

Folder eCC_00019640 is in stage Annual_Report_Review

Name of the University, Hospital, Research Institute, Academy or Ministry

Regional Central Health Directorate

Name of the Division, Department, Unit, Section or Area

Classification Area, General Directorate

City Udine **Reference Number** ITA-85

Title WHO Collaborating Centre for Family of International Classifications

Report Year 07-2020 to 07-2021

1. Annual report on the agreed workplan

Describe progress made on the agreed workplan. For each activity, detail (1) the actions taken, (2) the outputs delivered, as well as (3) any difficulties that may have been encountered. Three responses are expected. [maximum 200 words per activity]. Indicate, if an activity has been completed previously, has not yet started or has been placed on hold.

Activity 1

Title: Support ICD-11 implementation

Description: This activity and respective deliverables will support ICD-11 implementation in Italy.

Status: ongoing

In developing the Italian ICD-10 clinical modification under a national programme started some years ago, Lucilla Frattura and her team (Friuli Venezia Giulia Region) took into account ICD-11 in order to make the Italian modification as aligned as possible to ICD-11 itself. In this framework, some analyses were made in order to study some specific health conditions and how ICD-11 could be updated considering the way by which the draft of the Italian ICD-10 clinical modification codes the same conditions.

HARMONIZATION OF THE WHOFIC: In the past year, the Italian WHO-FIC CC team participated and contributed substantially to the task aiming at harmonizing WHO-FIC reference classifications with special relevance for the foundation content and its model. The vision of a harmonized ICD/ICF/ ICHI Content Model and Foundation includes: 1. One single Foundation from which all variants of all WHO-FIC classifications are derived as linearizations; 2. A core WHO-FIC Content Model shared and extended by different classifications; 3. Harmonized Foundation content, without duplicates and with mutual references, that serves the requirements of all classifications; 4. Clear relationship to underlying ontologies; 5. Integrated tools that facilitate the development, maintenance, versioning, and publication of all WHO-FIC classifications. Work continues on these directions.

Two main lines of work have been identified: one dealing with the model and the other addressing the harmonization of the content. This latter line concentrated on the existing entities represented in the three reference classifications and transferred in the WHO-FIC common foundation. The group is led by Andrea Martinuzzi (La Nostra Famiglia) and Vincenzo Della Mea (University of Udine). Updates on the progress of this work were presented at the FDC mid-year meeting and were translated into a scientific manuscript submitted for publication.

The working group meets regularly by teleconference.

Vincenzo Della Mea also continued to experiment with deep learning models, in particular for automated coding of short diagnostic sentences. A first study was carried out with already available Transformer-based models, and then a disease specific AI model was built starting from ICD-11. One paper was accepted at a

major conference, another one was submitted to a journal. Finally, Vincenzo Della Mea became member of a new working group inside ITC devoted to the identification of a technical standard for death certificate data transfer.

Some activities were carried out by ISTAT experts with the aim of building knowledge on the content and application of ICD-11. ISTAT has carried out first activities aimed at testing the use of ICD-11 in mortality statistics. In particular, the coding of frequent terms found in mortality, included in medical dictionaries used in automated coding, was started. Some coding issues were discussed within the international mortality community (especially Iris Core Group). Particular attention was given to the use of novel features of ICD-11 in mortality by coding some cases with the use of post-coordination. The international collaboration finalized to the implementation of ICD-11 in automated coding also continued by providing expertise and activities finalized to the development of tools for automated coding (especially the development of decision tables).

Since March 2020, Matilde Leonardi (Fondazione Carlo Besta), Lucilla Frattura (Friuli Venezia Giulia Region) and Paula Tonel (Friuli Venezia Giulia Region) have been participating to the WHO discussions and meetings about ICD-10 and ICD-11 development and use of emergency codes to classify COVID-19 in all the different phases of the pandemic.

DISSEMINATION OF RESULTS

Zavaroni C, Bassi G, Nardo E, Frattura L. Usefulness of the classification of cervical and vaginal smear findings in ICD-11. 2020 WHO-FIC Virtual Annual Meeting Poster booklet

Zavaroni C, Bassi G, Nardo E, Frattura L. A comprehensive classification system facilitates effective communication among health workers, comparative studies and development of systematic treatment strategies: the case of muscle and tendon injuries & proposal for avoiding a ICD-11 tumble. 2020 WHO-FIC Virtual Annual Meeting Poster booklet

Zavaroni C, Nardo E, Bassi G, Frattura L. ALECT2 amyloidosis, a frequent form of systemic amyloidosis: evocative case for ICD-11 flowering. 2020 WHO-FIC Virtual Annual Meeting Poster booklet

Zavaroni C, Bassi G, Frattura L. Dynamic labour progression and temporality extension codes in ICD-11. WHO-FIC Virtual Annual Meeting, 18-22 October 2021. (submitted)

Zavaroni C, Bassi G, Frattura L. Duration of pregnancy related to obstructed labour and premature rupture of membranes in ICD-11. WHO-FIC Virtual Annual Meeting, 18-22 October 2021. (submitted)

Zavaroni C, Bassi G, Frattura L. ICD-11 Temporality regarding some conditions complicating pregnancy, labour or delivery that can occur in different phases of pregnancy: the case of injuries. WHO-FIC Virtual Annual Meeting, 18-22 October 2021. (submitted)

Della Mea V, Popescu MH, Roitero K. Underlying cause of death identification from death certificates using reverse coding to text and a NLP based deep learning approach. Informatics in Medicine Unlocked, Volume 21, 2020, 100456

Popescu MH, Roitero K, Travasci S, Della Mea V. Automatic Assignment of ICD10 Codes to Diagnostic Texts using Transformers Based Techniques. In: Proc. Of IEEE Int. Conf. on Healthcare Informatics (ICHI) 2021.

Roitero K, Portelli B, Popescu MH, Della Mea V. DiLBERT: Cheap Embeddings for Disease Related Medical NLP. Submitted to IEEE Access, 2021.

Orsi C, De Rocchi D, Popescu MH, Heuser F, Weber S, Frova L, Della Mea V, Grippo F. Implementing ICD11 for mortality statistics: translation of decision tables embedded in the automated coding system Iris. RIVISTA DI STATISTICA UFFICIALE N. 1-2/2020 https://www.istat.it/it/files/2021/05/RSU-1-2_2020_Article-2.pdf
<https://www.who.int/standards/classifications/classification-of-diseases/emergency-use-icd-codes-for-covid-19-disease-outbreak>

Activity 2

Title: Support management of the WHO FIC maintenance process

Description: This activity and respective deliverables will support update and maintenance of ICD-11, ICF and ICHI.

Status: ongoing

ITALIAN WHO-FIC CC EXPERTS INVOLVED IN THE MAINTENANCE OF ICF AND ICD

Lucilla Frattura (Friuli Venezia Giulia Region) acted as CSAC Co-Chair for ICF (second mandate, expiring in October 2020) and CSAC

voting member for ICF updates

Francesco Grippo (ISTAT) acted as CSAC voting member for ICD-11 updates and Chiara Orsi (ISTAT) was requested to be added as observer for ICD-11 update process.

Paula Tonel (Friuli Venezia Giulia Region) acted as CSAC Secretariat.

Matilde Leonardi (Fondazione Carlo Besta) acted as FDRG Co-Chair (second mandate, expiring in October 2020)

Andrea Martinuzzi (La Nostra Famiglia) acted as FDRG Co-Chair (first mandate, starting in October 2020).

Carlo Zavaroni (Friuli Venezia Giulia Region) acted as MbRG member.

ICF UPDATE PROCESS 2020

The CSAC-ICF co-chair (Lucilla Frattura) and CSAC-ICF secretariat (Paula Tonel) organized and coordinated two voting rounds for the ICF update process 2020. The first voting round was opened in July 2020 and was closed in August 2020. The second voting round was opened in August 2020 and closed in September 2020. The votes were collected and documents with the results of the two voting rounds and with proposals for discussion were prepared for the 2020 WHO-FIC Network annual meeting. The CSAC-ICF co-chair and secretariat coordinated the CSAC-ICF session at the WHO-FIC Network annual meeting (virtual) held in October 2020. The CSAC-ICF secretariat with the new CSAC-ICF co-chair (Marie Cuenot) organized an extraordinary CSAC-ICF session to be held via teleconference in December 2020 to complete discussion on ICF update proposals that could not be discussed in October due to time restrictions. Minutes were prepared for the October and December sessions. Work was done on the ICF update platform to move, and modify if necessary, update proposals based on decisions taken at the October and December CSAC-ICF sessions. The annual update documents for the ICF updates approved during the 2020 update process (May, October and December 2020 CSAC-ICF sessions) and to be implemented in 2021 were prepared and delivered to WHO.

ICF UPDATE PROCESS 2021

In 2021 ICF has been moved to a new environment/platform. 2021 is a transition year and no discussion and voting on ICF update proposals was held.

WORK ON ICF 2021

As per request by WHO, the CSAC-ICF secretariat checked and ensured that all ICF update proposals that had been implemented as part of the ICF 2017 release were marked as implemented in the old ICF update platform. Moreover, the CSAC-ICF secretariat prepared the lists of all ICF update proposals implemented in ICF 2017 release and of all ICF update proposals that have been approved but that are not included in ICF 2017 release (post 2017).

Among the tasks related to ICF integration into the new platform, the CSAC-ICF secretariat together with the CSAC-ICF co-chair (Marie Cuenot) and the FDRG co-chairs cross checked all automatically generated residual categories (.8 and .9 codes) in ICF linearization. The CSAC-ICF secretariat with the CSAC-ICF co-chair also worked on a new ICF update process document (draft) prepared by WHO.

The CSAC-ICF secretariat participated in several teleconferences regarding work on ICF for 2021. In particular, the CSAC-ICF secretariat participated in:

- a teleconference with CSAC-ICF and FDRG co-chairs and WHO (24 November 2020) to discuss the way forward for CSAC-ICF
- in FDRG teleconferences when ICF/ICF updates were one of the topics to be discussed or to update FDRG members on ICF
- in a teleconference with CSAC-ICF co-chair and WHO to discuss work on ICF (16 March 2021)
- in a teleconference with CSAC-ICF co-chair, FDRG co-chairs and WHO to discuss/prepare CSAC-ICF and

FDRG joint session (19 April 2021).

- in the CSAC-ICF and FDRG Joint session (20 April 2021) to update members on ICF (new maintenance platform, new workflow for ICF maintenance, future work on ICF etc.). Material was prepared to be presented at the teleconference.

- in 2 teleconferences with CSAC-ICF co-chair, FDRG co-chairs, Huib ten Napel, and WHO to discuss work on ICF linearization and foundation (29 April 2021) and to check first part of work done on ICF linearization and organize next work (12 May 2021). The minutes of the 29 April teleconference were also prepared.

- in a teleconference with CSAC-ICF members and WHO to update membership on work done on ICF integration into the new platform and on work ahead (19 May 2021). Minutes of the teleconference were also prepared.

ICD-11 UPDATE PROCESS 2020

The CSAC-ICF Co-chair (Lucilla Frattura) and CSAC-ICF secretariat (Paula Tonel) participated in the CSAC-ICD sessions at the WHO-FIC Network annual meeting (virtual) held in October 2020.

ICD-11 UPDATE PROCESS 2021

The CSAC-ICF secretariat participated in numerous online meetings of the CSAC Small Group in relation to ICD-11. The focus was mainly discussion and 'triaging' of ICD-11 update proposals. The CSAC ICD-11 update process document was also discussed.

OTHER

The CSAC-ICF secretariat participated in some online meetings organized by WHO in relation to the WHO-FIC Network annual meeting 2020 (8 October 2020), CSAC co-chair transition (4 November 2020), and in relation to Covid-19 coding (8 September 2020, 18 December 2020).

DELIVERABLES

Annual update documents for the ICF updates approved during the 2020 update process

A mid-year report on CSAC-ICF activity during 2020-2021

DISSEMINATION OF RESULTS

Hargreaves J, Frattura L, Macpherson B, Tonel P. Classification and Statistics Advisory Committee (CSAC) Annual Report 2020. In: 2020 WHO FIC Network Annual Meeting Booklet

Zhang M, Cuenot M, Macpherson B, Tonel P. Classification and Statistics Advisory Committee (CSAC) Annual Report 2021. Submitted at the 2021 WHO FIC Network Virtual Annual Meeting

Activity 3

Title: Contribute to the development and testing of the International Classification of Health Interventions (ICHI)

Description: This activity and respective deliverables will support the field testing and further development of ICHI.

Status: ongoing

The Italian WHO-FIC CC has been covering the function of Co-Chair (Andrea Martinuzzi, La Nostra Famiglia) of the ICHI technical working group and was involved in the various activities related to the finalization of this classification. This group completed the round of revision during a virtual meeting on June 28-29th 2020. After the 2020 WHO-FIC annual virtual meeting, the ICHI task force was busy revising the functioning intervention and the public health sections in view of the final consensus review to be held in September 2021. Under the chairmanship of Andrea Martinuzzi (La Nostra Famiglia) and Richard Madden, the ICHI mid-year meeting was held virtually on May 3rd 2021 addressing the steps along the path towards ICHI finalization.

University of Udine collaborated to implement the transition of ICHI towards the WHO-FIC platform by providing the raw ICHI data to be imported into iCAT and then on the WHO-FIC platform. At present, the ICHI platform is hosted at the University of Udine and it is read-only, acting as a browser for ICHI.

DELIVERABLES

<https://mitel.dimi.uniud.it/ichi/>

DISSEMINATION OF RESULTS

Almborg A, Cumerlato M, Rankin N, Martinuzzi A, Madden R. ICHI 2021: towards finalisation. Submitted at the 2021 WHO-FIC Network Virtual Annual Meeting

Activity 4

Title: Support ICF implementation and modernization

Description: This activity and respective deliverables will support ICF modernization and implementation at national and international level.

Status: ongoing

Focus on ICF continues to be a central task for the Italian CC.

The new chairmanship of FDRG held by Andrea Martinuzzi (La Nostra Famiglia) led the FDRG mid-year virtual meeting on April 19-20 2021 addressing the challenges of the new e-environment into which ICF was migrated (iCAT). FDRG specific tasks included the ICF content revision for consistency and continuity within the common WHO-FIC foundation as well as review of the new workflow for ICF update. The ICF use cases collection was completed providing the first worldwide view of ICF use in the various sectors.

Vincenzo Della Mea (University of Udine) participated in the work about the WHO-FIC harmonization by building software to compare ICF in its last ClaML version with the version currently hosted in the WHO-FIC platform. The software was also exploiting the ICD-11 API.

At the national level, the ICF implementation in the NHS is led by the Ministry of Health with the support of the Italian WHO-FIC CC. Lucilla Frattura (Friuli Venezia Giulia Region) was part of the national team involved in this programme. Her team actively contributed to the development of an ICF-based assessment protocol and to its implementation in a web tool. The new Italian translation of an updated version of ICF was completed considering the 2018 updates.

Matilde Leonardi (Fondazione Carlo Besta) has been participating in the WHO Neuro Covid forum and in this capacity contributed to the development of the WHO Post Covid 19 case Report Form where she worked into the introduction of the Functioning area, section 2.5 Functioning, based on the WHO DAS 2.0 domains. At the national level, in the academic year 2020-2021 she has been providing ICF and WHO DAS 2.0 education and training courses at the Catholic University of Milan (Disability manager Course), and in other specific training courses. Matilde Leonardi together with a large group of colleagues dealing with ICF and WHO DAS 2.0 and interested in introducing functioning as a key element for health systems and services' planning, even in emergencies such as the Covid 19 pandemic, coordinated and published a paper.

DELIVERABLES

Italian Ministry of Health, draft of the National Guidelines for disability eligibility of children and youth for school inclusion purposes and for providing their functioning profile based on the ICD and the ICF

ACCEDI webtool

New ICF translation in Italian considering the 2018 updates

<https://centridiateneo.unicatt.it/bioetica-formazione-attivita-in-corso-4248>

DISSEMINATION OF RESULTS

Leonardi, M., Lee, H., van der Veen, S. et al. Avoiding the Banality of Evil in Times of COVID-19: Thinking Differently with a Biopsychosocial Perspective for Future Health and Social Policies Development. *SN Compr. Clin. Med.* 2, 1758–1760 (2020). <https://doi.org/10.1007/s42399-020-00486-8>

Activity 5

Title: Supporting WHO-FIC cross-cutting activities

Description: This activity and respective deliverables will support promotion of WHO-FIC.

Status: ongoing

ACTIVE PARTICIPATION IN THE WORK AND MEETINGS OF THE WHO FIC NETWORK

Lucilla Frattura (Friuli Venezia Giulia Region) acted as CSAC Co-Chair for ICF (second mandate, expired in October 2020) and CSAC voting member for ICF updates. She also was the Italian FDRG and EIC voting member.

Francesco Grippo (ISTAT) acted as CSAC voting member for ICD-11 updates and Chiara Orsi (ISTAT) was observer for ICD-11 update process. Francesco Grippo was also the Italian MRG voting member.

Paula Tonel (Friuli Venezia Giulia Region) acted as CSAC-ICF Secretariat.

Matilde Leonardi (Fondazione Carlo Besta) acted as FDRG Co-Chair (second mandate, expired in October 2020) and was an EIC member. Since WHO-FIC meeting 2019 she has been nominated by WHO as FIC-SEG member and has been participating in 2020 and 2021 to the meetings concerning the FIC flow and

organization.

Andrea Martinuzzi (La Nostra Famiglia) acted as FDRG Co-Chair (first mandate, starting in October 2020).

Under WHO mandate he also holds the chairmanship of the ICHI development task force.

Carlo Zavaroni (Friuli Venezia Giulia Region) acted as MbRG member.

The Italian Center is also active in ITC (Vincenzo della Mea, University of Udine) and FDRG (Giovanni Bassi, Friuli Venezia Giulia Region).

NETWORK ACTIVITIES NOT ALREADY DESCRIBED IN OTHER SECTIONS OF THIS PROGRESS REPORT

WHO-FIC FOR THE MONITORING OF SDG3 OBJECTIVES: The assessment of relevant indicators such as those listed in the “100 core health indicators” recently reviewed is a way in which achievements within the SDGs and more specifically in SDG3 and the health sensitive topics across the other SDGs can be monitored. Universal Health Coverage (UHC) is an essential part of SDGs, and its progression should also be monitored. The WHO-FIC reference classifications can provide a useful framework to gather and analyse the needed data. This work was started by the FDC under the chairmanship of Andrea Martinuzzi and now has reached its conclusion. The systematic mapping of the health indicators on specific codes of the three reference WHO classifications has been expanded and refined to the granularity of single codes from the 3 reference classification generating a mapping file where not only the mapped items but also the gaps to be filled by other UN or International classifications can be identified. The finalized map is now ready to be published as a scientific report.

DELIVERABLE

https://cdn.who.int/media/docs/default-source/3rd-edl-submissions/who_crf_postcovid_feb9_2021.pdf?sfvrsn=76afd14_1&download=true

FDC co-chairmanship: The Italian WHO-FIC CC provided chairperson function (Andrea Martinuzzi) to the FDC up to October 2020. The Co-Chair participated in and coordinated all the committee activities including the bi-weekly Co-Chairs/Secretariat teleconferences.

FDRG co-chairmanship: The Italian WHO-FIC CC provided chairperson function (Matilde Leonardi up to October 2020 and Andrea Martinuzzi from October 2020) to the FDRG . The Co-Chair participated in and coordinated all the committee activities including the regular FDRG teleconferences.

MRG: Francesco Grippo and Chiara Orsi participated in the mid-year meeting of the MRG, contributing especially to the development of rules for the correct coding and section of COVID-19 related deaths. Active participation was also provided during the meeting of the CSAC for the development and updates of ICD for the COVID-19 coding, in particular concerning the codes and rules for the new codes such as complications of COVID-19 vaccines. In collaboration with the Iris Institute, ISTAT has decisively contributed to the refinement of the knowledge base (decision tables) for the correct coding of COVID-19 and related codes (Post-Covid conditions and complications of vaccines) used in manual and automated coding.

Implementing COVID-19 coding rules: A big effort was devoted by the Italian WHO-FIC CC to support the Italian Ministry of Health in coding COVID-19, adapting WHO indications to the Italian way of coding morbidity and mortality. For morbidity coding purposes, Frattura and Zavaroni provided technical materials to introduce new ICD-9-CM codes able to be transcoded for international purposes to WHO codes in ICD-10. The Italian Ministry of Health coordinated this effort and will be responsible for its implementation at hospital level. With the collaboration of ISS (Istituto Superiore di Sanità), an extensive report on the Italian adaptation of WHO definition and guidelines was produced and an updated version was provided (<https://www.istat.it/it/archivio/244763>). A section on the ISTAT webpage was created and maintained for instructions on COVID-19 deaths reporting (<https://www.istat.it/it/archivio/240401>, section Certificazione e Classificazione ICD-10 del COVID-19).

DELIVERABLES:

- CSAC SWP
- FDC SWP

- FDRG SWP
- Report of CSAC, FDC, FDRG at annual WHOFIC Council virtual meetings and mid-year meetings

DISSEMINATION OF RESULTS

Zavaroni C, Frattura L. An ICD-11 update proposal for coding COVID-19. 2020 WHO-FIC Network Virtual Annual Meeting Poster booklet

Navarra S, Orsi C, Grande E, Simeoni S, Cinque S, Cialesi R, Frova L, Marchetti S, Pappagallo M, Grippo F. Selection of coexisting causes of death in COVID-19 related deaths, 2020 WHO-FIC Network Virtual Annual Meeting Poster booklet

Della Mea V, Martinuzzi A, Almborg A, van Gool C, Tu S. Harmonizing ICF within the Family of International Classification: next steps. Submitted at the 2021 WHO FIC Network Virtual Annual Meeting

Martinuzzi A, Maniero A, Della Mea V. ICF-based rehabilitation programs: a clinical experience turning use case resource. Submitted at the 2021 WHO FIC Network Virtual Annual Meeting

ISS, ISTAT, INAIL. COVID-19: rapporto ad interim su definizione, certificazione e classificazione delle cause di morte. Updated version 26 April 2021.

2. Annual report on other activities requested

Should WHO have requested activities in addition to the agreed workplan, please describe related actions taken by your institution [maximum 200 words]. Please do not include in this report any activity done by your institution that was not requested by and agreed with WHO.

No additional activities have been requested.

3. Resources

Indicate staff time spent on the implementation of activities agreed with WHO (i.e. those mentioned in questions no. 1 and no. 2 above). Do not include any data related to other activities done by your institution without the agreement of WHO. Please indicate staff time using the number of “full-day equivalents” – a day of work comprising 8 hours (e.g. 4 hours work per day for 7 days should be recorded as 3.5 full-day equivalents).

Number of staff involved (either partially or fully)

Senior staff	Mid-career staff	Junior staff, PhD students
5	0	0

Number of full-day equivalents, total for all staff involved

Senior staff	Mid-career staff	Junior staff, PhD students
4	0	0

Implementation of the agreed workplan activities (i.e. those mentioned in questions no. 1 and no. 2 above) normally require resources beyond staff-time, such as the use of laboratory facilities, purchasing of materials, travel, etc. Please estimate the costs of these other resources as a percentage of the total costs incurred (e.g. if you incurred costs of USD 100 and the value of your staff time was USD 50 which makes the total of USD 150, please report 33.3% and 66.7%).

Percentage of costs associated with staff time	Percentage of costs associated with other resources	Total
85.00	15.00	100.00

4. Networking

Describe any interactions or collaboration with other WHO Collaborating Centres in the context of the implementation of the agreed activities. If you are part of a network of WHO Collaborating Centres, please also mention the name of the network and describe your involvement in that network [maximum 200 words].

The Italian WHO-FIC CC is part of the WHO-FIC Network. The workplan takes into account the activities run under the network and this progress report shows them.