Supplementary Table 1: Aspects with multiple assignment to domains\*

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Technologies** | | **HTA domains** | | | | | |
| **Videorasterstereography** | **X-ray** | **S & E** | **Econ** | **Ethics** | **Law** | **Soc-cult** | **Org** |
| **Radiation exposure** | | | | | | | |
| No radiation exposure, purely light-optical procedure; harmless especially for children, pregnant women | Increased risk of cancer, especially breast cancer; requirements according to GRR, e.g. health benefit must outweigh radiation risk, lead protection | X | X | X | X | X | X |
| **Diagnostic accuracy** | | | | | | | |
| No imaging of bony structures; diagnostic studies available to compare the technologies | Established and reliable procedure, not questionable standard, e.g. for corset production | X | X | X | X |  |  |
| Alignment of patient in standardized position: free standing; compensation of posture variations by averaging several images over 6 seconds | Patient in standardized position: patient leans against X-ray film cassette, depending on the height of the back cusps additional torsion of the trunk | X |  |  |  |  | X |
| **Personal data/privacy** | | | | | | | |
| Confidentiality, documentation and storage obligation according to GMPCCD; but grey area, as users are sometimes also non-medical specialists, e.g. in medical supply stores for corset production | Confidentiality, documentation and storage obligation according to GMPCCD further obligations according to GRR, e.g. X-ray pass |  |  | X | X | X | X |
| **Use of services** | | | | | | | |
| No assumption of costs by statutory health insurance, but by private health insurance; therefore the use of services depends on socio-economic status | Cost absorption by statutory and private health insurance; no social inequality | X | X | X | X | X | X |
| More frequent control examinations possible, since no radiation exposure, possibly compensation of lower accuracy | Frequency of control examinations due to radiation exposure also limited according to GRR | X | X | X | X | X | X |
| Possible lack of acceptance due to missing information or scepticism | Established, known procedure; information about risks of this radiation exposure necessary (X-ray passport) | X |  | X |  | X | X |
| Distribution not comprehensive, possibly long waiting and travel times | Nationwide distribution, access with little time |  | X | X |  | X | X |
| **Self-determination** | | | | | | | |
| Self-determination about the frequency of the check-up (additional confirmation possibility, reduction of fears about progression) or by choosing the alternative for necessary examinations, e.g. in case of suspected progression | Self-determination limited to waiving necessary examinations, e.g. in case of suspected progression |  | X | X |  | X | X |
| **Qualification requirements/expenses for service providers** | | | | | | | |
| Execution by a person with appropriate device training, no additional personnel required for professional performance | Execution by a physician with expertise in radiation protection, MTRA or person with appropriate training or under supervision/supervision and with expertise according to GRR |  | X |  | X |  | X |
| No construction requirements, annual maintenance, training/refresher courses | Requirements according to GRR: X-ray room, regular functional testing/maintenance, advanced training/refresher courses |  | X |  | X |  | X |
| **Application** | | | | | | | |
| For follow-up as an alternative/supplementary to clinical examination or alternative to conventional X-rays if progression is suspected | For initial diagnosis, in case of suspected progression, for fabrication/check of corset, pre-/postoperative | X | X |  |  |  | X |
| Limited range of application (scoliosis, poor posture, leg axis asymmetry, pelvic obliquity, etc.) | Scope not limited |  | X |  |  |  | X |
| **Patient comfort** | | | | | | | |
| No safety precautions, rapid measurement, no holding of breath, examiner and relatives can remain in the room during measurement, patient stands with back to the examiner (if necessary, reduction of shame), discussion of findings immediately possible | Protective measures according to GRR, e.g. lead apron, two exposures (anterior-posterior and lateral beam path), holding breath, patient alone during exposure in separate X-ray room, immediate discussion of findings only possible with digital radiography and if a radiology unit is available in the orthopedic practice |  |  | X | X | X | X |
| **Acceptance** | | | | | | | |
| Possible resistance to technology  Doctors: due to different technique / mode of operation  Personnel: due to new/changed tasks and responsibilities  Patients: due to a lack of information, due to costs to be borne by the patient | Resistance to the technology  Patients: due to radiation exposure |  | X | X |  | X |  |
| **Power relations** | | | | | | | |
| Possible rivalries due to competition at the expense of patients between the professional associations of radiology and orthopaedics  Higher ranking and unjustified preference of private health insurance policy holders or self-payers over persons with a low socio-economic status who cannot afford the study despite having been informed | Radiology as a "monopoly" for follow-up (besides clinical examinations)  Balanced relationship between patients due to solidarity-based reimbursement |  | X | X | X | X |  |
| \* The table content resulted from the development of the initial and final logical model by reflective thoughts, answering checklists and question catalogues, using and developing several tools, the patient meeting, discussions with domain experts and involvement of further stakeholders.  E: Economics, GMPCCD: German model professional code of conduct for doctors, MTRA: Medical-technical radiology assistant, Org: organizational, GRR: German radiological regulation, S & E: Safety and efficacy, Soc-cult: Sociocultural | | | | | | | |