

Contents

	<i>Page</i>
CHAPTER 1: SUMMARY AND POLICY IMPLICATIONS.	3
Introduction	3
Summary	4
Urinary Stones	4
Alternative Treatments for Urinary Stones.	4
ESWL: Efficacy, Safety, and Regulation by the Food and Drug Administration . . .	5
The Costs and Economics of ESWL	6
ESWL and Federal Payment Policies	7
Effects of Federal Policies on Planning for ESWL.	9
Conclusions	10
CHAPTER 2: URINARY STONES.	15
Introduction	15
Structure and Function of the Urinary Tract	15
Epidemiology of Upper Urinary Stones.	16
Incidence of Urinary Stones.	17
Distribution of Stones.	18
Stone Recurrence	19
Upper Urinary Stones and Treatment Technologies	19
CHAPTER 3: ALTERNATIVE TREATMENTS FOR URINARY STONES.. . . .	23
Introduction	23
Approaches to Stone Treatment.	23
Dietary and Medical Management	23
Open Surgery.	25
Transurethral Manipulation.	26
Percutaneous Procedures	26
Instruments for Stone Destruction and Removal	27
Mechanical and Chemical Removal	27
Electrohydraulic Lithotripsy	28
Ultrasonic Lithotripsy	28
Experimental Endoscopic Lithotripsy Instruments	29
CHAPTER 4: ESWL: EFFICACY, SAFETY, AND REGULATION BY THE FOOD AND DRUG ADMINISTRATION	33
Introduction	33
Description of the Dornier Lithotripter	33
Early Studies of ESWL	34
Regulation by FDA and Clinical Trials in the United States	36
Safety and Efficacy of ESWL: Current Status	38
Other Extracorporeal Shock Wave Lithotripters	41
CHAPTER 5:THE COSTS AND ECONOMICS OF ESWL	45
Introduction	45
Costs to the Health Care Facility	46
Capital Costs	46
Operating Costs	46
Effects of Patient Caseload	48
Ambulatory Centers	49
Implications of High Fixed Costs	50
Costs and Economics of Physician Services	52

Contents—continued

	<i>Page</i>
Comparing Costs of Alternative Technologies.	53
Disability Costs	56
CHAPTER 6: ESWL AND FEDERAL PAYMENT POLICIES.	61
Introduction	61
Medicare	62
Coverage Decisions	62
Hospital Payment	63
Payment to Ambulatory Facilities	68
Payment for Physician Services	70
Other Public Payers for Health Care Services	74
Veterans Administration.	74
Department of Defense	75
Indian Health Service	76
CHAPTER 7: EFFECTS OF FEDERAL POLICIES ON PLANNING FOR ESWL	79
Introduction	79
Federal Planning Policy and the CON Programs	79
The State CON Programs	80
The Effects of CON and State Health Planning Systems	82
Planning and the Dynamic Market	84
APPENDIX A.—ACKNOWLEDGMENTS AND THE HEALTH PROGRAM ADVISORY COMMITTEE	89
APPENDIX B.—ESWL: TECHNICAL BACKGROUND	92
APPENDIX C.—CODING SYSTEMS	94
APPENDIX D.—GLOSSARY OF TERMS AND ACRONYMS	96
REFERENCES	101

Tables

Table No.	<i>Page</i>
1. Relative Frequencies and Radiodensities of Major Types of Urinary Stones.	17
2. Summary of Estimates of the Incidence of Urinary Stones in the United States	17
3. Foods Containing High Levels of Calcium or Oxalate	24
4. Extracorporeal Shock Wave Lithotripters Under Development in the United States, December 1985	41
5. Two Estimates of Hypothetical Annual Facility Costs of the Dornier Lithotripter, 1985	47
6. Average Per-Case ESWL Operating Costs of Hospitals As Reported in Two Surveys, 1985	48
7. Approximate Average Technical Charges and Caseloads at the Six Longest-Operating Extracorporeal Shock Wave Lithotripsy Sites in the United States, May 1985	49
8. Estimates of Number of Extracorporeal Shock Wave Lithotripters Required in the United States	50
9. Dornier Lithotripters Installed in the United States as of December 1985	51
10. Examples of Average Hospital Charges for Alternative Methods of Removing Upper Urinary Stones	55

Contents—continued

<i>Table No.</i>	<i>Page</i>
11. Diagnosis-Related Groups Used as Basis for Medicare Payment for Urinary Stone Treatment, 1986	64
12. Medicare Admissions in DRGs Relating to Stone Disease as Represented in the Medpar Database, 1981	67
13. Sample Urologists' Fees for Selected Stone Removal Procedures, 1985	70
14. Certificate-of-Need Thresholds in Each State and the District of Columbia, 1986	81
C-1. ICD-9-CM Codes Relating to Urinary Stones	95

Figures

<i>Figure No.</i>	<i>Page</i>
1. Diagram of the Urinary Tract	16
2. Alternative Methods for Medicare Payment for Services Provided to a Hypothetical Patient Presenting the Symptom of Extreme Flank Pain	73