

# Development of standardised approaches to reporting of RQ-PCR data

Mette Østergaard, Charlotte Guldborg Nyvold & Peter Hokland  
*Dept. of Hematology, Århus University Hospital, DK*

Jan Kaare Larsen, Kristian Forsström & Tor Foss Mortensen  
*Langtved Data, Odense, DK*

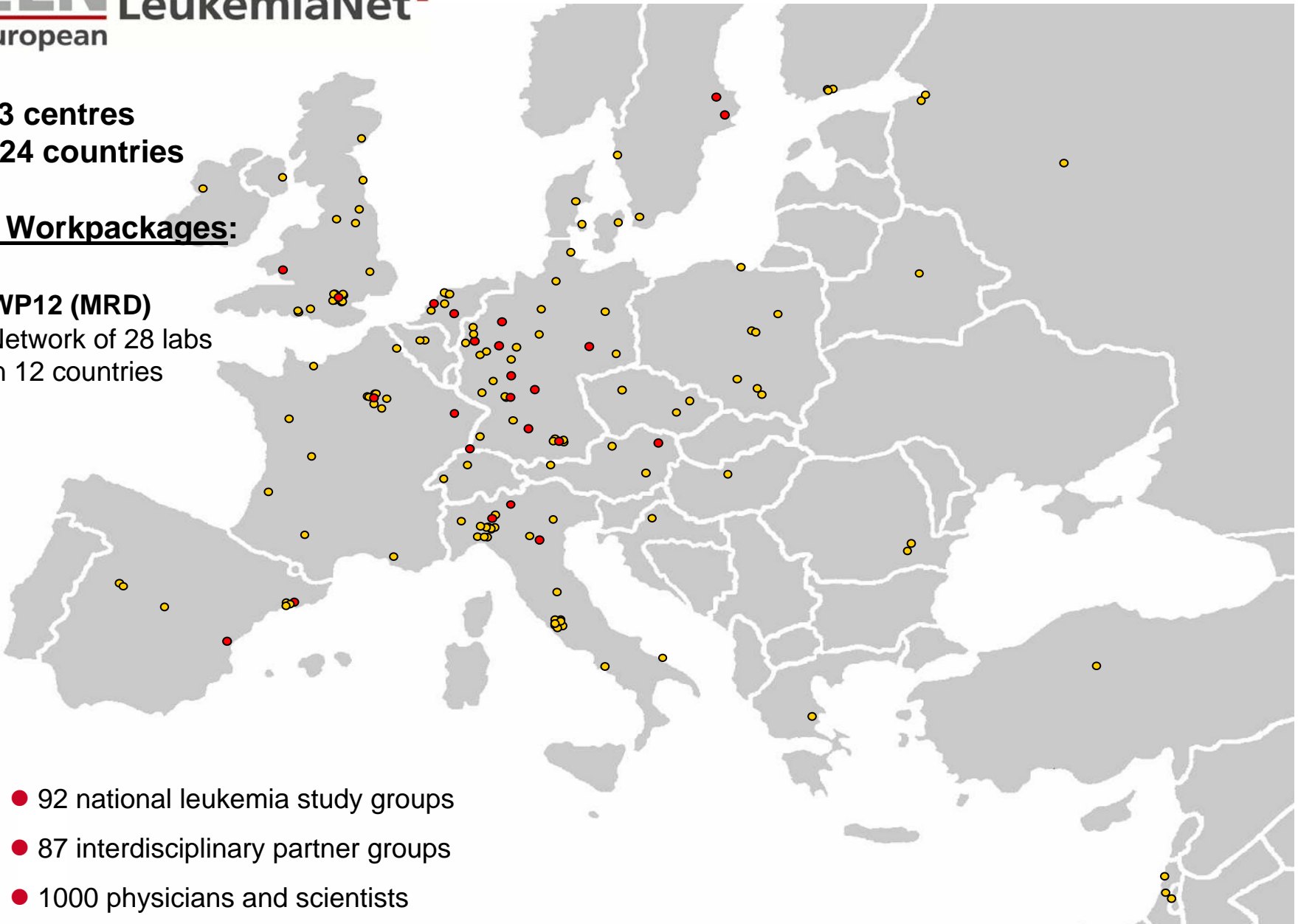
David Grimwade  
*King's College London School of Medicine*

**133 centres  
in 24 countries**

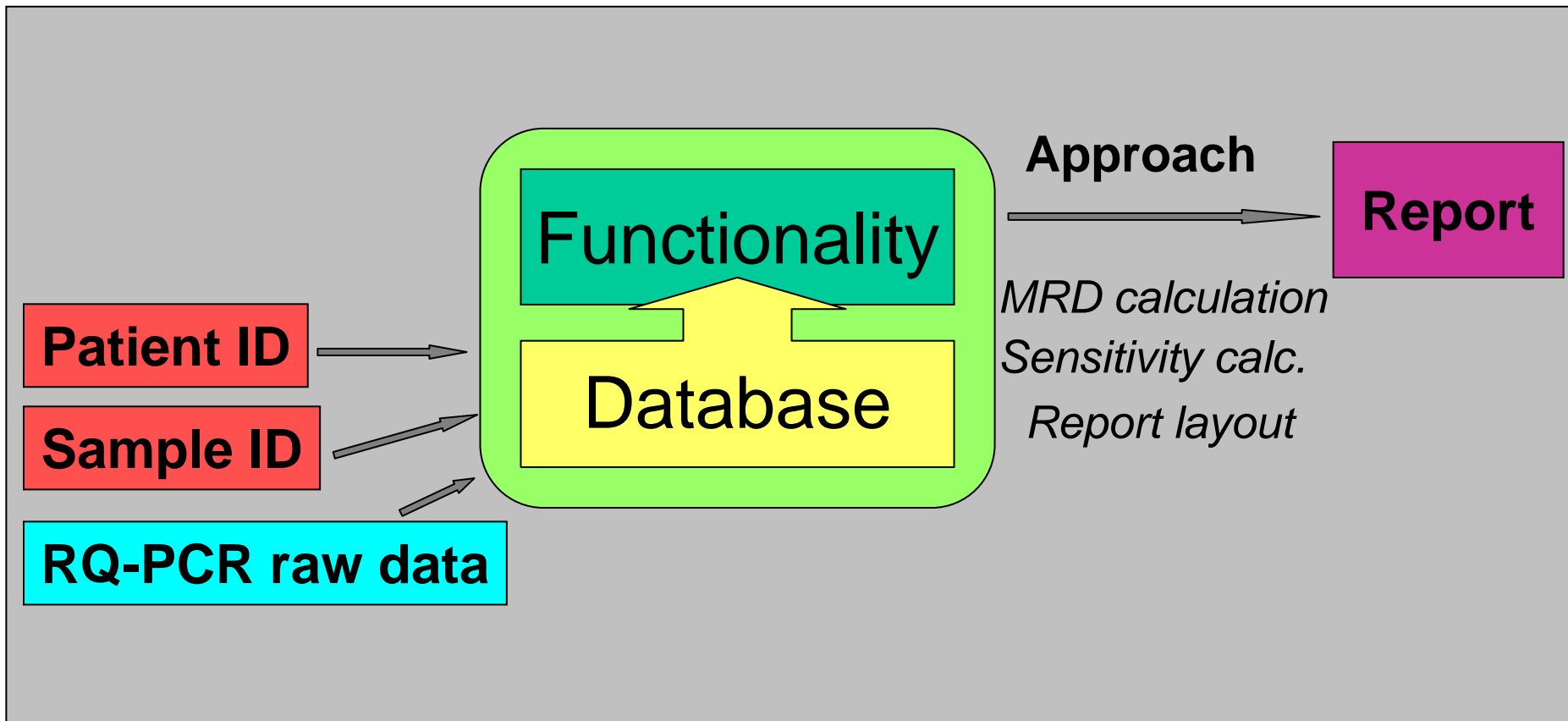
**17 Workpackages:**

**- WP12 (MRD)**

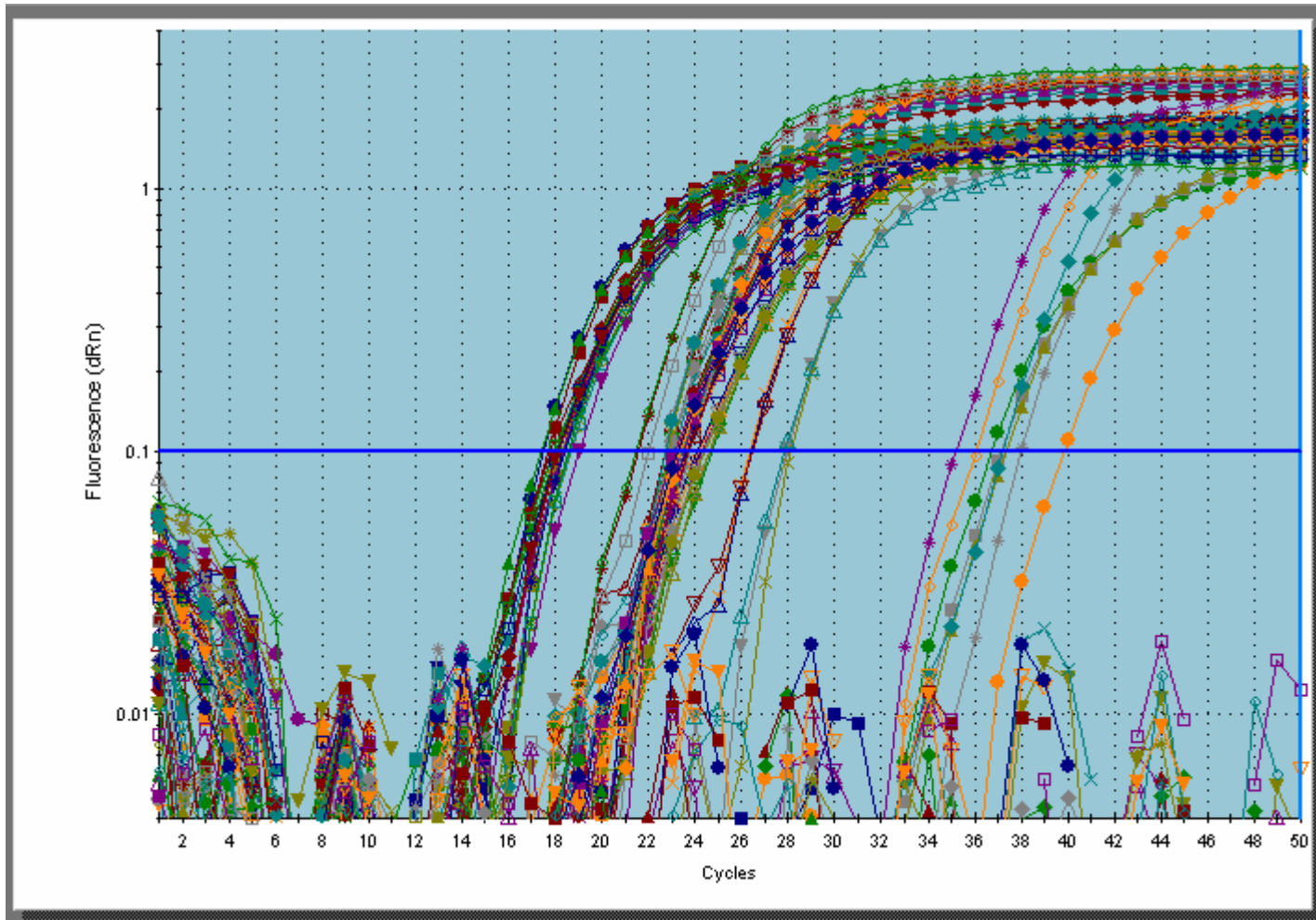
Network of 28 labs  
in 12 countries



# Development of ELN MRD reporting program



# RQ-PCR analysis



# Export of raw RQ-PCR data

Microsoft Excel - Test 136 220807-1.txt

Filer Rediger Vis Indsæt Formater Funktioner Data Windue Hjælp

I27 =

	A	B	C	D	E	F	G	H
1	Well	Well Name	Well Comment	Dye	Assay	Well Type	Threshold	Ct (dRn)
2	A1	831*06	B2M	FAM	FAM	Unknown	0,0782	15,89
3	A2	831*06	B2M	FAM	FAM	Unknown	0,0782	15,99
4	A3	831*06	B2M	FAM	FAM	Unknown	0,0782	15,92
5	A4	831*06	ABL	FAM	FAM	Unknown	0,0782	24,04
6	A5	831*06	ABL	FAM	FAM	Unknown	0,0782	23,64
7	A6	831*06	ABL	FAM	FAM	Unknown	0,0782	23,95
8	A7	---	---	FAM	FAM	Not in Use	0,0782	No Ct
9	A8	---	---	FAM	FAM	Not in Use	0,0782	No Ct
10	A9	---	---	FAM	FAM	Not in Use	0,0782	No Ct
11	A10	831*06	WT-1	FAM	FAM	Not in Use	0,0782	23,92
12	A11	831*06	WT-1	FAM	FAM	Unknown	0,0782	25,28
13	A12	831*06	WT-1	FAM	FAM	Unknown	0,0782	25,23
14	B1	832*06	B2M	FAM	FAM	Unknown	0,0782	17,3
15	B2	832*06	B2M	FAM	FAM	Unknown	0,0782	17,43
16	B3	832*06	B2M	FAM	FAM	Unknown	0,0782	16,96
17	B4	832*06	ABL	FAM	FAM	Unknown	0,0782	24,74
18	B5	832*06	ABL	FAM	FAM	Unknown	0,0782	24,74
19	B6	832*06	ABL	FAM	FAM	Unknown	0,0782	24,49
20	B7	---	---	FAM	FAM	Not in Use	0,0782	No Ct
21	B8	---	---	FAM	FAM	Not in Use	0,0782	No Ct
22	B9	---	---	FAM	FAM	Not in Use	0,0782	No Ct
23	B10	832*06	WT-1	FAM	FAM	Unknown	0,0782	25,68
24	B11	832*06	WT-1	FAM	FAM	Unknown	0,0782	25,54
25	B12	832*06	WT-1	FAM	FAM	Unknown	0,0782	25,64
26	C1	702*07	ABL	FAM	FAM	Unknown	0,0782	19,14

Test 136 220807-1

Klar FST

# Assignment of sample details

The screenshot shows the DataBrowser application window titled "DataBrowser - 150942, Svendsen, Svend". The interface is divided into several sections:

- Queries:** A list on the left includes "All Patients", "Sample No Search", and "Integrity".
- Result of search - 63 patients:** A table displaying search results with columns for PatientID and FullName.
- Patient Form:** A green section for editing patient information, including fields for Patient ID, First Name, Last Name, Date of Birth, Sex, MinDate, and MaxDate.
- Samples:** A cyan section for sample management, featuring a list of sample numbers (8055, 8060, 8070, 8071, 8078, 8109) and a detailed form for sample 8055.
- Search Summary:** A status bar at the bottom of the application area indicating "Search: 63 patients found."

PatientID	FullName
150942	Svendsen, Svend
201195AV	V, A
101243	Johansen, Aage Erik
060247	Grethe Dam
100874	Kelvin Mulenga
000000-NB4	control, BCR1
000000-NB4-2	control, BCR1og3

Sample No.	Sample Type	Sample Date	Request no.
8055	PB	01-10-2005	

ReferenceSampleNo	Factor	ExpFactor	SensFactor
8055			

SampleNoStandard	FactorStd	ExpFactorStd	SensFactorStd
ABLp21009050			

Search: 63 patients found.

Taskbar: E:\JHL\MRD Program, Microsoft PowerPoint - ..., MRD Data Reporting, 50%

# Data import according to RQ-PCR platform

The screenshot shows the DataBrowser - MX3000 application window. The top section displays a list of queries on the left and a search result table on the right. The search result table is titled "Result of search - 5 metabases" and contains the following data:

Name	Path
ABI 7700	
MX3000	
LightCycler	
ABI 7900	
ABI 7500	

Below the search results is a toolbar with icons for Find, New Metabase, Delete, Save, Create copy, Cancel, Print, and Exit. The main configuration area is divided into three sections:

- Metabases:** Contains fields for Name (MX3000), Path, and TreeID (Patient).
- mbTables:** Contains tabs for Samples and SampleResults. It includes a navigation toolbar and configuration fields for DestinationTable (Results), SourceFilename, Action (Prompt), Delimiter (Tab), QuoteChar, and FileNameColumn (TxtFileName).
- mbColumns:** Contains tabs for FKey, Marker, and Ct. It includes a navigation toolbar and configuration fields for DestinationColumn (FKey), SourceColumn (Well Name), FieldOrder, Delimiter, DecimalChar, and FReferenceColumn (SampleNo). There are also checkboxes for Pkey and Fkey, with Fkey checked.

# Generation of MRD report

DataBrowser - 100874, Kelvin Mulenga

Queries Result of search - 63 patients

PatientID	FullName
150942	Svensden, Svend
201195AV	V, A
101243	Johansen, Aage Erik
060247	Grethe Dam
▶ 100874	Kelvin Mulenga
000000-NB4	control, BCR1
000000-NB4-2	control, BCR1og3

Find New Patient Delete Save Create copy Cancel Print Exit ...

SampleNoStandard FactorStd ExpFactorStd SensFactorStd

Results Text

Indication

Conclusion  
RQ-PCR has been performed on peripheral blood from

Conclusion

Comment  
We recommend that a new PB sample be taken after three months

MRD target Signed By Co. Signed By



# Generation of tailor-made MRD report



Patient ID: 100874

Name: Mukuga, Kelvin

Department:

Sample Date: 10-10-2006

Date: 02-12-2007  
21:59:48

Indication: AML obs remission

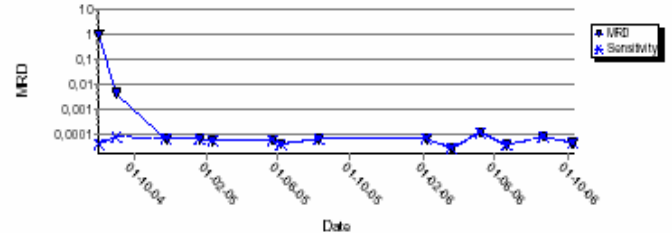
Conclusion: RD-PCR has been performed on peripheral blood from 10-10-2006. The patient is in continuous molecular complete remission.

MRD-Target: BCR-3

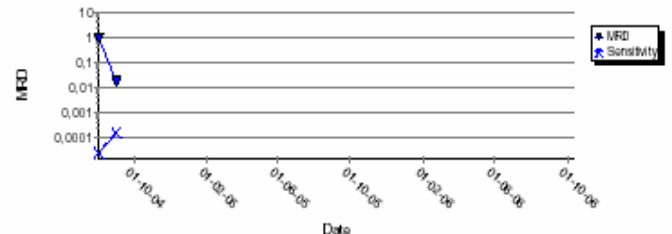
### Latest Results

Sample No	Date	Material	MRD	1:Sensitivity	Change to previous (log [fold])
714*06	10-10-2006	PB	4.86e-5	1 : 20570	-0.26 [0.55]
530*06	21-08-2006	PB	8.81e-5	1 : 11348	0.36 [2.27]

### Results Blood



### Results Bone Marrow



Comment: We recommend that a new PB sample be taken after three months

Approved by: Kain Brandstrup    Morte Østergaard

# Progress & proposed time-frame for distribution of ELN MRD reporting program

- Dec 07/Jan 08: Initial evaluation in ELN labs with ABI & Lightcycler platforms (Guy's, Copenhagen, Munich, Ulm)
- Spring 08: Troubleshooting of program & user manuals; subsequent distribution across ELN
- Establish “hot-line” for software support
- Late 2008: Licensing of validated program for use by labs outside ELN

# Program distribution

## Installation CD:

- MRD program
  - SQL database program
  - MRD program w. examples
- Read me files
  - Installation
  - Test examples
- Manuals
  - SQL technical manual
  - MRD program user manual

# Minimal requirements

- ***PC users:***
  - **Single PC min. Windows 2000 (analyses and data base)**
    - MSDE-SQL database
  - **OR: Server PC in computer network**
    - Microsoft SQL Server 2000™ on PC
- ***Mac users:***
  - **Single Mac w. Citrix Metaframe (PC-window)**
    - MSDE-SQL database
  - **OR: Server PC in computer network**
    - Microsoft SQL Server 2000™ on PC

# Software basics

- SQL database (2000 server version)
- Server/local
- Preconditions
  - Unique patient ID
  - Raw data in text file
  - Sample no., gene name, Ct value linked

# Software basics (II)

- Security
  - Login at different user levels
  - Log (SQL)
- Data import
  - Creating samples in patient files
  - Describing a metabase
- Reports
  - Printing a report
  - Composing of reports

# Metabase: Import of raw data

- Run analyses on RQ-PCR equipment
- Evaluate run
- Export raw data as text file
- Import into MRD reporting program by using the appropriate "Metabase"

*Metabase: tells from which columns in the text file the info used for the database tables should be taken.*