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INNSBRUCK

# Update 1

## Development of the PC-software “Computer based Health Evaluation System” (CHES)

# Update 2

## Results of an evaluation study

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Evaluation  
Software  
Development

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EORTC QLG meeting, Paris 2006



# Background

- ⇒ QOL measurement as a clinical instrument has the potential of playing an important role in clinical decision making, e.g.
  - ) Improvement of symptom control by screening special problems
  - ) Enhancing patient participation in the treatment process
- ⇒ Prerequisite for this is that QOL assessments are integrated in the daily clinical routine
- ⇒ **Use of Computer-technology is indispensable for this**





# Software Development

Several steps, time of development 4 years

1. Data assessment (EORTC QLQ-C30) by paper and pencil, data input by study nurse into Excel Spreadsheet, longitudinal EORTC QoL profile was printed
2. Visual Basic (VBA) Software – data input by the patients themselves (via Tablet-PC), storage in database
3. **CHES Computer-based Health Evaluation System, Professional computer software on JAVA basis**

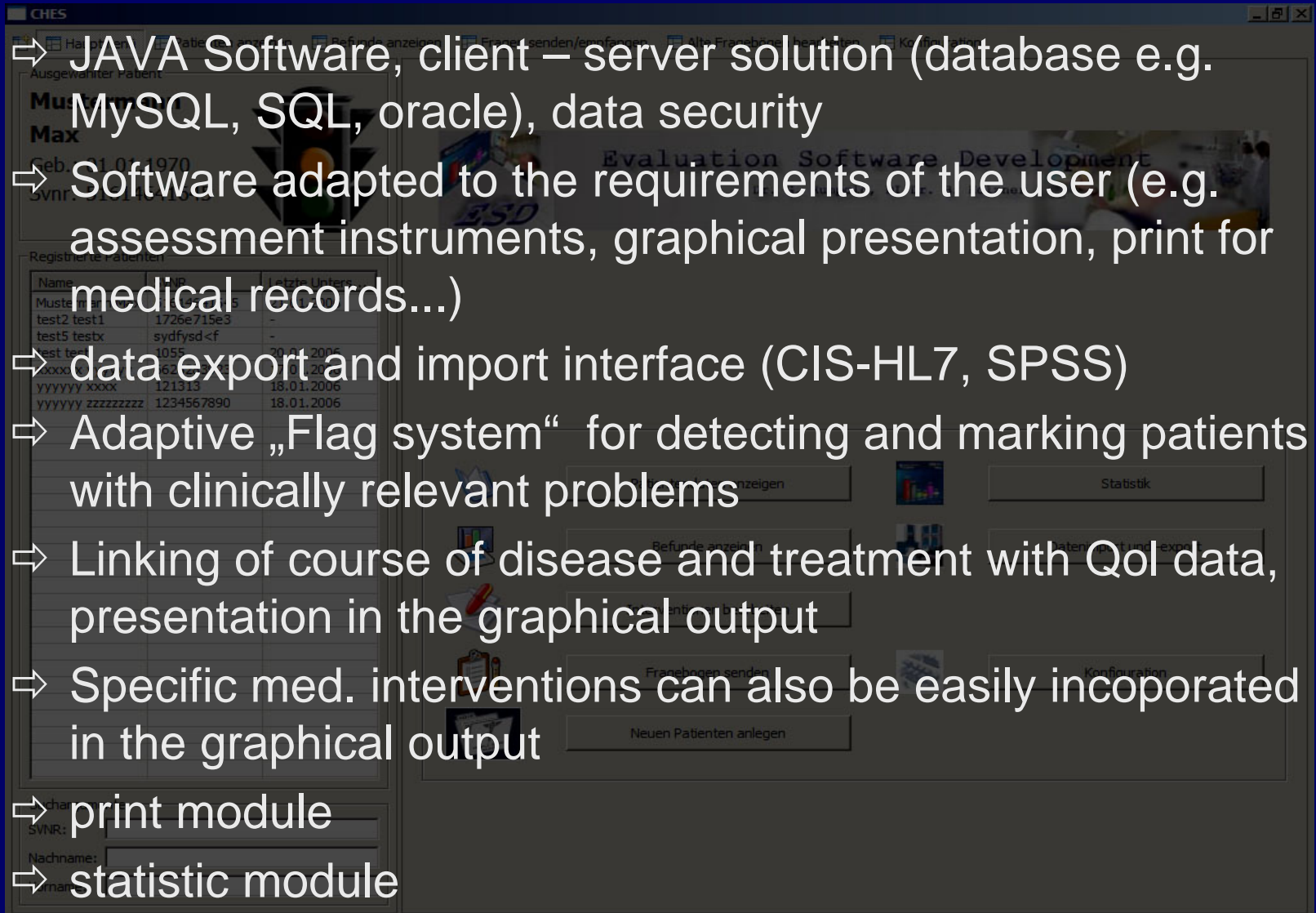




# Computer-based Health Evaluation System – CHES

## PC-software for the assessment, calculation and presentation of psychosocial and medical data

- ⇒ JAVA Software, client – server solution (database e.g. MySQL, SQL, oracle), data security
- ⇒ Software adapted to the requirements of the user (e.g. assessment instruments, graphical presentation, print for medical records...)
- ⇒ data export and import interface (CIS-HL7, SPSS)
- ⇒ Adaptive „Flag system“ for detecting and marking patients with clinically relevant problems
- ⇒ Linking of course of disease and treatment with Qol data, presentation in the graphical output
- ⇒ Specific med. interventions can also be easily incorporated in the graphical output
- ⇒ print module
- ⇒ statistic module





# Computerized assessment of QoL in patients undergoing chemotherapy

Research project with a „forerunner“ of the presented software

## Research questions

What impact does the individual routine assessment of QOL in the clinical oncological practice have on the.....

- patients' satisfaction with care?
- patients' QOL?
- medical treatment? Are there interventions directly based on the individual QOL measurement?





## Patients and Methods

- ⇒ 145 Patients undergoing chemotherapy (different types of cancer) at the oncological outpatient unit of Kufstein County Hospital
- ⇒ „Intervention“: Routinely QOL assessment (EORTC QLQ-C30) including graphical presentation (CHES forerunner)
- ⇒ Evaluation of physician patient contact: QOL (COOP-WONCA charts), medical interventions, Patients' Satisfaction Questionnaire (PSQ)

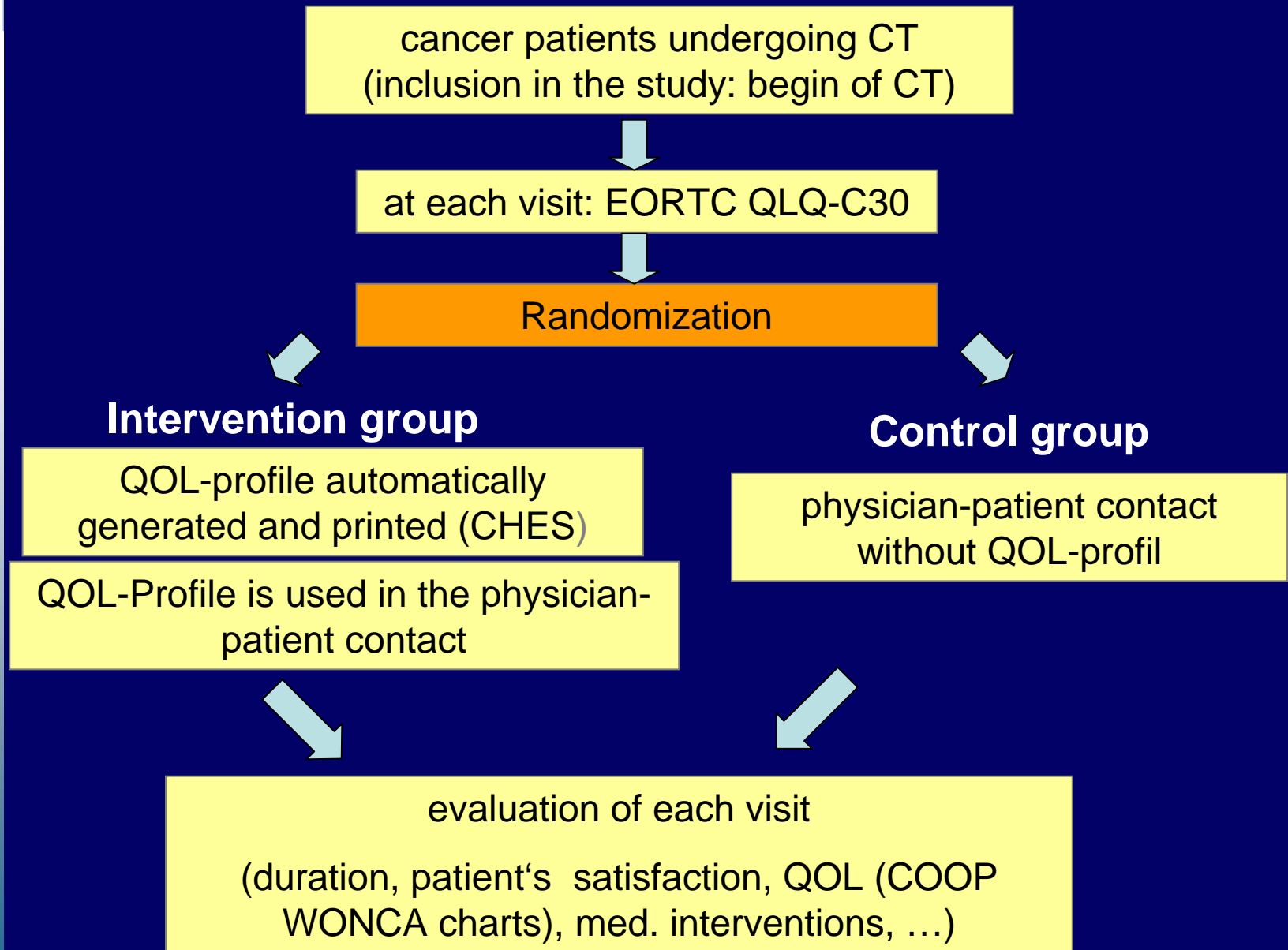
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# Flow chart





## Summary of main results

- ⇒ QOL-assessments and its graphical presentation can be integrated in the daily clinical oncological practice
- ⇒ Improvement of patients' satisfaction with care
- ⇒ QOL improvement (physical and emotional domain, particularly for chemotherapy non-responders)
- ⇒ Medical interventions were initiated based on the discussion of the QOL profile: 1/6 of all visits





# Ongoing CHES - Projects

- ⇒ **QoL-assessment of oncological outpatients**  
Department of Internal Medicine, Wels Hospital, Austria  
Department of Internal Medicine, County Hospital Kufstein, Austria
- ⇒ **Comprehensive QoL-assessment of patients with colorectal cancer**  
Department of Internal Medicine, Wels Hospital, Austria
- ⇒ **Comprehensive Geriatric Assessment of oncological patients (age>65a)**  
Department of Internal Medicine, Hospital Merciful Brethren, Vienna, Austria
- ⇒ **QoL-assessment of patients with brain tumor and their relatives**  
Department of Neurology, Medical University Innsbruck, Austria

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# Practical experiences

- ⇒ Computerized data collection (with CHES) is well accepted by the patients and physicians
- ⇒ Computerized data collection has to be supervised
- ⇒ Use of the software and the profiles by the physicians depends on their attitude towards such QoL projects and also on their „computer friendliness“
- ⇒ EORTC Functioning scales are sometimes reduced to Global QoL by physicians
- ⇒ Interpretation of functioning scales and its clinical meaning has to be learned  
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
- ⇒ Use of the QoL profiles has the power of changing clinical practice (e.g. sleep disturbances, taste alterations...)





## CHES – Projects in implementation

- ⇒ **Comprehensive QoL-assessment of QoL of patients with testicular cancer (from diagnosis to long-term follow up)**  
Department of Urology, Medical University Innsbruck, Austria
- ⇒ **QoL-assessment and psychooncological indication in oncological outpatients**  
Department of Oncology, Medical University Graz, Austria

## CHES – Projects in planing

- ⇒ **QoL-assessment of outpatients with multiple myeloma**  
Medical Clinic - Hematology and Oncology, Charité Berlin, Germany
- ⇒ **QoL-assessment and psychooncological indication in oncological outpatients**  
Department of Psychosocial Medicine, University Leipzig, Germany





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# “Computer based Health Evaluation System” (CHES)

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