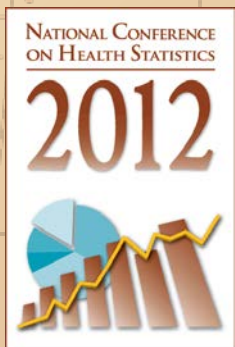


Understanding the Impact of the Differences in ICD-9-CM and ICD-10-CM and Its Potential Impact on Data Analysis

Donna Pickett, MPH, RHIA
National Center for Health Statistics
August 6, 2012



Overview

- History of ICD
- Overview of ICD-10
- Overview of ICD-10-CM
 - Development/Testing
 - Benefits
- Structure/Conventions
- Chapter-specific Overview
- Guidelines
- General Equivalence Maps (GEMs)

History of the ICD

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ICD Revisions

<i>ICD Revision No.</i>	<i>Year of Conference When Adopted</i>	<i>Year in Use in the U.S.</i>	<i>ICD, Clinical Modification</i>	<i>Year in Use in the U.S.</i>
First	1900	1900-1909		
Second	1909	1910-1920		
Third	1920	1921-1929		
Fourth	1929	1930-1938		
Fifth	1938	1939-1948		
Sixth	1948	1949-1957		
Seventh	1955	1958-1967		
Eighth	1965	1968-1978	ICDA-8 H-ICDA-1 H-ICDA-2	1968-1978 1968-1972 1973-1978
Ninth	1975	1979-1998	ICD-9-CM	1979
Tenth	1989	1999-	ICD-10-CM	Oct. 1, 2013 (2014?)

World Health Organization and ICD-10 Implementation

- W.H.O. has authorized the publication of ICD-10 versions in 30+ languages
- Death certificates in U.S. have been coded using ICD-10 since data year 1999
- More than 90 countries having implemented ICD-10 (or a clinical modification) for morbidity applications.

International Statistical Classification of Diseases and Health Related Problems, Tenth Revision (ICD-10)

ICD-10 represents the broadest scope of any ICD revision to date. Changes include:

- Alphanumeric codes
- Restructuring certain chapters/ categories
- Addition of new features
- Expansion of detail (2,033 categories; 855 more than ICD-9)
 - Diseases of the Eye and Adnexa (Chapter 7)
 - Diseases of the Ear and Mastoid Process (Chapter 8)

International Statistical Classification of Diseases and Health Related Problems, Tenth Revision (ICD-10)

Alphanumeric

- A00-B99 Infectious and parasitic diseases
- C00-D48 Neoplasms
- E00-E90 Endocrine, nutritional and metabolic diseases
- S00 - T98 Injury, poisoning and certain other consequences of external causes

International Statistical Classification of Diseases and Health Related Problems, Tenth Revision (ICD-10)

- Chapters where major changes have occurred were field-tested by WHO:
 - Chapter V, Mental and behavioral disorders
 - Chapter XIX, Injury, poisoning and certain other consequences of external causes
 - Chapter XX, External causes of morbidity and mortality

Expanded Detail in ICD-10

ICD-9

250 Diabetes

- 4th digit to identify type of manifestation

ICD-10

E10 Insulin-dependent

E11 Non-insulin dependent

E12 Malnutrition-related

E13 Other specified

4th digit to identify type of manifestation

Expanded Detail in ICD-10 External Causes of Injuries

ICD-9 (E800-E999)

Transport accidents	E800-E848
Intentional self-harm	E950-E959
Complic. med/surg care	E870-E876

ICD-10 (V00-Y98)

Transport accidents	V01-V99
Intentional self-harm	X60-X84
Complic. med/surg care	Y40-Y84

ICD-10-CM

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ICD-10 Evaluation Contract

In September 1994 NCHS awarded a contract to the Center for Health Policy Studies (CHPS) to evaluate the International Statistical Classification of Diseases and Related Health Problems (ICD-10).

Assess whether ICD-10 significant improvement over ICD-9-CM to warrant implementation for morbidity reporting

Recommend additional improvements to ICD-10 and to correct any problems identified during the course of evaluation.

ICD-10 not significantly better than ICD-9-CM for morbidity applications to warrant implementation.

A clinical modification of the ICD-10 would be a significant improvement and worth implementing.

ICD-10-CM Development

- Three phases of development
 - Phase 1 - Prototype developed under contract
 - Phase 2 - Enhancements by NCHS
 - Phase 3 - Further enhancements based on physician groups, other classification users and public comments

ICD-10-CM Partial List Phase II Reviewers

American Academy of Dermatology
American Academy of Neurology
American Academy of Oral and Maxillofacial Surgeons
American Academy of Orthopedic Surgeons
American Academy of Pediatrics
American Burn Association
American College of Obstetricians and Gynecologists
American Diabetes Association
American Nursing Association
American Psychiatric Association
American Urological Association
ANSI Z16.2 Workgroup (Workers Comp)
Nat'l Assoc. of Children's Hosps & Related Institutions

ICD-10-CM Testing

- Draft of Tabular List and crosswalks posted on NCHS website for 3 month open public comment period (1997)
- Pre-release version of ICD-10-CM posted on NCHS website (May 2002)
- AHIMA/AHA jointly conduct pilot test of ICD-10-CM (June – July 2003)

Benefits of Adopting the New Coding System

- Updated medical terminology and classification of diseases;
- Allows easier comparison of mortality and morbidity data
- Provides better data for:
 - Measuring care provided to patients;
 - Designing payment systems;
 - Processing claims;
 - Making clinical decisions;
 - Tracking public health;
 - Identifying fraud and abuse; and
 - Conducting research

HIPAA Administrative Simplification: Modifications to Medical Data Code Set Standards

- Published January 16, 2009
 - Adopts ICD-10-CM and ICD10-PCS as replacements for ICD-9-CM
- October 1, 2013 – Compliance date for implementation of ICD-10-CM and ICD-10-PCS
- Single implementation date for all users
 - Date of service for ambulatory and physician reporting
 - Date of discharge for inpatient and other settings

HIPAA Administrative Simplification: Modifications to Medical Data Code Set Standards

- February 16, 2012 - HHS Secretary announced intent to delay implementation
- New NPRM published April 2012
 - Adopts ICD-10-CM and ICD10-PCS as replacements for ICD-9-CM
 - October 1, 2014 – New proposed compliance date for implementation of ICD-10-CM and ICD-10-PCS
 - Public comment period closed May 17, 2012

ICD-10 Code Freeze Decision

- Last regular, annual updates to both ICD-9-CM and ICD-10 would be made on October 1, 2011
- Only limited ICD-9-CM & ICD-10 updates for new technologies and new diseases on October 1, 2012, and October 1, 2013
- Regular updates to ICD-10 code sets to begin October 1, 2014 (?)

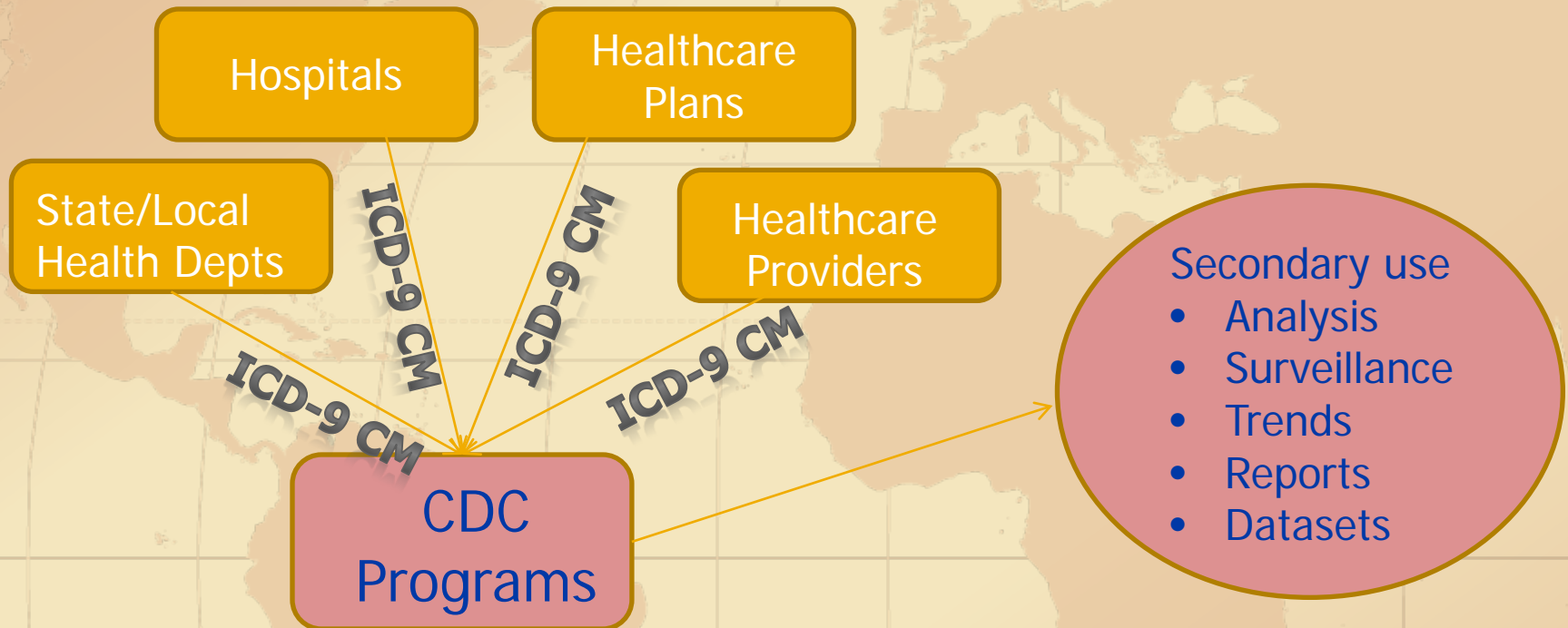
ICD-9-CM Coordination and Maintenance Committee

- Public updating process has been in place to update ICD-9-CM since 1985
- Process will continue to allow for updating of ICD-10-CM and ICD-10-PCS
 - Two meetings each year (March and September)
 - Any approved changes discussed during the freeze to be held until October 1, 2014 (?) unless related to new disease or new technology

You Aren't A HIPAA-covered Entity But Are You Affected?

- Do you code using ICD-9-CM as part of your organization/program activities?
- Do you receive ICD-9-CM coded data?
- Do you receive verbatim diagnosis/procedure information that you code?
- Do you have a contractor that codes your data?

Secondary Use of ICD-9-CM codes at CDC



CDC's ICD-10 Transition Workgroup

- ❑ **Information Resources Governance (IRG) formed the ICD-10 Transition Workgroup as an entity under the Public Health Domain Committee, April 2011**
- ❑ **Goals of the workgroup**
 - To identify common needs and gaps across CDC that could potentially be addressed by shared solutions
 - To leverage the use of existing processes and tools to optimize efficiency in resource usage
 - To document successes and challenges that programs have already faced in their planning efforts to facilitate the sharing of lessons learned

ICD-10-CM Structure/Conventions

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ICD-10-CM Structure

ICD-9-CM (14,025 codes)

- 3 -5 characters
- First character is numeric or alpha (E or V)
- Characters 2-5 are numeric
- Always at least 3 characters
- Use of decimal after 3 characters

ICD-10-CM (68, 069 codes)

- 3 -7 characters
- Character 1 is alpha (all letters except U are used)
- Character 2 is numeric
- Characters 3 -7 are alpha or numeric
- Use of decimal after 3 characters
- Use of dummy placeholder "x"
- Alpha characters are not case-sensitive

ICD-10-CM Differences

- New instructional notes
- Expanded codes for greater specificity
 - Expansions for laterality (e.g. right vs. left) and specific body areas
 - Added code extensions for injuries & external causes of injuries
- Placeholder "x"
 - for some codes for future expansion
 - Fill out characters when a code contains fewer than 6 characters and a 7th character applies
- 7th Characters
 - Used in certain chapters to provide additional information about the encounter
 - Must always be in the 7th position
 - If code has applicable 7th character, the code must be reported with appropriate 7th character value to be a valid code

Structural Differences: ICD-10-CM

- Placeholder "x" is used
 - as a 5th character placeholder at certain 6 character codes to allow for future expansion
 - When a base 3-5 character codes requires a 7th digit
 - means "x" is placed in otherwise unfilled placeholder as the 5th and/or 6th character
- Base code S50.02 Contusion of left elbow
 - Use S50.02xD to report a subsequent encounter
- Base code S47.1 Crushing injury of right shoulder and upper arm
 - Use S47.1xxA to report the initial encounter

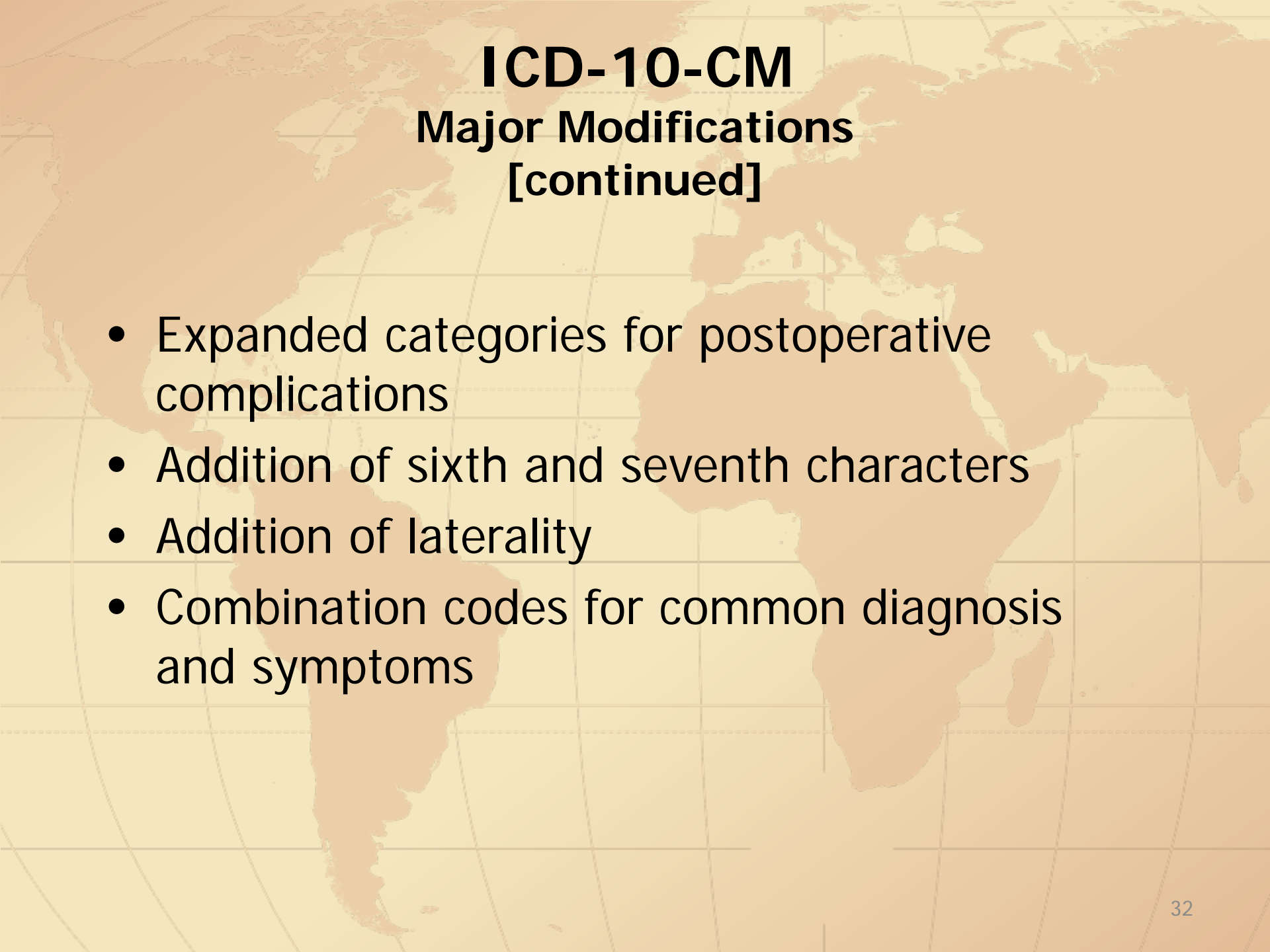
Structural Differences ICD-10-CM Diagnoses

- ICD-10-CM codes are 3 – 7 digits
 - A78 Q fever
 - A69.20 Lyme disease, unspecified
 - O9A.311 Physical abuse complicating pregnancy, first trimester
 - S42.001A Fracture of unspecified part of right clavicle, initial encounter for closed fracture

ICD-10-CM

Major Modifications [continued]

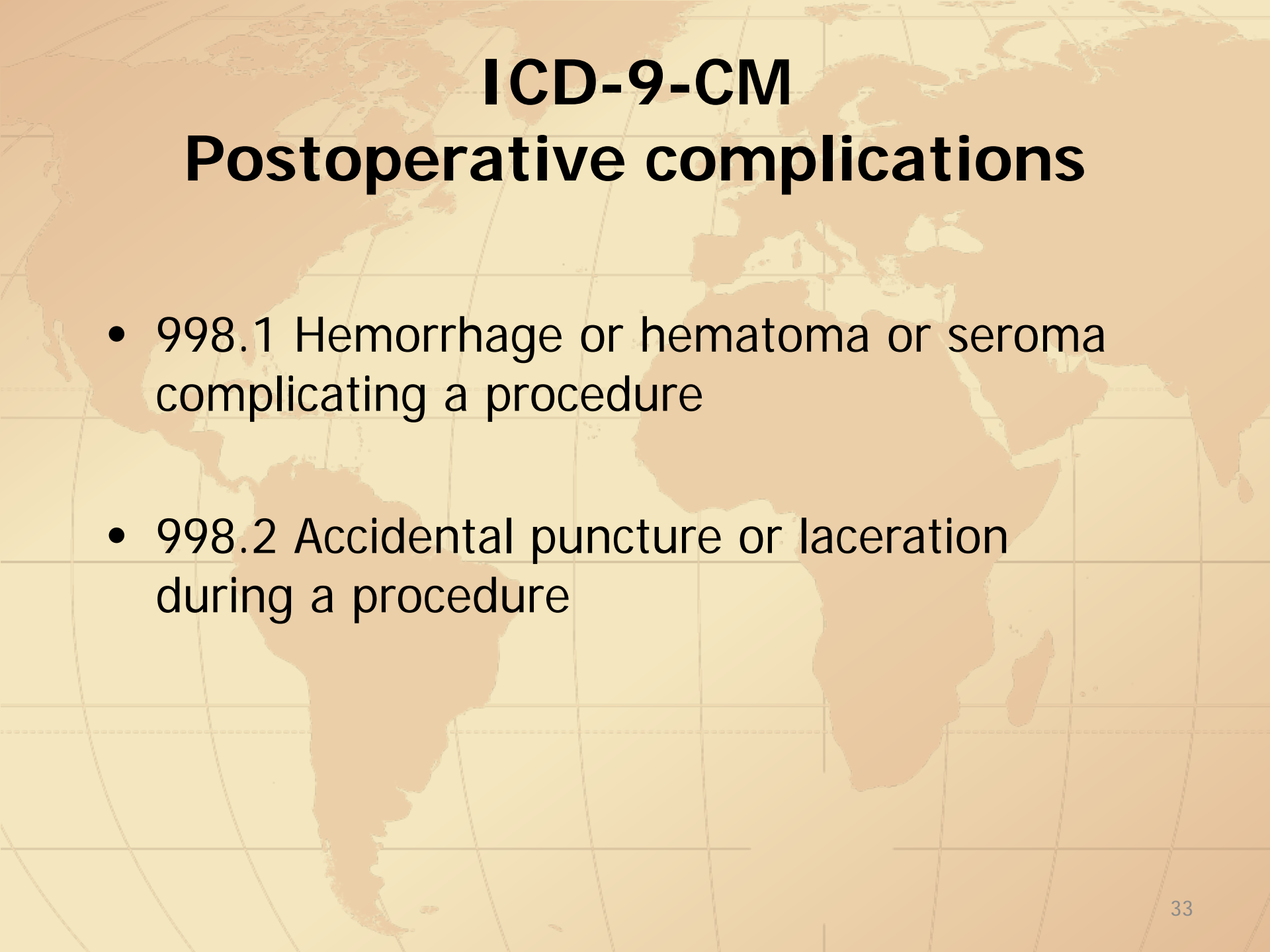
- Added trimesters to OB codes (fifth-digits from ICD-9-CM will not be used)
- Revised diabetes mellitus codes (5th digits from ICD-9-CM will not be used)
- Expanded codes (e.g., injury, diabetes)
- Added code extensions for injuries and external causes of injuries

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

ICD-10-CM

Major Modifications [continued]

- Expanded categories for postoperative complications
- Addition of sixth and seventh characters
- Addition of laterality
- Combination codes for common diagnosis and symptoms

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

ICD-9-CM

Postoperative complications

- 998.1 Hemorrhage or hematoma or seroma complicating a procedure
- 998.2 Accidental puncture or laceration during a procedure

ICD-10-CM

Postoperative complications

- G97.3 Hemorrhage or hematoma complicating a nervous system procedure
 - G97.31 Intraoperative hemorrhage/hematoma of nervous system organ or structure complicating nervous system procedure
 - G97.32 Intraoperative hemorrhage/hematoma of nervous system organ or structure complicating other procedure

ICD-10-CM

Postoperative complications

- H95.3 Accidental puncture or laceration during an ear procedure
 - H95.31 Accidental puncture and laceration of the ear and mastoid process following procedure on ear and mastoid process
 - H95.32 Accidental puncture and laceration of ear and mastoid process following other procedure

Diagnosis/ Symptom Combination Codes

- I25.110 Atherosclerotic heart disease with unstable angina
- K71.51 Toxic liver disease with chronic active hepatitis with ascites
- K50.012 Crohn's disease of small intestine with intestinal obstruction

ICD-10-CM

Structure/Conventions

- Format
 - Tabular List and Alphabetic Index
 - Index
 - Alphabetic Index of Diseases and Injuries
 - Alphabetic Index of External Causes of Injuries
 - Table of Neoplasms
 - Table of Drugs and Chemicals

ICD-10-CM

Structure/Conventions (continued)

- Format – Tabular
 - Valid codes may be 3-6 characters in length and are in **BOLD** typeface
 - 4th character can be a letter or a number
 - Codes longer than 3 characters have decimal point after first 3 characters
 - Must code to highest level of detail, using the codes
 - Full code titles are used

Full code titles

ICD-9-CM

143 Malignant neoplasm of gum

143.0 Upper gum

143.1 Lower gum

ICD-10-CM

C03 Malignant neoplasm of gum

C03.0 Malignant neoplasm of upper gum

C03.1 Malignant neoplasm of lower gum

ICD-10-CM Structure/Conventions (continued)

- Exclude Notes
 - Exclude1: Means NOT CODED HERE
 - Code being excluded is never used with code
 - The two conditions cannot occur together
 - Examples –
 - B06 Rubella [German measles]**
Excludes1: congenital rubella (P35.0)

ICD-10-CM Conventions (continued)

- Exclude Notes

- Exclude2: Means NOT INCLUDED HERE

- Excluded condition is not part of the condition represented by the code
 - Acceptable to use both codes together if patient has both conditions

- **Example:**

- J04.0 Acute laryngitis**

- Excludes2: chronic laryngitis (J37.0)**

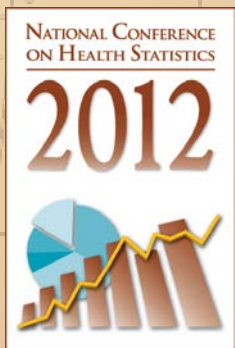
ICD-10-CM Conventions (continued)

- Code First Notes
 - Used when certain conditions have both an underlying etiology and multiple body system manifestations
 - Requires the underlying condition be sequenced first followed by the manifestation
 - Proper sequencing order of the codes: etiology followed by manifestation (same coding convention as ICD-9-CM)

ICD-10-CM Conventions (continued)

- Code Also Notes
 - A code also note instructs that 2 codes may be required to fully describe a condition but the sequencing of the two codes depends on the circumstances of the encounter.

Chapter-specific Overview



Chapter 1: Infectious and Parasitic Diseases

- HIV
 - B20, Human Immunodeficiency [HIV] disease
 - O98.7, HIV complicating pregnancy, childbirth and puerperium (new code)
 - R75, Inconclusive laboratory evidence of human immunodeficiency virus [HIV]
 - Z20.6, Contact with and (suspected) exposure to human immunodeficiency virus [HIV]
 - Z21, Asymptomatic human immunodeficiency virus [HIV] infection status
- New section (A50-A64)
 - Infections with predominantly sexual mode of transmission

Chapter 1: Infectious and parasitic diseases

- Streptococcal sore throat
 - Moved from Chapter 1 (034.0) to Chapter 10 - Diseases of Respiratory System (J02.0)
- Tetanus neonatorum
 - Moved from Chapter 15 (771.3) to Chapter 1 (A33)
- OB tetanus
 - Moved from Chapter 11 (670.8) to Chapter 1 (A34)

Chapter 2: Neoplasms

- Melanoma in situ
 - Category 172, Malignant melanoma of skin to unique ICD-10-CM category D03-, Melanoma in situ
- Waldenstrom's macroglobulinemia
 - Moved from Ch. 3 (disorders of plasma protein) to C88 Malignant immunoproliferative diseases in Chapter 2
- Leukemias and lymphomas

Example: Laterality in Chapter 2

C50.1 Malignant neoplasm, of central portion of breast

C50.111 Malignant neoplasm of central portion of right female breast

C50.122 Malignant neoplasm of central portion of left male breast

Chapter 3:

Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism

Mainly conditions/diseases from Chapter 4 of ICD-9-CM but also from Chapter 3, (Endocrine) and Chapter 1 (Infectious and Parasitic)

- Moved Immunity Diseases from “Endocrine, Nutritional and Metabolic Disorders” to “Diseases of the Blood”
 - Diseases of the Blood and Blood Forming Organs and Certain Disorders Involving the Immune Mechanism (Chapter 3)

Chapter 4: Endocrine, nutritional, and metabolic diseases

- Diabetes Mellitus (categories E08-E14)
 - E08 Diabetes mellitus due to underlying condition
 - E09 Drug or chemical induced diabetes mellitus
 - E10 Type 1 diabetes mellitus
 - E11 Type 2 diabetes mellitus
 - E13 Other specified diabetes mellitus
 - E14 Unspecified diabetes mellitus

Diabetes mellitus

ICD-9-CM

250.X

5th digit "1"

identified

juvenile-onset

5th digit "0"

identified adult-onset

ICD-10

E10.X Insulin-dependent

E11.X Non-insulin dependent

E12 Malnutrition-related

E13 Other specified

E14 Unspecified

4th digit for type of complication

ICD-10-CM

E08 Diabetes due to underlying condition

E09 Drug or chemical induced diabetes

E10 Type 1 diabetes

E11 Type 2 diabetes

E13 Other specified diabetes mellitus

E14 Unspecified

5/6th digit for type of complication

Diabetes mellitus

- The common fifth-digit subclassification in ICD-9-CM for diabetes mellitus will not be used in ICD-10-CM (Controlled/uncontrolled)
- The diabetes categories have been fully revised to reflect revisions to the classification of diabetes issued by the American Diabetes Association

Diabetes mellitus

Examples

- E09.01 Drug or chemical induced diabetes mellitus with hyperosmolarity with coma
- E10.11 Type 1 diabetes mellitus with ketoacidosis with coma
- E11.40 Type 2 diabetes mellitus with diabetic nephropathy, unspecified
- E13.621 Other specified diabetes mellitus with foot ulcer

Chapter 6:

Diseases of nervous system

- Sense organs separated from nervous system
- Dominant/nondominant side (e.g., G81, Hemiplegia and hemiparesis)
- Basilar and carotid artery syndromes, transient global amnesia, transient cerebral ischemia, were in Chapter 7 in ICD-9-CM now reside in Chapter 6 in ICD-10-CM

Chapter 9: Diseases of circulatory system

- Hypertension – no distinction for malignant/benign in ICD-10-CM or ICD-10)
- Binswanger's disease
 - Moved from Chapter 5 to Chapter 9
- Gangrene from Chapter 16, Signs and Symptoms to Chapter 9
- STEMI, non-STEMI included in code titles

Chapter 9: Diseases of circulatory system (continued)

- Initial and subsequent acute myocardial infarction
- AMI time frames
 - From 8 weeks or less in ICD-9-CM to four weeks or less in ICD-10-CM (consistent with ICD-10)
- Sequelae of cerebrovascular disease
 - Expansion of all subcategories to specify laterality and greater detail about the sequela
- Intraoperative and postprocedural circulatory system complications

Chapter 10: Diseases of respiratory system

- Asthma (distinction for extrinsic/intrinsic no longer used)
 - Mild, moderate, severe
 - Intermittent versus persistent
- Strep throat
 - Moved from Chapter 1

Chapter 12: Diseases of the skin and subcutaneous tissue

Decubitus ulcers

- Required use of two codes in ICD-9-CM
- ICD-10-CM one combination code
- Site, laterality, severity

Decubitus ulcer, stage 3 of sacrum

- 707.03 and 707.23 (ICD-9-CM)
- L89.153 (ICD-10-CM)

Chapter 13:

Diseases of the musculoskeletal system and connective tissue

- Site: joint vs. bone/limb
- Laterality
- Gout
 - Moved from Chapter 3 (Endocrine, nutritional, metabolic, in ICD-9-CM)
 - Gout distinctions: idiopathic, drug-induced, lead-induced
- Polyarteritis nodosa
 - Moved from Chapter 7, Diseases of circulatory system

Chapter 13:

Diseases of the musculoskeletal system and connective tissue (continued)

- 7th character extensions for osteoporosis

The appropriate 7th character is to be added to each code from category M80:

A - initial encounter for fracture

D - subsequent encounter for fracture with routine healing

G - subsequent encounter for fracture with delayed healing

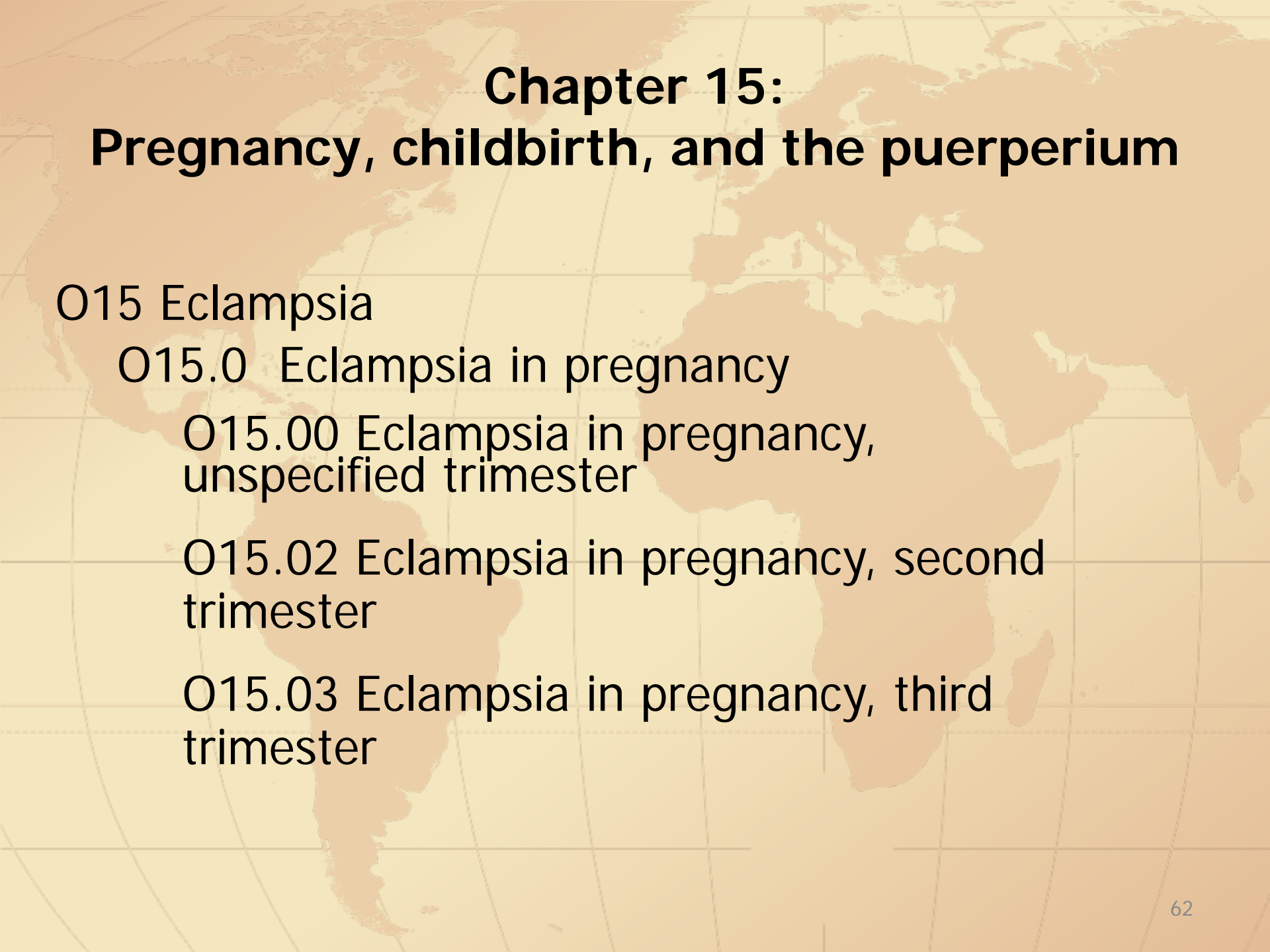
K - subsequent encounter for fracture with nonunion

P - subsequent encounter for fracture with malunion

S - sequela

Chapter 15: Pregnancy, childbirth, and the puerperium

- ICD-9-CM 5th digits not used in ICD-10-CM
- Trimesters indicated with final character
- Supervision of high-risk pregnancy
 - Moved from Supplementary chapter in ICD-9-CM to OB chapter in ICD-10-CM
- Timeframe for abortions and fetal deaths changed from 22 weeks to 20 weeks
- Timeframe for early and late vomiting in pregnancy changed from 22 weeks to 20 weeks

A faint, light-colored world map is visible in the background of the slide, showing the continents and a grid of latitude and longitude lines.

Chapter 15: Pregnancy, childbirth, and the puerperium

O15 Eclampsia

O15.0 Eclampsia in pregnancy

O15.00 Eclampsia in pregnancy,
unspecified trimester

O15.02 Eclampsia in pregnancy, second
trimester

O15.03 Eclampsia in pregnancy, third
trimester

Chapter 15: Pregnancy, childbirth, and the puerperium (continued)

O31

Complications specific to multiple gestation

One of the following 7th characters is to be assigned to each code under category O31. 7th character 0 is for single gestations and multiple gestations where the fetus is unspecified. 7th characters 1 through 9 are for cases of multiple gestations to identify the fetus for which the code applies. The appropriate code from category O30, Multiple gestation, must also be assigned when assigning a code from category O31 that has a 7th character of 1 through 9.

0 - not applicable or unspecified

1 - fetus 1

2 - fetus 2

3 - fetus 3

4 - fetus 4

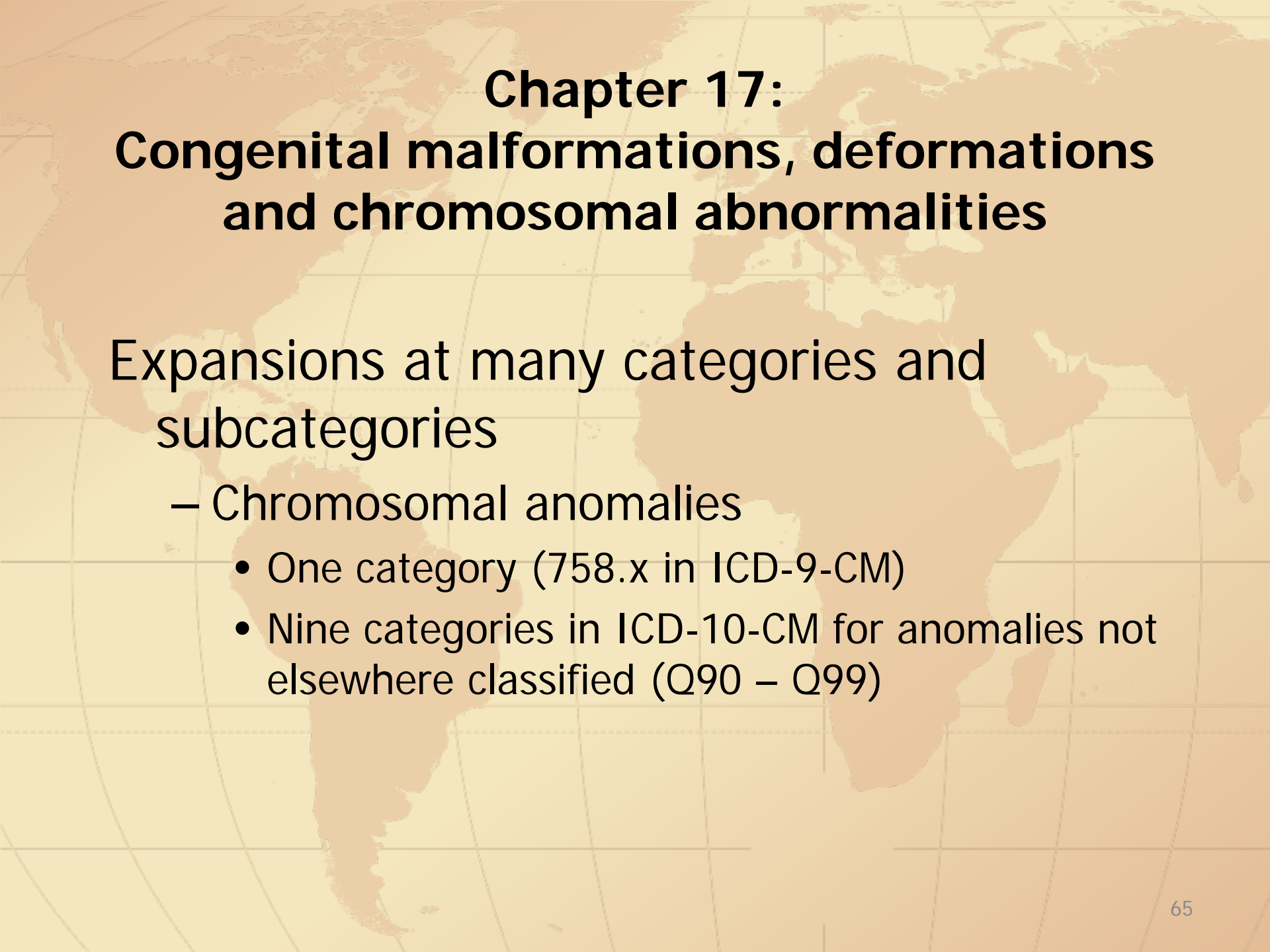
5 - fetus 5

9 - other fetus

Chapter 16:

Certain conditions originating in the newborn (perinatal) period

- Change in terminology
 - 760-763, Maternal causes of perinatal morbidity and mortality; P00-P04, Newborn affected by maternal factors and by complications of pregnancy, labor, and delivery
- Consistent use of terminology

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

Chapter 17: Congenital malformations, deformations and chromosomal abnormalities

Expansions at many categories and subcategories

– Chromosomal anomalies

- One category (758.x in ICD-9-CM)
- Nine categories in ICD-10-CM for anomalies not elsewhere classified (Q90 – Q99)

Chapter 18:

Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified

- SIRS of non-infectious origin (with and without acute organ failure); severe sepsis with and without septic shock
- Glasgow coma scale
 - Primarily for use in trauma registries
- Bradycardia
 - Moved from Chapter 7, Circulatory, to Chapter 18
- Pleurisy
 - Moved from Chapter 8, Respiratory , to Chapter 18

Chapter 19: Injury, poisoning and certain other consequences of external causes

Injuries Restructured

ICD-9

Fractures	800-829
Dislocations	830-839
Sprains/Strains	840-848

ICD-10

Injuries to head	S00-S09
Injuries to neck	S10-S19
Injures to thorax	S20-S29

Chapter 19:

Injury, poisoning and certain other consequences of external causes

Type of injury at 3rd character

- 0 Superficial injuries
- 1 Open wounds
- 2 Fractures
- 3 Dislocations and sprains
- 4 Injury of nerves
- 5 Injury of blood vessels
- 6 Injury of muscles and tendons
- 9 Other and unspecified

Chapter 19:

Injury, poisoning and certain other consequences of external causes

- S00 Superficial injury of head
- S10 Superficial injury of neck
- S20 Superficial injury of thorax
- S30 Superficial injury of abdomen, lower back, and pelvis

- S01 Open wound of head
- S11 Open wound of neck
- S21 Open wound of thorax
- S31 Open wound of abdomen, lower back, and pelvis

- S02 Fracture of skull and facial bones
- S12 Fracture of neck
- S22 Fracture of rib(s), sternum and thoracic spine
- S32 Fracture of lumbar spine and pelvis

Injury codes in ICD-9-CM/ICD-10

Open wounds

- laceration w/foreign body
- laceration w/o foreign body
- puncture wound w/foreign body
- puncture wound w/o foreign body
- bite

Superficial wounds

- abrasion
- blister
- contusion
- external constriction
- superficial foreign body
- insect bite

ICD-10-CM


Expanded Injury Codes

Detail for open wounds added at 5th digit

S41.01- Laceration without foreign body of shoulder

S41.02- Laceration with foreign body of shoulder

S41.03- Puncture wound without foreign body of shoulder

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

ICD-10-CM Expanded Injury Codes

S00.411 Abrasion of ear, right ear

S50.351 Superficial foreign body of
right elbow

S81.012 Laceration without foreign
body, left knee

Fracture codes in ICD-9-CM/ICD-10

Fractures, closed

- Comminuted
- Depressed
- Elevated
- Fissured
- Greenstick
- Linear
- Spiral

Fractures, open

- Compound
- Infected
- Missile

ICD-10-CM Expanded Injury Codes

- S42.31- Greenstick fracture of shaft of humerus
- S42.32- Transverse fracture of shaft of humerus
- S42.33- Oblique fracture of shaft of humerus
- S42.42- Comminuted supracondylar fracture without intercondylar fracture of humerus

Chapter 19:

7th character – Fractures

- A Initial encounter for closed fracture
- B Initial encounter for open fracture
- D Subsequent encounter for fracture with routine healing
- G Subsequent encounter for fracture with delayed healing
- K Subsequent encounter for fracture with nonunion
- P Subsequent encounter for fracture with malunion
- S Sequela

Chapter 19:

7th character – Open fractures

The open fracture designations are based on the Gustilo open fracture classification

The appropriate 7th character is to be added to each code from category S52

A - initial encounter for closed fracture

B - initial encounter for open fracture type I or II

C - initial encounter for open fracture type IIIA, IIIB, or IIIC

D - subsequent encounter for closed fracture with routine healing

E - subsequent encounter for open fracture type I or II with routine healing

F - subsequent encounter for open fracture type IIIA, IIIB, or IIIC with routine healing

G - subsequent encounter for closed fracture with delayed healing

H - subsequent encounter for open fracture type I or II with delayed healing

J - subsequent encounter for open fracture type IIIA, IIIB, or IIIC with delayed healing

K - subsequent encounter for closed fracture with nonunion

M - subsequent encounter for open fracture type I or II with nonunion

N - subsequent encounter for open fracture type IIIA, IIIB, or IIIC with nonunion

P - subsequent encounter for closed fracture with malunion

Q - subsequent encounter for open fracture type I or II with malunion

R - subsequent encounter for open fracture type IIIA, IIIB, or IIIC with malunion

S - sequela

Chapter 19:

7th character – Type of encounter

Types of encounters: Initial, subsequent, sequela

- Active treatment: surgical treatment, ER encounter, evaluation and treatment by new physician
- Subsequent encounter: routine care, during healing phase (e.g., cast change/removal, removal of external fixation device)
- Sequela: complications or conditions that arise as a direct result of an injury

Chapter 19: Injury, poisoning and certain other consequences of external causes (continued)

- 5th character "x" dummy place holder
 - Example: T36.0x1 Poisoning by penicillins, accidental (unintentional)

Chapter 19: Injury, poisoning and certain other consequences of external causes (continued)

- New concepts:
 - Underdosing – taking less of a medication than is prescribed by the provider whether inadvertently or deliberately with resulting negative consequence
 - Additional code for patient noncompliance (Z91.12, Z91.13-) or failure in dosage in medical care (Y63.-)

Poisoning/External Cause ICD-9-CM

Accidental poisoning by thyroid hormones

962.7 (Poisoning) Thyroid and thyroid derivatives
and

E858.0 Accidental poisoning, Hormones and
synthetic substitutes

Poisoning/External Cause ICD-10-CM Combination Codes

- T38.1x1 Poisoning by thyroid hormones and substitutes, accidental (unintentional)
- T38.1x2 Poisoning by thyroid hormones and substitutes, intentional self-harm
- T38.1x3 Poisoning by thyroid hormones and substitutes, assault
- T38.1x4 Poisoning by thyroid hormones and substitutes, undetermined
- T38.1x5 Adverse effect of thyroid hormones and substitutes

Poisoning/External Cause ICD-10-CM Combination Codes

Codes in T36- T50 (Poisoning by, adverse effects of and underdosing of drugs, medicaments and biological substances) include s detail for:

- Substance
- External cause (accidental, intentional, assault, undetermined, adverse effect)
- Use of external cause of injury code is unnecessary

Poisoning/External Cause ICD-10-CM Combination Codes

T36 Poisoning by, adverse effect of and underdosing of systemic antibiotics

The appropriate 7th character is to be added to each code from category T36

A - initial encounter

D - subsequent encounter

S - sequela

T36.0 Poisoning by, adverse effect of and underdosing of penicillins

T36.0X Poisoning by, adverse effect of and underdosing of penicillins

T36.0X1 Poisoning by penicillins, accidental (unintentional)

T36.0X2 Poisoning by penicillins, intentional self-harm

T36.0X3 Poisoning by penicillins, assault

T36.0X4 Poisoning by penicillins, undetermined

T36.0X5 Adverse effect of penicillins

T36.0X6 Underdosing of penicillins

Poisoning/External Cause

ICD-10-CM Combination Codes

T58 Toxic effect of carbon monoxide

Includes: asphyxiation from carbon monoxide; toxic effect of carbon monoxide from all sources

The appropriate 7th character is to be added to each code from category T58

A - initial encounter

D - subsequent encounter

S - sequela

T58.0 Toxic effect of carbon monoxide from motor vehicle exhaust

Toxic effect of exhaust gas from gas engine

Toxic effect of exhaust gas from motor pump

T58.01, Toxic effect of carbon monoxide from motor vehicle exhaust, accidental (unintentional)

T58.02, Toxic effect of carbon monoxide from motor vehicle exhaust, intentional self-harm

T58.03, Toxic effect of carbon monoxide from motor vehicle exhaust, assault

T58.04, Toxic effect of carbon monoxide from motor vehicle exhaust, undetermined

Chapter 19:

Injury, poisoning and certain other consequences of external causes

(continued)

Burns and corrosions

Distinction between burns and corrosions

Burns: thermal (except sunburn)

Corrosions: Due to chemicals

T20 – T25 Burns and corrosions of external body surface, specified by site

T26 – T28 Burns and corrosions confined to eye and internal organs

T31, Burns classified according to extent of body surface involved

T32, Corrosions classified according to extent of body surface involved

T21.3-, Burn of third degree of trunk

T21.7-, Corrosion of third degree of trunk

Chapter 19:

Injury, poisoning and certain other consequences of external causes (continued)

Adult and Child Abuse

Distinction between suspected and confirmed abuse

T74, Adult and child abuse, neglect and other maltreatment, confirmed

T76, Adult and child abuse, neglect and other maltreatment,
suspected

T74.3 Psychological abuse, confirmed

T74.31 Adult psychological abuse, confirmed

T74.32 Child psychological abuse, confirmed

T76.3 Psychological abuse, suspected

T76.31 Adult psychological abuse, suspected

T76.32 Child psychological abuse, suspected

ICD-10-CM Code Examples

ICD-9-CM

996.1 Mechanical complication of other vascular device, implant, and graft

ICD-10-CM

9 codes differentiating aortic graft, carotid arterial graft, femoral graft from catheters.

Examples:

T82.49xA Other complication of vascular dialysis catheter, initial encounter

T82.591A Other mechanical complication of surgically created arteriovenous shunt, initial encounter

T82.593A Other mechanical complication of balloon (counterpulsation) device, initial encounter

T82.595A Other mechanical complication of umbrella device, initial encounter

ICD-10-CM Code Examples

ICD-9-CM

998.2 Accidental puncture or laceration during a procedure

ICD-10-CM

21 codes indicating accidental puncture and laceration specifying organ or body system and type of procedure

Examples:

D78.11 Accidental puncture and laceration of spleen during a procedure on the spleen

D78.12 Accidental puncture and laceration of spleen during other procedure

Chapter 20:

External causes of morbidity

- Uses letters V, W, X, Y
 - U00 – U49 reserved for reserved for use by WHO for provisional assignment of new diseases with uncertain etiology
 - U50 – U99 for national use in research e.g., when testing an alternative subclassification for a special project
- Some external cause codes deactivated; concepts added to the injury/poisoning codes
 - New concept
 - Blood alcohol level (Y90)

Certain External Cause of Injury Codes Added to the Injury Codes

X44 Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances

X64 Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances

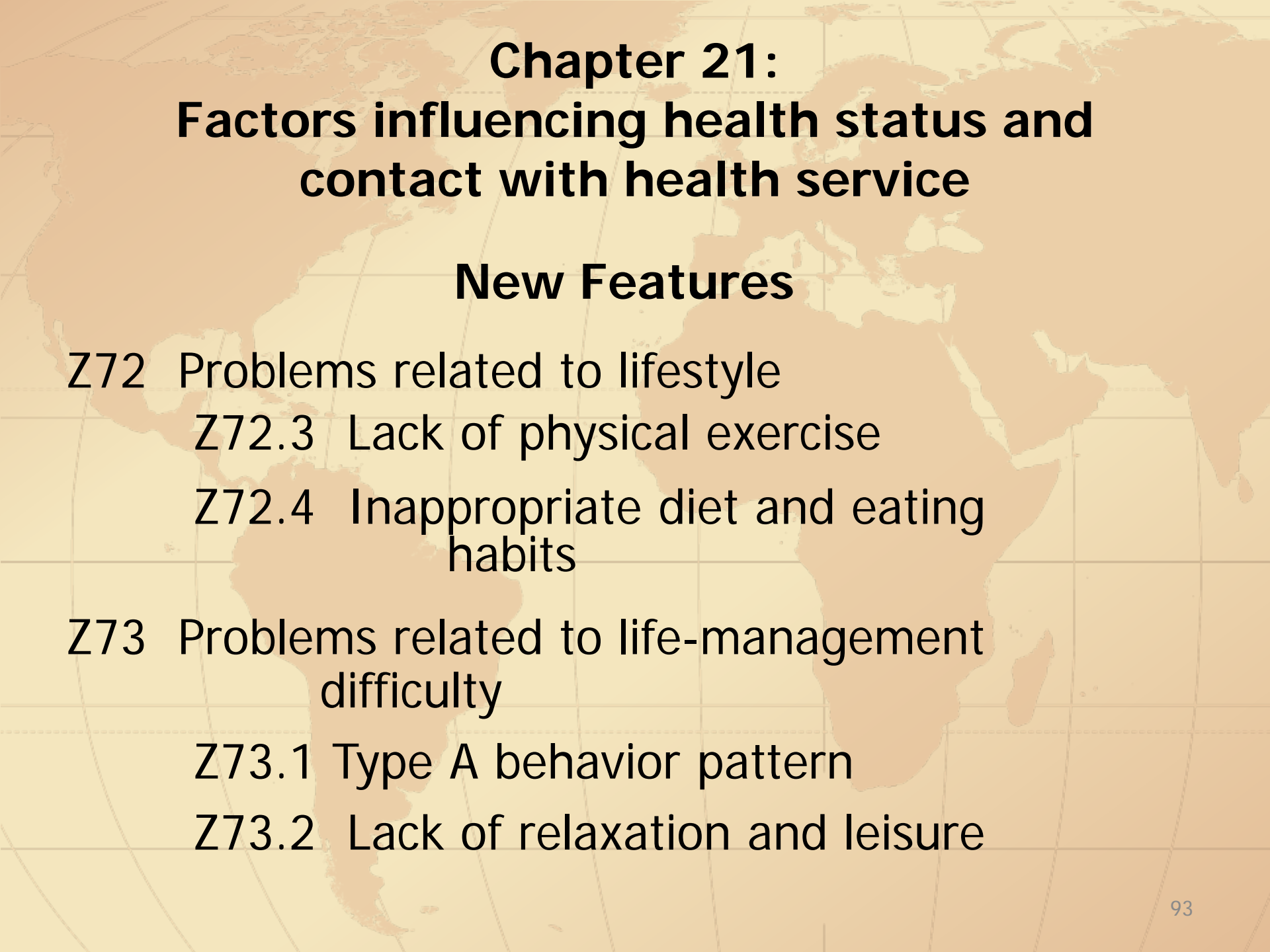
Y14 Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent

Place of Occurrence

- Y92.0x Home
- Y92.1x Residential institution
- Y92.2x School, other institution and public administrative area
- Y92.3x Sports and athletic area
- Y92.4 Street and highway
- Y92.5x Trade and service areas
- Y92.6 Industrial and construction area
- Y92.7 Farm
- Y92.8x Other specified place

Activity

- Y93.0x Injured while engaged in sports activity
- Y93.1 Injured while engaged in leisure activity
- Y93.3x Injured while engaged in other types of work
- Y93.4 Injured while resting, sleeping, eating or engaging in other vital activities
- Y93.8 Injured while engaged in personal hygiene
- Y93.9 Injured during unspecified activity

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

Chapter 21: Factors influencing health status and contact with health service

New Features

Z72 Problems related to lifestyle

Z72.3 Lack of physical exercise

Z72.4 Inappropriate diet and eating habits

Z73 Problems related to life-management difficulty

Z73.1 Type A behavior pattern

Z73.2 Lack of relaxation and leisure

Chapter 21: Factors influencing health status and contact with health service

Other new features

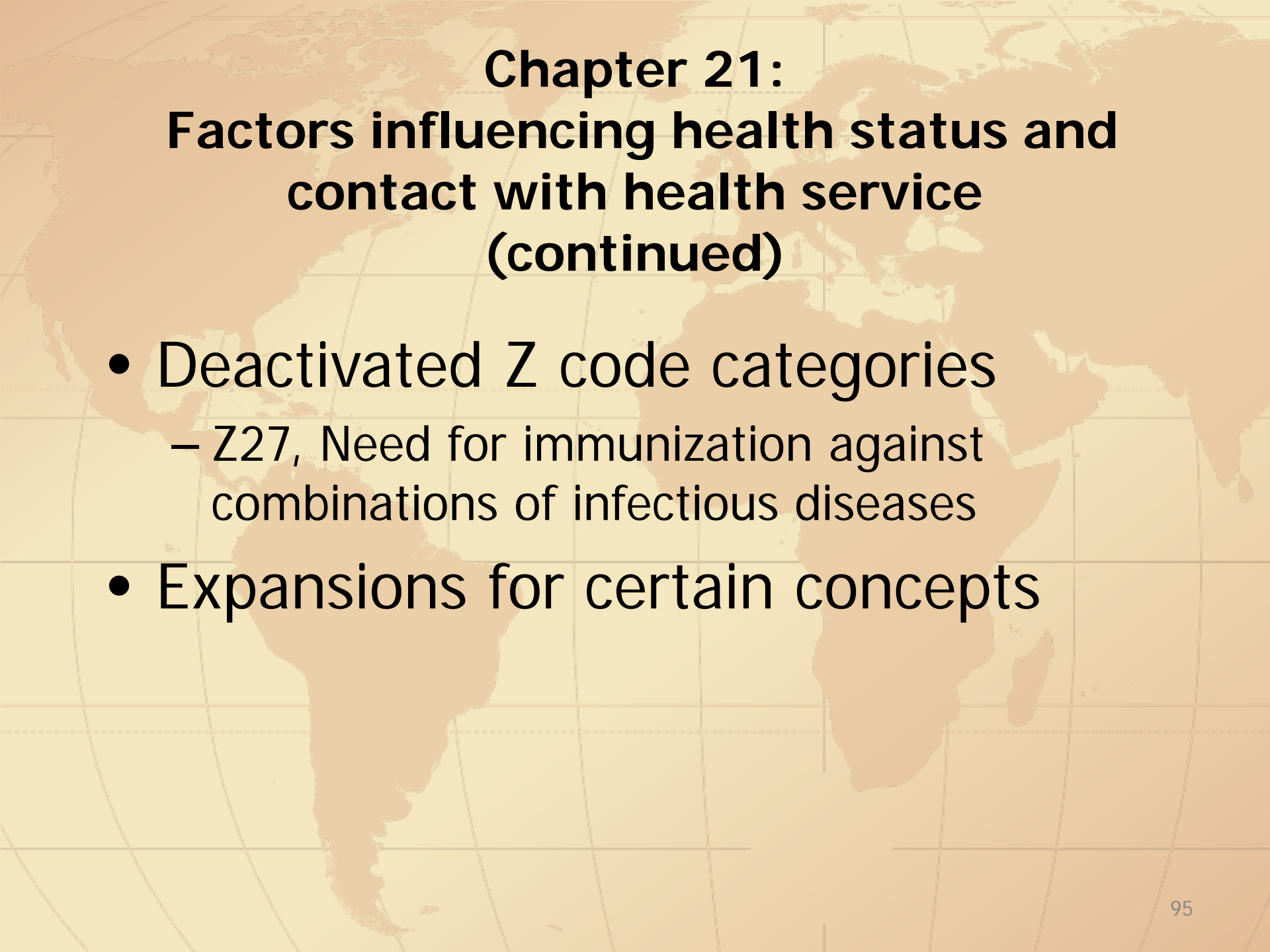
Do not Resuscitate (Z66)

Blood type (Z67)

Z code categories

– Uncomplicated abortions (elective, legal, therapeutic)

- Moved from OB Chapter (Chapter 11) in ICD-9-CM to Chapter 21 in ICD-10-CM

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and a grid of latitude and longitude lines.

Chapter 21: Factors influencing health status and contact with health service (continued)

- Deactivated Z code categories
 - Z27, Need for immunization against combinations of infectious diseases
- Expansions for certain concepts

ICD-10-CM Code Examples

ICD-9-CM

V15.81

Noncompliance
with medical
treatment

ICD-10-CM

Z91.11 Patient's noncompliance with dietary regimen

Z91.120 Patient's intentional underdosing of medication regimen due to financial hardship

Z91.128 Patient's intentional underdosing of medication regimen for other reason

Z91.130 Patient's unintentional underdosing of medication regimen due to age-related debility

Z91.138 Patient's unintentional underdosing of medication regimen for other reason

Z91.14 Patient's other noncompliance with medication regimen

Z91.15 Patient's noncompliance with renal dialysis

Z91.19 Patient's noncompliance with other medical treatment and regimen

ICD-10-CM Guidelines

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2012



ICD-10-CM

Official Guidelines for Coding and Reporting

- Apply to use of ICD-10-CM in acute short-term and long-term hospital inpatient, physician office, and other outpatient settings
- Divided into 3 sections:
 - Section I: ICD-10-CM conventions
 - Section II: General coding guidelines
 - Section III: Chapter-specific guidelines

ICD-10-CM Official Guidelines for Coding and Reporting (continued)

- ICD-10-CM Official Guidelines for Coding and Reporting accompany and complement ICD-10-CM conventions and instructions
- Adherence to the official coding guidelines in all health care settings is required under the Health Insurance Portability and Accountability Act

General Equivalence Maps GEMs

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NCHS ICD-10 Transition for Mortality

- Death certificates in U.S. have been coded using ICD-10 since data year 1999
- Statistical impact and comparability
 - Measurement of discontinuity
 - Comparability ratio which results from dual-coding a large sample of 1996 death certificates from the national mortality data file
 - Ratios used to understand/explain discontinuities from 1998 and 1999 impact the shifts away from some categories and into others



National Vital Statistics Reports



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Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates

by Robert N. Anderson, Ph.D.; Arialdi M. Miniño, M.P.H.; Donna L. Hoyert, Ph.D.; and Harry M. Rosenberg, Ph.D.

Abstract

Objectives—This report presents preliminary results describing the effects of implementing the Tenth Revision of the *International Classification of Diseases* (ICD-10) on mortality statistics for selected causes of death effective with deaths occurring in the United States in 1999. The report also describes major features of the Tenth Revision (ICD-10), including changes from the Ninth Revision (ICD-9) in classification and rules for selecting underlying causes of death. Application of comparability ratios is also discussed.

Methods—The report is based on cause-of-death information from a large sample of 1996 death certificates filed in the 50 States and the District of Columbia. Cause-of-death information in the sample includes underlying cause of death classified by both ICD-9 and ICD-10. Because the data file on which comparability information is derived is incomplete, results are preliminary.

Results—Preliminary comparability ratios by cause of death are

Introduction

This report presents preliminary data describing the effects of the implementation of the Tenth Revision of the *International Classification of Diseases* (ICD-10) on mortality statistics for selected causes of death. ICD-10 was implemented in the United States beginning with deaths occurring in 1999 and replaces the Ninth Revision of the ICD (ICD-9), which was implemented in the United States with 1979 mortality data.

The *International Classification of Diseases* has been revised approximately every 10 years since 1900 (1) (table A). The purpose of the revision is to stay abreast of medical advances in terms of disease nomenclature and etiology. The introduction of new classifications is costly to the Federal government and the States, and often introduces major disruptions in time series of mortality and morbidity statistics. However, revisions are essential to stay current with advances in medical science and to ensure the international comparability of health

What are GEMs?

- Used to facilitate linking between the codes in ICD-9-CM and ICD-10 code sets
- Use of GEMs very important in identifying differences that would have been highlighted if dual-coding could have been undertaken
- The GEMs can also be used for general reference
- The GEMs can be used to assist in
 - Converting ICD-9 based systems or applications to ICD-10 based applications
 - *For more information on converting ICD-9 based systems and applications to ICD-10, see the MS-DRG conversion project report at: http://www.cms.gov/ICD10/17_ICD10_MS_DRG_Conversion_Project.asp*
 - Creating one-to-one backwards mappings (also known as a crosswalk) from incoming ICD-10 based records to ICD-9 based legacy systems
 - Migrating ICD-9-CM historical data to a ICD-10 based representation for comparable longitudinal analysis
 - Creating ICD-10 based test records from a repository of ICD-9 based test records

What are GEMs?

- **One entry in a GEM identifies relationships between one code in the source system and its possible equivalents in the target system without consideration of patient medical record information**
 - Source is the code one is mapping from
 - Target is the code being mapped to
- **Each GEM file contains an entry for every source system code in the file**
- **A GEM file contains only those target system codes which are plausible translations of the source system code being looked up**
 - For example, in the ICD-10-CM to ICD-9-CM GEM, each ICD-10-CM is translated only to the ICD-9-CM code(s) that are plausible translations based on the meaning of the ICD-10-CM code as contained in the code title, instructional notes, and index entries.

Why Do We Need GEMs?

- One ICD-9-CM code represented by multiple ICD-10 codes or one ICD-10 code represented by multiple ICD-9-CM codes
- There are new concepts in ICD-10-CM that have no predecessor in ICD-9-CM (e.g., under dosing, blood type)
- Use of GEMs very important in identifying differences that would have been highlighted if dual-coding could have been undertaken

What GEMs Aren't?

- **GEMs are not crosswalks**
 - The GEMs are more complex than a simple one-to-one crosswalk, but ultimately more useful. They reflect the relative complexity of the code sets clearly so that it can be managed effectively, rather than masking it in an oversimplified way.
 - They are reference mappings, to help the user navigate the complexity of translating meaning from one code set to the other.
- **GEMs are not a substitute for learning how to use ICD-10-CM and ICD-10-PCS**

How the GEMs Work

Translation depends on source

- Because the translation is based on the meaning of the source system code...
- And these are two different languages of healthcare...
- Then the GEMs may have different content in each direction
 - **Not all** I-9 codes are used in an I-10 GEM
 - **Not all** I-10 codes are used in an I-9 GEM

Four ICD-9-CM codes translate to four ICD-10-CM codes

4 ICD-9-CM diagnosis codes

71511 Osteoarthritis, localized, primary, shoulder region

To **M19019** Primary osteoarthritis, unspecified shoulder

71512 Osteoarthritis, localized, primary, upper arm

To **M19029** Primary osteoarthritis, unspecified elbow

71513 Osteoarthritis, localized, primary, forearm

To **M19039** Primary osteoarthritis, unspecified wrist

71514 Osteoarthritis, localized, primary, hand

To **M19049** Primary osteoarthritis, unspecified hand

Eight of these ICD-10-CM codes are not in the ICD-9-CM GEM

12 ICD-10-CM codes

M19011 Primary osteoarthritis, right shoulder

M19012 Primary osteoarthritis, left shoulder

M19019 Primary osteoarthritis, unspecified shoulder

M19021 Primary osteoarthritis, right elbow

M19022 Primary osteoarthritis, left elbow

M19029 Primary osteoarthritis, unspecified elbow

M19031 Primary osteoarthritis, right wrist

M19032 Primary osteoarthritis, left wrist

M19039 Primary osteoarthritis, unspecified wrist

M19041 Primary osteoarthritis, right hand

M19042 Primary osteoarthritis, left hand

M19049 Primary osteoarthritis, unspecified hand

GEMs

Example from ICD-10-CM GEM

- Diagnosis mapping

ICD-10-CM Source system code on the left side

ICD-9-CM Target system code in the middle

Flags on the right

- T500x1A 9620 10111
- T500x1A E8580 10112

- T500x1D 9620 10111
- T500x1D E8580 10112

- T500x1S 9090 10111
- T500x1S E9292 10112

ICD-10-CM ⇨ ICD-9-CM

- Some codes have approximate equivalence

ICD-10-CM Source	to	ICD-9-CM Target
J02.0, Streptococcal pharyngitis	≈	034.0, Streptococcal sore throat

ICD-10-CM ⇨ ICD-9-CM

- When ICD-10-CM contains a combination code, it may relate back to 2 distinct ICD-9-CM codes
- What used to require 2 or more codes, now only requires a single code

ICD-10-CM Source	to	ICD-9-CM Target
R65.21 Severe sepsis with septic shock	≈	995.92 Severe sepsis <i>and</i> 785.52 Septic shock

ICD-9-CM ⇨ ICD-10-CM

In some cases ICD-9-CM may have had certain specificities that are not being translated to ICD-10-CM

ICD-9-CM	ICD-10-CM
010.90 Primary tuberculous infection, unspecified examination 010.91 Primary tuberculous infection, bacteriological/histological exam not done 010.92 Primary tuberculous infection, bacteriological/histological exam unknown (at present) 010.93 Primary tuberculous infection, tubercle bacilli found by microscopy 010.94 Primary tuberculous infection, tubercle bacilli found by bacterial culture 010.95 Primary tuberculous infection, tubercle bacilli confirmed histologically 010.96 Primary tuberculous infection, tubercle bacilli confirmed by other methods	A15.7 Primary respiratory tuberculosis

ICD-10-CM ⇒ ICD-9-CM

- When there is no ICD-9-CM code for the ICD-10-CM code

ICD-10-CM Source	to	ICD-9-CM Target
T38.3X6A Underdosing of insulin and oral hypoglycemic [antidiabetic] drugs, initial encounter T44.7X6A Underdosing of beta-adrenoreceptor antagonists	≈	No dx

Analysis and Reporting Challenges Report and Publication Redesign

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Table 20. Number of all-listed diagnoses for discharges from short-stay hospitals, by age and diagnosis: United States, 2005
 [Discharges of inpatients from nonfederal hospitals. Excludes newborn infants. Diagnostic groupings and code numbers are based on the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)*]

All-listed diagnosis and ICD-9-CM code	All ages	Under 15 years	15-44 years	45-64 years	65 years and over
	Number in thousands				
All conditions	169,359	7,242	41,680	42,790	77,647
Infectious and parasitic diseases 001-139	4,331	466	901	1,182	1,782
Septicemia 038	861	24	89	213	534
Neoplasms 140-239	4,454	112	613	1,560	2,169
Malignant neoplasms 140-208,230-234	3,439	97	288	1,173	1,881
Malignant neoplasm of large intestine and rectum 153-154,197.5	258	*	10	84	165
Malignant neoplasm on trachea, bronchus, and lung 162,176.4,197.0,197.3	494	*	20	165	305
Benign neoplasms 210-229	855	9	302	346	199
Benign neoplasm of uterus 218-219	434	*	217	203	14
Endocrine, nutritional and metabolic diseases, and immunity disorders 240-279	20,325	622	2,619	6,270	10,813
Diabetes mellitus 250	5,480	40	611	1,881	2,949
Volume depletion 276.5	2,558	326	326	475	1,432
Diseases of the blood and blood-forming organs 280-289	5,109	186	1,045	1,293	2,584
Anemias 280-285	3,831	100	804	913	2,014
Mental disorders 290-319	12,695	356	5,330	3,911	3,098
Psychoses 290-300	4,154	107	1,486	977	1,582

Number of All-listed Diagnoses for discharges from short-stay hospitals, by ICD-9-CM codes, 2010

Detailed diagnosis table

Code number	Total number of discharges
034.0	19,000
462	57,000

Trend Estimate in ICD-10-CM?

- J02- , Acute pharyngitis
 - Includes J02.0, Streptococcal pharyngitis (includes strep sore throat); J02.8, Pharyngitis due to other specified organisms
- Strep tonsillitis goes to J03.00 or J03.01!

ICD-10-CM Resources

ICD-10-CM files (PDF and XML formats)

ICD-10-CM Coding Guidelines

Codes and descriptions (short and long descriptors)

Addenda

General Equivalence Maps with Guide and Technical documents

<http://www.cdc.gov/nchs/icd/icd10cm.htm#10update>

Questions?

Email: dfp4@cdc.gov

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