

ICD Codes: Utility for Classification of CKD by Severity, Treatment and Diagnosis

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Identification and Classification of Chronic Kidney Disease

- Identify and classify CKD for purposes of:
 - Epidemiological studies (*study of the disease*)
 - Quality improvement (*patient care*)
 - Surveillance (*health care policy*)
- Two methods
 - Laboratory Tests
 - ICD codes

Goals of the Presentations

- History and definition of ICD
- ICD codes in different countries
- Use of ICD-9-CM for CKD
 - Specific codes
 - USRDS
 - Modifications to ICD-9-CM for CKD
 - Use of ICD-9-CM codes for classification of CKD by disease
- ICD-10 update and revision
- Next steps

International Classification of Disease and the World Health Organization

- ICD was first developed in 1893 as the International List of Causes of Death. WHO took over responsibility for the ICD in 1948.
- Recorded in several data sources including health and vital records and used for both epidemiological and health management purposes
- ICD-9 and ICD-10 are currently in use for morbidity; ICD-11 is in development
- ICD is modified by individual countries to adapt to specific clinical needs

Country	ICD Version	Codes required for Billing	Pt severity effects reimbursement
Argentina	Both	Yes and No	No
Belgium	9	Yes	Yes
Brazil	10	Yes	No
Canada	10	Yes	No
United Kingdom	10	No	No
France	10	No	No
India	10	No	No
Japan	10	Yes	Yes
Netherlands	9 & 10	Yes	Not Sure
Norway	10	Yes	Yes
Puerto Rico	9	Yes	Yes
Saudi Arabia	Not Sure	No	Not Sure
South Africa	10	Yes	No
Spain	9	No	No
Turkey	10	Yes	No
USA	9	Yes	Yes
Venezuela	10	Yes	No

Use of ICD-9-CM codes for Identification of Kidney Disease

- 136 codes related to kidney disease in ICD-9-CM

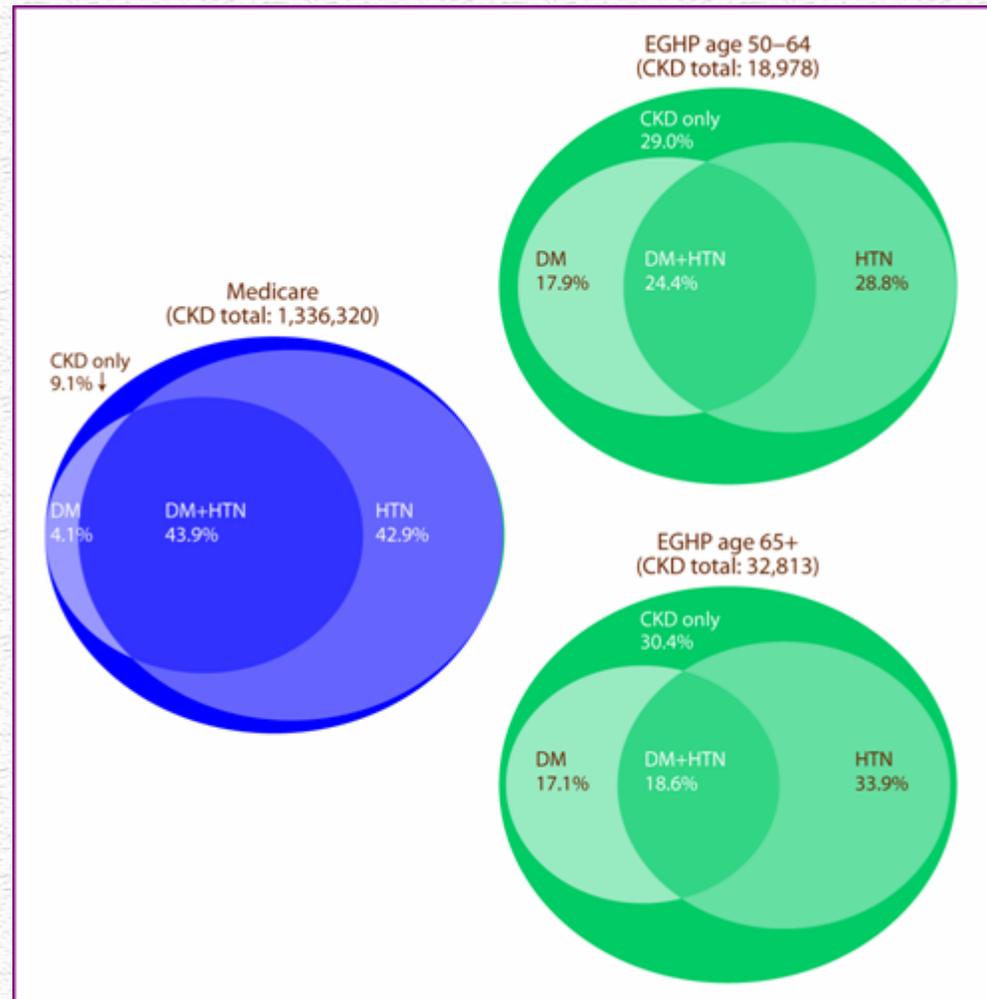
Category	Number	Examples
CKD	5	Chronic renal failure (585)
AKD	6	Acute renal failure w lesion tubular necrosis (584.5)
Damage	42	Proteinuria (791.0)
Etiology	80	Membranous nephropathy (581.1)
Complications	3	Renal osteodystrophy (588.9)
Transplant	2	Status, post kidney transplant (v42.0)
Dialysis	10	Renal dialysis status (v45.1)
Risk factors	many	Diabetes 250.00

Frequency of Occurrence of CKD codes in the 5% Medicare sample claims set (2004)

ICD9 Code	Description	Count	Percent
585	Chronic renal failure	862350	50%
588	Disorders resulting from impaired renal function	190886	11%
584	Acute renal failure	163562	9%
403.x1	Hypertensive renal disease with renal failure	126579	7%
586	Renal failure, unspecified	117539	7%
250.4	Diabetes with renal manifestations	97707	6%
591	Hydronephrosis	35654	2%
189.0	Malignant neoplasm of kidney	30775	2%
583	Nephritis & nephropathy, not specified as acute	26856	2%
440.1	Atherosclerosis of renal artery	23458	1%

Counts of patients with diabetes & HTN in the Medicare & EGHP CKD populations

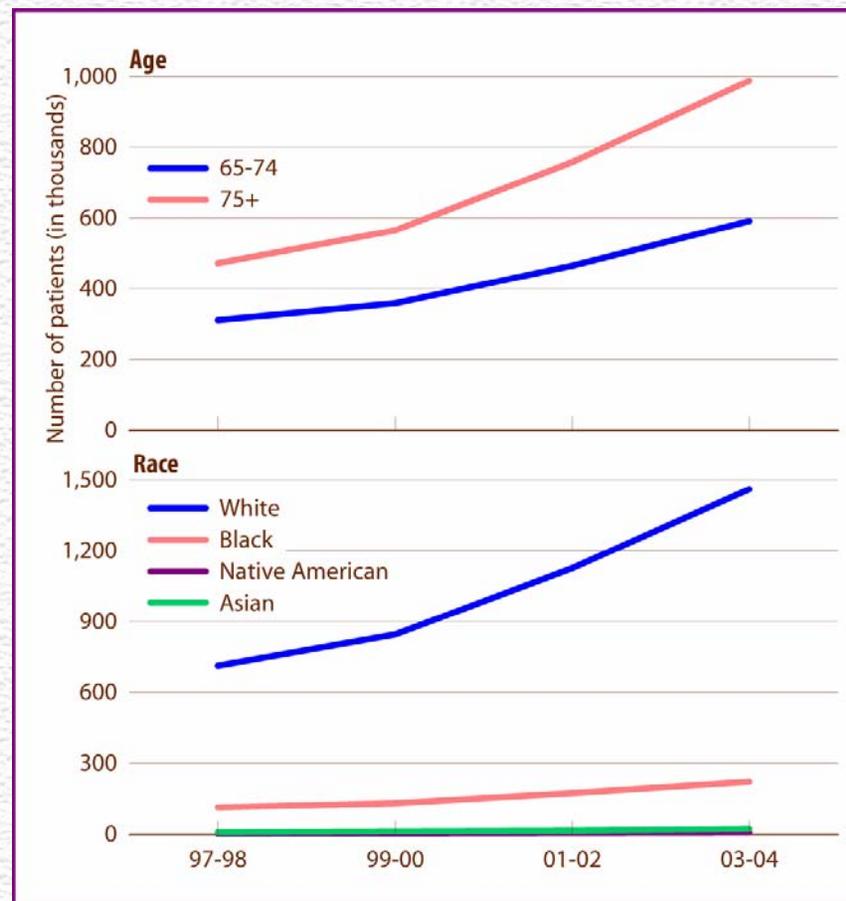
Figure 1.1



Medicare: general Medicare CKD patients continuously enrolled in Medicare Parts A & B in 2004; patients enrolled in an HMO or diagnosed with ESRD during the year are excluded.
EGHP: CKD patients continuously enrolled in a fee-for-service-plan in 2004.

Size of the CKD population (estimated from the 5% sample), by age & race

Figure 1.6



general Medicare CKD patients continuously enrolled in Medicare Parts A & B for two consecutive years (numbers estimated from 5 percent sample); patients enrolled in an HMO or diagnosed with ESRD during the period are excluded.

NEW ICD-9-CM CODES FOR CKD

Revise <u>(CKD)</u>	585	Chronic renal failure <u>Chronic kidney disease</u>
New code	585.1	Chronic kidney disease, Stage 1
New code	585.2	Chronic kidney disease, Stage 2 (mild)
New code	585.3	Chronic kidney disease, Stage 3 (moderate)
New code	585.4	Chronic kidney disease, Stage 4 (severe)
New code	585.5	Chronic kidney disease, Stage 5
New code	585.6	End stage renal disease
New code	585.9	Chronic kidney disease, unspecified Chronic renal disease Chronic renal failure NOS Chronic renal insufficiency
Add status, if	Use additional code to identify kidney transplant applicable	(V42.0)

Disease		CKD Classification		
		Stage & Tx	Marker of Kidney Damage	Disease (ICD Code)
Diabetic Kidney Disease	Type 1	585.X	Proteinuria 791.1	250.x1, 250.x3
	Type 2	(585.6 For ESRD)	Proteinuria 791.1	250.x0, 250.x2
Non-Diabetic Kidney Disease	Glomerular Diseases	With V codes for D or T (v45.1, V42.0)	Hematuria <u>±</u> Proteinuria 599.7; <u>±</u> 791.1	580-583
	Vascular diseases		<u>±</u> Proteinuria <u>±</u> 791.1	e.g. 443, 445.81, 447.3,403-405
	Tubulointersitial Diseases		<u>±</u> Pyuria, <u>±</u> Proteinuria, <u>±</u> Imaging studies <u>±</u> 791.7* ; <u>±</u> 791.1; <u>±</u> 753.2	e.g. 590.xx
	Cystic diseases		Cysts	753.1x
	Non-diabetic kidney disease not otherwise specified		<u>±</u> Proteinuria <u>±</u> 791.1	V42.0 + 585.x
Transplant			<u>±</u> Proteinuria	<u>±</u> 791.1

WHO Family of Classifications

www.who.int/classifications

RELATED Classifications

International Classification of **Primary Care** (ICPC)

International Classification of External Causes of **Injury** (ICECI)

The Anatomical, Therapeutic, Chemical (ATC) classification system with Defined Daily Doses (DDD)

ISO 9999 **Technical aids** for persons with disabilities – Classification and Terminology

REFERENCE Classifications

International
Classification of
Diseases

International
Classification of
Functioning,
Disability & Health

International
Classification of
Health
Interventions
(under development)

DERIVED Classifications

International Classification of Diseases for **Oncology**, Third Edition (ICD-O-3)

The ICD-10 Classification of **Mental and Behavioural Disorders**

Application of the International Classification of Diseases to **Dentistry** and Stomatology, Third Edition (ICD-DA)

Application of the International Classification of Diseases to **Neurology** (ICD-10-NA)

ICF, **Children & Youth Version** (ICF -CY)

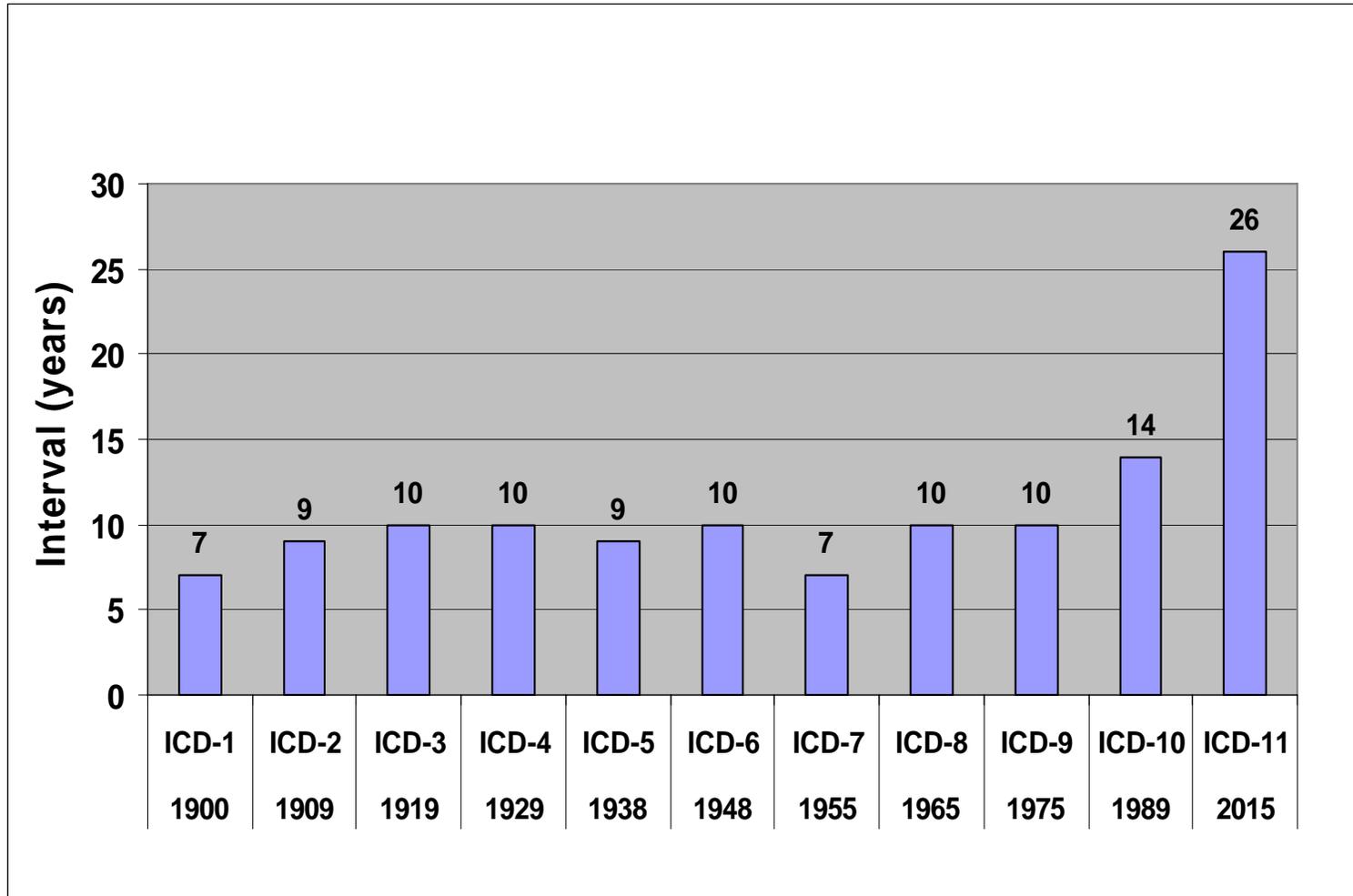


Maintenance of ICD

- Minor updates once a year:
 - Spelling, clarifications, index entries
- Major updates every three years:
 - Meaning of category
 - Deletion or addition of category –
 - » J09 avian flu
- Revision every ...



ICD Revisions

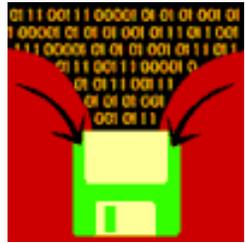


Key Drivers

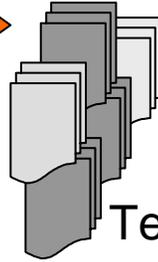
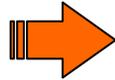
- **Mandated by WHA and EB**
- **Respond to consumer-needs**
- **Keep up with new scientific knowledge**
- **Compatibility within the WHO-FIC members**
- **Usability within Health Information Systems**



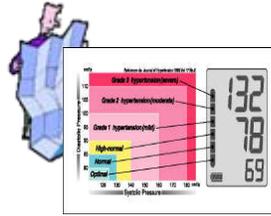
Placing WHO Classifications



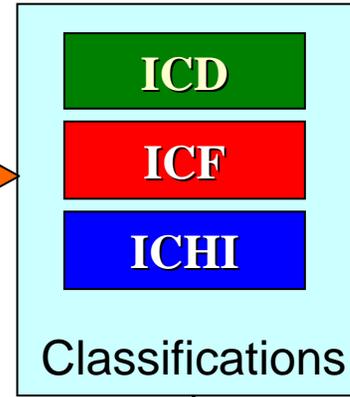
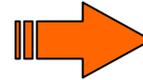
e-Health Record Systems



Terminologies



Mappings



Classifications



Population Health

- Births
- Deaths
- Diseases
- Disability
- Risk factors



Clinical

- Decision Support
- Integration of care
- Outcome
- Management Interventions
- Diagnosis assessment



Administration

- Scheduling
- Resources
- Billing

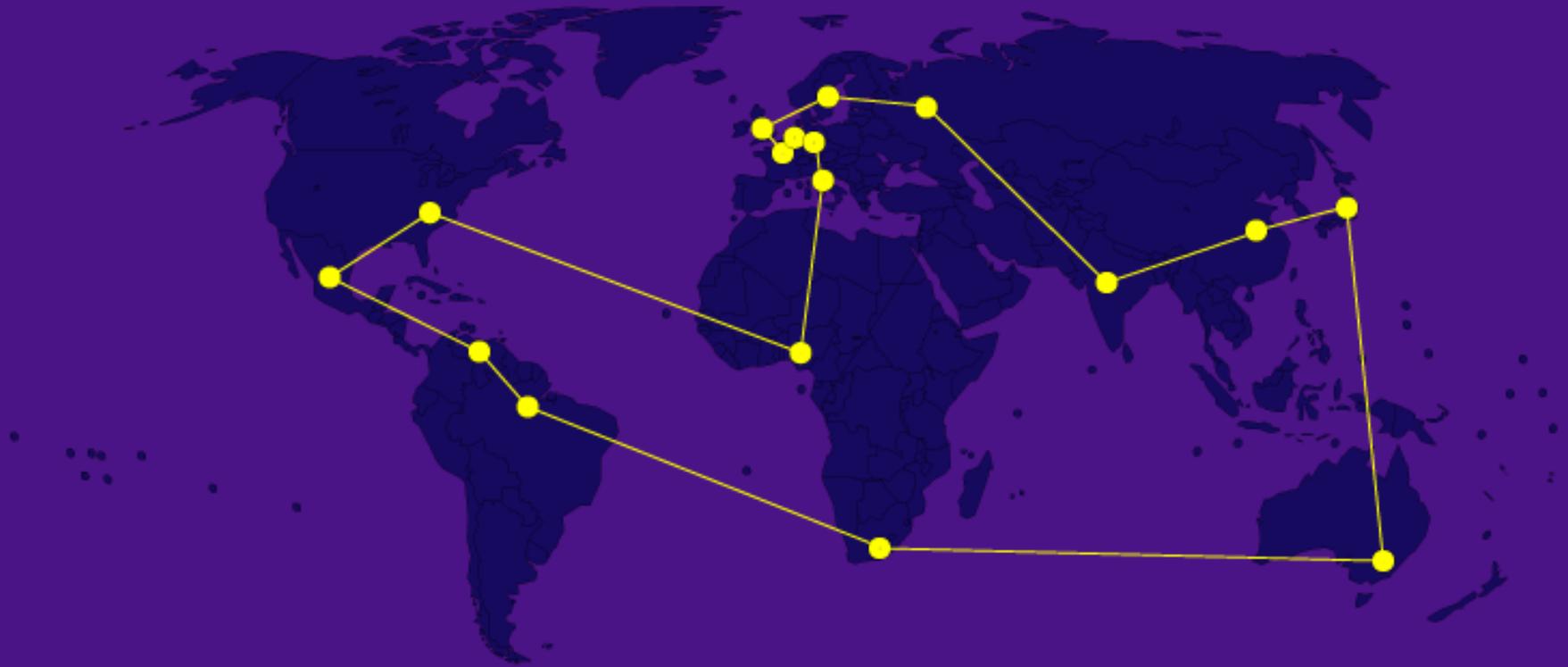


Reporting

- Cost
- Needs
- Outcome



The WHO-FIC Network of Collaborating Centres



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ICD

- + 01 Certain infectious and parasitic diseases 3 [add](#)
- + 02 Neoplasms [add](#)
- + 03 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism 2 [add](#)
- + 04 Endocrine, nutritional and metabolic diseases [add](#)
- + 05 Mental and behavioural disorders [add](#)
- + 06 Diseases of the nervous system 2 [add](#)
- + 07 Diseases of the eye and adnexa 1 [add](#)
- + 08 Diseases of the ear and mastoid process [add](#)
- + 09 Diseases of the circulatory system 3 [add](#)
- + 10 Diseases of the respiratory system [add](#)
- + 11 Diseases of the digestive system 2 [add](#)
- + 12 Diseases of the skin and subcutaneous tissue [add](#)
- + 13 Diseases of the musculoskeletal system and connective tissue 3 [add](#)
- + 14 Diseases of the genitourinary system [add](#)
- + 15 Pregnancy, childbirth and the puerperium 1 [add](#)
- + 16 Certain conditions originating in the perinatal period [add](#)
- + 17 Congenital malformations, deformations and chromosomal abnormalities [add](#)
- + 18 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified [add](#)
- + 19 Injury, poisoning and certain other consequences of external causes 3 [add](#)
- + 20 External causes of morbidity and mortality 4 [add](#)
- + 21 Factors influencing health status and contact with health services [add](#)
- + 22 Codes for special purposes [add](#)
- + MORPH Morphology of Neoplasms [add](#)
- + OTH Other non code specific proposals 7 [add](#)

Proposals linked to: Chapter 20 External causes of morbidity and mortality

- ▼ [Tsunami victims](#) [Edit]
- ▼ [Table of drugs and chemicals - Indexing of protozoal vaccines](#) [Edit]
- ▼ [Table of drugs and chemicals - indexing of deoxybarbiturates](#) [Edit]
- ▼ [Fall in tub, not resulting in drowning](#) [Edit]
- ▼ [Table of drugs and chemicals - indexing of intravenous methylprednisolone](#) [Edit]

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Table of drugs and chemicals - indexing of intravenous methylprednisolone

Proposal ID : 30 - **Proposal State :** UnderDiscussion

Originator : Julie Rust(j.rust@fhs.usyd.edu.au) - **Last Update made by :** Lori Moskal

Creation Date : 04-Apr-2006 08:37 CET - **Last Update :** 07-Apr-2006 23:22 CET

Primary Code Affected : T49.0

Secondary Codes Affected : T38.0, Y56.0, Y42.0

Volumes Affected : 3

Proposal Type : Change to an existing index entry that changes the code assignment from one three-character category to another three-character category (movement of terms)

Change Reason : Need to create, delete or correct an index entry

Detailed Description

The addition of a new index entry in the Table of Drugs and Chemicals (Volume 3) for methylprednisolone via an intravenous route.

Methylprednisolone	T49.0	X44.-	X64.-	Y14.-	Y56.0
- intravenous	T38.0	X44.-	X64.-	Y14.-	
	Y42.0				

Rationale

Methylprednisolone may be administered via an intravenous route and therefore the code assignment of T49.0 *Local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified* and Y56.0 *Local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified* is not correct.

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Change Reason

- Need to identify a new disease.
- Need to reflect a change in clinical knowledge
- Need to reflect a change in clinical terminology
- Need for compatibility within the WHO Family of Classifications
- Change in rules, guidelines or conventions
- Need to improve clarity or reduce ambiguity in the tabular list
- Need to create, delete or correct an index entry
- Need for greater or less specificity
- Need to correct typographical errors

Update Specific to a Language Version

NotLanguageSpecific ⓘ

Detailed Description ⓘ

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Recommend adding "tsunami NOS" as an inclusion term under X39 in Volume 1 and as an index entry in Volume 3.

Recommended changes to Volume 1, p 1081 (ICD-10 1st edition)

X39 Exposure to other and unspecified forces of nature
Includes: natural radiation NOS
 tidal wave NOS
 tsunami NOS
Excludes: exposure NOS (X59.9)

Volume 3, p. 620 (ICD-10 1st edition)

Tripping
 - over
 ...

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Clinical modifications

- N18.8 Sonstige chronische Niereninsuffizienz
- N18.80 Einseitige chronische Nierenfunktionsstörung
- N18.81 Chronische Niereninsuffizienz, Stadium I;
- N18.82 Chronische Niereninsuffizienz, Stadium II;
- N18.83 Chronische Niereninsuffizienz, Stadium III;
- N18.84 Chronische Niereninsuffizienz, Stadium IV
- N18.89 Chronische nicht-terminale Niereninsuffizienz, Stadium nicht näher bezeichnet



Classifications of CKD

- **Severity (stage)**
- **Treatment (HD vs. PD)**
- **Diagnosis (cause)**
- **Prognosis (progression, CVD)**

Proposed Next Steps

- Develop consensus within international nephrology community for kidney disease related recommendations for updates or revisions to ICD-10. Recommendations should include:
 - CKD Modifications to ICD-9-CM
 - Improved codes for markers of kidney damage and type of kidney disease
- Within individual countries, work with clinicians and coders to use ICD codes to classify CKD by severity, treatment, and diagnosis