

Contents

	<i>Page</i>
CHAPTER 1: INTRODUCTION, SUMMARY OF FINDINGS, AND SUGGESTED FUTURE DIRECTIONS	3
Introduction	3
Scope of the Study	4
Organization of the Case Study	5
Summary of Findings	5
Effectiveness of Alternative Dialysis Modalities	5
Costs of Treatment for ESRD	7
Conclusions	8
Clinical Effectiveness	8
Quality of Life	8
Costs of Treatment	8
Effects of Medicare's 1983 Composite Reimbursement Rates	9
Suggested Future Directions	9
Better Medical Information	9
Better Cost Information	10
Eligibility for the ESRD Program	10
CHAPTER 2: END-STAGE RENAL DISEASE: SCOPE AND TRENDS	13
End-Stage Renal Disease Defined	13
Prevalence of End-Stage Renal Disease	13
Medicare's End-Stage Renal Disease Program	14
Clinical Characteristics and Outcomes of Persons Enrolled in the ESRD Program	15
Trends in the Use of Chronic Dialysis Modalities	15
CHAPTER 3: PHYSIOLOGY AND TECHNIQUES OF MODALITIES FOR CHRONIC RENAL DIALYSIS	19
Hemodialysis	19
Principles and Physiology	19
Technique	19
Continuous Ambulatory Peritoneal Dialysis	20
Principles and Physiology	20
Technique	20
Comparative Efficiency of Dialysis by Hemodialysis and Continuous Ambulatory Peritoneal Dialysis	21
CHAPTER 4: CLINICAL EFFECTIVENESS OF CONTINUOUS AMBULATORY PERITONEAL DIALYSIS AND HEMODIALYSIS	25
Patient Survival	25
Ability to Continue on a Dialysis Modality	28
Patient Morbidity	29
Hospitalization Rates	29
Complications of Dialysis	30
Quality of Life on Dialysis	32
Burden of Treatment	34
Effects of Case-Mix Differences on the Outcomes of Chronic Dialysis	34
Characteristics of ESRD Populations	35
Implications of Differences in Patient Characteristics for Health Outcomes	35
Use of a "Standard Population" to Report Outcomes	37
CHAPTER 5: COSTS OF TREATMENT FOR END-STAGE RENAL DISEASE	43
Introduction	43
Projected Cost of Dialysis From Cost Audits	43
Projected Cost of Dialysis From 1982 Medicare ESRD Reimbursement Rates	44
Projected Costs of Dialysis Under HCFA's 1983 Composite Reimbursement Rates	45
Financial Incentives Created by HCFA's 1983 Composite Reimbursement Rates	46
Cost Implications of the Direct Purchase of Supplies for Home Dialysis	47
CHAPTER 6: ANALYSIS OF END-STAGE RENAL DISEASE EXPENDITURES	51
Introduction	51
Methods of the Analysis	51
ESRD Program Data Files	51
patient Subgroups for Analysis	52
Costs of Hospitalizations	52
Costs of Outpatient Dialysis and Physician Services	53

Contents—continued

	<i>Page</i>
Total Costs of Care	53
Costs of Changing Dialysis Modality and Costs of Dying	53
Results	53
Population Characteristics	53
Costs of Dialysis and Physician Services (Part B Costs)	53
Rates and Costs of Hospitalization	56
Total Costs of Care	58
“Cost of Changing” Dialysis Modality	58
“Cost of Dying”	58
Predictors of Hospitalization in Survivors Who Continue on a Single Dialysis Modality	58
Discussion	60
APPENDIX A: ACKNOWLEDGMENTS AND HEALTH PROGRAM ADVISORY COMMITTEE	65
APPENDIX B: GLOSSARY OF ACRONYMS AND TERMS	68
REFERENCES	73

List of Tables

<i>Table No.</i>	<i>Page</i>
1-1. Comparison of CAPD and HD as Currently Practiced	6
1-2. Advantages and Disadvantages of CAPD Relative to HD	7
2-1. Estimated Prevalence and Incidence of End-Stage Renal Disease in the United States, 1982	14
3-1. Strategies for Solute Removal With Hemo- or Peritoneal Dialysis to Maintain Average BUN = 80mg/dl	22
4-1. Patient Survival and the Ability of Patients to Continue CAPD	26
4-2. Patient Survival on HA	27
4-3. Comparisons of Patient Survival on CAPD and HD	27
4-4. Prior Treatment Modalities inpatients Entering the NIH CAPD Registry	28
4-5. Reasons for Leaving CAPD Other Than Transplantation or Return of Renal Function	28
4-6. Hospitalization Rates by Dialysis Modality	29
4-7. Hospitalization and Complication Rates in Patients on CAPD	29
4-8. Summary of Studies of the Employment Status of ESRD Patients	33
4-9. National Kidney Dialysis and Kidney Transplantation Study: Functional Impairment and Current Employment Status by Type of Dialysis	34
4-10. NIH CAPD Registry: Characteristics of CAPD Population Enrolled, 1981 and 1982.....	35
4-11. Patients Beginning Chronic Dialysis in 1981 Under the ESRD Program	36
4-12. National Kidney Dialysis and Kidney Transplantation Study: Population Characteristics of Random Samples of Prevalent Patients Undergoing Chronic Dialysis in Eleven Selected Dialysis Facilities, in 1981.....	37
4-13. Patient Survival and Ability to Continue on a Dialysis Modality in “Standard Population” of ESRD Patients	38
5-1. Cost of Dialysis per Patient-Year as Estimated From Health Care Financing Administration and General Accounting Office Cost Audits	44
5-2. Cost of Dialysis per Patient-Year From 1982 Medicare Reimbursement Rates	45
5-3. Estimated Projected Cost of Dialysis per Patient-Year Under HCFA’s 1983 Composite Reimbursement Rates ..	46
5-4. Comparison Between Estimates of the Projected Cost of Dialysis per Patient-Year Based on HCFA and GAO Cost Audits and HCFA’s 1983 Composite Reimbursement Rates:	46
5-5. Estimates of the Annual Cost of CAPD Supplies and Equipment	47
6-1. Distribution of the ESRD Population by Clinical Subgroup and Dialysis Modality for 1981 and 1982 Files and for the Merged File	54
6-2. Demographic Characteristics of ESRD Program Participants by Clinical Subgroup and Dialysis Modality for the Merged File	54
6-3. Mean Costs of Dialysis and Physician Services by Clinical Subgroup and Dialysis Modality	55
6-4. Comparisons of the Estimated Costs of Dialysis From Different Data Sources by Dialysis Modality	55
6-5. Mean Frequency of Hospitalizations by Clinical Subgroup and Dialysis Modality	56
6-6. Mean Number of Hospital Days and Estimated Hospital Costs per Patient-Year by Clinical Subgroup and Dialysis Modality	56
6-7. Distribution of Lengths of Hospital Stay by Clinical Subgroup and Dialysis Modality	57
6-8. Total Costs of Care per Patient-Year by Clinical Subgroup and Dialysis Modality	57
6-9. Distribution of Total Cost of Care per Patient-Year by Clinical Subgroup and Dialysis Modality	58
6-10. Mean Costs Per Patient-Year of a Single Change in the Modality of Dialysis Among Survivors	59
6-11. Mean Costs of Dying in Patients on a Single Dialysis Modality	59
6-12. Predictors of Days of Hospitalization in Survivors on Continuous Dialysis by a Single Modality	59
6-13. Estimated Total Costs per Patient-Year of Care by Modality of Dialysis	60