Know Your Numbers in Real Time: Using Total Cost of Ownership, Dynamic Costing, and Test Production Management by Analyzer to Cut Costs, Reduce TAT, and Boost Quality

Citilab and Exalab Case Studies

What is Data Analytics?

Data analytics is a technology-driven process for analyzing data and presenting actionable information to help corporate executives, business managers and other end users make more informed business decisions.

Data analytics encompasses a variety of tools, applications and methodologies that enable organizations to collect data from internal systems and external sources, prepare it for analysis, develop and run queries against the data, and create reports, dashboards and data visualizations to make the analytical results available to corporate decision makers as well as operational workers.

What is Data Analytics?
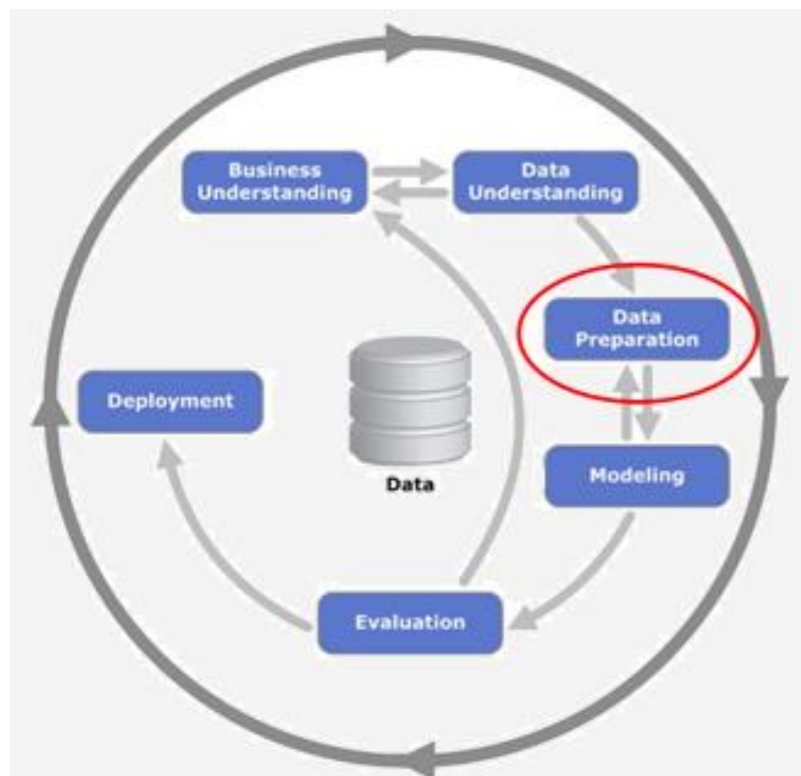
The potential benefits of data analytics programs include accelerating and improving decision making; optimizing internal business processes; increasing operational efficiency; driving new revenues; and gaining competitive advantages over business rivals. Data analytics systems can also help companies identify market trends and spot business problems that need to be addressed.

Data analysis can include historical information, as well as new data gathered from source systems as it is generated, enabling data analysis to support both strategic and tactical decision-making processes.

Data Analytics in Laboratories

- Online Kpi's monitoring in every department of laboratory

- TCO calculations

- Deep analytics of tube flows, including all possible timestamps

- Planning and supporting management decisions

- Scientific investigations

- Medical affairs support

- And much more

Data Preparation
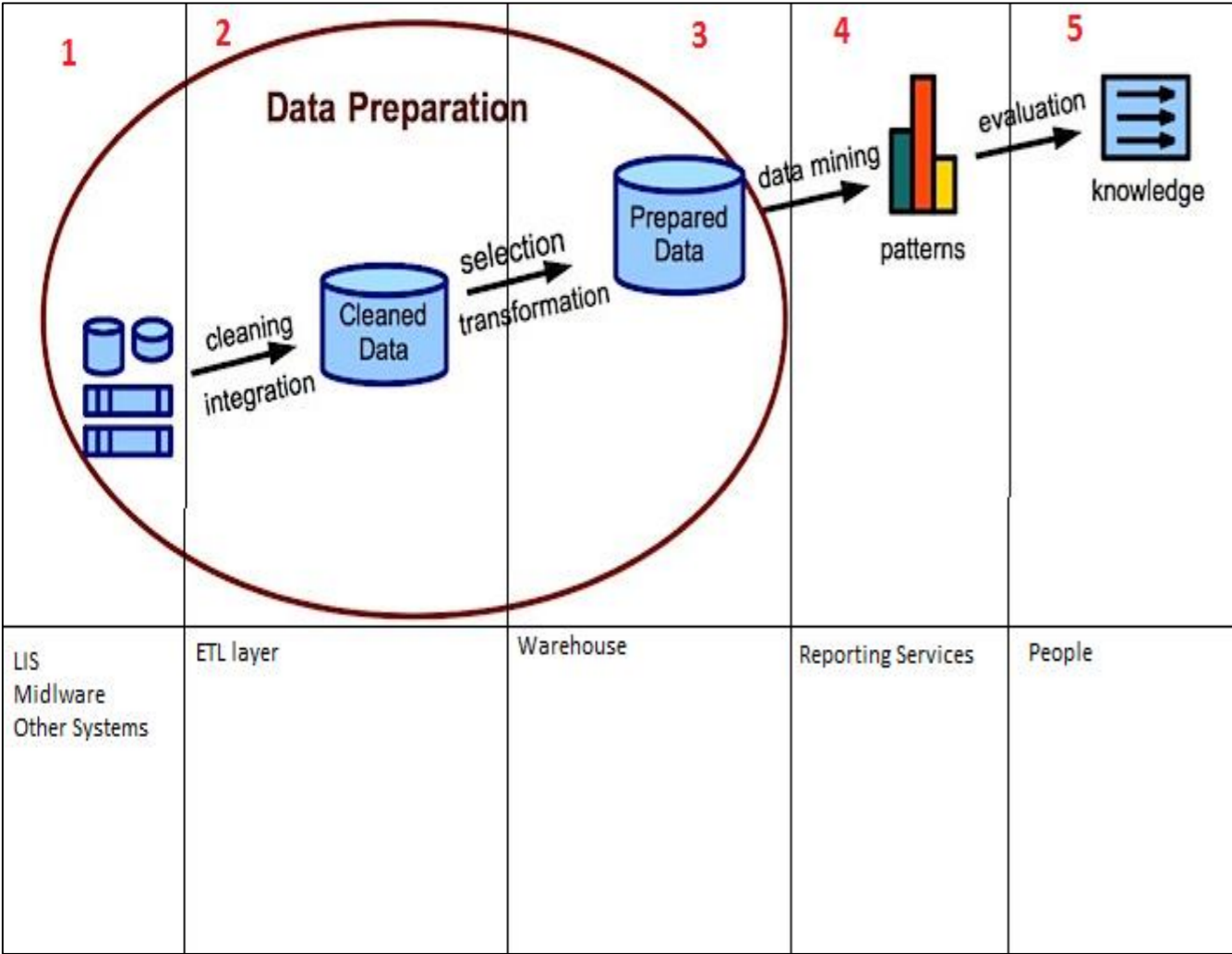
This schema shows the abstract flow of data from the application databases to people making decisions.

The most important and hard step is the first one. Before analyze you need to understand what you plan to analyze exactly and where and how it is stored. Otherwise it is a big risk to gather wrong data and all next steps will just lead to wrong decisions

Data Preparation – Basic steps

- Learn how your data is stored in laboratory systems databases

- Describe final data model

- Fix or avoid laboratory systems data problems – missing categories, timestamps, wrong or garbage data

- Prepare Warehouse data model – dimensions and facts

- Prepare ETL packages

- Test data quality with laboratory specialists

- Schedule data transfer carefully to avoid peak hours

- Make different types of reporting based of needs (plain e-mail reporting, excel or interactive reports for analytics etc.)

- Document all steps

Data Flow Schema
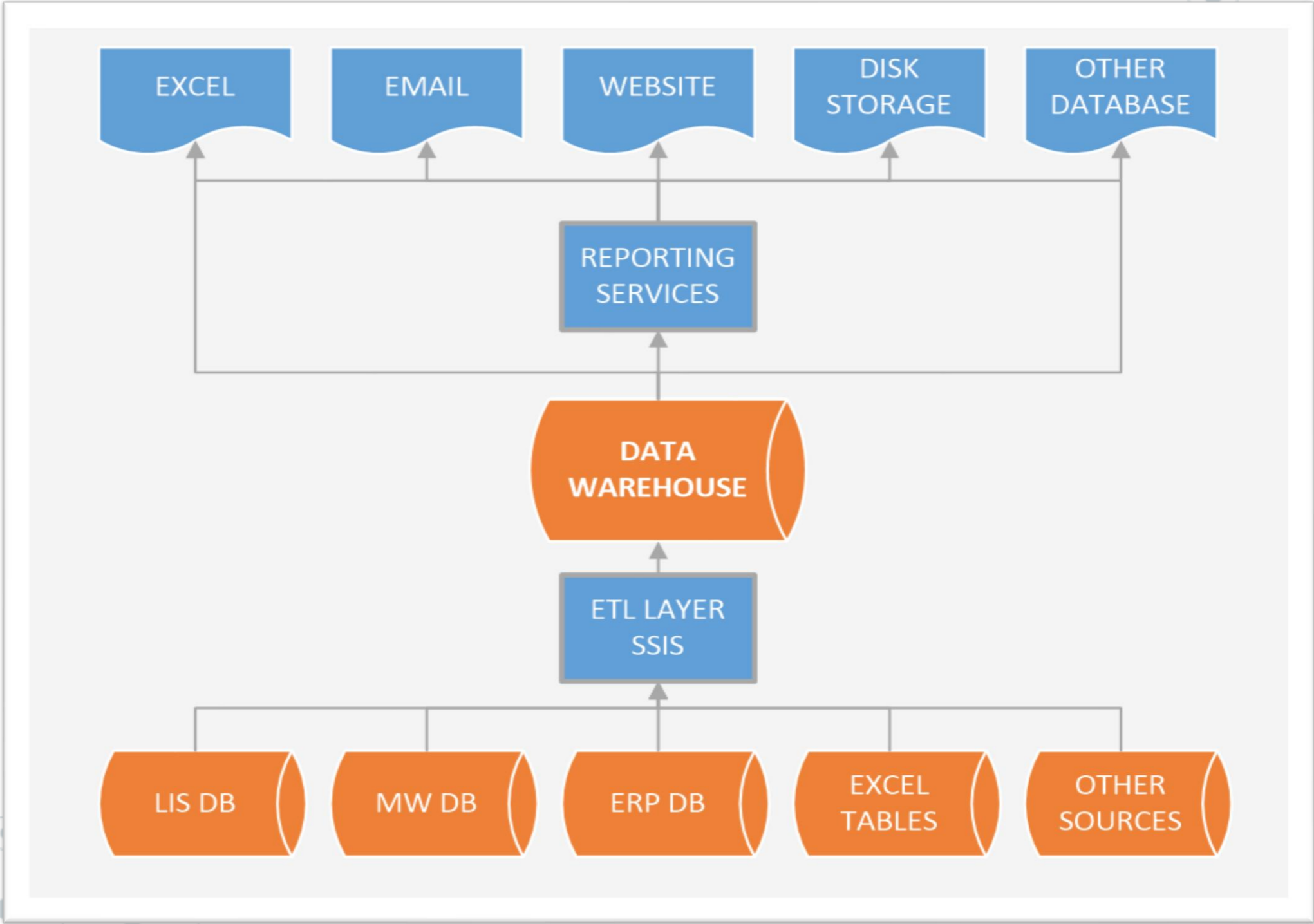
Why Data Warehouse?

- Production system load optimization

- Independent of Production systems data structure and DB versions

- Optimized for reporting and analytics data structure

- Cleaned and prepared data

- Fast Reports generation

- Combines data from any sources

- Centralized control

Reporting Flexibility

- Production, Economics, Logistics, Sales, Medical Affairs

- Operative, on Demand, on Schedule

- XLS,PDF,HTML, Word, CSV and so on

- Plain, Multidimensional, Diagrams, Combined

- By e-mail, on web-site, file storage, directly to Excel,

  self-analytics tools or other databases

HBa1c – prescribers support report

Datas HbA1c

Report Generation Date: 7/1/2017

HbA1c-suivi des patients diabétiques HbA1c > 90j

Identité patients	date de naissance	Age	sexe	contexte	résultat	date	délai depuis le dernier contrôle
DEL	13/11/1962	54	M	suivi	9.6	31/03/2017	92
DUF	23/11/1947	69	F	suivi	6.3	22/03/2017	101
LEP	14/07/1972	44	M	suivi	5.2	18/03/2017	105
REA	03/07/1959	57	M	suivi	8.1	16/03/2017	107
ESP	06/05/1968	48	M	suivi	9.3	10/03/2017	113
MAR PIE	09/06/1953	63	M	suivi	8.5	10/03/2017	113
BEL	26/12/1966	50	M	suivi	12	22/03/2017	101
SEN	01/06/1941	75	M	suivi	6.6	21/03/2017	102
CAN	13/11/1943	73	F	suivi	5.9	02/03/2017	121

HbA1c > ou égal à 6,5% hors diabéte connu

Identité patients	date de naissance	Age	sexe	contexte	résultat	date	délai depuis le dernier contrôle
BOR DAN	24/10/1956	59	M	non défini	6.8	12/07/2016	354
PER	29/09/1962	54	M	non défini	6.5	11/02/2017	140
GIZ	26/12/1971	45	M	non défini	6.9	09/02/2017	142
DEL	23/12/1941	75	M	non défini	7.9	10/03/2017	113

HBa1c – dynamic dashboard
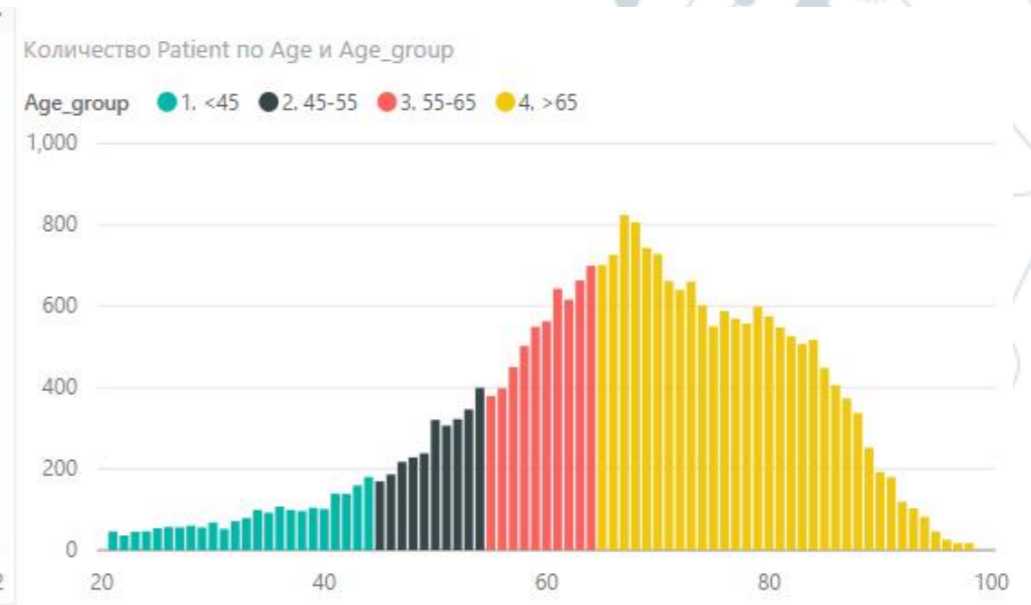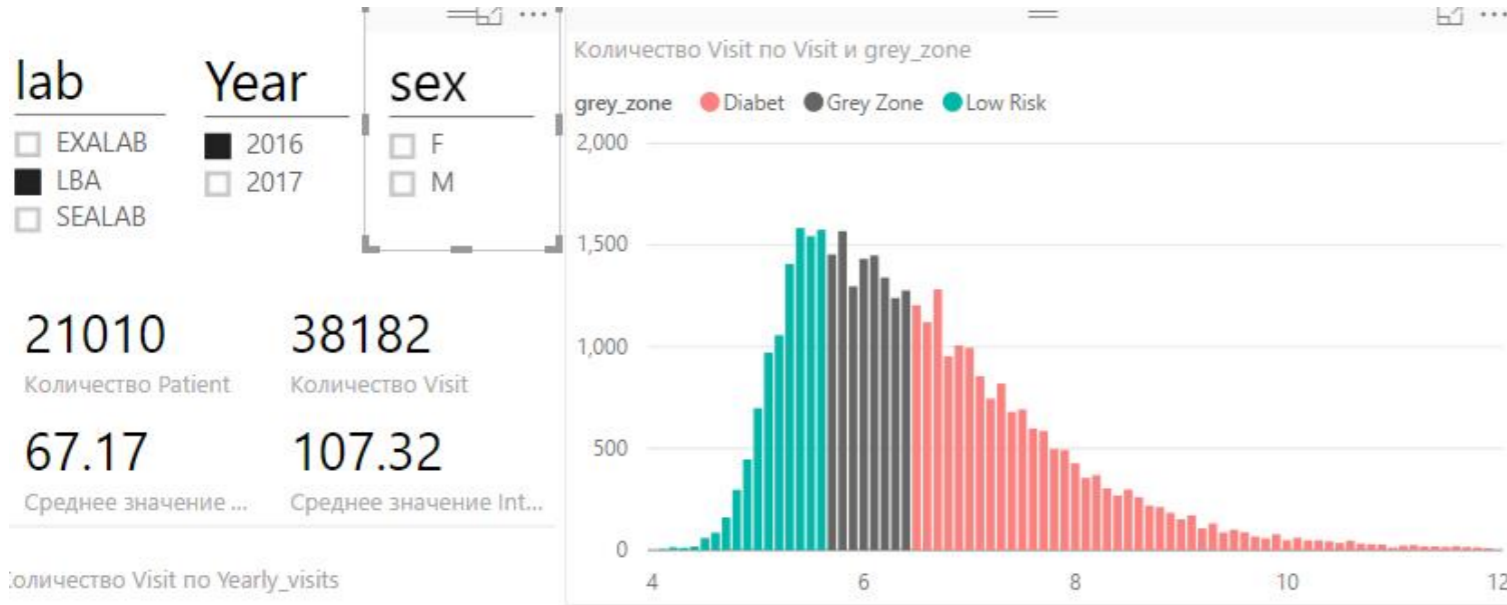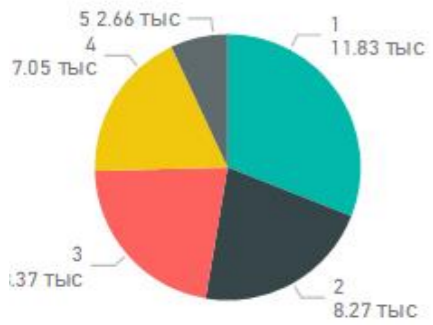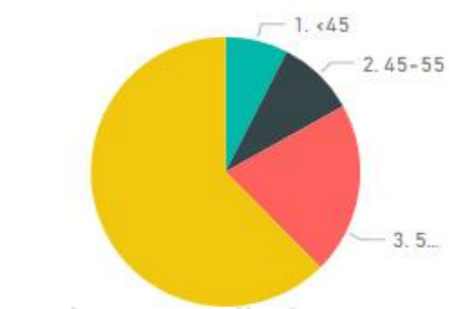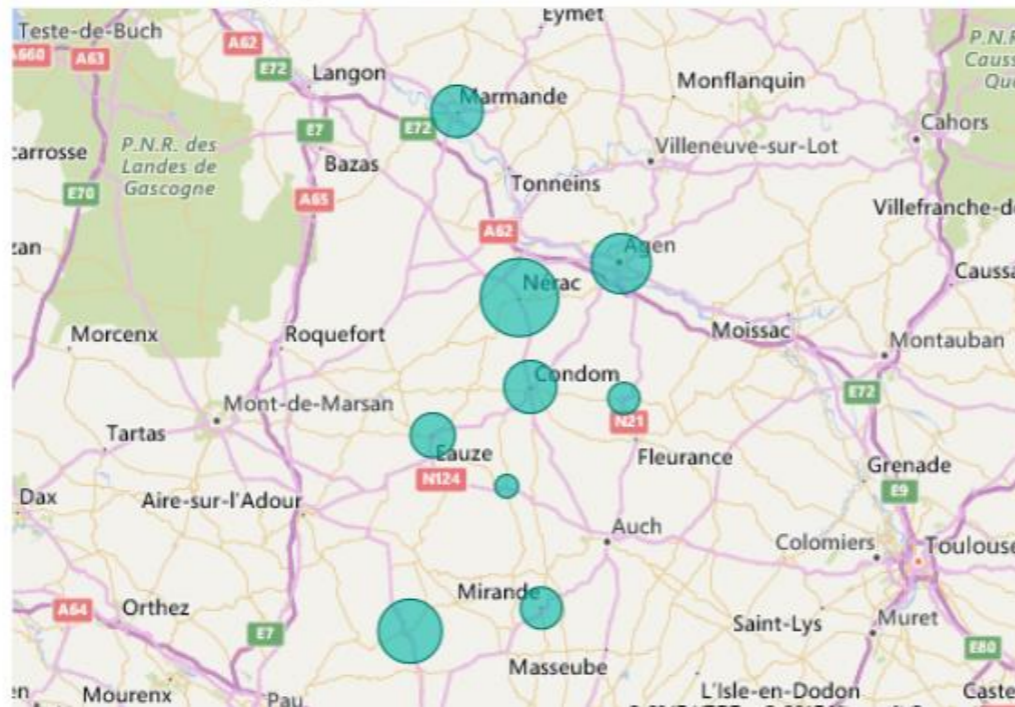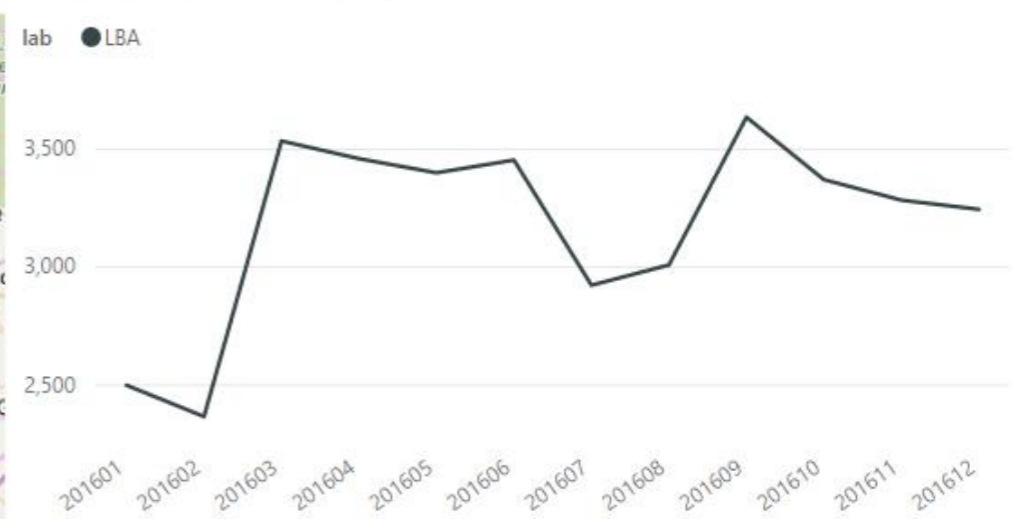
Daily Reports

DR_Registration_by_Hour			
dt hour	Patients	Requests	Tests
0:00	22	26	271
1:00	2	4	28
2:00	4	5	17
3:00	2	2	2
4:00	6	6	6
5:00	0	0	0
6:00	6	6	72
7:00	623	668	6746
8:00	825	900	8042
9:00	844	924	6767
10:00	630	687	4347
11:00	466	495	2670
12:00	219	236	1253
13:00	85	111	462
14:00	120	129	533
15:00	119	134	598
16:00	176	253	2119
17:00	109	120	561
18:00	40	47	215
19:00	14	18	102
20:00	10	12	204
21:00	12	14	213
22:00	4	7	45
23:00	7	10	85
Total	4345	4814	35358

Daily Registration By Hour

— Patients

Thank You!

For additional information please contact:

- PATRICK GONTARD - pgontard@gontardcie.com

- ROMAN KUVSHINOV — rkuvshinov@gontardcie.com