Health care utilization is also higher for the CKD population. All-cause hospitalization rate (adjusted, 2019) was about two point four times higher for Medicare FFS adults living with CKD compared to adults without CKD. Medicare Advantage adults living with CKD saw similar all-cause hospitalization rates. Mortality from CKD has declined over the past ten years due to advancements in care for people with CKD as well as changes in the detection of the disease. The mortality rate for Medicare adults with a diagnosis of CKD remained about twice that of Medicare adults without CKD.

Overview of End-Stage Renal Disease in Texas

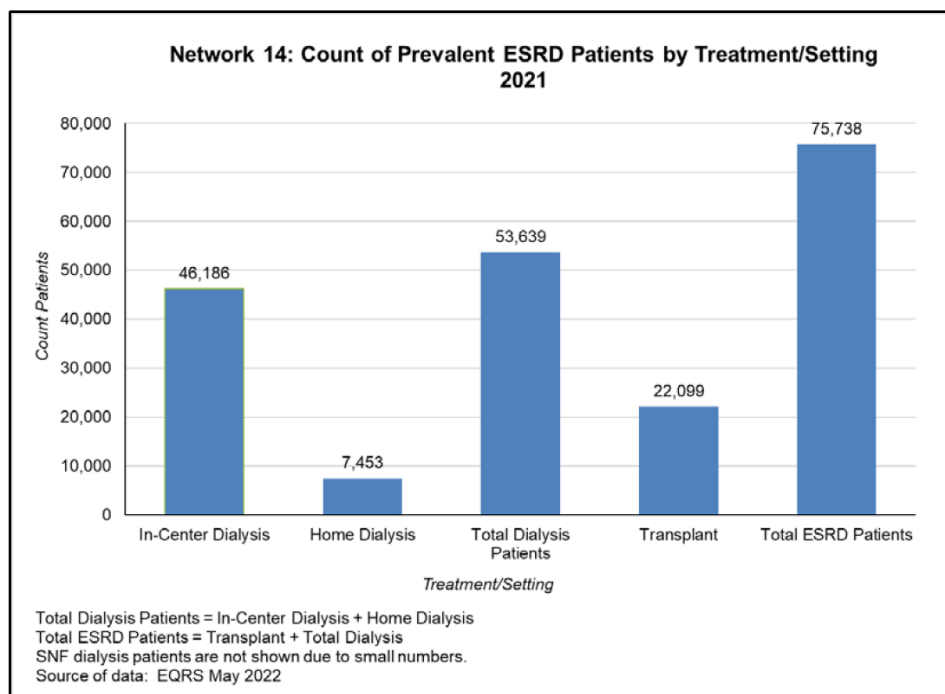
Alliant Health Solutions is the Quality Innovation Network-Quality Improvement Organization (QIN-QIO) serving Texas. They assess ESRD statistics in Texas, which is referred to as Network 14. In 2021, the QIN-QIO counted 75,738 unique ESRD patients in Network 14 who had received dialysis or a kidney transplant.ⁱ Ten percent of the national population of patients living with ESRD reside in Network 14. Texas has the largest percentage of ESRD patients of all the networks serviced by this QIN-QIO.^j

^h United States Renal Data System. (2020). USRDS Annual Data Report: Epidemiology of kidney disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2021.

ⁱ Alliant ESRD Network 14. (2022). 2021 Annual Report. Retrieved from https://quality.allianthealth.org/media_library/esrd-nw14-2021-annual-report/

^j The QIN-QIO serves the following networks: Alabama, Florida, Georgia, Kentucky, Louisiana, North Carolina, Tennessee, and Texas.

Figure 1. Count of Prevalent ESRD Patients by Treatment Setting, Texas (Network 14)



To care for these patients, Texas (Network 14) has 783 dialysis facilities.^k Almost three-quarters of these dialysis facilities are managed by large dialysis organizations and the rest are small organizations or independent practices. Sixty-one percent of patients receive dialysis services in a dialysis center. Ten percent of patients use home dialysis modalities. Twenty-nine percent of patients are living with a kidney transplant.^l

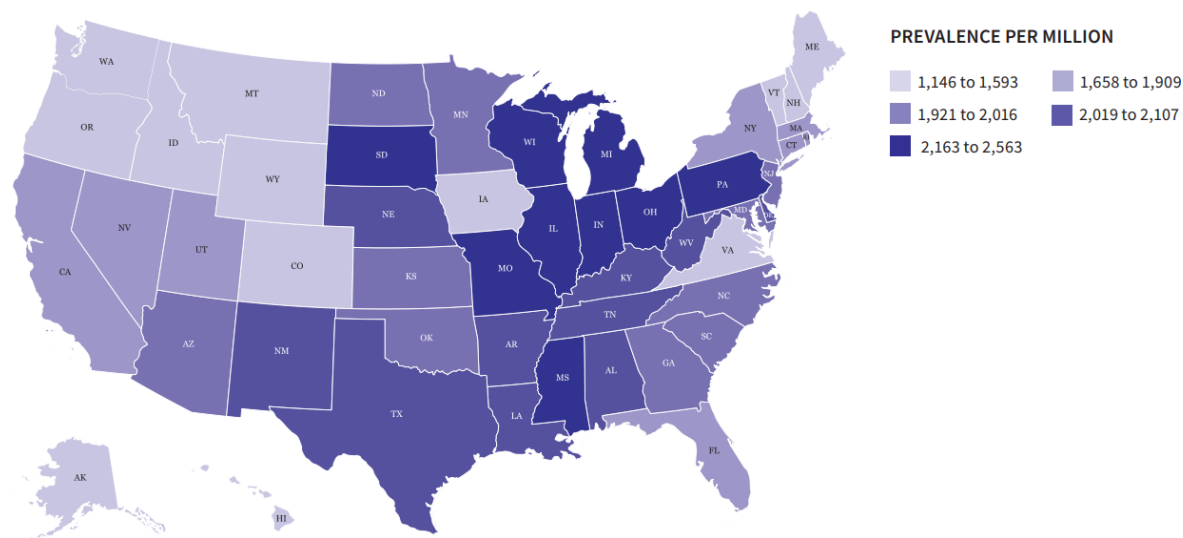
Data from the [Advancing American Kidney Health](#) report published by the U.S. Health and Human Services shows the prevalence of ESRD by state. The map below shows prevalence rates of ESRD per one million people. The darker the shading on the map, the higher the prevalence rate. Texas is in the second highest prevalence rate category.

^k Alliant ESRD Network 14. (2022). 2021 Annual Report. Retrieved from https://quality.allianthealth.org/media_library/esrd-nw14-2021-annual-report/

^l Alliant ESRD Network 14. (2022). 2021 Annual Report. Retrieved from https://quality.allianthealth.org/media_library/esrd-nw14-2021-annual-report/

Figure 2. Prevalence of ESRD by U.S. State for 2016

Prevalence of ESRD by U.S. State for 2016



How Dialysis Services are Covered in Texas

Medicaid

Texas residents who are determined eligible for Medicaid can receive dialysis services. Medicaid eligibility requirements include:

- Live in and intend to remain in Texas
- Be a United States citizen or meet immigration status requirements
- Financial eligibility requirements, which vary by each Medicaid program, defined as a percentage of the federal poverty level (FPL).
- Meet a Medicaid eligibility category, such as pregnant women, children, certain parents/caretakers, people with disabilities, and/or elderly.

Information on these programs and the eligibility process can be found in the [13th Edition Texas Medicaid and CHIP Reference Guide](#).

Texas Medicaid's coverage of renal dialysis services includes all items and services used to provide outpatient maintenance dialysis in an ESRD facility or in a patient's home when medically necessary. Renal dialysis services include:

- All items and services included under the composite rate

- Injectable drugs and biologicals and their oral or other forms of administration that are for the treatment of ESRD
- Diagnostic laboratory tests that are for the treatment of ESRD
- Home and self-dialysis training, and
- All supplies, equipment, and self-dialysis support services necessary for the effective performance of a patient's dialysis provided in the ESRD facility or in a patient's home. Support services may include dialysis access sites and equipment monitoring, blood clots removal, patient referral, and direct services from registered nurses, licensed vocational nurses, technicians, social workers, and dietitians.

Texas Medicaid reimburses renal dialysis services on a per-treatment basis for all client ages. ESRD facilities providing dialysis treatments, whether in center or in home and regardless of modality, receive payment for up to three hemodialysis treatments per week, unless there is a medical necessity for a greater frequency.

Under the current policy, renal dialysis services are reimbursed according to composite rates which align with Medicare prior to 2011. Medicare currently reimburses for ESRD using a prospective payment system instead of a composite rate payment. To reduce cost, streamline reimbursement, clarify the ESRD services benefit, and provide clear direction for billing in-center and home dialysis, HHSC implemented the following policy updates, effective March 1, 2022:

- Included all Medicare composite rate items and services into Texas Medicaid's composite rate
 - ▶ Renal facilities now receive one payment per session or per day depending on the treatment modality for all items and services related to the treatment of ESRD, including routine labs and drugs that were previously separately reimbursed, to closer align with Medicare's methodology.
- Removed Method II composite rate
 - ▶ Renal facilities must now directly or under arrangement provide home dialysis clients with all necessary equipment and supplies, maintenance, and support. Dialysis DME suppliers are no longer reimbursed separately for equipment and supplies and the renal dialysis facility will not receive separate reimbursement for support services. The renal dialysis facility now receives the same payment for home dialysis clients as they would receive for an in-center dialysis client. If an arrangement is made with a

DME supplier, the DME supplier must seek reimbursement from the renal dialysis facility. Based on utilization data, renal facilities have been billing Texas Medicaid in alignment with Medicare’s policies for a number of years so this update is not expected be a significant change for most providers.

Appendix A of this report includes claims processing details, the prospective payment system, and billing requirements.

Tables 6a-c show total costs for dialysis services for the Texas Medicaid program for state fiscal year 2018 through 2021. These costs include inpatient and outpatient utilization of dialysis services.

In the state fiscal years shown, the number of clients, the amount paid, and the average amount paid per client has decreased for Medicaid Fee-for-Service. The number of clients, the amount paid, and the average amount paid per client has increased in Medicaid Managed Care. For Medicaid Total, the combination of all programs, the number of clients has decreased in the four-year time frame shown while the amount paid and average amount paid per client has increased. Appendix C shows detailed costs associated with providing dialysis services in Texas’ Medicaid program for state fiscal years 2018-2021. It is unknown if or how the COVID-19 public health emergency has impacted the figures for 2020-2021.

Table 6a. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year 2018-21, Annual Program Totals for Medicaid Fee-for-Service (Includes Emergency Medicaid)

Medicaid Fee-for-Service	2018	2019	2020	2021
Clients	15,504	15,860	14,909	13,394
Amount Paid	\$4,613,442.46	\$4,420,228.72	\$4,155,093.93	\$3,570,235.53
Average Amount Paid per Client	\$297.56	\$278.70	\$278.70	\$266.55

Table 6b. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year 2018-21, Annual Program Totals for Medicaid Managed Care

Medicaid Managed Care	2018	2019	2020	2021
Clients	5,036	5,245	4,837	5,058
Amount Paid	\$70,583,049.32	\$76,872,838.39	\$80,487,298.83	\$79,826,119.08
Average Amount Paid per Client	\$14,015.70	\$14,656.40	\$16,639.92	\$15,782.15

Table 6c. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year 2018-21, Annual Program Totals for Medicaid Total

Medicaid Total	2018	2019	2020	2021
Clients	19,191	19,686	18,532	17,271
Amount Paid	\$75,196,491.78	\$81,293,067.11	\$84,642,392.76	\$83,396,354.61
Average Amount Paid per Client	\$3,918.32	\$4,129.49	\$4,567.36	\$4,828.69

Emergency Medicaid

Certain immigrants may qualify for Emergency Medicaid coverage, if all other Medicaid eligibility requirements are met except for immigration status. If determined eligible for Emergency Medicaid, Medicaid only covers care until the emergency medical condition is stabilized. Emergency Medicaid does not cover routine dialysis services as this is not considered an emergency medical condition in the state of Texas.

Table 7 shows total costs (all funds) for the Texas Emergency Medicaid program for state fiscal year 2018 through 2021 for inpatient and outpatient utilization of dialysis services. In the state fiscal years shown, the number of clients decreased, the amount paid remained stable, and the average amount paid per client increased. Appendix D shows detailed costs associated with providing dialysis services in Texas’ Emergency Medicaid program for state fiscal years 2018-2021.

Table 7. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year (FY) 2018-21, Annual Program Totals for Emergency Medicaid^m

State Fiscal Year	Clients	Amount Paid	Average Amount Paid per Client
2018	514	\$351,903.86	\$684.64
2019	553	\$335,765.67	\$607.17
2020	508	\$432,220.70	\$850.83
2021	377	\$358,548.53	\$951.06

^m There may be additional costs for inpatient services that are paid for as part of a DRG payment made to the hospital providing care that are not able to be reflected in these amounts.

Medicare

People of any age with a diagnosis of ESRD may be eligible for Medicare benefits if they meet one of the below requirements:

- Worked the required amount of time under Social Security, the Railroad Retirement Board (RRB), or as a government employee
- Are already getting or are eligible for Social Security or RRB benefits
- Are the spouse or dependent child of a person who meets either of the requirements above

Medicare health insurance coverage is divided into different parts. Original Medicare includes parts A and B. Applicants can choose to add Part C and/or Part D depending on what coverage they purchase. The below table defines the different parts of Medicare.

Table 8. Parts of Medicare

Medicare Partⁿ	Description
Part A (Hospital Insurance)	Helps cover inpatient care in hospitals, skilled nursing facility care, hospice care, and home health care
Part B (Medical Insurance)	Helps cover services from doctors and other health care providers, outpatient care, home health care, durable medical equipment (like wheelchairs, walkers, hospital beds, and other equipment), and many preventive services (like screenings, shots or vaccines, and yearly “Wellness” visits)

ⁿ Medicare.gov (2022). Parts of Medicare. Retrieved from <https://www.medicare.gov/basics/get-started-with-medicare/medicare-basics/parts-of-medicare>

Medicare Part ⁿ	Description
Part C (Medicare Advantage)	A Medicare-approved plan from a private company that offers an alternative to Original Medicare for health and drug coverage. Plans are usually 'bundled' including Part A, Part B, and usually Part D. Some plans offer extra benefits that original Medicare does not cover such as vision, hearing, and dental services.
Part D (Drug coverage)	Helps cover the cost of prescription drugs (including many recommended shots or vaccines) through a Medicare drug plan in addition to Original Medicare, or a Medicare Advantage Plan with drug coverage. Plans that offer Medicare drug coverage are run by private insurance companies that follow rules set by Medicare.

Dialysis services and supplies are covered by Medicare in both Parts A and B. Part A includes inpatient dialysis treatment. Part B covers outpatient dialysis treatment, physician services related to dialysis, home dialysis training, home dialysis equipment and supplies, certain home support services, most drugs related to outpatient and home dialysis, and other supplies related to dialysis.

Medicare has a 90-day waiting period that must be fulfilled. Coverage will then begin in the fourth month of dialysis. People living with ESRD in Texas may be eligible for the KHC program, as described in this report, to help cover costs during this waiting period. Details on Medicare coverage of dialysis services can be found in the Medicare Coverage of Kidney Dialysis & Kidney Transplant Services booklet.

Kidney Health Care Program

The Kidney Health Care (KHC) program provides limited benefits to eligible clients with ESRD to assist with medical expenses directly resulting from ESRD care and treatment. Benefits may include medical treatments such as access to surgery and dialysis treatments, financial assistance with transportation, approved medications, and the payment of premiums in some instances.

The KHC program was established by the Texas Legislature in 1973 during the 63rd Texas Legislature, to address gaps in the Medicare Chronic Renal Disease (CRD) program. Many beneficiaries receive benefits during the Medicare waiting period.

The KHC program helps with expenses including treatment and prescription medication costs not covered by Medicare; costs related to Medicare prescription drug deductibles, coinsurance amounts, premium payment assistance, Part D Donut Hole (or Coverage Gap) expenditures; and transportation costs associated with ESRD treatment. Data for the program is published annually. Appendix A includes links to the most recent full reports on the KHC program, state fiscal year 2019-2021.

To be eligible for KHC benefits, an applicant must meet the following criteria:

- Have a diagnosis of ESRD certified by physician;
- Receive regular dialysis treatments or have received a kidney transplant;
- Have a gross income less than \$60,000 annually; and
- Be a Texas resident.

Recipients are expected to apply for Medicare. Applicants must not have full Medicaid (drugs, medical, and transportation benefits) nor be a ward of the state or be incarcerated in a city, county, state, or federal jail or prison.

Benefits available to KHC clients are dependent on treatment status and eligibility for benefits from other programs such as Medicare, Medicaid, or private insurance. KHC is the payer of last resort in that KHC benefits are paid only after all other third-party payers have met their liability.

KHC is also a State Pharmaceutical Assistance Program (SPAP) for clients diagnosed with ESRD and who are receiving kidney dialysis or have had a kidney transplant. An SPAP is a state-administered program certified by the Centers for Medicare and Medicaid Services to coordinate with Medicare's prescription drug program and make payments secondary to Medicare that will count toward the individual's out-of-pocket expenses. All payments made by KHC for drugs covered by Medicare Part D count towards the clients' true out-of-pocket (TrOOP) expenses.

KHC clients are designated by their treatment modality, which is based on their clinical needs and helps to determine benefits they receive. The below table shows the treatment modality of KHC eligible clients, the percent of clients receiving dialysis, and the percent of clients in the program by modality for fiscal year 2021. The majority of clients are receiving dialysis in a facility setting. The next largest group of clients are those who have received a kidney transplant. The smallest population of clients receives home dialysis.

Table 9. Modality of KHC Eligible Clients Fiscal Year 2021

Count	Modality	% Dialysis Clients	% Total Clients
11,270	Facility Dialysis	86%	54%
1,894	Home Dialysis	14%	9%
7,826	Transplant	N/A	37%

Cost Effective Dialysis in Texas Medicaid

Medicare End-Stage Renal Disease Treatment Choices Model

Renal dialysis services provided to Medicare beneficiaries are paid for via a bundled prospective payment system (PPS) as of January 1, 2011. The ESRD PPS provides a patient-level and facility-level adjusted per treatment (dialysis) payment to ESRD facilities for renal dialysis services. Services can be provided at the facility or at the patient's home. The bundled payment includes the cost of medications, laboratory testing, supplies, and capital-related costs. Training for home and self-dialysis are available as add-on as well as additional payment for high-cost outliers.^o

CMS instituted the ESRD Treatment Choices (ETC) Model on January 1, 2021. The model aims to increase the use of home dialysis and kidney transplant for Medicare beneficiaries living with ESRD to decrease the high costs associated with ESRD and to improve the quality of care for ESRD patients. "Under the ETC Model, CMS makes certain payment adjustments that encourage participating ESRD facilities and managing clinicians to ensure that ESRD beneficiaries have access to and receive education about their kidney disease treatment options. Specifically, CMS positively adjusts certain Medicare payments to participating ESRD facilities and Managing Clinicians for the first three years of the model for home dialysis and dialysis-related services."^p There are two payment adjustments in the ETC Model:

- A uniformly positive adjustment on Medicare claims for home dialysis during the initial three years of the model, and
- A per treatment payment adjustment, either upward or downward, for dialysis based on the rate of home dialysis and transplant rate calculated as the sum of the transplant waitlist rate and the living donor transplant rate.

^o *End Stage Renal Disease (ESRD) Prospective Payment System (PPS)*. (2021, December 22). Centers for Medicare and Medicaid Services. Retrieved May 10, 2022, from <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ESRDpayment?msclkid=b3b4c57dcfce11eca389aa42fd77d837>

^p *ESRD Treatment Choices (ETC) Model*. (2022, May 9). Centers for Medicare and Medicaid Services. Retrieved May 9, 2022, from <https://innovation.cms.gov/innovation-models/esrd-treatment-choices-model>

The ETC Model also incentivizes providers to address disparities in home dialysis and transplant rates. Additional improvement points, which are used to determine incentive amounts, can be earned by participating providers who demonstrate significant improvement in the home dialysis rates or transplant rates among dual-eligible beneficiaries or Low Income Subsidy (LIS) recipients in their care. Also, achievement benchmarks will be stratified by the proportion of beneficiaries who are dual-eligible beneficiaries or LIS recipients to ensure providers who see a disproportionately high volume of these patients will not be negatively affected during benchmark scoring. The innovative model description and additional resources can be found on the CMS website.

Home Dialysis Cost Effectiveness

HHSC reviewed home dialysis studies that assessed cost effectiveness and cost outcomes based on modality. There were few studies available that focused specifically on actual cost changes associated with implementing home dialysis. Literature reviews, editorials, and an international workshop summary provided broader views and incorporated compounding factors surrounding home dialysis.

A single-center study from Manitoba, Canada implemented a cost minimization model by implementing full- and partial-assist home hemodialysis (HD) and continuous cycling peritoneal dialysis (CCPD) over a one-year time period.⁹ The outcome metrics of the annual total per-patient costs (maintenance and training) were presented by modality and whether the patient received full- or partial-assist services compared to in-center dialysis services. The table below summarizes the per-patient costs observed at the conclusion of the study. Each modality was compared to in-center hemodialysis. The study found that all modalities delivered in the home setting, with the exception of both peritoneal dialysis methods that required an assistant, realized a cost savings as compared to in-center hemodialysis. This suggests that encouraging more use of in-home hemodialysis and peritoneal dialysis methods could result in a cost savings.

⁹ Bamforth, R.J., Beaudry, A., Ferguson, T.W., Rigatto, C., Tangri, N., Bohm, C., & Komenda, P. (2021). Costs of assisted home dialysis: A single-payer Canadian model from Manitoba. *Kidney Medicine*, 3(6), 942-950. doi: 10.1016/j.xkme.2021.04.019

Table 10. Net Accumulated Costs & Savings Realized at 1 Year by Modality (Converted to United States Dollars)^r

Modality	In-Center HD	Home CAPD	Home CCPD	Home CCPD (Partial-Assist)	Home CCPD (Full-Assist)	Home HD	Home HD (Complete Care)
1-Year Cost	\$50,502.51	\$31,111.64	\$40,001.28	\$51,397.52	\$56,662.95	\$45,580.75	\$48,265.50
Savings Compared to In-Center HD	N/A	\$19,390.87	\$10,501.23	(\$895.01)	(\$6,160.44)	\$4,921.77	\$2,237.01

This study also determined cost-neutrality variables that represented the time in which a cost savings was realized between modalities compared to in-center services. For self-administered continuous ambulatory peritoneal dialysis (CAPD), a cost savings was achieved at 2.94 months. Self-administered CCPD was cost neutral at 4.76 months with the time point increasing if CCPD was delivered via partial- or full-assist models. For HD, cost savings was achieved at 7.12 months. For a patient requiring complete care HD, which includes a health aide who remains with the patient during HD treatment, a cost-neutral point was recognized at only 0.02 months as compared with in-center dialysis. Overall, the study found that home-based modalities can offer similar or reduced costs of care per patient.

A second study out of Ontario, Canada reviewed patient data to assess the cost effects of long-term home-based PD and HD treatments^s. The researchers reviewed over 12,000 cases of patients older than eighteen years who initiated routine dialysis for chronic kidney disease. Similar to the prior study, patients were grouped by modality and mean costs at 30 days were assessed at the five-year mark. The analysis found that mean costs at thirty-day were lower for patients who received in-home dialysis treatments as compared to patients who received dialysis in a facility. Patients who received PD had fifty percent lower thirty-day costs and patients who received HD had sixty-four percent lower thirty-day costs. The

^r Bamforth, R.J., Beaudry, A., Ferguson, T.W., Rigatto, C., Tangri, N., Bohm, C., & Komenda, P. (2021). Costs of assisted home dialysis: A single-payer Canadian model from Manitoba. *Kidney Medicine*, 3(6), 942-950. doi: 10.1016/j.xkme.2021.04.019

Note: Canadian Dollar to U.S. Dollar conversion rate as of November 23, 2022.

^s Krahn, M.D., Bremner, K.E., de Oliveira, D., Dixon, S.N., McFarlane, P., Garg, A.X., Mitsakakis, N., Blake, P.G., Harvey, R., & Pechlivanoglou, P. (2019). Home dialysis is associated with lower costs and better survival than other modalities: A population-based study in Ontario, Canada. *Peritoneal Dialysis International*, 39(6), 553-561.

doi:10.3747/pdi.2018.00268

survival rate was also assessed for these populations. Patients who received in-home dialysis treatments had higher five-year unadjusted survival rates than those who were dialyzed in a facility. This second study also suggests savings and increased survival rates for home-based dialysis.

Value-Based Purchasing Models for Dialysis Services

HHSC is moving away from paying for volume to paying for the value of health care services. The main avenues pursued by HHSC to move towards value-based care are the following:

- Managed Care Value-Based Payment Programs,
- 1115 Healthcare Transformation Waiver, and
- Directed Payment Programs.

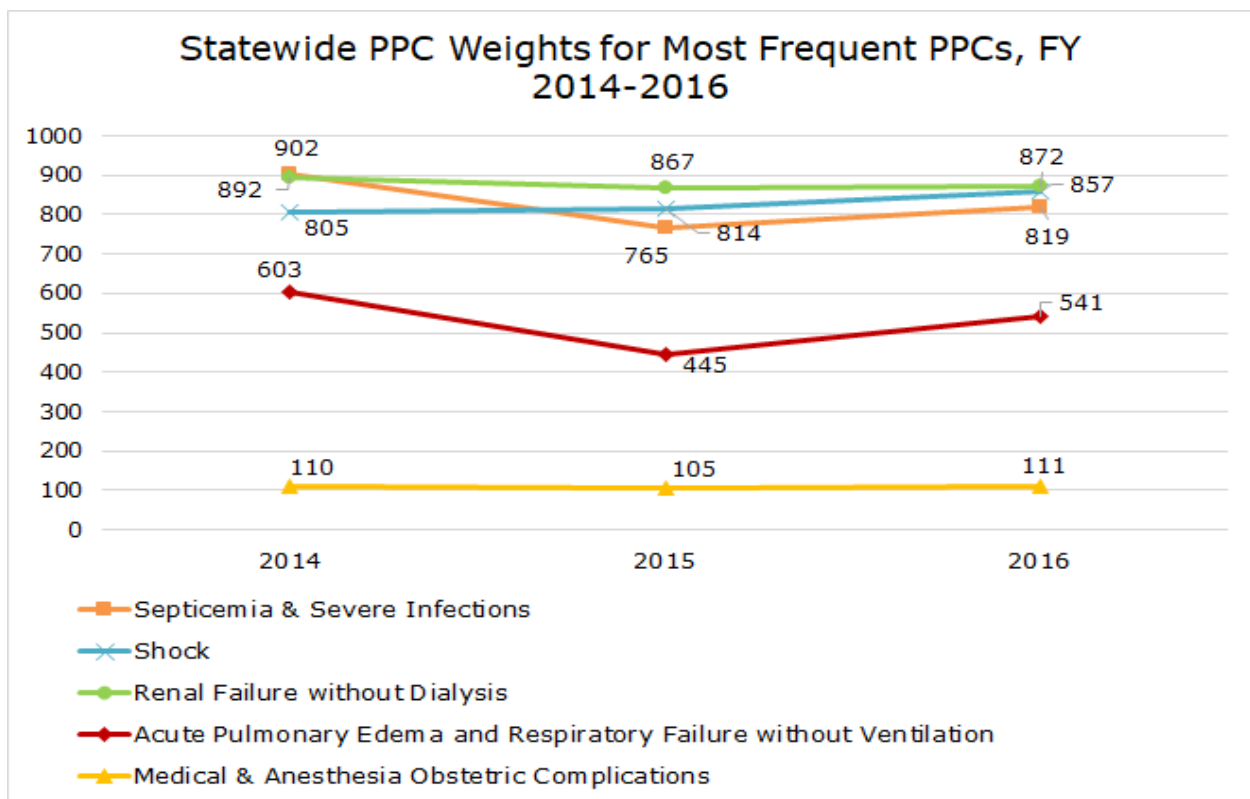
All of these programs are monitored yearly by examining the trends in key quality measures used to measure the performance of each individual program.

The transformation to value-based care aims to achieve better care for individuals, better health for populations, and lower cost for the state. To this end, HHSC has implemented contract requirements for MCOs to achieve minimum levels of alternative payment model (APM) agreements with their providers. Calendar year 2018 was the first measurement year for these value-based payment (VBP) initiatives, and HHSC's MCOs have met expectations on both initiatives since they were introduced. The impact of the novel coronavirus (COVID-19) public health emergency on the entire health care system, including Medicaid and CHIP, led HHSC to freeze APM level requirements for 2022. An assessment of all the APMs developed by MCOs and the providers since this program has been introduced did not find any interventions specifically dedicated to address dialysis services.

HHSC is also actively working to sustain a Texas Medicaid program that continues to advance value-based care and other effective delivery system reforms as funding for the Delivery System Reform Incentive Payment (DSRIP) program ends. HHSC submitted a set of reports to the Centers for Medicare and Medicaid Services (CMS) addressing each of the milestones in its DSRIP Transition Plan approved by CMS in 2020. The milestone reports lay the groundwork to develop strategies, programs and policies to sustain successful DSRIP activities and incorporate emerging areas of innovation into the Medicaid program.

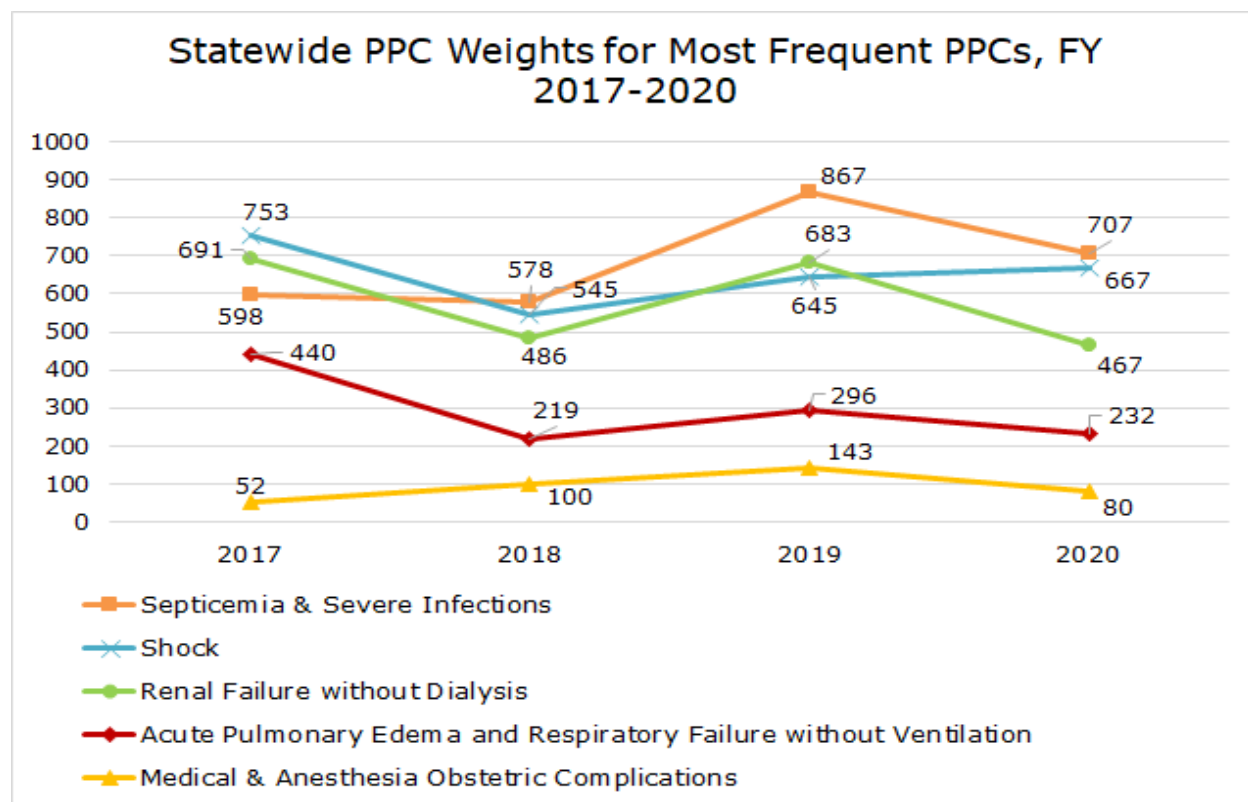
Finally, HHSC monitors hospital Potentially Preventable Complications (PPCs) as part of its Hospital Quality Based Payment Program. An examination of the trends of more than 60 PPCs over the previous seven years (of available data), found “Renal Failure without Dialysis” to be among the five most frequent preventable complications. As shown (Figure 3), in the first three years of observation it was the predominant PPC, while in the next four years, it was the third (Figure 4). The two separate assessment time periods were applied to make the distinction in the change of the methodology employed to examine the trends of these complications.

Figure 3. Changes in hospital PPC performance for 2014–2016



These trends indicate the need to adopt interventions to reduce complications, some of which might be through the development of APMs within a larger approach of value-based care.

Figure 4. Changes in hospital PPC performance for 2017–2020



Innovative Delivery Models

Delivery System Reform Incentive Payment (DSRIP) Program

In the first several years of the DSRIP Program, participating organizations received funding for projects they designed to improve the delivery and quality of health care services. Parkland Hospital created a new outpatient hemodialysis pilot with Fresenius, a dialysis services company. Overall goals were optimal treatment, reduced cost of care, and elimination of emergency department (ED) to Acute Dialysis Unit (ADU) cycles. They identified three tiers of patients:

- Tier 1: Includes the most stable patients with the fewest weekly ED/ADU visits
- Tier 2: Includes less stable patients with 3 or more weekly ED/ADU visits and increased rate of psych/social issues
- Tier 3: Includes unstable patients

For patients in Tier 1, the goal was to eliminate the ED to ADU cycles. For patients in Tier 2, the goal was to reduce the ED to ADU cycles and stabilize the patient clinically. A goal was not set for patients in Tier 3. The target population for the interventions was a combination of Tier 1 & Tier 2 patients. The project's first intervention was to start a peritoneal dialysis program for Tier 1 patients only. The second intervention was to launch an outpatient hemodialysis clinic for patients for whom this was clinically appropriate.

Starting in Demonstration year (DY4) (October 1, 2014), patients were selected to transition to scheduled outpatient dialysis, rather than acute dialysis through the emergency department. For DY4, Parkland Hospital's goal was to serve 394 individuals via the outpatient hemodialysis clinic. The hospital surpassed their goal and served 424 in the clinic. In DY5 the hospital's goal was to serve 432 individuals and the hospital again surpassed this goal and by caring for 465 individuals. For DY6, the hospital's goal was set again at 432 and was surpassed for a third time by caring for 477 individuals.

Parkland Hospital submitted data throughout the project for evaluation of effectiveness. For fiscal year 2013, the hospital reported the average direct cost per dialysis patient in the project was \$48,734, by fiscal year 2015 the average direct cost was \$42,448, and for fiscal year 2016 the average direct cost per patient was \$37,772. This represents a 22.5 percent decrease in average direct cost per patient from fiscal year 2013 to fiscal year 2016. This routine dialysis care program model was able to achieve reductions in the cost of care for the individuals served by the pilot.

Alternative Models of Care in Texas

Some ESRD patients in the state of Texas receive dialysis services through their local hospital district. Hospital districts are funded via local taxes imposed on residents residing in the district's county, municipality, or other governmental entity.[†] Hospital districts are charged with operating hospital facilities and providing medical and hospital care for the district's needy inhabitants.[‡] The district also assumes any outstanding indebtedness incurred by a county, municipality, or other

[†] Texas Health and Safety Code. Title 4. Health Facilities, Subtitle D. Hospital Districts, Chapter 286. Hospital Districts Created by Voter Approval, Subchapter A., General Provisions. Available at <https://statutes.capitol.texas.gov/Docs/HS/htm/HS.286.htm>

[‡] Texas Health and Safety Code. Title 4. Health Facilities, Subtitle D. Hospital Districts, Chapter 286. Hospital Districts Created by Voter Approval, Subchapter A., General Provisions. Available at <https://statutes.capitol.texas.gov/Docs/HS/htm/HS.286.htm>

governmental entity in which all or part of the district is located in providing hospital care for residents of the territory.^v To receive services, residents of the hospital district must apply to the district's health coverage program. For example, in Travis county, uninsured residents can apply to the Medical Access Program (MAP) via Central Health.^w Bexar county operates a similar program called CareLink via the University Health System.^x Harris county offers a Financial Assistance Program, via Harris Health System.^y Residents who sign up for coverage from one of these programs make a monthly payment based on total household income and family size.^z Members are able to access dialysis services at dialysis facilities within the health district.

Specifically for Harris Health Financial Assistance Program members, dialysis services are provided at Riverside Dialysis Clinic.^{aa} The clinic describes dialysis for undocumented and uninsured patients, including those who sign up for the financial assistance program, which requires an appointment.^{bb} Those in need of dialysis are encouraged to call for an appointment in advance due to limited capacity at the clinic.^{cc}

Alternatives to Providing Dialysis via Emergency Medicaid

Title 42 code of federal regulations (CFR) § 440.255 requires states to treat emergency medical conditions, which are those that, "in the absence of immediate medical attention, could place a patient's health in serious jeopardy, cause serious impairment to bodily functions, or serious dysfunction of any bodily organ or part."

^v Texas Health and Safety Code. Title 4. Health Facilities, Subtitle D. Hospital Districts, Chapter 286. Hospital Districts Created by Voter Approval, Subchapter A., General Provisions. Available at <https://statutes.capitol.texas.gov/Docs/HS/htm/HS.286.htm>

^w "What is MAP and MAP Basic?" (2022). Retrieved from <https://www.centralhealth.net/map/>

^x "What is CareLink?" (2022). Retrieved from <https://www.universityhealthsystem.com/patient-visitor-resources/support/carelink>

^y "Patient Eligibility". (n.d.) Retrieved from <https://www.harrishealth.org/access-care/patient-eligibility>

^z "CareLink Frequently Asked Questions." (2022). Retrieved from <https://www.universityhealthsystem.com/patient-visitor-resources/support/carelink/faqs>

^{aa} "Riverside Dialysis Center. (n.d.). Retrieved from <https://www.harrishealth.org/locations-hh/Pages/riverside-dialysis-center.aspx>

^{bb} Bryant, N. (2022). Riverside dialysis clinic: Dialysis in Houston for the uninsured. Retrieved from <https://houstoncasemanagers.com/riverside-clinic/>

^{cc} "What is CareLink?" (2022). Retrieved from <https://www.universityhealthsystem.com/patient-visitor-resources/support/carelink>

Each state must define which conditions are included as emergency conditions. Most states, including Texas, include emergency-only hemodialysis as an emergency medical condition, but do not cover routine scheduled dialysis.^{dd}

A study from Dallas examined outcomes for undocumented immigrants living with ESRD who received scheduled dialysis compared to emergency-only dialysis. The group that received schedule dialysis were enrolled in a private commercial insurance program provided by the facility. At twelve months, the participants who received schedule dialysis were found to have lower mortality, fewer emergency department visits, fewer hospitalizations, and fewer hospital days.^{ee}

In multiple studies analyzing the effects of scheduled dialysis programs, actual costs decreased and estimated savings increased. One U.S. study estimated emergency-only dialysis cost to be \$285,000-\$400,000 per person per year versus \$76,177-\$90,971 for standard dialysis services.^{ff} The study from Parkland Hospital in Dallas, estimated an average savings of \$5,768 per member per month.^{gg} In Colorado the cost estimate for emergency-only dialysis was up to \$400,000 per person per year compared to under \$100,000 for scheduled outpatient dialysis, with a potential savings of over \$5,700 per person per month if switched to a scheduled dialysis model.^{hh} These costs and potential savings are not necessarily specific to Medicaid programs, but rather to the programs studied that aimed to decrease the cost of ESRD-related patient care for unfunded patients.

^{dd} Khullar, D. & Chokshi, D.A. (2019). Immigrant health, value-based care, and emergency Medicaid reform. *Journal of the American Medical Association (JAMA)*, 321(10), 928-929. doi: 10.1001/jama.2019.0839

^{ee} Nguyen, O.K., Vazquez, M.A., & Charles, L. (2019). Association of scheduled vs emergency-only dialysis with health outcomes and costs in undocumented immigrants with end-stage renal disease. *Journal of the American Medical Association Internal Medicine*, 179(2), 175-183. doi: 10.1001/jamainternmed.2018.5866

^{ff} Rizzolo, K., Novick, T.K., & Cervantes, L. (2020). Dialysis care for undocumented immigrants with kidney failure in the COVID-19 era: Public health implications and policy recommendations. *American Journal of Kidney Disease*, 76(2), 255-257. doi: 10.1053/j.ajkd.2020.05.001

^{gg} Nguyen, O.K., Vazquez, M.A., & Charles, L. (2019). Association of scheduled vs emergency-only dialysis with health outcomes and costs in undocumented immigrants with end-stage renal disease. *Journal of the American Medical Association Internal Medicine*, 179(2), 175-183. doi: 10.1001/jamainternmed.2018.5866

^{hh} Colwell, J. (2021). Getting dialysis for undocumented patients. *ACP Internist*. <https://acpinternist.org/archives/2021/02/getting-dialysis-for-undocumented-patients.htm>

Medicaid Programs from Other States

Other states or districts have modified their Medicaid programs to increase options in providing dialysis to populations not eligible for Medicaid, Medicare, or Medigap programs. In twelve states and the District of Columbia, outpatient maintenance dialysis is a covered benefit under the Medicaid program or under an emergency program for defined populations not eligible for Medicaid. States where dialysis services are covered via Medicaid programs and some modifications of an emergency program are Arizona, California, Colorado, Illinois, Massachusetts, Minnesota, New York, North Carolina, Pennsylvania, Virginia, Washington, and Wisconsin.

Descriptions of the dialysis programs from the states with publicly available information are detailed below. These states were profiled below because they have taken a different approach to address coverage of routine dialysis services and had information publicly available.

Arizona

Arizona provides dialysis services to Medicaid beneficiaries and non-citizens who otherwise meet the requirement for Title XIX eligibility. The program reimburses providers for emergency outpatient dialysis services provided to Federal Emergency Services Program (FESP) members with ESRD “when the member’s physician, nurse practitioner, or physician assistant signs a monthly certification stating that the member requires dialysis services at least three times a week.” Free-standing dialysis facilities providing services to this population are reimbursed under an all-inclusive composite rate, which covers non-physician services, supplies, diagnostic testing, and drugs. Details of dialysis services provided under Medicaid, the certification form, and the federal emergency services program can be found at the links in Appendix A.

Colorado

Colorado provides dialysis services via their state Emergency Medicaid (EM) program. Applicants for EM must meet the same eligibility requirements as all other Health First Colorado applicants, except for immigration or citizenship requirements. The EM program covers medical emergencies only so all applicants must be seeking treatment for a qualifying life- or limb-threatening medical emergency. Dialysis for ESRD at an inpatient or freestanding dialysis center is covered as an emergency medical condition. The dialysis services, or any

emergency medical condition, are covered by this program for the duration of the emergency condition.

Illinois

Illinois modified their definition of emergency medical condition in 2018 to include end stage renal disease (ESRD). Noncitizens who do not meet immigration requirements and have ESRD can receive dialysis services. A physician's note that the noncitizen is receiving ESRD services is sufficient, which allows these patients to bypass the medical determination process. Coverage is for dialysis services only and each case is approved on an ongoing basis.

Minnesota

Minnesota covers a variety of services for noncitizens, regardless of immigration status. Providers receive payment for services furnished to treat emergency medical conditions. Dialysis services provided in a hospital or freestanding dialysis facility are included in the state's definition of emergency medical conditions. Minnesota also includes kidney transplant in its definition of an emergency medical condition if the noncitizen has been diagnosed with ESRD, is currently receiving dialysis, and is a potential candidate for a kidney transplant.

North Carolina

North Carolina covers dialysis services for undocumented immigrants as an emergency service. Under the state's emergency Medicaid program, medical emergencies are covered for the duration of the emergency. Each medical emergency is required to be reviewed daily to determine if the undocumented immigrant continues to have a qualifying emergency condition. "Once the condition is stable enough to receive in-home hemodialysis without benefit of immediate attention of the medical provider, the treatment is no longer an emergency service."

Washington

The state of Washington has an Alien Emergency Medical program. This program provides coverage for individuals who do not meet citizenship or immigration status requirements, including having not met the five-year immigration bar, and who have a qualifying medical condition. Dialysis treatment is listed as a qualifying emergency medical condition. Dialysis treatments, along with a few other

treatments, that do not require an inpatient hospital stay are covered for the treatment of acute renal failure or ESRD.

Wisconsin

Wisconsin covers services for acute emergency medical conditions for certain non-U.S. citizens who are not qualified immigrants. The state's definition of an emergency medical condition mirrors the federal definition but there is an added comment that for the purposes of the policy, services for ESRD as well as all labor and delivery services are considered emergency services.

Conclusion

Patients living with kidneys that do not function sufficiently may be diagnosed with chronic kidney disease (CKD) which can progress to end-stage renal disease (ESRD). The most effective way to improve the quality of care and reduce costs related to CKD and ESRD is by slowing disease progression, reducing the amount of people with diabetes and high blood pressure, and effective management of patients who require routine dialysis. Additionally, preventing delays in treatment can reduce or eliminate the need for costly emergency dialysis sessions and inpatient hospital admissions.

A cost savings to the Medicaid program could be achieved by additional models such as the research and programs summarized in this report which demonstrate how delivering dialysis to patients in their home setting as compared to in a dialysis center resulted in a cost savings. Value-based purchasing programs that monitor kidney- and dialysis-related outcomes could improve quality and effectiveness of care. Small pilot programs, such as the program from Parkland Hospital, can improve care at the local level and result in cost savings due to increased efficiency in patient care. Lastly, some states have redefined an emergency medical condition to include the condition of ESRD to improve access to routine dialysis and prevent crisis episodes necessitating emergency dialysis and possible inpatient admissions.

List of Acronyms

Acronym	Full Name
ADU	Acute Dialysis Unit
AEM	Alien Emergency Medical
APM	Alternative Payment Model
CAPD	Continuous Ambulatory Peritoneal Dialysis
CCPD	Continuous Cycle Peritoneal Dialysis
CHIRP	Comprehensive Hospital Increase Reimbursement Program
CKD	Chronic Kidney Disease
CMS	Centers for Medicare and Medicaid Services
CRD	Chronic Renal Disease
DPP	Directed Payment Program
DSRIP	Delivery System Reform Incentive Payment
ED	Emergency Department
EM	Emergency Medicaid
ESRD	End Stage Renal Disease
ETC	End-Stage Renal Disease (ESRD) Treatment Choices
FESP	Federal Emergency Services Program
FPL	Federal Poverty Level
HD	Hemodialysis
HHSC	Health and Human Services Commission
KHC	Kidney Health Care
LIS	Low Income Subside
MAGI	Modified Adjusted Gross Income
MCO	Managed Care Organization
P4Q	Pay-for-Quality
PD	Peritoneal Dialysis
PDP	Prescription Drug Plans
PEMS	Provider Enrollment and Management System
PPC	Potentially Preventable Complications
QIPP	Quality Incentive Payment Program
RRB	Railroad Retirement Board
S.B.	Senate Bill
SPAP	State Pharmaceutical Assistance Program
SSN	Social Security Number
TrOOP	True Out-of-Pocket
UHRIP	Uniform Hospital Rate Increase Program
VBP	Value-Based Payment

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Appendix A. Referenced Resources

[13th Edition Texas Medicaid and CHIP Reference Guide](#)

[42 CFR § 440.255](#)

[2021 Minnesota Statutes 256B.06 Eligibility Migrant Workers Citizenship](#)

[Advancing American Kidney Health](#)

[Arizona's Coverage of Dialysis Services](#)

[Arizona's Initial Case Creation Form for Dialysis Services](#)

[Arizona's Dialysis Certification Form](#)

[Arizona's Federal Emergency Services Program](#)

[Colorado's Emergency Medicaid Program](#)

[ESRD Billing Requirements \(novitas-solutions.com\)](#)

[ESRD General Information | CMS](#)

[ESRD Prospective Payment System \(PPS\) | CMS](#)

[ESRD Treatment Choices \(ETC\) Model](#)

[Illinois Department of Human Services Emergency Medical Coverage for Noncitizens Not Meeting Immigration Status](#)

[KHC Program Report FY 2019](#)

[KHC Program Report FY 2020](#)

[KHC Program Report FY 2021](#)

[Medicare Claims Processing Manual \(cms.gov\)](#)

[Medicare Coverage of Kidney Dialysis & Kidney Transplant Services booklet](#)

[NC Division of Medical Assistance End-Stage Renal Disease](#)

[Washington State Health Care Authority Health Care Services and Supports Noncitizens](#)

[Wisconsin Forward Health Non-U.S. Citizens Emergency Services](#)

Appendix B. Types of Dialysis

Frequently Asked Questions	Hemodialysis	Peritoneal Dialysis
What is it?	Blood flows through tubes, called catheters, to a machine that cleans it by removing wastes and toxins. Blood is then returned to your body through the catheter.	A fluid, called dialysate, is put into the abdominal cavity via a catheter. The dialysate stays in for a few hours while it cleans the blood then is removed through the same catheter.
Where is it done?	Can be done in the hospital, a dialysis center, or at home	Can be done in the hospital, a dialysis center, or at home
Who will perform the treatment?	A nurse or dialysis technician. Patients can be trained to do their own dialysis at home with help from a nurse, tech, or family member.	Patients can be trained to do their own dialysis at home. Help may or may not be needed from a nurse, tech, or family member.
How long does it take?	2-4 hours, 3 times per week	Typically done overnight while the patient sleeps or several times throughout the day.

Source:

https://www.kidneyfund.org/treatments/dialysis?gclid=EAIaIQobChMI5PHKwIHJ9wIVbxXUAR2-PAhHEAAYBCAAEgIqm_D_BwE

Appendix C. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year 2018-2021, Medicaid Total

Table C1. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for Medicaid Total, State Fiscal Year 2018

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	60	\$376,342.57	\$6,272.38
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	179	\$921,407.13	\$5,147.53
Hemodialysis, In Center	4,695	\$60,801,250.22	\$12,950.21
Intermittent Peritoneal Dialysis (IPD), In Center	6	\$9,232.49	\$1,538.75
Other/General Dialysis, In Center	399	\$467,151.95	\$1,170.81
Physician Services - ESRD, In Center	15,883	\$4,370,914.09	\$275.19
Physician Services - Hemodialysis, In Center	8,609	\$8,025,990.49	\$932.28
Unscheduled/Emergency dialysis, In Center	119	\$26,005.45	\$218.53
Physician Services - ESRD, Home	43	46,707.39	\$155.99
Physician Services - Hemodialysis, Home	9	\$191,490.00	\$21,276.67
Total	19,191	\$75,196,491.78	\$3,918.32

Table C2. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for Medicaid Total, State Fiscal Year 2019

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	69	\$284,889.39	\$4,128.83

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	197	\$1,287,865.45	\$6,537.39
Hemodialysis, In Center	4,677	\$65,414,371.17	\$13,986.40
Intermittent Peritoneal Dialysis (IPD), In Center	14	\$30,241.09	\$2,160.08
Other/General Dialysis, In Center	433	\$541,012.63	\$1,249.45
Physician Services - ESRD, In Center	16,685	\$4,550,410.62	\$272.72
Physician Services - Hemodialysis, In Center	8,441	\$8,868,476.03	\$1,050.64
Unscheduled/Emergency dialysis, In Center	96	\$13,519.02	\$140.82
Physician Services - ESRD, Home	86	\$15,881.71	\$184.67
Physician Services - Hemodialysis, Home	9	\$286,400.00	\$31,822.22
Total	19,686	\$81,293,067.11	\$4,129.49

Table C3. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for Medicaid Total, State Fiscal Year 2020

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	77	\$417,079.43	\$5,416.62
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	186	\$1,734,893.78	\$9,327.39
Hemodialysis, In Center	4,167	\$66,845,054.60	\$16,041.53
Intermittent Peritoneal Dialysis (IPD), In Center	7	\$13,851.34	\$1,978.76
Other/General Dialysis, In Center	358	\$520,702.89	\$1,454.48
Physician Services - ESRD, In Center	15,534	\$4,364,741.76	\$280.98
Physician Services - Hemodialysis, In Center	7,761	\$10,566,403.30	\$1,361.47
Unscheduled/Emergency dialysis, In Center	75	\$19,849.54	\$264.66

Modality	Clients	Amount Paid	Average Amount Paid per Client
Physician Services - ESRD, Home	251	\$94,416.12	\$376.16
Physician Services - Hemodialysis, Home	1	\$65,400.00	\$65,400.00
Total	18,532	\$84,642,392.76	\$4,567.36

Table C4. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for Medicaid Total, State Fiscal Year 2021

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	93	\$600,619.06	\$6,458.27
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	209	\$1,908,167.19	\$9,129.99
Hemodialysis, In Center	4,195	\$64,765,968.93	\$15,438.85
Intermittent Peritoneal Dialysis (IPD), In Center	11	\$4,967.24	\$451.57
Other/General Dialysis, In Center	370	\$512,961.83	\$1,386.38
Physician Services - ESRD, In Center	14,226	\$4,297,838.46	\$302.11
Physician Services - Hemodialysis, In Center	6,870	\$11,128,197.94	\$1,619.83
Unscheduled/Emergency dialysis, In Center	73	\$12,981.23	\$177.83
Physician Services - ESRD, Home	320	\$163,997.40	\$512.49
Physician Services - Hemodialysis, Home	2	\$655.33	\$327.67
Total	17,271	\$83,96,354.61	\$4,828.69

Note: Client counts are unduplicated based on the Medicaid patient control number (PCN). Subtotals may sum to more than the unduplicated total because some clients were in more than one of the subtotal groups. The fee-for-service paid amount represents the cost of services paid by Medicaid. Expenditures reflect client services only and do not include administrative, capitation, and supplemental payments. Medicaid managed care is paid on a capitation basis. The managed care paid amount represents the cost of services as reported by the managed care health plans.

Appendix D. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services, State Fiscal Year 2018-2021, Emergency Medicaid (TP30)

Table D1. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for the Emergency Medicaid (TP30) Program, State Fiscal Year 2018

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	0	\$0.00	\$0.00
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	1	\$124.15	\$124.15
Hemodialysis, In Center	63	\$145,775.70	\$2,313.90
Intermittent Peritoneal Dialysis (IPD), In Center	0	\$0.00	\$0.00
Other/General Dialysis, In Center	45	\$103,916.02	\$2,309.24
Physician Services - ESRD, In Center	132	\$5,794.12	\$43.89
Physician Services - Hemodialysis, In Center	342	\$84,415.24	\$246.86
Unscheduled/Emergency Dialysis, In Center	58	\$11,878.63	\$204.80
Physician Services - ESRD, Home	0	\$0.00	\$0.00
Physician Services - Hemodialysis, Home	0	\$0.00	\$0.00
Total	514	\$351,903.86	\$684.64

Table D2. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for the Emergency Medicaid (TP30) Program, State Fiscal Year 2019

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	0	0.00	0.00
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	0	0.00	0.00

Modality	Clients	Amount Paid	Average Amount Paid per Client
Hemodialysis, In Center	62	\$109,444.60	\$1,765.24
Intermittent Peritoneal Dialysis (IPD), In Center	1	\$3,119.47	\$3,119.47
Other/General Dialysis, In Center	46	\$113,147.08	\$2,459.72
Physician Services - ESRD, In Center	171	\$7,123.58	\$41.66
Physician Services - Hemodialysis, In Center	365	\$94,484.46	\$258.86
Unscheduled/Emergency Dialysis, In Center	46	\$8,446.48	\$183.62
Physician Services - ESRD, Home	0	\$0.00	\$0.00
Physician Services - Hemodialysis, Home	0	\$0.00	\$0.00
Total	553	\$335,765.67	\$607.17

Table D3. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for the Emergency Medicaid (TP30) Program, State Fiscal Year 2020

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	0	\$0.00	\$0.00
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	0	\$0.00	\$0.00
Hemodialysis, In Center	89	\$205,317.27	\$2,306.94
Intermittent Peritoneal Dialysis (IPD), In Center	1	\$0.00	\$0.00
Other/General Dialysis, In Center	47	\$122,596.42	\$2,608.43
Physician Services - ESRD, In Center	90	\$4,743.77	\$52.71
Physician Services - Hemodialysis, In Center	342	\$94,018.90	\$274.91
Unscheduled/Emergency Dialysis, In Center	32	\$5,544.35	\$173.26
Physician Services - ESRD, Home	0	\$0.00	\$0.00
Physician Services - Hemodialysis, Home	0	\$0.00	\$0.00
Total	508	\$432,220.70	\$850.83

Table D4. Texas Medicaid Inpatient and Outpatient – Professional Utilization of Renal Dialysis Services for the Emergency Medicaid (TP30) Program, State Fiscal Year 2021

Modality	Clients	Amount Paid	Average Amount Paid per Client
Continuous Ambulatory Peritoneal Dialysis (CAPD), In Center	0	\$0.00	\$0.00
Continuous Cycling Peritoneal Dialysis (CCPD), In Center	1	\$7,230.06	\$7,230.06
Hemodialysis, In Center	82	\$167,187.36	\$2,038.87
Intermittent Peritoneal Dialysis (IPD), In Center	1	\$351.54	\$351.54
Other/General Dialysis, In Center	50	\$112,489.29	\$2,249.79
Physician Services - ESRD, In Center	28	\$856.94	\$30.61
Physician Services - Hemodialysis, In Center	228	\$62,868.37	\$275.74
Unscheduled/Emergency Dialysis, In Center	41	\$7,564.97	\$184.51
Physician Services - ESRD, Home	0	\$0.00	\$0.00
Physician Services - Hemodialysis, Home	0	\$0.00	\$0.00
Total	377	\$358,548.53	\$951.06