Review of the NCSP+ maps to ICHI

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Ann-Helene Almborg[1], Nicole Rankin[2], Arna Hardardottir[1], Eva Krpelanova[3]
[1]*Nordic CC,* [2]*Australia CC,* [3]*WHO*

Abstract The backbone classification, NCSP+, used in NordDRG system and maintained by The Nordic Casemix Centre (NordCase) has been mapped to International Classification of Health Interventions (ICHI). These maps resulted in proposals to add new axis codes and new stem codes. A working group in Health Interventions Reference Group (HIRG) has reviewed these maps. The result of the review show that ICHI covers a lot of the originally proposed new stem codes by using postcoordination of stem code(s) with or without extension code(s). This work has also enriched the ICHI content by adding new suggested stem codes, index terms and extension codes.

Introduction

The linkage of Nordic national intervention codes to the backbone classification, NCSP+, created by NordCase is crucial because the NordDRG system is maintained through NCSP+ codes rather than national codes. NCSP+ consists of about 17,000 interventions with a proportion of these mapped to ICHI. This mapping is an integral part of using ICHI and ICD-11 in the WHO DRG system (casemix tool) grouper based on NordDRG grouper. In the original mapping work postcoordination was not leveraged.

The NCSP+ maps resulted in 2426 suggested new stem codes and an additional 2576 secondary maps to these new stem codes giving a total of 5002 NCSP+ maps to ICHI.
The purpose of the review of the maps is to enrich ICHI content as well as to ICHI as an integral part of the WHO-based DRG system. A working group (n=6 members) in HIRG was established during 2025 to review 468 NCSP+ maps to 189 new suggested stem codes based on suggested new axis codes.

The second step during 2026, has been focusing on the NCSP+ codes that are major interventions performed in the operating room (OR1), are used in more then one country, the title is enough detailed, and the code is an intervention according ICHI. This resulted in 1514 codes. The working group increased to 17 members.
The Guidance for mapping to ICHI has been published in July 2026.

Methods & Materials

The method for the review has been further developed to include:

- maps to foundation URIs for stem codes, index terms, and extension codes.
- value the relationship from ICHI stem code, syntax or index terms to NCSP+ code.

The template has been enriched with new columns to cover the information above.
The 1514 NCSP+ codes have been run in Code Fusion.
The maps were split to batches of 20 maps, which were allocated to the members step by step. The working group has had regular meetings (Feb – July 2026) to progress and finalize the first review.
The members have reviewed between 1-18 batches depending on their capacity to review. The review of a batch was estimated to ≈3 hours by the members.

Result

The 1514 NCSP+ maps to ICHI original suggested 744 new ICHI stem codes. The first review of these 1514 maps resulted in proposals to add about 420 new stem codes and 650 index terms to the stem codes. Examples demonstrating use of existing codes in ICHI can be seen in Table 1 and stem codes to be created can be seen in Table 2.

Table 1. Examples of maps to existing stem codes and index terms (proposed new index terms in blue letters

NCSP+ code	NCSP+ title	ICHI code	ICHI title	URI	index term	URI	Relationship stem code &syntax	Relationship index term
AASK00	Cranioplasty	MAA.ML.AA	Cranial osteoplasty	http://id.who.int/icd/entity/2105412033	Cranioplasty		exact	exact
AASJ00	Hemispherectomy	AAA.JJ.AA	Partial excision of brain	http://id.who.int/icd/entity/1431751550	Hemispherectomy	http://id.who.int/icd/entity/613601704	broader	exact
CFSA00	Incision of conjunctiva	BBA.FA.AA	Incision of conjunctiva	http://id.who.int/icd/entity/1476301208			exact	
CHSF15	Cryotherapy of ciliary body	BBD.GA.AH	Destruction of lesion of ciliary body	http://id.who.int/icd/entity/364443319	Cyclocryotherapy	http://id.who.int/icd/entity/1422494345	broader	exact
FFSE10	Creation or expansion of ASD in open heart surgery	HAD.FA.AA	Incision of atrial septum	http://id.who.int/icd/entity/1617329141	Fenestration of atrial septum	http://id.who.int/icd/entity/2055664991	broader	exact
FBSF00	Resection of pulmonary artery	HID.JI.AA	Partial excision of pulmonary artery	http://id.who.int/icd/entity/1791601102	Resection of pulmonary artery		exact	exact
GCSA32	Endoscopic insertion of bronchial stent	JBB.LH.AD	Endoscopic dilatation with insertion of device into bronchus	http://id.who.int/icd/entity/539224197	Endoscopic insertion of bronchial stent	http://id.who.int/icd/entity/1967582925	broader	exact
EESC02	Rapid expansion of maxilla	MAF.LK.AA	Distraction osteogenesis of maxilla	http://id.who.int/icd/entity/1852786048	Rapid expansion of maxilla(REM)		broader	exact

Table 2. Examples of maps to new proposed stem codes and index terms (blue letters)

NCSP+ code	NCSP+ title	ICHI code	ICHI title	URI	index term	URI	Relationship stem code &syntax	Relationship index term
FBSB00	Incision of pulmonary artery	HID.FA.AA	Incision of pulmonary artery				exact	
FBSA00	Suture of pulmonary artery	HID.MK.AA	Repair of pulmonary artery		Suture of pulmonary artery		exact	exact
FESC10	Pericardioperitoneostomy	HFF.LI.AA	Pericardial shunt		Pericardioperitoneostomy		broader	exact
PDSP10	Percutaneous plastic repair of infrarenal abdominal aorta	HIH.MK.AF &XA2LN9	Percutaneous transluminal repair of abdominal aorta&Infrarenal abdominal aorta	&http://id.who.int/icd/entity/513525349	Percutaneous transluminal plasty of abdominal aorta		broader	exact
ZTXP00	Free autograft of vein	IZD.ML.AA &XG7LM0	Reconstruction of vein, not elsewhere classified&Autograft	&http://id.who.int/icd/entity/779231929	Free autograft of vein		exact	exact
QCSH30	Transplantation of nail to finger	LBD.KD.AA	Transplantation of nailbed of finger				exact	

The review of the maps resulted in proposals to add several extension codes to ICHI to provide further specificity e.g. preventive, cementless, with cement, single component/

Conclusions

- This review demonstrated the benefit of mapping to ICHI foundation entities and using postcoordination of stem code(s) with or without extension code(s).
- ICHI content covers several of the original proposed new stem codes.
- The maps have contributed to enriching ICHI be suggested new stem codes, extension codes and index terms.
- The enrichment of ICHI will improve the search functions in the Coding tool and browser.
- The review has contributed to improve the mapping methods, principles and mapping template and to Guidance for mapping to ICHI.
- Second review is necessary to confirm the results. The manual review is time consuming.
- The reviewed maps will be used as an integral part of using ICHI and ICD-11 in the DRG grouper in the development of the WHO-based DRG system.

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