



## CEBO: organizational position in Masaryk Univerzity

Kamenice 126/3, 625 00 Brno, Czech Republic



Faculty of Medicine,  
Masaryk University, Brno



Faculty of Science,  
Masaryk University, Brno



# Centre of Biostatistics and Analyses

[www.cba.muni.cz](http://www.cba.muni.cz)

is professional IT provider, SW developer and guarantee of data analyses

CBA, Faculty of Science, Faculty of Medicine, Masaryk University,  
Kamenice 126/3, 625 00 Brno, Czech Republic, [cba@cba.muni.cz](mailto:cba@cba.muni.cz)

The Centre of Biostatistics and Analyses (CBA) was established in 2001 as inter-faculty institute of Masaryk University in Brno, Czech Republic. As an academic institute, CBA has the following mission:

- 1) **Education and research** in the field of applied data analysis and ICTs for biological and clinical disciplines
- 2) **Professional service and guaranty for clinical trials and health care registries** (data analysis, software development, internet services)
- 3) To develop newly established **study program Computational Biology** in the Czech Republic



Regarding clinical registries and clinical trials, CBA closely collaborates with participating clinical centers and works under the guarantee of professional societies.



Faculty of Science,  
Masaryk University, Brno



Faculty of Medicine,  
Masaryk University, Brno

# Centre of Biostatistics and Analyses

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## Academic institute

- > Established in 2001
- > 40 employees
- > > 65 scientific projects

## Structure /divisions/

- > Data analysis
- > **Clinical trials**
- > Environmental informatics
- > SW development & ITC

## Research and teaching

- > Computational biology
- > Ecological risk assessment
- > Human risk assessment
- > Evidence-based medicine



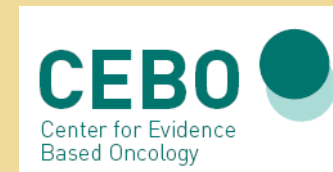
# CEBO is coming to new environment



**Centre of Biostatistics  
and Analyses**



**Institute of Biostatistics  
and Analyses**



# CEBO is a part of newly established IBA



**IBA<sub>PřF MU</sub>**

**IBA<sub>LF MU</sub>**

**Division of environmental informatics**

**Economic department**

**Division of clinical trials**

**Division of data analysis**

**Division of ICT and SW development**



# CEBO is supported by newly established IBA



**IBA<sub>PřF MU</sub>**

Division of environmental informatics

Economic department

**Organization**

**Contract service**

**IBA<sub>LF MU</sub>**

**Education**

**Division of clinical trials**



**Data analysis**

Division of data analysis

**SW support**

Division of ICT and SW development

# Position of CEBO

-   **Independent academic department**
-   **Prepared for **complex service** in the field of interest**
-   **Professional support to clinical projects in all steps during their „life cycle“ trajectory**
-   **Open for both national and **international** collaboration**
-   **Financial sources ?**

# Management & functionality of CEBO

## EXECUTIVE MANAGEMENT

**Management  
of MU**

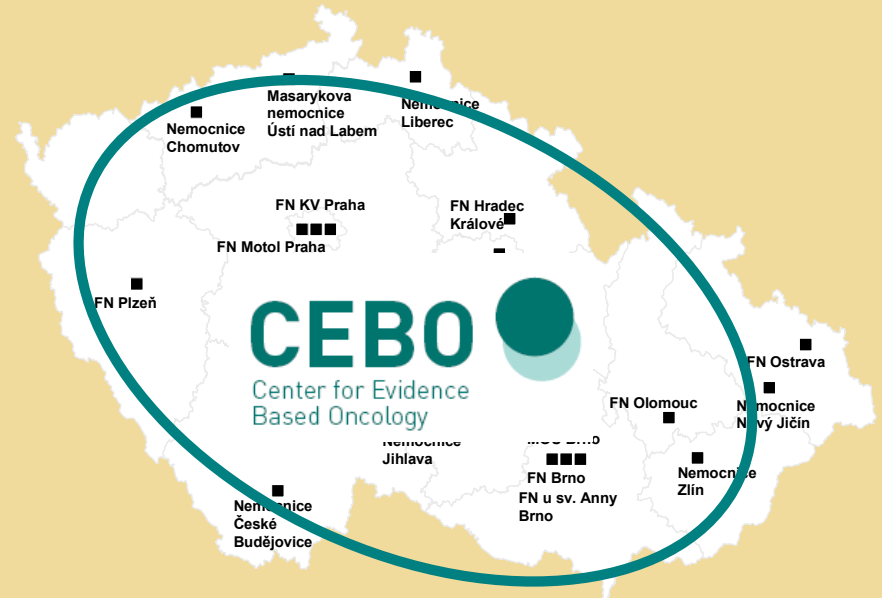


**Management  
of IBA**



➔ **CEBO Office**  
**Executive manager**  
**Professional team**

## SCIENTIFIC MANAGEMENT



➔ **Program committee**  
**Advisory board**

# Management & functionality of CEBO

## INPUTS

## OUTPUTS

**Initiation of projects  
/national, international/** →

→ **Advice, theoretical  
support**

**Project based on  
collaboration** →

→ **Educational  
support**



→ **Feasibility studies  
Project design**

**Ideas, proposals,  
hypotheses** →

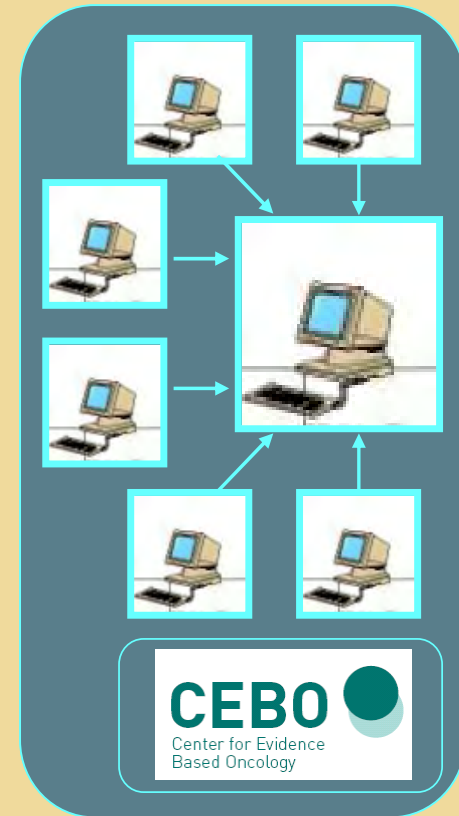
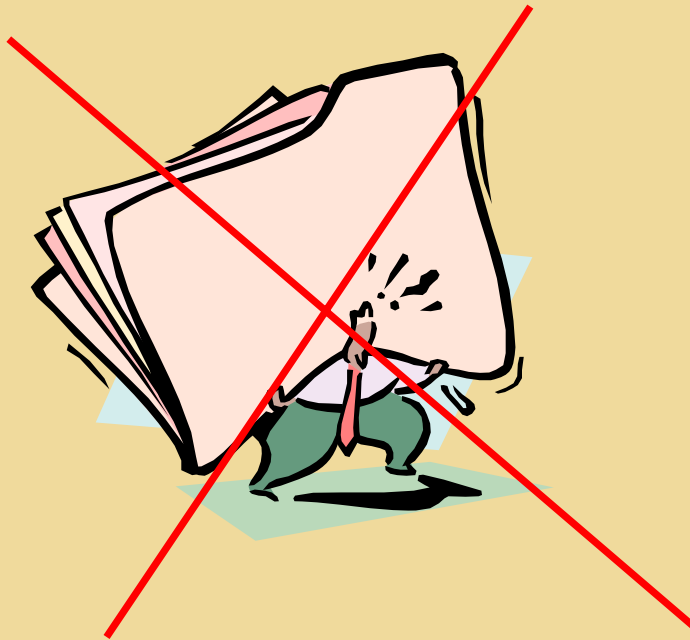
→ **Methodical support  
Partial services**

**Problems to be  
solved** →

→ **Project  
management**

# Methodical background of CEBO

**Effective and friendly system for data collection**



**Open on-line system based on ORACLE technology**

# Methodical background of CEBO

## Secure environment

data entry Local Computer



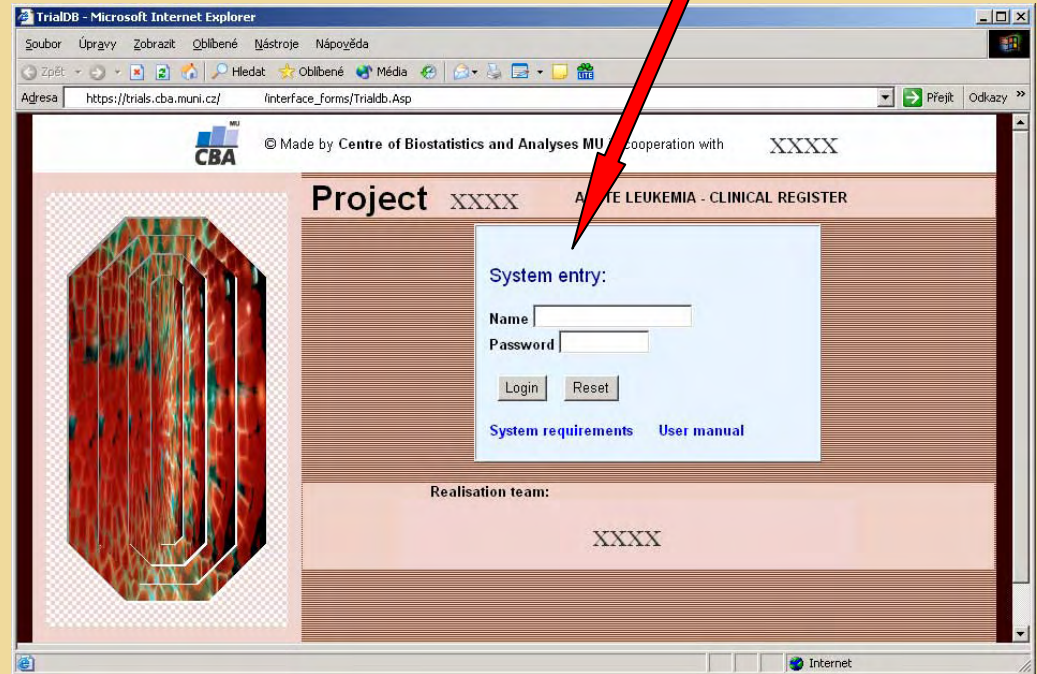
Web Server



Database Server  
(Oracle 9i Server)



(Secure web-based communication) 128 bit SSL



Fully guaranteed, authorized system

# Methodical background of CEBO

## Standardized environment for multicentric projects

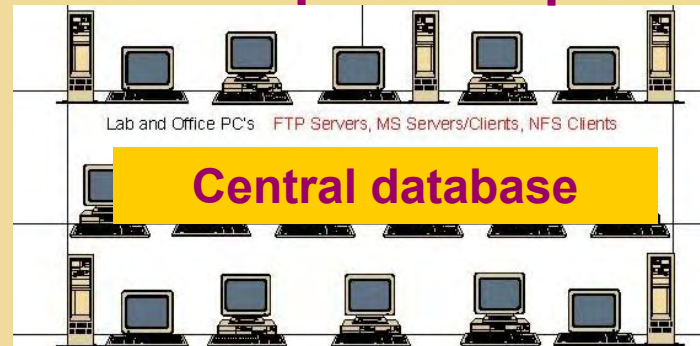
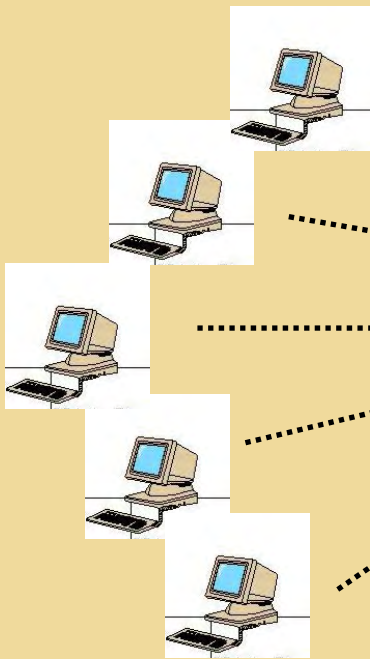
**Presentations and studies realised in individual centers can use central analytic support**

**Common reports**

**Common outputs are accessible to all participants, special application is based on agreement**

**Data of centers**

**Individual centers**



**Outputs**

**Data coding and analyses**

**Registration records**

**Electronic records**

**Overall outputs // internet presentations // ....**

# Methodical background of CEBO

SVOD – System for Viewing of Oncological Data

COBRA – Expert services

Diagnose selection  
COBRA – Expert services  
User preferred analyses  
Web portal SVOD  
Discussion club SVOD  
SVOD manual  
SVOD help  
Exit

Presentations Data browser Expert services

User preferred analyses

Epidemiology: incidence and mortality  
Comparative analysis: epidemiology  
Age structure of patient population  
Survival analysis  
Clinical stages  
Demographic data

**Predefined user controlled analytic tools**

Expert services

Expert services software SVOD

Epidemiology  
Comparative analysis  
Health care management

Základní epidemiologická Diagnostika

Zastoupení klinických stádií Diagnostika COO

Analýza přežití Diagnostika COO

Profil případů s danými stádii

**Comprehensive presentations with comments and access to appropriate analytic tools**

**Data browser - analysis of individual parameters**

Věk 45 - 59 let

Věk 60 a více let

Věk 45 - 59 let

Věk 60 a více let

popis	typ	N
1 pohlaví	kategorie	2470
2 rok narození	datum	2470
3 věk při stanovení dg.	spojitý	2470
4 věk při dg. - 5 letá kateg.	kategorie	2470
5 kraj trvalého bydliště	kategorie	2470
6 sociální postavení	kategorie	374
7 hlavní životní zaměstnání	kategorie	374
8 ZN v rodinné anamnéze	kategorie	374
9 kouření	kategorie	374
10 diagnóza onemocnění	kategorie	2470
11 rok stanovení diagnózy	datum	2470
12 laterality	kategorie	2470

Hodnota	Počet	%
1 stadium II	38761	38.69
2 stadium III	20626	20.59
3 stadium I	17947	17.91
4 stadium neznámé	13799	13.76
5 stadium IV	9071	9.05
6 Celkem	100194	

**SW solution**

# Information background of CEBO

<http://www.cba.muni.cz/svod>

About project

News

Epidemiological  
analyses

Publications,  
reports

Software SVOD

Analytic tools  
tutorial

The screenshot shows the SVOD website interface. At the top, there is a navigation menu with options like 'Soubor', 'Úpravy', 'Galerie', 'Ovládnutí', 'Nástroje', and 'Výpočet'. Below the menu is a search bar and a list of icons. The main content area is titled 'EPIDEMIOLOGIE ZHOUBNÝCH NÁDORŮ V ČESKÉ REPUBLICE'. On the left, there is a sidebar with a menu: 'O PROJEKTU', 'AKTUALITY', 'EPIDEMIOLOGICKÉ ANALÝZY', 'PUBLIKACE, ZPRÁVY', 'SOFTWARE SVOD', and 'PRŮVODCE ANALÝZAMI'. Below the menu is a search bar and a login section with fields for 'login:' and 'heslo:', and a 'Přihlásit' button. The main content area features a large map of the Czech Republic and a section titled 'EPIDEMIOLOGIE ZHOUBNÝCH NÁDORŮ V ČR - ANALÝZY'. This section is divided into several columns: 'INCIDENCE A MORTALITA', 'ČASOVÉ TRENDY', 'VĚK PACIENTŮ', and 'SROVNÁVACÍ STANDARDY'. Each column contains a small icon and a brief description of the data analysis tool. For example, 'INCIDENCE A MORTALITA' includes a line graph icon and text about the time development of incidence and mortality. 'ČASOVÉ TRENDY' includes a bar chart icon and text about changes in incidence and mortality over time. 'VĚK PACIENTŮ' includes a bar chart icon and text about the age structure of patients and the deceased. 'SROVNÁVACÍ STANDARDY' includes a line graph icon and text about the time development of epidemiological parameters in the Czech Republic compared to reference standards. On the right side of the main content area, there is a section titled 'REGIONÁLNÍ PŘEHLEDY' with a bar chart icon and text about regional overview. Below this, there is a section titled 'KLINICKÁ STÁDI' with a bar chart icon and text about clinical stages. At the bottom of the main content area, there is a section titled 'SROVNÁNÍ SE...' with a globe icon and text about international data. At the very bottom, there is a section titled 'PŘEHLED DIAG...' with a pie chart icon and text about comprehensive overview.

Epidemiological  
analyses

Incidence and mortality

Time trends

Regional overview

Age analyses

Clinical stages

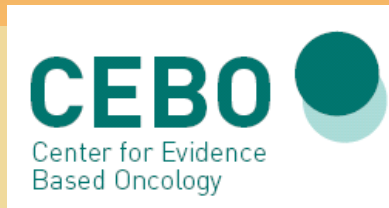
International data

Comparative standards

Comprehensive overview

Portal solution

# Challenges for CEBO



**Clinical trials**  
**Prospective, randomized**  
**research projects**

**Educational strategy in**  
**evidence-based oncology**  
**/associated with**  
**university/**

**Beneficial**  
**international**  
**collaboration**

**Evidence-based**  
**health care**  
**assessment**

# Challenges for CEBO



**The Association CEEESTAHC  
Krakow : an International  
Symposium**

**Evidence-Based  
Health Care**

***2-3. X. KRAKOW***



# THANK YOU FOR CEBO

