

Improving biological validation by means of a the electronic decision-making system VALAB[®]

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What is Valab ?

- Valab is an electronic tool for assisted biological validation of the medical laboratory.
- The VALAB software was initially built for a few parameters of clinical chemistry but the possibilities for validation was subsequently enlarged and now comprises a variety of parameters. It validates analysis from different areas as clinical chemistry, hematology and immunology.
- It contains 2 kinds of analysis:
 1. the fossil analysis
 2. the autoexpert analysis

Aims and background

Two years ago we set the aims of increasing security in biological validation, reducing turnaround times and gaining efficiency of personnel involved in biological validation and decided to introduce the system into our laboratory.

After installing the system with 3 modules and 25 additional parameters, we did a 7 months testing period. Thereafter, we decided to enlarge the spectrum of laboratory parameters for another 90 parameters.

How Valab operates

```

    graph TD
      MV[Medical validation] --> Valab
      Valab -- No --> Automaton
      Automaton -- Yes --> TV[Technical validation]
      TV -- Yes --> Valab
      Valab -- Yes --> TP[Transmission, printer, etc.]
      Automaton -- No --> MV
  
```

Interface with LIS (Mdis)

Integration of Valab in our data platform

Integration of Valab at different laboratory sites

Valab is used / No use of Valab

The Valab project

Start of automatization

Year	Start of automatization
2007	27.0.07
2008	18.2.08
2009	23.4.09
2010	21.6.10

4 periods:

- 27th mai 2007 - 2 modules + 25 subsequent analysis
- 27th mai 2007 - 27th september 2008
- 23 september - 27th mai 2009 - 49 subsequent analysis
- 27th mai 2009 - 56 subsequent analysis

Project Valab: statistics of Molis codes for 5 months

Valab project: choice of analysis codes

Results: Increasing security example: B2-microglobuline

With modelisation Valab increases the security of validation.

It uses a lot of other parameter, before it accept the result of an analysis

Result: reducing turnaround time

About 37% of the laboratory requests could be fully treated by VALAB, whereas 23% of the requests could not at all be treated. Turnaround time of completely treatable requests could be reduced by 72%, whereas turnaround time for partially treatable requests could be reduced by 16%. The turnaround time for nontreatable requests would be unchanged.

Conclusion

The degree of gain in security was difficult to assess. Nevertheless, looking at our complaint statistics, the rate of complaints clearly attributable to validation errors showed a decrease of errors.

Further, a gain in efficiency was achieved by focusing persons working in biological validation on important requests and not losing time with uncomplicated requests.

Together, we conclude that using VALAB in our medical laboratory reduced turnaround times, enhanced security, and increased efficiency of personnel working in biological validation.