



## // QUESTIONNAIRE ON E-HEALTH: SUMMARY OF ANSWERS

Requested by the CED Working Group e-Health following its meeting in June.

**Answers received by 2 November 2011: 22 countries (19 CED Members + 3 CED Observers).**

### 1. For what purpose do dentists in your country use computers in practice?

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To prescribe medicines</li> <li>• To bill patients and accounting</li> <li>• Other: To identify the patient and to verify if he/her is (still) entitled to have access to treatments paid by insurance companies/sickness funds via chip-card</li> </ul> <p><b>[Note from Austria:</b> <i>We would like to clarify that in all the questions where the questionnaire asked about what “dentists do” our answer was given considering a majority of dentists, though there may be single dentists who prefer different ways of using e-health systems/computers].</i></p> |
| Belgium        | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                                                  |
| Bulgaria       | <ul style="list-style-type: none"> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Czech Republic | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                               |
| Denmark        | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Estonia   | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                      |
| Finland   | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                      |
| France    | <ul style="list-style-type: none"> <li>• To transmit treatment data sickness funds</li> <li>• To keep patient records</li> <li>• To prescribe medicines</li> <li>• Other: To take intra-oral x-rays, to scan administrative papers</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Germany   | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                      |
| Hungary   | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                |
| Italy     | <ul style="list-style-type: none"> <li>• To keep patient records</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Lithuania | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                      |
| Malta     | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul> <p><b>[Note from Malta:</b> the answers for most of the questions are based on those dentists who use computers in private practice and those who work in the public hospital service – there is still a number of dentists (mostly the older generation) who use paper work and no computers]</p> |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Netherlands | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> <li>• Other: to send the bill directly to the insurance companies</li> </ul>                                                                                                                                                                                  |
| Portugal        | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                       |
| Slovakia        | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> <li>• Other: to get all kind of information from the internet, to read scientific literature or to access e-learning courses, to choose and order dental and non-dental material from e-shop</li> </ul>                     |
| Spain           | <ul style="list-style-type: none"> <li>• To keep patient records</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Sweden          | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                       |
| United Kingdom  | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul> <p><i>[Note from the UK: It needs to be noted that there is no standardised system for this. Some dentists might do all these things, others might only use computers for one or a variety of these options].</i></p> |
| Croatia         | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> </ul>                                                                                                                                                                                                                                                                                                                                                |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <ul style="list-style-type: none"> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul>                                                                                                                                                                                                                                                                                                                                           |
| Norway      | <ul style="list-style-type: none"> <li>• To exchange information with patients</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Switzerland | <ul style="list-style-type: none"> <li>• To transmit treatment data to health insurance companies or sickness funds</li> <li>• To keep patient records</li> <li>• To exchange information with other health professionals</li> <li>• To exchange information with patients</li> <li>• To exchange information with dental technicians</li> <li>• To prescribe medicines</li> <li>• To download digital images (for example, photos, x-rays, 3D, etc.)</li> <li>• To bill patients and accounting</li> </ul> |

2. How do dentists in your country mark the dental status of the patient (for example, through diagrams, tooth surfaces, etc.)?

|                |                                                                                                                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | In general via tooth surfaces, though diagrams are sometimes also used, especially in periodontology.                                                                                                                                            |
| Belgium        | Diagrams with tooth surfaces and records on base of FDI/WHO numbering system                                                                                                                                                                     |
| Bulgaria       | Tooth surfaces                                                                                                                                                                                                                                   |
| Czech Republic | Though diagrams                                                                                                                                                                                                                                  |
| Denmark        | Diagrams are mostly used                                                                                                                                                                                                                         |
| Estonia        | Mostly tooth surfaces, but through diagrams too                                                                                                                                                                                                  |
| Finland        | Diagrams and tooth surfaces                                                                                                                                                                                                                      |
| France         | Dental diagrams proper to each software                                                                                                                                                                                                          |
| Germany        | Tooth surfaces                                                                                                                                                                                                                                   |
| Hungary        | Either by diagrams or by WHO coding                                                                                                                                                                                                              |
| Italy          | On computer use, diagrams with or without tooth surfaces are generally used.                                                                                                                                                                     |
| Lithuania      | Tooth surfaces                                                                                                                                                                                                                                   |
| Malta          | Dental chart with caries marked on the teeth – all done through dental software programme                                                                                                                                                        |
| Netherlands    | That depends on the specific dental software program they use for the dental status. Most of the programs use statusdiagrams.                                                                                                                    |
| Portugal       | Through diagrams and tooth surfaces                                                                                                                                                                                                              |
| Slovakia       | There is a table with the numbers of teeth and a code for each abnormality                                                                                                                                                                       |
| Spain          | Through diagrams (odontogram)                                                                                                                                                                                                                    |
| Sweden         | Most common through images displaying tooth surfaces, but also diagrams                                                                                                                                                                          |
| United Kingdom | The most common tooth notation systems used in the UK are: FDI; Palmer (numbers 1-8 illustrated with triangular corners to identify position); BDJ (UR8/LL2); Anatomical descriptions (r upper third molar/l lower lateral incisor); Pictograms. |
| Croatia        | Through diagrams or tooth surfaces, depending on the software                                                                                                                                                                                    |
| Norway         | Graphical interface, based on ISO 3950-2009 nomenclature, 5 or 8 tooth surfaces                                                                                                                                                                  |
| Switzerland    | Diagrams, electronics, etc.                                                                                                                                                                                                                      |

## 3. Do dentists in your country use indices (for example, DMFT, CPI, ASA, etc.)?

Yes ☐ If yes, which ones? Are they mandatory?No ☐

| COUNTRY        | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NO                                                          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Austria        | Mainly DMFT – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -                                                           |
| Belgium        | DPSI , mandatory for reimbursement of paro treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                             |
| Bulgaria       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | X                                                           |
| Czech Republic | DMFT, CPITN, PBI – it is mandatory for the practices according to the contract with the health insurance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -                                                           |
| Denmark        | DMFT and DMFS and a central reporting system to the health authorities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                           |
| Estonia        | DMFT, CPI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                           |
| Finland        | DMFT, DMFS and CPI are widely used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -                                                           |
| France         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | X                                                           |
| Germany        | - DMFT – not mandatory<br>- Instead of CPI German dentists are using the Community Periodontal Index of Treatment Needs (CPITN) of WHO to assess the periodontal status of their patients – mandatory for some billing purposes<br>- PSI (Periodontal Screening Index) – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                           |
| Hungary        | DMFR, CPI, PII, GI is not mandatory.<br>The national survey uses DMFT and CPI indices. They are not mandatory for normal dental care treatments but some specified areas apply their own indices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -                                                           |
| Italy          | CPI seems to be preferred – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                           |
| Lithuania      | DMFT, CPI – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                           |
| Malta          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | X                                                           |
| Netherlands    | Yes. The DMFT index is used for research purposes. The use of the ASA score increases in the Dutch Dental practice. But the use of indices is not mandatory. We do not know exactly how often dentists use other indices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                           |
| Portugal       | Yes, DMFT – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                           |
| Slovakia       | DMFT, CPITN, PBI – they are mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -                                                           |
| Spain          | Yes – not mandatory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                           |
| Sweden         | Depending on the age of the patient and directives from local authorities (mainly in the Public Dental Service sector) different indices are used. For example it is mandatory to report DMFT/S and deft/s based indices at some ages in dental care for children.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Except for some caries indices for children at certain ages |
| United Kingdom | Yes, but it is not a standardised system for all – or even the majority of – dentists. Computer systems do not have these indices included as a standard. The most common ones are likely to be BPE and DMFT.<br>Some indices referred to in dental literature are:<br>- (CPITN) Community Periodontal Index of Treatment Needs; a simpler version of this is the Basic Periodontal Examination (BPE): used for periodontal treatment need, plaque and gingivitis;<br>- DMFT (permanent dentition)/dmft (primary dentition): used as measurement of caries (decayed, missing, filled teeth);<br>- DDE (developmental defects of enamel): used for enamel defects;<br>- TF (Thylstrup and Fejerskov): used for fluorosis;<br>- Dean's index: used for fluorosis;<br>- Horowitz index: used for fluorosis; | -                                                           |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|             | <ul style="list-style-type: none"> <li>- IOTN (index of orthodontic treatment need) and PAR (peer assessment rating): used for assessment of treatment need;</li> <li>- Trauma index;</li> <li>- Erosion index;</li> <li>- RCI (root caries index);</li> <li>- Functional health index = sound teeth + filled teeth;</li> <li>- Tissue health index = (sound teeth x4) + (filled teeth x2) + (decayed teeth x1).</li> </ul> <p>Some computer systems allow the owner to design their own screens for use in practice (for example, Software of Excellence's "custom screen"). This would allow the dentist to use whichever index he/she would prefer to use. The Advance system has in the past used the European Oral Health Index, and the company Denplan provides an 'oral health score' as part of its system.</p> <p>Not mandatory.</p> |   |
| Croatia     | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - |
| Norway      | DMFT, DMFS, partly mandatory (public dentistry)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - |
| Switzerland | All international indices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |

4. Do dentists in your country use systems to codify diagnosis in dental records (for example ICD10)?

| Country        | YES                                                                                                                                | NO |
|----------------|------------------------------------------------------------------------------------------------------------------------------------|----|
| Austria        | -                                                                                                                                  | X  |
| Belgium        | -                                                                                                                                  | X  |
| Bulgaria       | -                                                                                                                                  | X  |
| Czech Republic | ICD 10                                                                                                                             | -  |
| Denmark        | -                                                                                                                                  | X  |
| Estonia        | ICD 10                                                                                                                             | -  |
| Finland        | ICD 10 and also other                                                                                                              | -  |
| France         | -                                                                                                                                  | X  |
| Germany        | ICD 10, only oral surgeons                                                                                                         | -  |
| Hungary        | BNO codes                                                                                                                          | -  |
| Italy          | -                                                                                                                                  | X  |
| Lithuania      | ICD-10AM                                                                                                                           | -  |
| Malta          | -                                                                                                                                  | X  |
| Netherlands    | ICD 10                                                                                                                             | -  |
| Portugal       | -                                                                                                                                  | X  |
| Slovakia       | The international classification of diseases, beside this there is the national catalogue of diagnosis codes                       | -  |
| Spain          | -                                                                                                                                  | X  |
| Sweden         | A system created for the National Dental Health system and quality register; ICD 10 diagnoses often used in specialist dental care | -  |

|                |                                                                                                                                                |   |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|---|
| United Kingdom | Not standardised throughout the UK. As part of the BPE, codes are provided both for diagnosis and for suggested treatment (see annex attached) | - |
| Croatia        | International classification of illness                                                                                                        | - |
| Norway         | ICD10, possibly ICD10-DA3                                                                                                                      | - |
| Switzerland    | National code of diagnosis                                                                                                                     |   |

5. Do dentists in your country use systems to codify treatments in dental records?

| Country        | YES                                                                                                                          | NO                                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Austria        | -                                                                                                                            | X                                                                                                               |
| Belgium        | -                                                                                                                            | -                                                                                                               |
| Bulgaria       | -                                                                                                                            | X                                                                                                               |
| Czech Republic | Numerical code of treatments are used for contact with health insurance companies                                            | -                                                                                                               |
| Denmark        | They use the graphics provided by the practice management's IT software mostly with tooth diagrams                           | -                                                                                                               |
| Estonia        | Yes, sick fund codes                                                                                                         | -                                                                                                               |
| Finland        | X                                                                                                                            | -                                                                                                               |
| France         | -                                                                                                                            | No specific code. Only the key-letter plus a billing coefficient for health insurance is common, but not unique |
| Germany        | -                                                                                                                            | X                                                                                                               |
| Hungary        | Codes provided by the Hungarian Health Insurance Fund                                                                        | -                                                                                                               |
| Italy          | No particular system is used to codify treatments as each dentist could use his own system related to the computer software. | -                                                                                                               |
| Lithuania      | ACHI                                                                                                                         | -                                                                                                               |
| Malta          | No standard one and each dentist has its own method – 16 or LR6                                                              | -                                                                                                               |
| Netherlands    | Yes, the codes in the Dental Fees 2011 and the EI standard to exchange information with dental insurance companies           | -                                                                                                               |
| Portugal       | Yes, very different ones                                                                                                     | -                                                                                                               |
| Slovakia       | There is the national catalogue of treatment codes                                                                           | -                                                                                                               |
| Spain          | -                                                                                                                            | X                                                                                                               |
| Sweden         | X (see reply to question 4)                                                                                                  | -                                                                                                               |
| United Kingdom | Not standardised throughout the UK (see annex attached)                                                                      | -                                                                                                               |
| Croatia        | Croatian Health Insurance Code and Croatian Chamber of Dental Medicine Code                                                  | -                                                                                                               |

|             |   |   |
|-------------|---|---|
| Norway      | - | - |
| Switzerland | - | - |

5.1. Would you find it useful to have a common codification of treatment for the purpose of exchanging treatment information with other dentists?

| Country        | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NO |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Austria        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Belgium        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Bulgaria       | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Czech Republic | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | X  |
| Denmark        | Yes, but it depends on the levels of detail; we find it very unlikely that uniform codification nomenclature can be agreed in the EU; we find more feasible country-by-country. Some could request an epidemiology register for re-research                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -  |
| Estonia        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Finland        | Yes, with the process of more similar systems in EU countries this is the likely development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -  |
| France         | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Germany        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | X  |
| Hungary        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Italy          | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Lithuania      | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Malta          | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Netherlands    | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Portugal       | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Slovakia       | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Spain          | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Sweden         | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| United Kingdom | At the moment, it is not clear to us whether this would be useful or cost-effective as the need for such an exchange of information is relatively rare in general practice. The main area where exchange of patient information takes place is x-rays, and a secure system for the transfer of such pictures might be desirable (this is unrelated to codification, however). In our experience, hospital email systems regularly block email-attachments, and therefore the sending of x-rays by email is not effective. Email is also not deemed to be appropriately safe for such exchange. We are not certain that codification would be useful in terms of exchanging treatment information, although it could be useful to monitor the type and amount of treatment provided. |    |
| Croatia        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Norway         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |
| Switzerland    | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -  |



5.2. Would you find it useful to have a common codification for the purpose of collecting information to identify a body (forensic dentistry)?

| Country        | YES                                                                                                                                                                                                                                                                               | NO |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Austria        | -                                                                                                                                                                                                                                                                                 | -  |
| Belgium        | X                                                                                                                                                                                                                                                                                 | -  |
| Bulgaria       | X                                                                                                                                                                                                                                                                                 | -  |
| Czech Republic | -                                                                                                                                                                                                                                                                                 | X  |
| Denmark        | Yes, there already exist, used by NATO and in Scandinavian forensic dentistry/medicine                                                                                                                                                                                            | -  |
| Estonia        | X                                                                                                                                                                                                                                                                                 | -  |
| Finland        | Yes, there is a common system in many European countries                                                                                                                                                                                                                          | -  |
| France         | X                                                                                                                                                                                                                                                                                 | -  |
| Germany        | X                                                                                                                                                                                                                                                                                 | -  |
| Hungary        | X                                                                                                                                                                                                                                                                                 | -  |
| Italy          | X                                                                                                                                                                                                                                                                                 | -  |
| Lithuania      | X                                                                                                                                                                                                                                                                                 | -  |
| Malta          | X                                                                                                                                                                                                                                                                                 | -  |
| Netherlands    | X                                                                                                                                                                                                                                                                                 | -  |
| Portugal       | X                                                                                                                                                                                                                                                                                 | -  |
| Slovakia       | -                                                                                                                                                                                                                                                                                 | X  |
| Spain          | X                                                                                                                                                                                                                                                                                 | -  |
| Sweden         | X                                                                                                                                                                                                                                                                                 | -  |
| United Kingdom | Again, due to the relatively small number of cases where this would be relevant we are not convinced that this would be cost-effective. As there is no legal requirement to use one codification system over another, we are doubtful that the uptake by dentists would be great. |    |
| Croatia        | X                                                                                                                                                                                                                                                                                 | -  |
| Norway         | -                                                                                                                                                                                                                                                                                 | -  |
| Switzerland    | X                                                                                                                                                                                                                                                                                 | -  |

## 6. Please share a well-working example of ICT systems in place in your country (if applicable):

| Country        | 6.1. to exchange information between professionals                                                                                                                                                                                                                                                                                                                                                                                                     | 6.2. to provide on-going advice to patients in the context of individual oral health promotion and disease prevention                                                                                                                                                                                                                                                                                                                                                 |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria *      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Belgium        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bulgaria       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Czech Republic | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Denmark        | Outlook or other                                                                                                                                                                                                                                                                                                                                                                                                                                       | n.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Estonia        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Finland        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| France         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DMP (Dossier Medical du Personnel) about to be implemented: Personal Medical Record of the patient shared between health professionals                                                                                                                                                                                                                                                                                                                                |
| Germany        | Starting from 1 January 2012 dentists shall fully exchange all relevant data with dental laboratory technicians on the basis of a standardized interface, which is based on XML.                                                                                                                                                                                                                                                                       | A well-working example for an ICT-System in the context of individual oral health promotion is the Online "Pradontitis-Check" ( <a href="http://www.prodente.de/fileadmin/module/parodontitis_schnelltest/index.html">http://www.prodente.de/fileadmin/module/parodontitis_schnelltest/index.html</a> ) of ProDente, an initiative of dental organizations, organizations of dental technicians, dental trade and dental industry partners in which BZÄK is a member. |
| Hungary *      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Italy          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Lithuania      | SVEIDRA                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Malta          | Private practice:<br>General practitioner needs advice re a treatment plan and diagnosis, emails a clinical picture and x-rays to a consultant who gives advice if possible, and a discussion is possible.                                                                                                                                                                                                                                             | Emailing the x-rays and clinical pictures of the dental caries of a young 6 year old with carious deciduous teeth and this helps the parent to reinforce oral hygiene and dietary habits and to show other carers or parents or grandparents of the damage that sugar intake is having on their teeth.                                                                                                                                                                |
| Netherlands    | n.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                   | n.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Portugal       | SISO which is a public software programme for oral health                                                                                                                                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Slovakia       | Sending/exchanging digital x-rays: advantage at multidisciplinary treatment, at complex cases or transfers of patients.                                                                                                                                                                                                                                                                                                                                | Internet based on-line platform for patients, where they may pose questions to professionals                                                                                                                                                                                                                                                                                                                                                                          |
| Spain          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sweden         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| United Kingdom | <a href="http://www.connectingforhealth.nhs.uk/systemsandservices/scr">http://www.connectingforhealth.nhs.uk/systemsandservices/scr</a><br>The Summary Care Record is a centrally held database in England and is populated by general medical practitioners on behalf of each of their registered patients. Information includes things such as allergies, current medications and conditions and it is intended to support emergency care providers. | n.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Croatia        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|             |                                     |   |
|-------------|-------------------------------------|---|
| Norway      | Work in progress, available in 2012 | - |
| Switzerland | -                                   | - |

**\* Comments:**

**Austria** – there is at the moment no really well-working ICT system in Austria, though the government is planning one for years now.

**Hungary** – In Hungary both systems are widely used. There are dental offices that record medical files in written form and there are also some offices using high numbered patient registrations software on the market, and there are some offices using simultaneously both systems. ICT systems mainly work alone, except the 3300 dental offices financed by National Health Care Insurance. They use such a computer registration in which they are obligated to make a report from the patient discourses.

7. Do dentists in your country use their software to monitor outcomes of treatments and prevention advice?

| COUNTRY        | YES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NO                                                                            |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Austria        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Belgium        | Not organised.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                               |
| Bulgaria       | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Czech Republic | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Denmark        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not in a systematic way, but it can't be excluded that some do.               |
| Estonia        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | X                                                                             |
| Finland        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | rare                                                                          |
| France         | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | X                                                                             |
| Germany        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Hungary        | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Italy          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Cannot answer for all dentists, but as far as they are aware not very common. |
| Lithuania      | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Malta          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Cannot answer for all dentists, but as far as they are aware, no              |
| Netherlands    | Not very common. Most dentists use their software to keep patient records, to keep and exchange treatment data to patients and insurance companies and to send bills to patients or directly to the insurance companies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                               |
| Portugal       | Sometimes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -                                                                             |
| Slovakia       | No knowledge concerning this question.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                               |
| Spain          | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                                                                             |
| Sweden         | Sometimes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -                                                                             |
| United Kingdom | <p>Not in detail at the moment. Many software packages will ask for an end-of-treatment oral health assessment to include a "tick-box" for outcomes such as improved oral hygiene and smoking cessation.</p> <p>The NHS 'vital signs' report provides an indication of the performance of dentists against their UDA target (i.e. the amount of NHS treatment they are expected to undertake in their NHS contract). The report is produced on a quarterly basis for each NHS dentist and provides a system of monitoring the impact of NHS funding and other initiatives on access and overall value for money. It measures four key areas: access, activity, quality and value for money. A new NHS dental contract is currently being piloted. This contract includes an oral health assessment and treatment planning programme. It is expected that this programme will provide a procedure to monitor treatment outcomes.</p> |                                                                               |

|             |                                                   |                                 |
|-------------|---------------------------------------------------|---------------------------------|
| Croatia     | Yes they can, but usage depends on the individual | -                               |
| Norway      |                                                   | No, at least not commonly used. |
| Switzerland | Yes, especially in surveys                        | -                               |

8. Which existing standards do dentists in your country use for information exchange concerning basic dental software “language” (e.g. DICOM for x-rays, XML-HL7, etc.)? **(Please ask software providers in your country)**

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | Most used are XML based systems                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Belgium        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Bulgaria       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Czech Republic | There exists four different dental software programmes in Czech Republic. For x-rays are used .jpeg and .bmp formats in different viewers from x-ray devices producers. It is difficult to gain info about basic dental “language” – as we know they are used Visual Object and Visual Studio.                                                                                                                                                                                              |
| Denmark        | The standard used is mostly DICOM – but other smaller IT mgmt. system providers use their own                                                                                                                                                                                                                                                                                                                                                                                               |
| Estonia        | DICOM, XML-HL7                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Finland        | DICOM is used; XML-HL7 will be the base of the coming system of the nationwide archive of all healthcare records, both public and private.                                                                                                                                                                                                                                                                                                                                                  |
| France         | Former standard with tagged text format. Future international XML Health Standard.                                                                                                                                                                                                                                                                                                                                                                                                          |
| Germany        | No. Only basic standards like XML are used for the information exchange via dental software (see also the reply to question 6.1). Specific standards like DICOM or XML-HL7 are not used by German providers of dental software.                                                                                                                                                                                                                                                             |
| Hungary        | The providers we asked use the above mentioned/listed software (DICOM, XML-HL7).                                                                                                                                                                                                                                                                                                                                                                                                            |
| Italy          | DICOM for X-rays is more common than others                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Lithuania      | DICOM for X-rays                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Malta          | Most dentists use Vix Win programme                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Netherlands    | XML is used to send messages by websites (webservices). SOAP is used for exchanging structured patient information and DICOM is used for the exchange of X-rays.                                                                                                                                                                                                                                                                                                                            |
| Portugal       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Slovakia       | DICOM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Spain          | GESDEN, NEMOTEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sweden         | Most common is DICOM                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| United Kingdom | There is no standard system for this; dentists do not tend to exchange information with each other through a compatible computer system/language. The software providers use their own proprietary formats and protocols for the practices using their systems. Computers are more usually used for transferring information about dentists' NHS claims to their relevant NHS authority, thus, essentially, for accounting purposes rather than for the purpose of exchanging patient data. |
| Croatia        | DICOM, XML and other on the market.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Norway         | DICOM possible, ebXML framework, national adoption of XML for contents.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Switzerland    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## 9. How is patient data protected according to national legislation:

| Country        | 9.1. In dental practices (for example, limited access requiring password, ID-card or professional card, etc.)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 9.2. For exchanging information between health professionals (for example, electronic signature, secure on-line portal, etc.)?                                                                                                                                                                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | It is the legal duty of every dentist to protect patient data though the method of the protection is not prescribed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | By law only via secure online portals                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Belgium        | Password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mostly not sufficiently secured                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Bulgaria       | Limited access requiring password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Czech Republic | Password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Electronic signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Denmark        | Most have password protection and specific login                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Most use secure transfer – encrypted emails, passwords, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Estonia        | ID card identification and digital signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Electronic signature and secure on-line portal                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Finland        | All these examples are used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Secure connection is used; the law does not allow using email to send patient data.                                                                                                                                                                                                                                                                                                                                                                                                         |
| France         | Password. In the near future, health professional smart card                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Health professional smart card; password                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Germany        | In Germany, patient data are generally treated as sensitive personal data. We have several specific regulations, e.g. in the context of radiology which contain specific provisions on how to treat electronic x-rays. In general, our national Data Protection Act is applicable to dentists. However, it only contains general provisions on the use, storage and treatment of sensitive personal data. Furthermore, the general law of professional rules and regulations for dentists is also applicable. To provide guidance in transferring these general provisions into practical references, BZÄK and KZBV have issued guidelines on data protection and data safety of dental records which have been provided to every dental practitioner. These guidelines contain specific recommendations on how to ensure data safety, for example using sufficient passwords and encryption software and data protection as well, for example using specific smartcards for the exchange of sensitive data. | BZÄK is strongly recommending using smartcards that contain a so-called qualified electronic signature referring to the German Electronic Signature Act. Such smartcards can be used for the exchange of information between health professionals and a secure authentication at on-line portals.<br><br>Our specific electronic health professional card for dentists contains an electronic certificate which approves that the card-holder is entitled to work as a dental professional. |
| Hungary        | Data privacy protection law defines precisely the handling of patient data. This law regulates the kind of data dentists can have access. Dentists have to ensure their own data protection. It is the dentists' responsibility if the data comes out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data communications exist primarily among dental offices financed by National Health Care Insurance. It means that the data communication goes through special modems and passwords to a server which stores the patient's information. The communication is processed on the health care registration number of the patient.                                                                                                                                                               |
| Italy          | Sensible data is protected according to national legislation, by ensuring limited access and requiring a password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Lithuania      | Limited access requiring password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Electronic signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                               |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Malta          | Access to the computer and to the software via a password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No protection, sent via normal email.                                                                                         |
| Netherlands    | It is protected by national legislation: Personal Data Protection Act: <i>Wet bescherming persoonsgegevens</i> and <i>de Wet op de Geneeskundige Behandelingsovereenkomst</i> (WGBO). Since 1-1-2011 dentists in Holland have to apply the Code for Information Security (NEN 7510). This is a set of rules of how to manage information security in dental practice for example the use of IC-cards (UZI-cards), the use of passwords and so on.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | See answer 9.1                                                                                                                |
| Portugal       | Limited access requiring password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secure on-line portal                                                                                                         |
| Slovakia       | The dentist is responsible for data protection of patients and his/hers employers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Same as in question 9.1: the dentist providing information is responsible for data protection.                                |
| Spain          | Limited access password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Secure-on-line portal. The legislation about confidentiality is very hard in our country. We use electronic signature (RIDO). |
| Sweden         | This is regulated in a special law on electronic dental/medical record. For example, access is only permitted to persons involved in the treatment of the patient (the legal caregiver has to check this by random controls of the log system), passwords to enter dental/medical record system and for signing all notations, the use of electronic ID cards is becoming more common, especially within the Public Dental Service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes, encryption.                                                                                                              |
| United Kingdom | <p>The Data Protection Act 1998 covers all aspects of data access and disclosure. Data must be processed fairly and lawfully. Owners of dental practices and self-employed dentists within practices are considered to be 'data controllers' and dental practices are 'data processors'. If they hold computer records, they have to be registered with a regulator, the Information Commissioner. Staff in dental practices are considered to be part of the 'data processors' and will therefore not register individually. They are bound by confidentiality clauses in their employment contract to ensure that data is kept confidential and not disclosed to third parties. All individuals regulated by the General Dental Council also have a professional obligation of safeguarding patient confidentiality.</p> <p>In order to prevent unauthorised access, it is advisable for access to computerised records to be dependent on passwords known only to essential staff and not easily discovered or implemented by chance. Staff responsible for maintaining computerised records must be fully trained to minimise the risk of error and the accidental loss of a record. Back-up copies should be stored in a secure and fire-protected place away from the computer installation, preferably off the premises. It is also essential that computer records have a full audit trail facility to prevent data being erased or overwritten and record details of any amendments made to the data including the date and by whom the data were amended. This is an essential medico-legal requirement.</p> <p>There are no specific legal provisions for the safety of the data being exchanged between health professionals for the purpose of patient care. The legislation only deals with the requirement for consent of the patient to such disclosure.</p> <p>Within the NHS in England, however, dental practices are now required to complete an Information Governance toolkit. The kit looks at information governance management, confidentiality and data protection assurance, and information security assurance. It requires the practice to have a number of protocols and procedures in place to ensure security of data. Following completion of the kit, the dental practice makes a statement to the NHS confirming it is compliant with current requirements related to the security of data held in practice.</p> |                                                                                                                               |

|             |                                                                                                                                                                                                                                          |                                                                                                   |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Croatia     | Current regulations (health protection law, privacy protection law) require limited access to information and data using ID card and passwords, requiring also personal responsibility of every staff member dealing with personal data. | For that purpose ID code and smart cards, as well as secured online portals are in use.           |
| Norway      | Minimum requirement is username/ password, electronic signature possible                                                                                                                                                                 | Electronic signature, in use for dentists when seeking reimbursement from national sickness fund. |
| Switzerland | -                                                                                                                                                                                                                                        | -                                                                                                 |

10. Do dentists in your country receive financial incentives to implement ICT tools in dental practices?

|                |                                                                                                                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | There were some financial incentives for dentists when the chip-card system for the patients was introduced. Unfortunately these incentives are not applicable anymore.                                                                                                                 |
| Belgium        | No, in preparation.                                                                                                                                                                                                                                                                     |
| Bulgaria       | No                                                                                                                                                                                                                                                                                      |
| Czech Republic | No                                                                                                                                                                                                                                                                                      |
| Denmark        | No                                                                                                                                                                                                                                                                                      |
| Estonia        | No                                                                                                                                                                                                                                                                                      |
| Finland        | No                                                                                                                                                                                                                                                                                      |
| France         | Financial support from health insurance (400 Euros per year): launching plus maintenance.                                                                                                                                                                                               |
| Germany        | In few cases our national legislator has obliged dentists to install and use specific ICT tools. Under these circumstances a reimbursement for the adjustment and also for the running costs of the equipment is possible.                                                              |
| Hungary        | In dental offices financed by National Health Care Insurance the patient's health care insurance has to be controlled each time according to the internet based insurance registration number of the patient and for that National Health Care Insurance accounts for a symbolic price. |
| Italy          | No                                                                                                                                                                                                                                                                                      |
| Lithuania      | No                                                                                                                                                                                                                                                                                      |
| Malta          | No                                                                                                                                                                                                                                                                                      |
| Netherlands    | No                                                                                                                                                                                                                                                                                      |
| Portugal       | No                                                                                                                                                                                                                                                                                      |
| Slovakia       | No                                                                                                                                                                                                                                                                                      |
| Spain          | No                                                                                                                                                                                                                                                                                      |
| Sweden         | To be a part of the National Health Care system enabling reimbursement for the patient this is a must.                                                                                                                                                                                  |
| United Kingdom | Not currently. As part of the future NHS contract dentists will have to be linked to an online system. Whether funding will be provided for those in need to modernise or install new equipment is not currently clear.                                                                 |
| Croatia        | Private practitioners, no; contractors with Croatian Health Insurance as social security provider, yes.                                                                                                                                                                                 |
| Norway         | No                                                                                                                                                                                                                                                                                      |
| Switzerland    | -                                                                                                                                                                                                                                                                                       |



11. How do you store your patient records? Locally in your computer or in “cloud” – in some secure central server? How is backup organized?

|                |                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | A majority of dentists store the records still in their computer but clouding is getting more ground. There are different ways how backup is organized like DVD, USB or a second hard disk.                                                                                                                                                                                                    |
| Belgium        | Individual different systems                                                                                                                                                                                                                                                                                                                                                                   |
| Bulgaria       | -                                                                                                                                                                                                                                                                                                                                                                                              |
| Czech Republic | The dentists who are using only computer (without printed records) need to use the electronic signature and the records are stored in computer – it is necessary to make a back up daily on two different memory media stored in safe.                                                                                                                                                         |
| Denmark        | a) data/records are stored in the practice – on a server; b) backup is often done with local backup media, external backup or for a few with external backup and verification. The largest providers of IT mgmt systems use external back-u.                                                                                                                                                   |
| Estonia        | Only locally; nationwide in 2012.                                                                                                                                                                                                                                                                                                                                                              |
| Finland        | Now locally, nationwide system is coming in 2014.                                                                                                                                                                                                                                                                                                                                              |
| France         | In the computer (very few servers). No backup is organized.                                                                                                                                                                                                                                                                                                                                    |
| Germany        | In general dentists store and secure their patient records locally. Due to data protection reasons, BZÄK strongly advises our dentists not to use cloud-technologies or central servers.                                                                                                                                                                                                       |
| Hungary        | Central Data Storage is not yet solved. All dental offices record data in their own computers or they handle the data manually through medical files. Each dental office needs to ensure that their data is saved – they do it on their own.                                                                                                                                                   |
| Italy          | Records are generally stored in a computer and/or in an external hard disk.                                                                                                                                                                                                                                                                                                                    |
| Lithuania      | Locally on a computer, secure central server.                                                                                                                                                                                                                                                                                                                                                  |
| Malta          | Locally on a computer and backed up on a secure server.                                                                                                                                                                                                                                                                                                                                        |
| Netherlands    | Most of the dentists store their patient records locally on their own computers and not in the 'cloud'. They organise their backups individually. It is not known how often they do that, if daily, weekly or monthly.                                                                                                                                                                         |
| Portugal       | Locally in the computer. Backup is organised in hard disks.                                                                                                                                                                                                                                                                                                                                    |
| Slovakia       | Patient records are stored both electronically and in paper form. Electronic storage is locally in dentists' computer. The dentist should periodically assure a backup. Paper files are to be stored in safely locked drawers.                                                                                                                                                                 |
| Spain          | Usually the patient records are stored locally.                                                                                                                                                                                                                                                                                                                                                |
| Sweden         | So far, most often on servers with secured routines for backups, but there might be a trend towards web-based solutions.                                                                                                                                                                                                                                                                       |
| United Kingdom | There is currently no system for this, although it is being considered as part of the dental NHS pilots and an NHS-wide strategy. The vast majority of dentists will, at the moment, hold the data in their practice and are advised to have an elaborate back-up system in place. Software suppliers are exploring cloud-based applications and already offer remote back-up of records/data. |
| Croatia        | Mostly locally, on hard disc and local backup copy on external memory. Hardware is not permanently on internet, and is shut off after working hours. Backups are made daily after closing office manually.                                                                                                                                                                                     |
| Norway         | Mostly locally. ASP possible. Backup is up to the individual practice. Both local and cloud possible.                                                                                                                                                                                                                                                                                          |
| Switzerland    | Individual solutions.                                                                                                                                                                                                                                                                                                                                                                          |



12. Do you have a common e-Health system with other healthcare professionals or do you have a solution solely for dental professionals?

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Austria        | The chip-card system for the patient is common for dentists and medical doctors, the newly planned ICT system will also be used by dentists and medical doctors.                                                                                                                                                                                                                                                                                                    |
| Belgium        | Common e-Health system                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Bulgaria       | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Czech Republic | It exist a common e-Health system (iZip) but it is not commonly used with healthcare professionals.                                                                                                                                                                                                                                                                                                                                                                 |
| Denmark        | No common system available in private practice                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Estonia        | Only partly – we can only have specific information from other healthcare professionals.                                                                                                                                                                                                                                                                                                                                                                            |
| Finland        | Mostly solutions for dentistry are separate, but in the public health centres and in hospitals there are systems that are common with medical doctors.                                                                                                                                                                                                                                                                                                              |
| France         | No, only for dentists.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Germany        | The establishment of a common e-Health-system in Germany (so called Telematikinfrastruktur) is ordered in sec. 291, 291a and 291b of our Social Act Nr. 5. However the system will probably not be in place before 2014 or 2015. BZÄK is monitoring the development very close. In the mean time several ICT-solutions for dental professionals are taking place, for example to ensure a safe and legally secure way to account and bill via electronic means.     |
| Hungary        | For dental offices finances by National Health Care Insurance (approximately 3300 dental offices) there is a common e-health system, but that it still in its infancy.                                                                                                                                                                                                                                                                                              |
| Italy          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lithuania      | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Malta          | There is a common e health system in the public sector and this is linked to the medical files of all patients – there is no link in private practice between private and private or private and public.                                                                                                                                                                                                                                                            |
| Netherlands    | No, just a solution for dental professionals                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Portugal       | Mainly the solutions are for dental professionals                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Slovakia       | The e-Health system (principles, law, insurance company communication, etc.) is common with other healthcare professionals, however, the software for dentists is usually specific (patient files, etc.).                                                                                                                                                                                                                                                           |
| Spain          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Sweden         | Basically dental and medical health care professionals use different systems. However in the Public Dental Service, foremost specialist dental care, there are examples of dental health care professionals using the medical system or having access to that system to receive information on e.g. patients in hospitals.                                                                                                                                          |
| United Kingdom | Consideration is being given to linking dentists into the NHS-wide 'Choose and Book' system, but currently the systems are entirely separate. It would be useful to link more effectively with other clinical systems. However, the UK's 'National Programme for IT' has recently been stopped and the approach will be reconsidered over time, therefore it is not expected that any major steps will take place for dentistry in this respect in the near future. |
| Croatia        | The so called unified e-health chart is in limited use (cca. 50% of dentist are connected, and almost 1005 of general practitioners – family medicine offices).                                                                                                                                                                                                                                                                                                     |
| Norway         | Solely dental professionals.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Switzerland    | E-Health system in construction.                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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