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CHES: a software for data collection, analysis and presentation of the EORTC QLQ-C30 and its modules within the QLQ

Holzner Bernhard, Johannes Giesinger

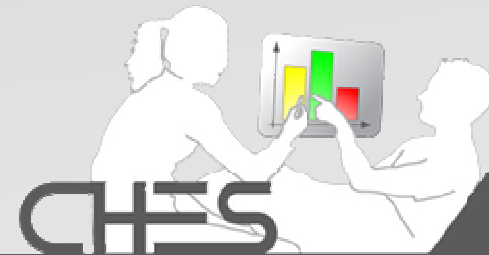
Department for Psychiatry and Psychotherapy
Innsbruck Medical University

Evaluation Software Development (ESD)

EORTC QLQ Meeting – Rome, April 2010

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Overview

- ⇒ General information
- ⇒ presentation of latest software features
- ⇒ Implementation experiences
- ⇒ EORTC grant details

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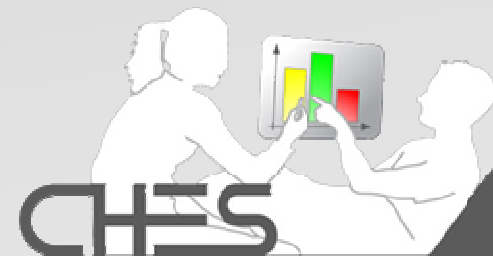
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Background I

- ⇒ Important general trend towards electronic data collection of PRO
- ⇒ Commercial software packages for data collection within clinical trials (e.g. Outcome)
- ⇒ Various software solutions for use in clinical routine (e.g. AnyQuest, Oncoquest, CHES...)

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Background II

- ⇒ Software development for 7 years (Computer-based Health Evaluation System CHES)
- ⇒ Implementation in various clinical settings (2.500 pat; > 10.000 assessments)
- ⇒ National meeting on ePRO with clinicians (Dec 2009)
- ⇒ Small national Grant: FemTech
- ⇒ EORTC grant: starting April 2010

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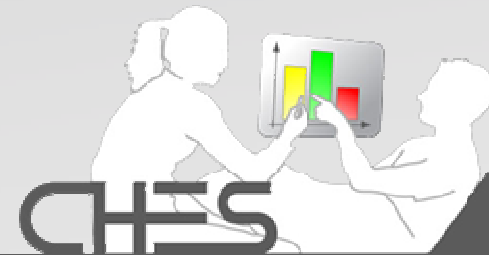
Grant details

- ⇒ Further development of the Computer-based Health Evaluation System (CHES)
- ⇒ Dissemination of the software (via website)

- ⇒ 2.5-years project from December 2009 to May 2012
- ⇒ official start in April 2010 –
some preliminary work has been done before

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Important Milestones

- ⇒ English version
- ⇒ Update System for web based bug fixing
- ⇒ Website
- ⇒ Home monitoring (web based data entry)
- ⇒ CAT data entry
- ⇒ User management
- ⇒ Statistic module
- ⇒ Multilingual version

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CHES – current features

- ⇒ JAVA Software, client – server solution, data security
- ⇒ data base: mysql, oracle...
- ⇒ Eyecatching graphical reports
- ⇒ data export and import interface (e.g. SPSS)
- ⇒ Adaptive „Flag system“ for detecting and marking patients with clinically relevant problems
- ⇒ Linking of course of disease and treatment with QoI data, presentation in the graphical output
- ⇒ Specific med. interventions can also be easily incorporated in the graphical output
- ⇒ print module, study monitoring module

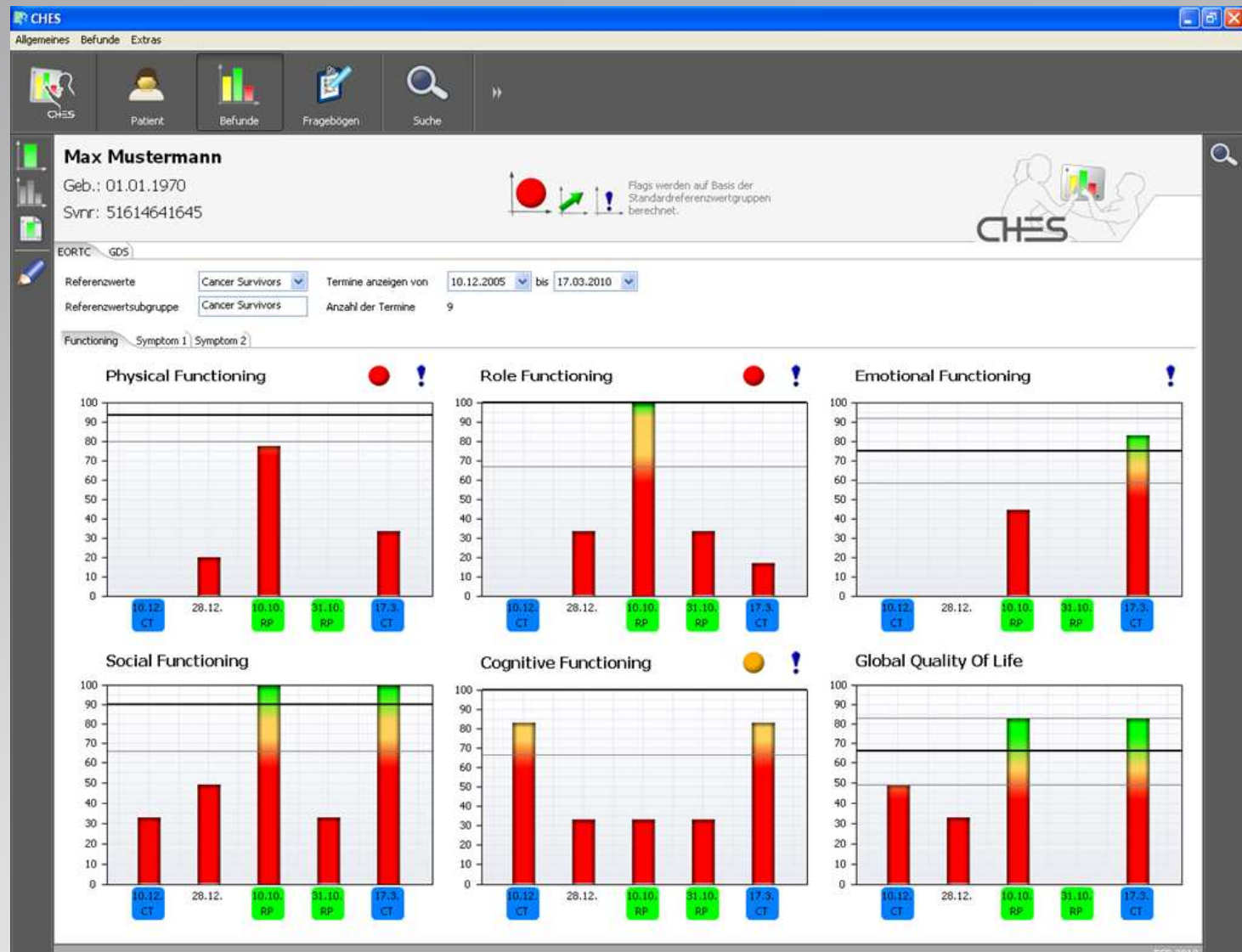
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Longitudinal QOL report

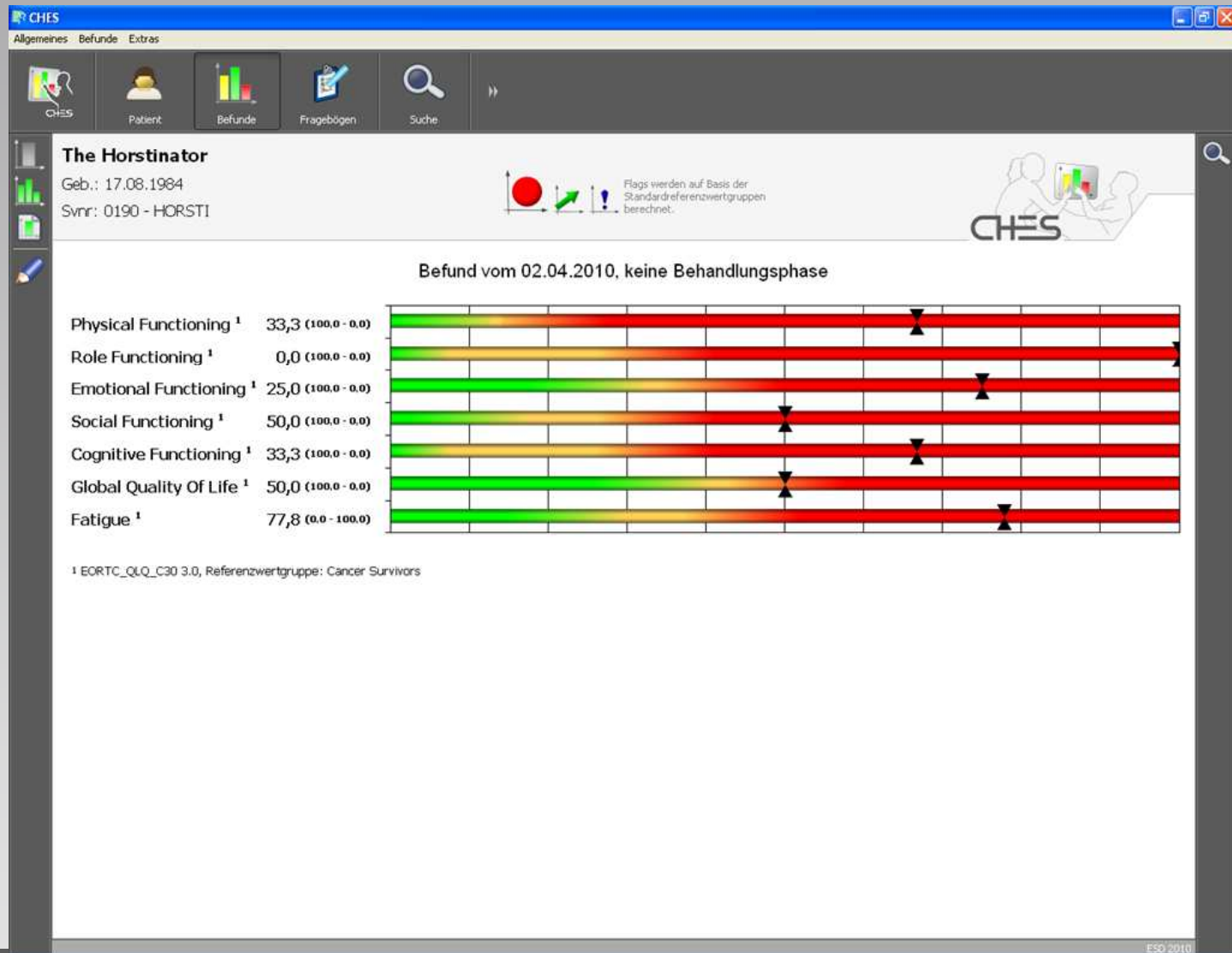


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Cross-sectional QOL report



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Questionnaire – Patient front-end

Max Mustermann	Untersuchung, am 17.03.2010:			fertig <input type="radio"/>
Geb.-Dat.: 01.01.1970 SVNr.: 51614641645	EORTC_QLQ_C30 (3.0)			
Wir sind an einigen Angaben interessiert, die Sie und Ihre Gesundheit betreffen. Bitte beantworten Sie die folgenden Fragen selbst, indem Sie die Zahl ankreuzen, die am besten auf Sie zutrifft.				
Während der letzten Woche:				
Bereitet es Ihnen Schwierigkeiten sich körperlich anzustrengen (z.B. eine schwere Einkaufstasche oder einen Koffer zu tragen?)	<input type="radio"/> Überhaupt nicht	<input checked="" type="radio"/> Wenig	<input type="radio"/> Mäßig	<input type="radio"/> Sehr
Bereitet es Ihnen Schwierigkeiten, einen längeren Spaziergang zu machen?	<input type="radio"/> Überhaupt nicht	<input checked="" type="radio"/> Wenig	<input type="radio"/> Mäßig	<input type="radio"/> Sehr
Bereitet es Ihnen Schwierigkeiten, eine kurze Strecke ausser Haus zu gehen?	<input type="radio"/> Überhaupt nicht	<input type="radio"/> Wenig	<input type="radio"/> Mäßig	<input checked="" type="radio"/> Sehr
Müssen Sie tagsüber im Bett liegen oder in einem Sessel sitzen?	<input type="radio"/> Überhaupt nicht	<input checked="" type="radio"/> Wenig	<input type="radio"/> Mäßig	<input type="radio"/> Sehr
Brauchen Sie Hilfe beim Essen, Anziehen, Waschen oder Benutzen der Toilette?	<input type="radio"/> Überhaupt nicht	<input type="radio"/> Wenig	<input checked="" type="radio"/> Mäßig	<input type="radio"/> Sehr
Waren Sie bei Ihrer Arbeit oder bei anderen tagtäglichen Beschäftigungen eingeschränkt?	<input type="radio"/> Überhaupt nicht	<input type="radio"/> Wenig	<input checked="" type="radio"/> Mäßig	<input type="radio"/> Sehr
				weiter

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Clinical report generator

Universitätsklinik für Spezielle Gynäkologie - Brustzentrum Salzburg
Vorstand: Prim. Univ.-Prof. Dr. Christian Menzel

Pat.-ID: Chef
Patient: Max Mustermann
Geburtsdatum: 01.01.1970
Erhebungsdatum: 17.03.2010

Befund zu Patient-reported Outcomes vom 17.03.2010

Max Mustermann befand sich zur Zeit des PRO-Monitorings (17.03.2010) in der Behandlungsphase "Chemotherapy".

Starke Beeinträchtigungen in den folgenden Bereichen:

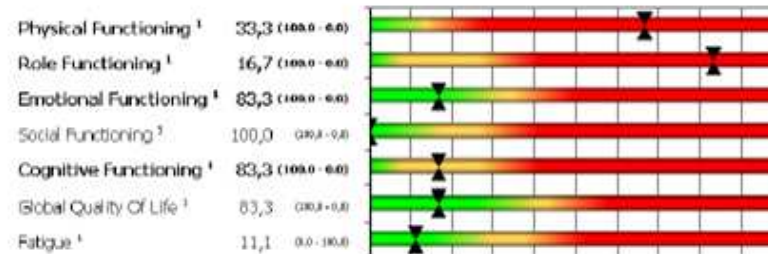
Physical Functioning¹ und Role Functioning¹

Beeinträchtigungen in den folgenden Bereichen:

Emotional Functioning¹ und Cognitive Functioning¹

Die übrigen erhobenen Befunde waren unauffällig.

Verwendete Untersuchungsinstrumente: EORTC_QLQ_C30 3.0



Automatisch generierter Befund!

¹ EORTC_QLQ_C30 3.0, Referenzwertgruppe: Cancer Survivors

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Publications

Implementation

- ⇒ **Implementation of computer-based quality of life monitoring in brain tumor outpatients in routine clinical practice** (Erharter et al., JPSM 2009)
- ⇒ **Towards the Implementation of Quality of Life Monitoring in Daily Clinical Routine: Methodological Issues and Clinical Implications** (Giesinger et al., Breast care 2009)
- ⇒ **Development of a screening tool for the identification of psychooncological treatment need in breast cancer patients** (Meraner et al., Psychooncology 2009).

Other Articles using CHES Data

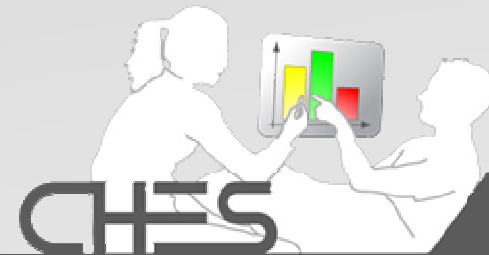
- ⇒ **A new approach to combining clinical relevance and statistical significance for evaluation of quality of life changes in the individual patient** (Kemmler, JCE 2009)
- ⇒ **Are gender-associated differences in quality of life in colorectal cancer patients disease-specific?**
(Giesinger et al., Qual Life Res 2009)
- ⇒ **Taste alterations in cancer patients receiving chemotherapy – a neglected issue?** (Zabernigg et al., submitted)

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→ Extension of the database by each study/project





Practical Experiences I

Computerized data collection (with CHES) is well accepted by the patients and physicians
experiences of more than 10.000 assessments in various clinical settings

Dealing with IT-problems is sometime tricky (Computer systems in hospitals are quite different)

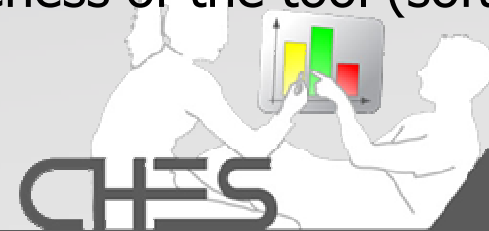
Computerized data collection has to be supervised (nurse, student, physician, psychooncologist, study nurse...)

Use of the software and the profiles by the physicians depends on

-) their attitude towards such QoL projects
-) their „computer friendliness“
-) the user-friendliness and the attractiveness of the tool (software)

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Practical experiences II

Physicians tend to overlook the individual EORTC Functioning scales and concentrate on the Global QoL subscale

Interpretation of functioning scales and its clinical meaning has to be trained

How can various symptoms and functioning scales and its impact on each other be interpreted? (e.g. fatigue, physical and emotional functioning...)

- regular training sessions with patient data

Physicians can be guided by an „intelligent“ software tool – e.g. by a flag system for easy interpretation of QoL profiles

Integration of computerized QoL-assessments can improve oncological treatment: e.g. problems with bladder control, appetite loss and taste problems, were recognized as clinically relevant

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Future perspective

EORTC grant

Clinical use

Home monitoring

Flag/alert system

Expectations on ePRO/software

Impact on medical decision making?

?????

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