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**Relationship between ICECI and ICD-10**

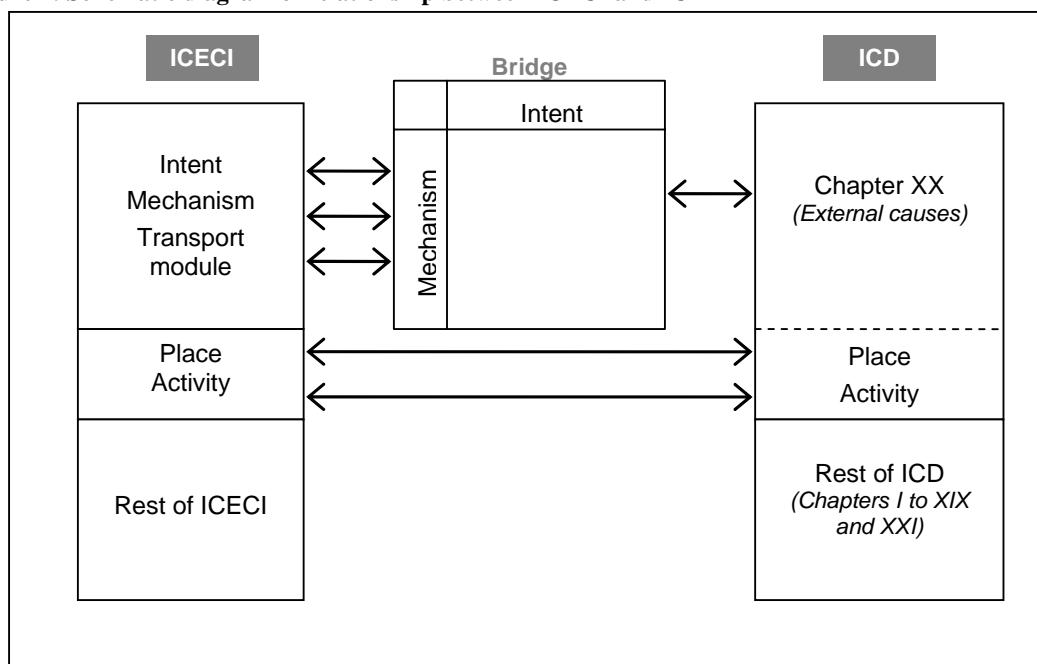
The ICECI is designed to have a role complementary to the ICD-10 external causes classification. The ICD, including its external causes classification, is the reference classification for international reporting of mortality. The ICD – often in a clinical modification – is widely used to classify hospital in-patient cases. As a specialised system focusing on external causes of injury, the ICECI enables more detailed and flexible classification in its subject area. The ICECI can be used in many settings, including emergency departments, clinics, in-patient hospital settings; in ad hoc studies and surveys; and specialised mortality registration systems.

The relationship between the ICECI and the ICD is shown schematically in [Figure 2](#). Most parts of the ICD (ie. Chapters I to XIX and Chapter XXI) do not deal with external causes of injury and poisoning. Hence, most of the ICD is beyond the scope of the ICECI, and issues of comparability do not arise.

Some parts of the ICECI fall beyond the scope of the ICD-10 External Causes chapter. This applies, for example, to items in some of the ICECI special modules (eg. [Proximal risk factors for intentional self-harm](#); [previous suicide attempt](#); [sex of perpetrator](#); [context of assault](#); [phase of \[sports\] activity](#)). Issues of comparability do not normally arise for these.

However, the conceptual scope of several items in the **Core** module of the ICECI overlaps with the scope of ICD-10 Chapter XX. The ICECI items for which this is most clearly so are: [Intent](#), [Mechanism](#), [Place](#), [Activity](#) and the [Transport module](#). Issues of comparability arise for these parts of the ICECI.

**Figure 2: Schematic diagram of relationship between ICECI and ICD**



The [Place](#) and [Activity](#) items in the ICECI were designed to be comparable to categories in the ICD-10 Place and Activity classifications. The relationship is shown in [Tables 3](#) and [4](#). ICECI Level 1 Place and Activity categories map directly to ICD Place and Activity categories, apart from minor differences in scope for two Place categories.

The [Intent](#), [Mechanism](#) and [Transport](#) module items in the ICECI have a more complex relationship with ICD-10 Chapter XX ([Table 5](#)). A major factor underlying the development of the ICECI has been dissatisfaction with some aspects of the ICD External Causes chapter for certain purposes related to injury prevention. It was not possible to develop a version of ICECI which mapped directly to categories in the External Causes chapter at

fine level without forcing the ICECI to take on characteristics of the External Causes chapter which had prompted development of the new approach. However, it was recognised by the ICECI development group that maximal comparability with ICD was a necessary design criterion.

The solution arrived at was to specify mapping between ICECI and ICD at the level of a previously published reporting standard for injury data. This is shown in [Figure 2](#) as the 'bridge' between ICECI and ICD.

The MMWR reference cited above specified the 'Intent' and 'Mechanism/Cause' categories of the Framework in terms of ICD-9 External Cause codes. Subsequent work has adapted the Framework for use with ICD-10 [[www.cdc.gov/nchs/about/otheract/ice/matrix10.htm](http://www.cdc.gov/nchs/about/otheract/ice/matrix10.htm)]. The Framework has also been specified in terms of ICECI. ICECI version 1.2 and ICD-10 External Causes are both mapped onto the Framework in [Table 5](#).

ICD-10 values are shown within cells of the matrix. ICECI-coded cases corresponding to a cell in the Framework are those having the Intent (C1) code value below the cell (in the last row of the table) *and* the Mechanism (C2), and sometimes Transport (T) module, code values to the right of the cell (in the last column of the table).

**Table 3: Table of ICD-10 External Cause and ICECI version 1.2 code equivalents: Place**

<i>Categories</i>	ICD-10 Place		ICECI 1.2	Notes
	<i>Codes</i>	<i>Codes</i>	<i>Codes</i>	
Home	0		C4=1	C4.4 excludes Sports and athletics areas at schools and educational areas
Residential institution	1		C4=2	
School, other institution and public administrative area	2		C4=3, 4	
Sports and athletics area	3		C4=5	
Street and highway	4		C4=6	
Trade and service area	5		C4=7, 11	
Industrial and construction area	6		C4=8	
Farm	7		C4=9	
Other specified places	8		C4=10, 12, 98	
Unspecified place	9		C4=99	

**Table 4: Table of ICD-10 External Cause and ICECI version 1.2 code equivalents: Activity**

<i>Categories</i>	ICD-10 Activity		ICECI 1.2
	<i>Codes</i>	<i>Codes</i>	<i>Codes</i>
While engaged in sports activity		0	C5=3.1, 4
While engaged in leisure activity		1	C5=5
While working for income		2	C5=1
While engaged in other types of work		3	C5=2, 3.8, 3.9
While resting, sleeping, eating or engaging in other vital activities		4	C5=6
While engaged in other specified activities		8	C5=7, 8, 98
During unspecified activity		9	C5=99

**Table 5 Framework for presenting injury data: table of ICD-10 External Cause and ICECI version 1.2 code equivalents: Mechanism and Intent**

Mechanism/cause	Unintentional	Manner/intent				ICECI 1.2
		Suicide	Homicide	Undetermined	Legal intervention / war	
All injury	V01-X59, Y85, Y86	X60-X84, Y87.0	X85-Y09, Y87.1	Y10-Y34, Y87.2, Y89.9	Y35, Y36, Y89 (0,1)	C2=1 to 8; 98; 99
Cut/ pierce	W25-W29, W45	X78	X99	Y28	Y35.4	C2=2 (except 2.2.2)
Drowning/ submersion	W65-W74	X71	X92	Y21	-	C2=5.2
Fall	W00-W19	X80	Y01	Y30	-	C2=1.5
Fire/ burn	X00-X19	X76, X77	X97, X98	Y26, Y27	Y36.3	C2=4.1
<i>Fire flame</i>	<i>X00-X09</i>	<i>X76</i>	<i>X97</i>	<i>Y26</i>	-	C2=4.1.3
<i>Hot object/substance</i>	<i>X10-X19</i>	<i>X77</i>	<i>X98</i>	<i>Y27</i>	-	C2=4.1.1;4.1.2; 4.1.4 to 4.1.9
Firearm	W32-W34	X72-X74	X93-X95	Y22-Y24	Y35.0	C2=2.2.2
Machinery	W24, W30-W31	-	-	-	-	C2=3.2
All transport	V01-V99	X82	Y03	Y32	Y36.1	C2=1.1
MV traffic	Any of the 6 categories below	X82	Y03	Y32	-	C2=1.1 AND any of the Transport module statements for the subordinate MV traffic rows.
Occupant	V30-V39 (4-9) V40-V49 (4-9) V50-V59 (4-9) V60-V69 (4-9) V70-V79 (4-9) V83-V86 (0-3)	-	-	-	-	C2=1.1 AND T1=(5 to 7) AND T2<>1 AND T4=(1 or 3)
Motorcyclist	V20-V28 (3-9) V29 (4-9)	-	-	-	-	C2=1.1 AND T1=4 AND T2<>1 AND T4=(1 or 3)

Mechanism/cause	Unintentional	Manner/intent				Legal intervention / war	ICECI 1.2
		Suicide	Homicide	Undetermined			
<i>Pedal cyclist</i>	V12-V14 (3-9) V19 (4-6)	-	-	-	-	C2=1.1 AND T1=2 AND T2<>1 AND T3=(4 to 7) AND T4=(1 or 3)	
<i>Pedestrian</i>	V02-V04 (1,9) V09 (2)	-	-	-	-	C2=1.1 AND T1=1 AND T2<>(2 to 6) AND T3=(4 to 7) AND T4=(1 or 3)	
<i>Other</i>	V80 (3-5) V81-V82 (1)	-	-	-	-	C2=1.1 AND T1=3 AND T2<>1 AND T3=(4 to 7) AND T4=(1 or 3)	
<i>Unspecified</i>	V87 (0-8), V89 (2)	-	-	-	-	C2=1.1 AND T1=99 AND T2<>1 AND T4=(1 or 3)	
Pedal cyclist, other	V10, V11, V12-V14 (0-2) V15-V18, V19 (0-3,8,9)	-	-	-	-	C2=1.1 AND T1=2 AND T4<>(1 or 3) OR C2=1.1 AND T1=2 AND T2<>1 AND T3<>(4 to 7) AND T4=(1 or 3) OR C2=1.1 AND T1=2 AND T2=1 AND T4=(1 or 3)	
Pedestrian, other	V01, V02-V04 (0) V05, V06, V09 (0,1,3,9)	-	-	-	-	C2=1.1 AND T1=1 AND T4<>(1 or 3) OR C2=1.1 AND T1=1 AND T2<>1 AND T3<>(4 to 7) AND T4=(1 or 3) OR C2=1.1 AND T1=1 AND T2=1 AND T4=(1 or 3)	
<i>Other land transport</i>	V20-V28 (0-2), V29 (0-3) V30-V39 (0-3), V40-V49 (0-3) V50-V59 (0-3), V60-V69 (0-3) V70-V79 (0-3), V80 (0-2, 6-9) V81-V82 (0,2-9), V83-V86 (4-9) V87.9, V88 (0-9), V89 (0,1,3,9)	Y82	Y03	Y32		C2=1.1 AND T1=(8 to 10) OR C2=1.1 AND T1=3 AND T4=(1 or 3) OR C2=1.1 AND T1=3 AND T3=(4 to 7) OR C2=1.1 AND T1=3 AND T2=1	
Transport, other	V90-V99	-	-	-	Y36.1	C2=1.1 AND T1=(11, 12, 98 or 99)	
Natural/ environmental	W42, W43, W53-W64, W92- W99, X20-X39, X51-X57	-	-	-	-	C2=2.2 or 8	

Mechanism/cause	Unintentional	Manner/intent				ICECI 1.2
		Suicide	Homicide	Undetermined	Legal intervention / war	
Overexertion	X50	-	-	-	-	C2=7
Poisoning	X40-X49	X60-X69	X85-X90	Y10-Y19	Y35.2	C2=6
Struck by, against	W20-W22, W50-W52	X79	Y00, Y04	Y29	Y35.3	C2=1.2
Suffocation	W75-W84	X70	X91	Y20	-	C2=5.1; 5.3 to 5.9
Other specified, classifiable	W23, W35-W41, W44, W49, W85-W91, Y85	X75, X81	X96, Y02, Y05-Y07	Y25, Y31	Y35 (1,5), Y36 (0-2, 4-8)	C2= 1.3 to 1.8; 3.1; 3.8; 4.2; 4.8
Other specified, not elsewhere classifiable	X58, Y86	X83, Y87.0	Y08, Y87.1	Y33, Y87.2	Y35.6, Y89 (0,1)	C2= 1.9; 3.9; 4.9; 98
Unspecified	X59	X84	Y09	Y34, Y89.9	Y35.7, Y36.9	C2=99
Adverse effects* Y40-Y84, Y88	-	-	-	-	-	C2=20
<i>Drugs</i> Y40-Y59, Y88.0	-	-	-	-	-	C2=20.1
<i>Medical care</i> Y60-Y84, Y88(1-3)	-	-	-	-	-	C2=20.3 to 20.9
<b>All external causes</b>	<b>V01-X59</b>	<b>X60-X84</b>	<b>X85-Y09</b>	<b>Y10-Y34</b>	<b>Y35-Y59</b>	C2=1 to 99
<b>ICECI 1.2</b>	C.1=1	C.1=2	C.1=3	C.1=5	C.1=4.1	

\* Adverse effects and complications of medical and surgical care are included in ICD classification of external causes, but have controversial status as external causes of injury.