Appendix C
Coding Systems

The CPT-4 Coding System for Physician Services

Two widespread systems for codifying medical diagnoses and procedures exist in the United States: the Physicians' Current Procedural Terminology, Fourth Edition (CPT-4), which codes procedures performed by physicians, and the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), which codes hospital diagnoses and procedures (9,188).

CPT-4 is a detailed list of five-digit codes for physician services, organized according to organ systems, that was developed (and is maintained) by the American Medical Association (AMA). It was initially developed to facilitate physician reporting on claim forms, and Medicare recently began requiring that physician bills be based on a version of this system. CPT has undergone numerous expansions, and the number of codes increased from 2,084 in 1966 to 7,040 in 1985 (182).

These codes may be clarified with modifiers under certain circumstances. For example, the CPT-4 manual states:

> [Certain procedures are a combination of a physician component and a technical component. When the physician component is reported separately, the service may be identified by adding the modifier '-26' to the usual procedure number or the service may be reported by use of the five digit modifier code 09926 (10)].

This reporting procedure is the mechanism through which a radiologist, for example, may get paid a "professional component only" charge for interpreting an X-ray in a hospital and a total charge (including an implicit or explicit "technical fee") for an office-based X-ray, where the equipment is owned by the physician.

Because CPT-4 is entirely under the aegis of AMA and is updated annually, the advent of extracorporeal shock wave lithotripsy (ESWL) created no structural difficulties for this coding system. A new code to represent ESWL performed by a physician, 50590, has been created.

The ICD-9-CM Coding System for Hospitals[1]

The diagnosis-related groups (DRGs) used by Medicare's prospective payment system to categorize patients for reimbursement purposes are based on a coding system known as ICD-9-CM. This system has two parts, The first and largest part is a comprehensive list of diseases with corresponding codes. It is compatible with the World Health Organization's (WHO's) list of disease codes, maintained for statistical purposes, and is updated along with the WHO list every 10 years. The second part of ICD-9-CM contains procedure codes. These are independent of the disease codes and are not directly based on an international system, although in the past they have been revised concurrently with the disease codes. The National Center for Health Statistics is the official WHO coding liaison in the United States, but the development and maintenance of the American version of ICD has historically been a cooperative effort of representatives from a variety of governmental agencies and professional organizations **(70).** The codes have historically been infrequently updated, and until very recently there was no established formal procedure for interim addition of codes or assignments of new diseases and procedures to existing codes. In late 1985, as a result of the dilemmas and uncertainties arising out of coding and DRG classification, a formal ongoing coding recommendations task force, jointly chaired by the National Center for Health Statistics and Health Care Financing Administration and including representatives of the major interested organizations, was established (50 FR 24374).

The ICD-9-CM codes are organized according to organ system (circulatory system, digestive system, etc.), with additional sections for subjects such as infectious diseases and accidental injury. Diseases are

[1]Portions of this section are exerpted from U S Congress, Ott Ice 01 Technology Assessment, *Medicare's Prospective Payment System Strategies for Evaluating Cost Quality and Medical Technology*, OTA-H-262 (Washington, DCU S Government Printing Office, October 1985)

assigned three-digit codes, with fourth and occasionally fifth digits available to allow more specificity. For instance, hereditary anemia is code 282. Sickle-cell anemia, one type of hereditary anemia, is code **282.6,** and the particular form called sickle-cell/Hb-C disease is further specified as code 282.63. The procedure codes are organized in a fashion similar to the disease codes, except that maximium specificity is reached at four digits rather than five. Table C-1 lists some ICD-9-CM codes relating to urinary stones.

The process of DRG assignment depends on both the diagnosis and procedure codes. The code for the principal diagnosis places the patient in a major diagnostic category and indicates which of several DRGs might be appropriate. The code for the principal procedure (or its absence) is used to determine whether the appropriate DRG is a medical or a surgical one. Surgical DRGs generally have higher reimbursement rates than medical ones. The final choice of DRG then depends on the specific procedure performed, the patient's age, and the presence or absence of coexisting diseases and complications.

The ICD-9-CM coding system, designed for clinical and statistical purposes, presents several problems when used as a basis for reimbursement (70,80,164). First, if inaccurate or inadequate coding was frequent when the DRGs were designed, many hospital cases may have been inaccurately classified. If this is the case, the DRG weights may consequently be inaccurate themselves. Second, some medical conditions can be described by more than one diagnostic code **(80).** Although any of several diagnoses may be technically correct, their associated codes lead to different DRGs with different weights.

A third major concern regards the procedure codes. Procedures utilizing new technologies may not be appropriately described by any of the current codes, and confusion about which code to use can lead to wide variation in DRG assignment. The code that seems most applicable may lead to an apparently inappropriate DRG; conversely, a DRG with an apparently appropriate reimbursement rate may be based on codes entirely unfitting to the new technology. Coding consultants at the American Hospital Association and the Commission on Professional and Hospital Activities help to reduce confusion and promote coding uniformity, Major problems of coding assignment are now the responsibility of the newly organized task force.

table C-1 .—ICD-9-CM Codes Relating to Urinary Stones

Diagnostic codes:
592 *Calculus (stone) of kidney and ureter*
- *592.0* Calculus of kidney
- 592,1 Calculus of ureter
- 592.9 Urinary calculus, unspecified

594 *Calculus (stone) of lower urinary tract*
- *594.0* Calculus in diverticulum of bladder
- 594.1 Other calculus in bladder
- 594.2 Calculus in urethra
- 594.8 Other lower urinary tract calculus
- 594.9 Calculus of lower urinary tract, unspecified

Procedure codes:
55 *Operations on kidney*
- *55.0* Nephrotomy and nephrostomy
  - 55.01 Nephrotomy (includes removal of stones from kidney)
  - 55.02 Nephrostomy
- 55.1 Pyelotomy and pyelostomy
  - 55.11 Pyelotomy (includes removal of stones from renal pelvis)
  - 55.12 Pyelostomy
- 55.9 Other operations on kidney
  - 55.99 other

56 *Operations on ureter*
- *56.0* Transurethral removal of obstruction from ureter and rend pelvis
- 56.2 Ureterotomy (includes removal of ureter stone through incision)

57 *Operations on urinary bladder*
- *57.0* Transurethral clearance of bladder
- 57.1 Cystotomy
  - 57.19 Other cystotomy (includes removal of bladder stone through incision)

58 *Operations on urethra*
- *58.0* Urethrotomy (includes removal of stone in urethra through incision)
- 58.6 Dilation of urethra (includes removal of calculus without incision)

59 *Other operations on urinary tract*
- *59.9* Other operations on urinary system
  - 59.95 Ultrasonic fragmentation of urinary stones
  - 59.99 Other