

## Case study: Implementing SLims in a Swiss Kidney Stone Cohort in support of clinical research

### SLims Added Values

- *SLims assures the collection of a diverse set of sample and patient information*  
The cohort relies on collections of relatively few specimen per patient (like blood, urine and derivate). However, due to the complexity of the project, many specific fields are needed, among them are a number of analysis values. SLims' great adaptability makes it a straightforward task to create a few hundred different fields for the sample parameters or project fields. Not all the data is directly collected in SLims, other software is used for certain data entries, such as health questionnaires. Those data points and results are imported into SLims as fully searchable, tabulated data points using its automated or semi-automated features.
- *SLims supports the Biobank to comply with patient data protection regulations*  
The personnel at each location needs access to the patient data of their own site in accordance with their role in the project. SLims' group- and role- privileges make sure that the different personnel at the varying sites have access only to the data they are allowed to; e.g. only staff with a very specific role is allowed to see the patient names participating in the project. Furthermore, SLims' exclusive access control, and chain of custody, guarantees an automatic tracking function which fully records and traces all the data entries.

### Client Need

Within the framework of this initiative, the Swiss Kidney Stone Cohort (SKSC) has been established to collect data of patients suffering from repeated kidney stone events over a ten-year time period. The goal of this integrated physiological approach is to set up a rational basis leading to the potential development of novel preventive, diagnostic, and therapeutic approaches in patients with chronic kidney diseases.

For the purpose of this multi-site research project, a new multi-site Biobank storing biological samples, such as urine and blood, was set up. During the collection time data on nutrition, physical activity, medical, and demographical information is gathered to build the foundation of a well-structured and annotated database of the patient population.

### Background

The nationwide research network of the Swiss National Centre of Competence in Research (NCCR) Kidney Control of Homeostasis (Kidney.CH) has set up a long-term initiative to advance knowledge and understanding of the renal homeostatic mechanisms controlling body composition in health and disease.



## More SLims Added Values

- *SLims makes planning patient visits a snap*  
Patients have to visit the site periodically for medical and clinical tests or to fill in life-style questionnaires. The built-in module to generate visitation plans integrates newly enrolled patients into the project. Moreover, it helps to merge the newly collected values and information into the existing database. With just a few clicks, SLims has laid down when the patients' next visit will be and what kind of investigation needs to be carried out by allocating the necessary entry fields. This automated feature saves a lot of time off planning and organizing.
- *SLims helps the Biobank to assure quality*  
SLims is configured to facilitate the activities of the monitoring staff who are able to raise queries directly when questions about source verification arise. Responses and data corrections are also traced in the system. Feedback mechanisms make sure records can only be marked as complete when all the data is present and verified.
- *SLims increases the knowledge base*  
The longer the project advances, the more information is loaded into SLims. By amassing huge numbers of data points to every sample and patient present in the repository, the database grows in value. Every data point gathered about the patient is neatly organized, ready to be interconnected for deeper correlative analyses. With SLims' ability to combine sample management with patient data, it is easy to see what kind of samples the biobank contains for every patient, at which location, and which derivative (like DNA or else) are available for additional investigations.

## SLims Solution

Genohm has developed SLims, a laboratory informatics software that integrates LIMS + ELN features. SLims has been selected to manage this entirely new Biobank and cohort establishing the continuous observation and follow-up of the chosen patient pool. Its highly adaptable data and sample management features satisfy a large and diverse set of criteria and enable the long-term observation of the kidney stone patient cohort and the sample collection for its Biobank.

SLims' LIMS + ELN features enable the SKSC initiative to:

- Make it easy to enroll patients and overview their progression in the cohort
- Combine patient data with sample management
- Handle different patient information like medical history, results from physical examinations, demographic, nutritional, and other life-style information
- Allow storage of various types of coded patient samples and recording diverse sets of sample-specific data points, ranging from collection time, metabolic, and other analyses parameters
- Link diverse sample locations yet be easy to use for the whole staff
- Provide adequate user-, group- and role-specific access
- Provide easy access across different institutions, yet comply effortlessly with data protection and patient protection needs

## About Genohm

Genohm is a Swiss company with offices in Lausanne (Switzerland), Ghent (Belgium) and in Durham, NC (USA). The company has developed SLims, a laboratory software automation suite. SLims provides laboratories with one integrated LIMS + ELN environment that tracks data and samples from the original sample shipment down to the result from lab machines and in-silico analysis pipelines. It fully accommodates the needs of any research lab, NGS lab, service facility, Biobank or QC lab.

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“SLims is the perfect  
Lab Companion for  
your Biobank”

