An HL7-CDA2 standard template for the ICF-based electronic biopsychosocial record

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Poster Number
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Abstract The aim of this poster is to propose an HL7-CDA2 template for the ICF-based electronic biopsychosocial record (FABER) developed by the Italian WHO-FIC collaborating centre.

Introduction

The aim of this poster is to propose an HL7-CDA2 template for the ICF-based electronic biopsychosocial record (FABER) developed by the Italian WHO-FIC collaborating centre (1,2). The HL7-CDA2 template was developed as a collaboration between the FVG Central Health Directorate (Italian WHO-FIC CC), the University of Udine, and Insiel S.p.a., the FVG Region in-house software developer.

Methods & Materials

HL7-CDA2 (Health Level Seven – Clinical Document Architecture level 2) is the standard format for clinical documents, based on the HL7 Reference Information Model (RIM) and on the eXtensible Markup Language (XML) (3). Since the CDA2 document derives from the HL7 RIM, it is specifically designed for a complete integration with HL7 technologies, which are widely used worldwide (4). By analyzing the features of the currently available ICF software, we selected a set of elements and attributes to represent the ICF-based electronic biopsychosocial assessment (as performed by FABER) (Figure 1), thus creating an HL7-CDA2 template for a biopsychosocial patient profile.

Figure 1 – FABER output into Patient Summary
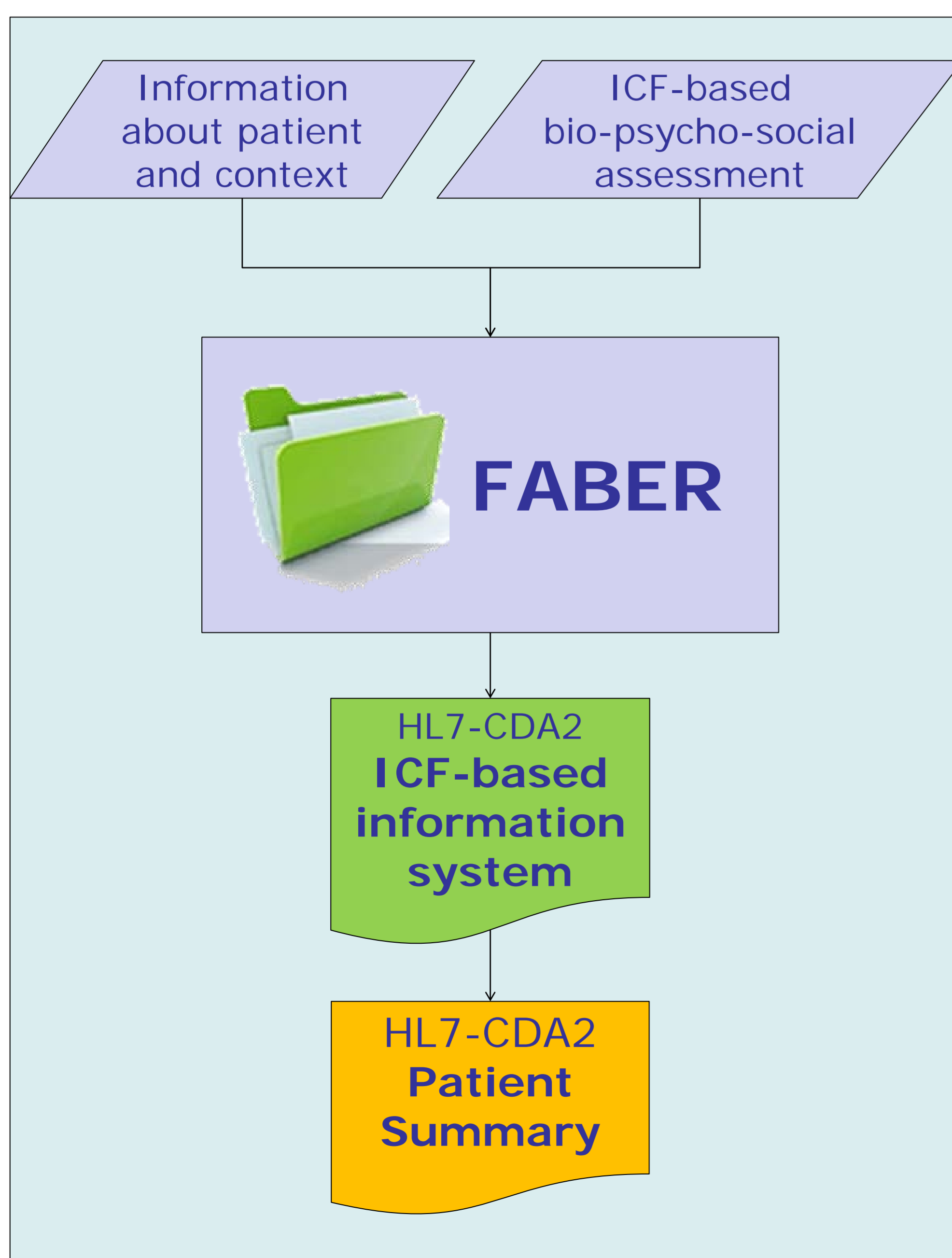
Results

In our template, the first part of the document is the HEADER, which includes information about the patient and the context (creation date, owner, editor, structure delivering the services, authentication, etc). The HEADER was developed following the guidelines used for the Patient Summary (PS) version 1.1 RC2 (20/06/2011), which in turn refers to the Electronic Health Record (EHR) directives by the Italian Ministry of Health (PS is a clinical document summarizing the patient's past and present clinical history according to the European project EPSOS and also adopted in Italy). The second part of the document is the BODY, which collects the real content of the electronic biopsychosocial record. We chose to implement the Environmental Factors and, separately, the other three components: Body Functions, Body Structures, and Activities and Participation. Later, the Environmental Factors were linked to each single category (Figure 2).

Figure 2 – Environmental Factors linked to single categories

```
<!-- Activities and Participation Reference Component -->
<entry>
  <observation typeCode="OBS" moodCode="EVN">
<!-- Activities and Participation template -->
    <template Id root='templateIdAPObservation' />
    <id root='OIDobs1AP' extension='APobservation' />
    <code code="CodeICFActPart"
      codeSystemName="ICF Activities and Participation"
      codeSystem="OIDActPartICF"
      codeSystemVersion="CodeVersion" />
    <Text>
      <reference value="#apcode1"/>
    </Text>
    <statusCode code='completed' />
    <value xsi:type="CD"
      code="ValueCodeAP1"
      codeSystem="specificOIDAP"
      codeSystemName="ICF" displayName="CodeAP1"/>
[…]
  </observation>
</entry>

                        […]


<!-- Environmental Factor Link -->
<observation typeCode="OBS" moodCode="EVN">
[…]
  <entryRelationship typeCode='REFR' inversionInd='false'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1' />
      <id root='OIDobs1AP' extension='APobservation' />
      <code code='CodeICFActPart'
        displayName=' '
        codeSystem='OIDActPartICF'
        codeSystemName=' ICF Activities and Participation' />
    </entryRelationship>
  </observation>
</observation>
```
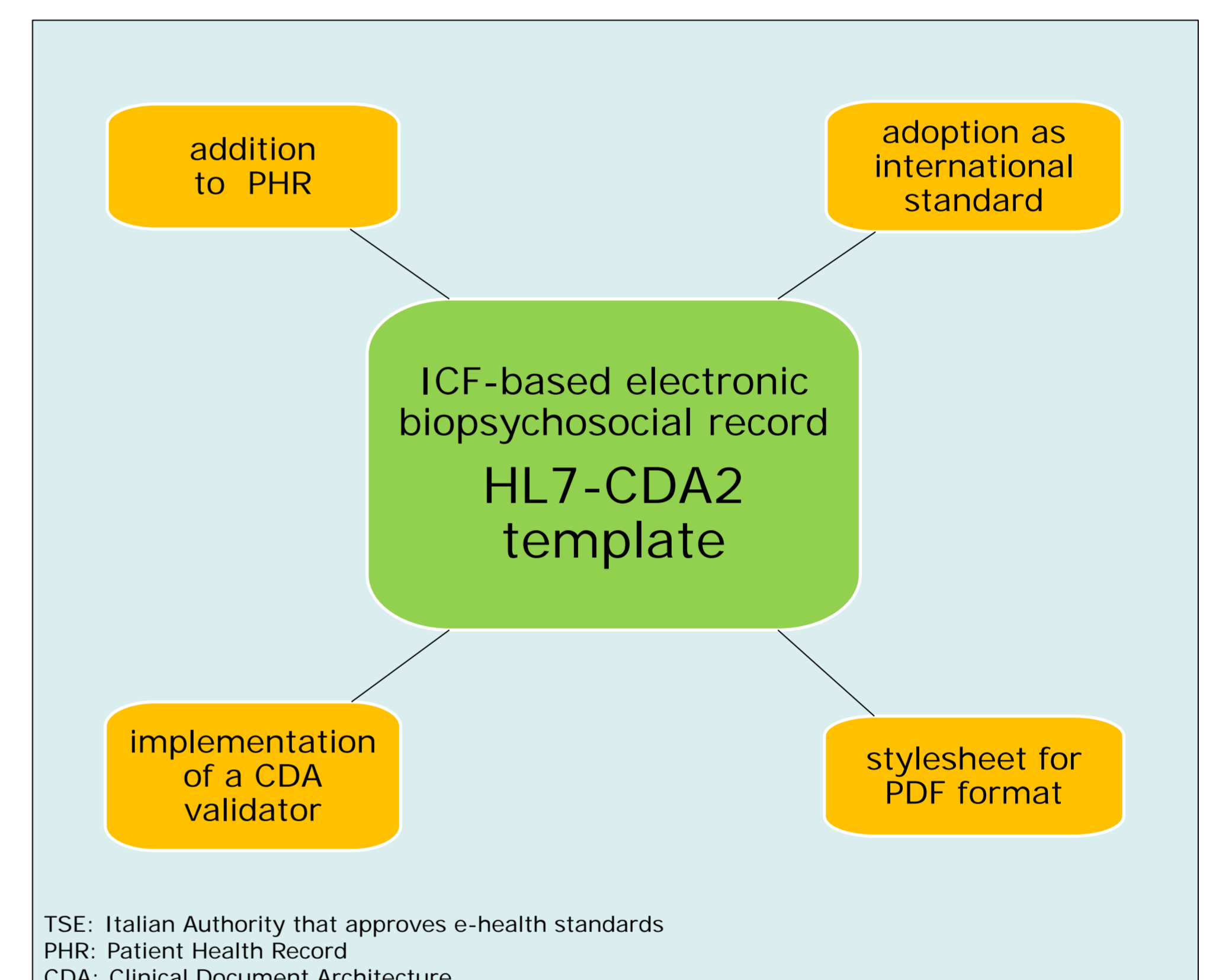
Once the HL7-CDA2 template was developed, we analysed the elements in common with the PS, in order to provide a possible implementation into the PS. Two possibilities will be submitted to the Italian Authority that approves e-health standards (TSE).

Conclusions

Information included in an electronic biopsychosocial record can also be used in the PS. Future developments for the ICF-based electronic biopsychosocial record HL7-CDA2 template include (Figure 3):

- approval by the TSE and addition into the Patient Health Record;
- proposal for its adoption as an international standard template;
- implementation of a stylesheet for the PDF format to deliver to patients;
- implementation of a specific CDA validator.

Figure 3 – Future developments

TSE: Italian Authority that approves e-health standards
PHR: Patient Health Record
CDA: Clinical Document Architecture

Acknowledgements

References

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