

Profiling by Care Setting Information Gain in the Transition from ICD-9-CM to ICD-10-CM

A Combined All Payer Claims Data and Administrative Case Mix Approach

- Review of the Coding Increases
- Magnitude of Changes in Unspecified Codes
- APCD and Case Mix care setting examples pre- and post- ICD-10-CM implementation
- General Equivalency Mapping

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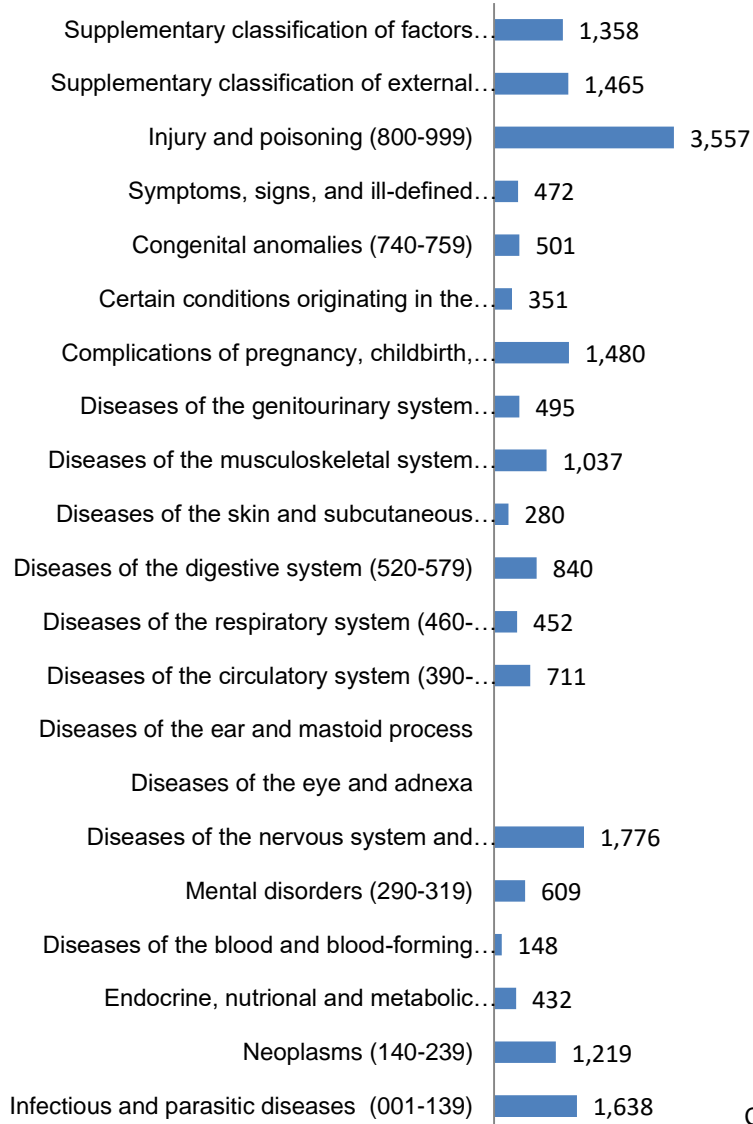
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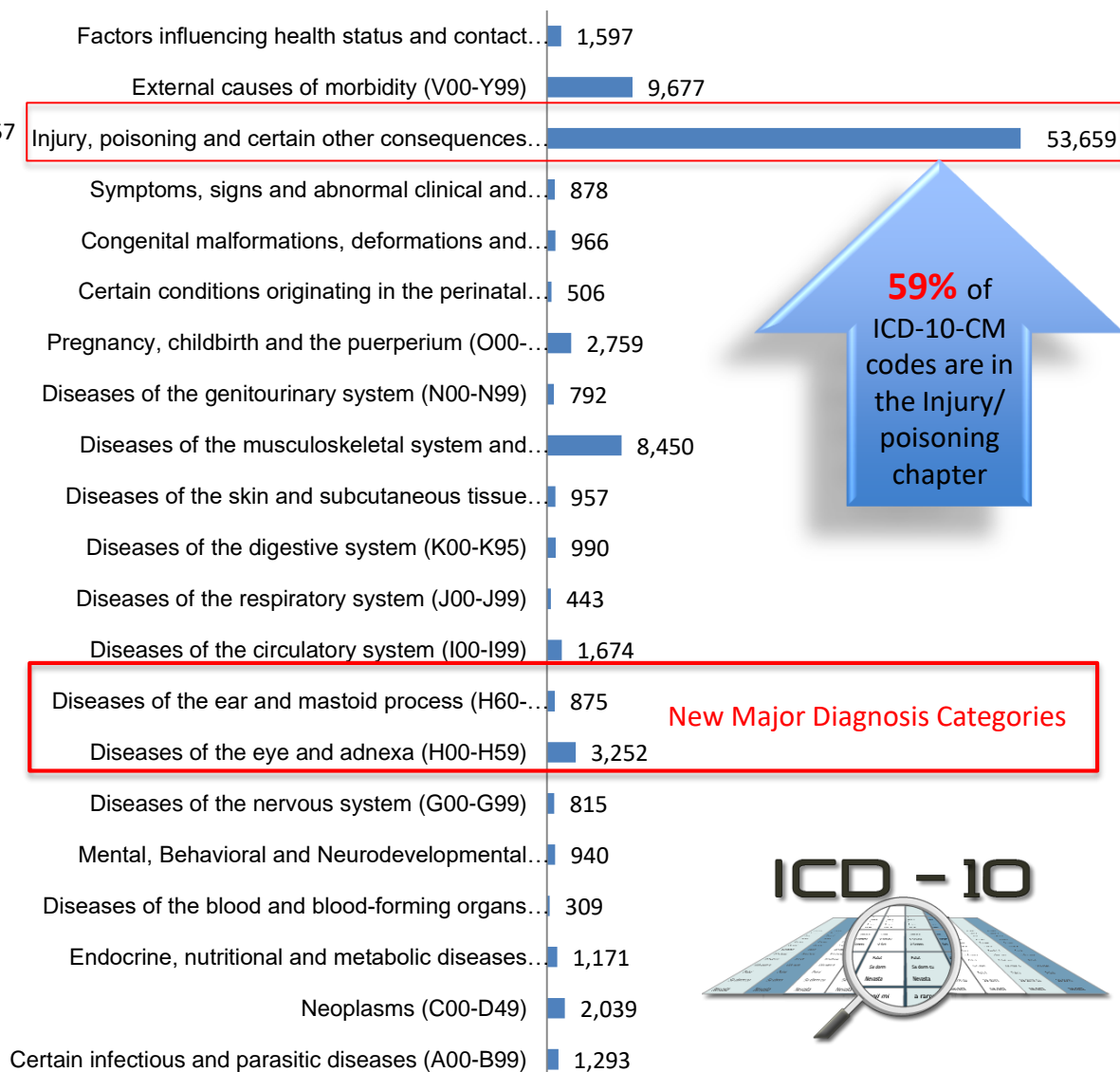
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Comparison of ICD-9-CM to ICD-10-CM Increase in Diagnosis Codes by ICD-10-CM Major Diagnosis Chapters

18,821 ICD-9-CM Codes



94,042 ICD-10-CM Codes



UNSPECIFIED CODES

CMS Definition

“Codes titled “unspecified” are for use when the information in the medical record is insufficient to assign a more specific code. For those categories for which an unspecified code is not provided, the “other specified” code may represent both other and unspecified.”*

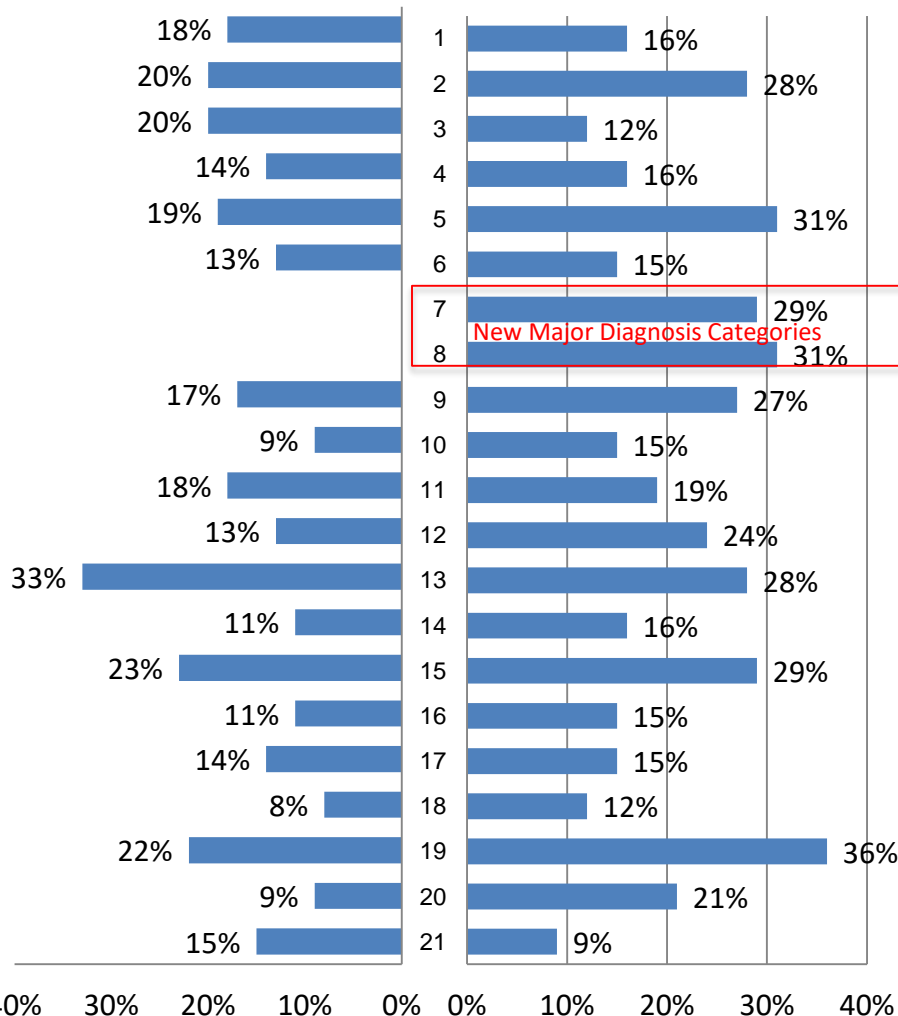
* *ICD-10-CM Official Guidelines for Coding and Reporting FY 2016. Department of Health and Human Services, Center for Medicare & Medicaid Services, <https://www.cms.gov/Medicare/Coding/ICD10/Downloads/2016-ICD-10-CM-Guidelines.pdf>*

ICD-10-CM's new anatomic and physiologic specificity (e.g. Glasgow Coma Score, blood types, drug underdosing and laterality) was paralleled by an increase in unspecified codes in all Major Diagnosis Categories except for Three

Percent Unspecified Diagnosis Codes

18% of ICD-9-CM Codes

30% of ICD-10-CM Codes



MDC	ICD-10-CM Diagnosis Major Group (Abbreviated)
1	Infectious & parasitic (Lower Unspecified)
2	Neoplasms
3	Blood & blood-forming organs & immune disorders (Lower Unspecified)
4	Endocrine, nutritional & metabolic
5	Mental, behavioral & neurodevelopmental
6	Nervous system
7	Eye & adnexa
8	Ear & mastoid
9	Circulatory
10	Respiratory
11	Digestive
12	Skin & subcutaneous
13	Musculoskeletal & connective tissue
14	Genitourinary
15	Pregnancy, childbirth & puerperium
16	Conditions originating in perinatal period
17	Congenital malformations, deformations & chromosomal abnormalities
18	Symptoms, signs & abnormal clinical & lab findings
19	Injury, poisoning & consequences of external causes
20	External causes of morbidity
21	Factors influencing health status (Lower Unspecified)

Massachusetts Case Mix Inpatient Acute Care Hospital Setting

Top 10 Unspecified Poisoning Diagnoses Comparing ICD-9-CM to ICD-10-CM

In ICD-9-CM (from 1/2014 to 9/2015), the code for poisoning by other and unspecified anticonvulsants ranked number one., ICD-9-CM 9663. **The CMS general equivalency mapping of ICD-9-CM 9663 to maps to 16 different ICD-10-CM increased the options for poisonings by anticonvulsants**

In ICD-10-CM (10/2015 to 9/2016), ICD-10-CM T50901A, unspecified medicaments and biologicals based on intentionality (**accidental**) and encounter sequence (**initial encounter**) became number one.

Top 10 ICD-9-CM Unspecified Poisoning Diagnoses January 2014 to September 2015

Rank	ICD-9-CM	Description
1	9663	Poisoning by other and unspecified anticonvulsants
2	96500	Poisoning by opium (alkaloids), unspecified
3	9779	Poisoning by unspecified drug or medicinal substance
4	E9509	Suicide and self-inflicted poisoning by other and unspecified solid and liquid substances
5	0059	Unspecified food poisoning
6	9729	Poisoning by other and unspecified agents primarily affecting the cardiovascular system
7	9679	Poisoning by unspecified sedative or hypnotic
8	E9809	Poisoning by other and unspecified solid and liquid substances, undetermined whether accidentally or purposely inflicted
9	9659	Poisoning by unspecified analgesic and antipyretic
10	96900	Poisoning by antidepressant, unspecified

Top 10 ICD-10-CM Unspecified Poisoning Diagnoses October 2015 to September 2016

Rank	ICD-10-CM	Description
1	T50901A	Poisoning by unspecified drugs, medicaments and biological substances, accidental (unintentional), initial encounter
2	T40601A	Poisoning by unspecified narcotics, accidental (unintentional), initial encounter
3	T50902A	Poisoning by unspecified drugs, medicaments and biological substances, intentional self-harm, initial encounter
4	T40602A	Poisoning by unspecified narcotics, intentional self-harm, initial encounter
5	T50904A	Poisoning by unspecified drugs, medicaments and biological substances, undetermined, initial encounter
6	T40604A	Poisoning by unspecified narcotics, undetermined, initial encounter
7	T4271XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, accidental (unintentional), initial encounter
8	T4272XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, intentional self-harm, initial encounter
9	T43202A	Poisoning by unspecified antidepressants, intentional self-harm, initial encounter
10	T4274XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, undetermined, initial encounter

ICD-9-CM to ICD-10-CM General Equivalence Mapping for the Top Ranking Inpatient Acute Care Hospital Unspecified Poisoning Diagnosis

The top ranking inpatient unspecified poisoning diagnosis (ICD-9-CM 9633) mapped to sixteen ICD-10-CM codes which provide new Information on anticonvulsant class, mixtures, intentionality, and episode sequence.

ICD-9-CM 9963 Crosswalk to Sixteen ICD-10-CM Codes

ICD-9-CM	Description	ICD-10-CM	Description
9963	Poisoning by other and unspecified anticonvulsants		
<p>Within the sixteen crosswalk codes for ICD-9-CM 9963, in FY2016 ICD-10-CM T426X2A (<i>Poisoning by other antiepileptic and sedative-hypnotic drugs, intentional self-harm, initial encounter</i>) ranked number one providing new information on the intentional anticonvulsants for self-harm.</p>			
		→ T421X1A	Poisoning by iminostilbenes, accidental (unintentional), initial encounter
		→ T421X2A	Poisoning by iminostilbenes, intentional self-harm, initial encounter
		→ T421X3A	Poisoning by iminostilbenes, assault, initial encounter
		→ T421X4A	Poisoning by iminostilbenes, undetermined, initial encounter
		→ T425X1A	Poisoning by mixed antiepileptics, accidental (unintentional), initial encounter
		→ T425X2A	Poisoning by mixed antiepileptics, intentional self-harm, initial encounter
		→ T425X3A	Poisoning by mixed antiepileptics, assault, initial encounter
		→ T425X4A	Poisoning by mixed antiepileptics, undetermined, initial encounter
		→ T426X1A	Poisoning by other antiepileptic and sedative-hypnotic drugs, accidental (unintentional), initial encounter
		→ T426X2A	Poisoning by other antiepileptic and sedative-hypnotic drugs, intentional self-harm, initial encounter
		→ T426X3A	Poisoning by other antiepileptic and sedative-hypnotic drugs, assault, initial encounter
		→ T426X4A	Poisoning by other antiepileptic and sedative-hypnotic drugs, undetermined, initial encounter
		→ T4271XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, accidental (unintentional), initial encounter
		→ T4272XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, intentional self-harm, initial encounter
		→ T4273XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, assault, initial encounter
		→ T4274XA	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs, undetermined, initial encounter



Massachusetts All Payer Claims Data (APCD) ICD-10-CM coding for Trauma Patients in

Prehospital Outpatient Ground and Air Ambulance Health Care Setting

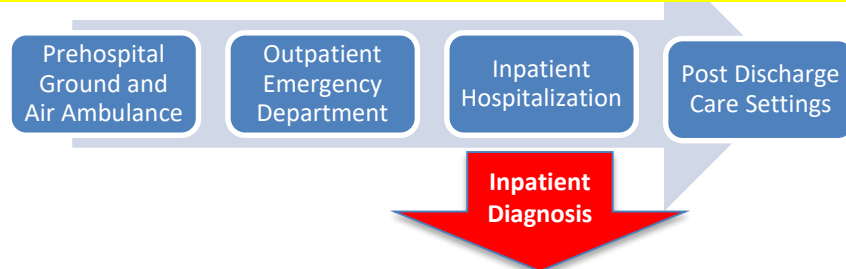
The APCD facilitates monitoring increased specificity in diagnosis from the prehospital to hospital care setting. ICD-10-CM T148 (Other Injury of Unspecified Body Region) was top ranking prehospital trauma diagnosis. APCD prehospital T148 trauma patients could be tracked for their prehospital diagnosis to their more specific hospital diagnosis following radiology for more specific diagnosis.

Top 10 Ambulance ICD-10-CM Unspecified Traumatic Injury Diagnoses October 2015 to September 2016

Rank	ICD-10-CM	Description
1	T148	Other injury of unspecified body region
2	S0990XA	Unspecified injury of head, initial encounter
3	T1490	Injury, unspecified
4	S3690XA	Unspecified injury of unspecified intra-abdominal organ, initial encounter
5	T07	Unspecified multiple injuries
6	S0190XA	Unspecified open wound of unspecified part of head, initial encounter
7	S3982XA	Other specified injuries of lower back, initial encounter
8	S0993XA	Unspecified injury of face, initial encounter
9	S090XXA	Injury of blood vessels of head, not elsewhere classified, initial encounter
10	S72009A	Fracture of unspecified part of neck of unspecified femur, initial encounter for closed fracture

Top ICD-10-CM Inpatient Diagnosis for Prehospital T148 Patients October 2015 to September 2016

APCD allows prehospital T148 tracking across the entire spectrum of care







Rank	ICD-10-CM	Full Description
1	S72142A	Displaced intertrochanteric fracture of left femur, initial encounter for closed fracture
2	S72141A	Displaced intertrochanteric fracture of right femur, initial encounter for closed fracture
3	S72012A	Unspecified intracapsular fracture of left femur, initial encounter for closed fracture
4	S7222XA	Displaced subtrochanteric fracture of left femur, initial encounter for closed fracture
5	S72002A	Fracture of unspecified part of neck of left femur, initial encounter for closed fracture

CMS General Equivalence Mapping for a Top Ground and Air Ambulance Inpatient Unspecified Traumatic Injury Diagnosis

A top ranking inpatient unspecified injury diagnosis (ICD-9-CM 9597) mapped to sixteen ICD-10-CM codes which provide new Information on anticonvulsant class, mixtures, intentionality, and episode sequence.

ICD-9-CM 9597 Crosswalk to Sixteen ICD-10-CM Codes

ICD-9-CM	Description	ICD-10-CM	Description
9597	Injury, other and unspecified, knee, leg, ankle, and foot	 S8980XA	OTHER SPECIFIED INJURIES OF UNSPECIFIED LOWER LEG, INITIAL ENCOUNTER
		 S8990XA	UNSPECIFIED INJURY OF UNSPECIFIED LOWER LEG, INITIAL ENCOUNTER
		 S99819A	OTHER SPECIFIED INJURIES OF UNSPECIFIED ANKLE, INITIAL ENCOUNTER
		 S99919A	UNSPECIFIED INJURY OF UNSPECIFIED ANKLE, INITIAL ENCOUNTER

Within the 4 crosswalk codes for ICD-9-CM 9597, in FY2016 ICD-10-CM **S8980XA (Other Specified injuries of unspecified lower leg, initial encounter)** ranked number one providing new information episode of care sequence and anatomic location.

CONCLUSION



- Public health researchers have historically bemoaned the quality and availability of cause data in claims-based information systems. The transition to ICD-10-CM and its increased embedding of intentionality codes demonstrates enormous benefits for public health injury surveillance.
- ICD-10-CM's increased encoding of encounter sequence will improve the calculation of disease and injury incident rates.
- The transition from ICD-9-CM to ICD-10-CM produced a shifting in the ranking of unspecified diagnosis codes and additional unspecified codes. However, ICD-10-CM's provision of increased anatomic and physiologic and cause specificity facilitates aligning codes with clinical facts collected from the provider's encounter with the patient even in the outpatient ambulance setting.