

# New coding tool for clinical pharmacology

The Norwegian Laboratory Coding System is a new, shared coding system which will ensure that all Norwegian laboratories use identically worded names and analysis codes for requisitions and results of laboratory tests. The Norwegian Society of Clinical Pharmacology has now developed its own website to maintain an overview of its analysis names and codes.

The Directorate of Health is currently working to develop and implement a shared coding system for all medical analyses and testing performed in Norwegian laboratories (1). This coding system, called the Norwegian Laboratory Coding System (NLK) will ensure that all laboratories use the same unique identifier when requisitioning and communicating the results of identical analyses. Until now, the laboratories have largely operated using local analysis and test registers which tend not to match up with each other, and this has given rise to different names for the same analysis, for example «wbc», «leukocytes» and «leucocytes». Different names and codes mean that the results of the same analysis performed by different laboratories may end up in different places in the patient's laboratory file and medical records. There are also examples of today's non-standardised nomenclature resulting in erroneous synonyms, for instance both carbamide and carbamazepine being abbreviated to «carb». This is clearly very undesirable and can result in confusion and serious errors.

The purpose of the Norwegian Laboratory Coding System is for all laboratory analyses to have a unique code and a single Norwegian name, thereby providing improved patient safety and a better overview of the patient's test results. Further inform-

ation about the Norwegian Laboratory Coding System is provided in Box 1.

## Challenges

The work on the Norwegian Laboratory Coding System has been demanding, both for the Directorate of Health and for us who have served on the expert advisory groups for the six laboratory sciences of immunology and transfusion medicine, clinical pharmacology, medical biochemistry, medical genetics, medical microbiology and pathology. It has been and will continue to be difficult to design and maintain a shared coding system which takes account of all necessary nuances across all laboratory sciences, and there are many remaining challenges to be resolved.

However, we believe that we have found a good solution for systematising and managing the coding system for clinical pharmacology, which we wish to present here.

## The pharmacology portal

In March of this year, the Norwegian Society of Clinical Pharmacology (NFKF) launched the Pharmacology portal, a shared website on which all laboratories in Norway offering clinical pharmacological analyses present their analysis repertoires (3, 4). In September of this year we are launching a new coding system application on the same portal (5).

The application ensures that all laboratories are given the correct codes when they publish their analysis repertoires on the Pharmacology portal.

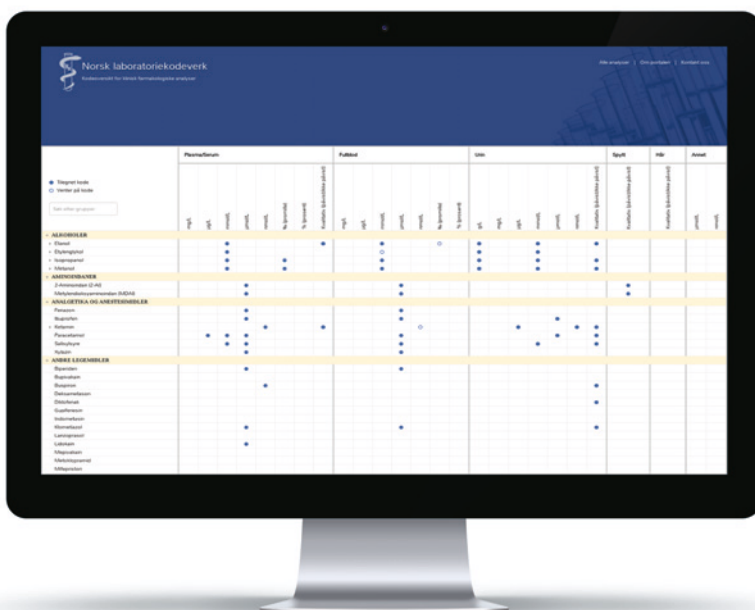
The codes are assigned based on the published details of the analysis (see Box 1, points a, b and c), and the application also ensures that the Directorate of Health is notified if there is a requirement for new codes for new analyses. In this way correct use of codes is assured, and time-consuming and confusing email communication between the laboratories and the Directorate of Health can be avoided. The solution also ensures that the clinical pharmacological community has professional control

### BOX 1

The Norwegian Laboratory Coding System (NLK) is based on the international «Nomenclature of properties and units» (NPU) coding system (2), which contains codes for systematic nomenclature of different types of laboratory tests in English. The NPU codes in the Norwegian Laboratory Coding System correspond to equivalent codes used, for example, in the United Kingdom and Denmark. Each unique code consists of five digits for instance «NPU12345» or «NPU12346», and these codes are assigned on an ongoing basis as new requirements are submitted to the international NPU secretariat. What defines a unique code is the combination of:

- the component** to be measured, for example haemoglobin, paracetamol or morphine
- the system** in which the component is measured, i.e. the test material, such as blood or urine, and
- the unit** of the result reported, for example nmol/l or ng/ml or «positive/negative».

All unique triplets of the three factors a, b and c receive a separate code. This means that if oxazepam in urine is measured and the result is given in ng/ml, one code is used, and if the result of the same analysis is given in  $\mu\text{mol/l}$ , another is used. The new coding system should ensure that it will not be possible for a reported test result linked to an analysis code to be misunderstood. The coding system also defines one unique name in Norwegian to be used for each analysis.



Coding system application on the Pharmacology portal. Photo: Kantega

and an updated overview of the analysis names and codes in use at any one time.

The application has been funded by the Norwegian Society of Clinical Pharmacology and the clinical pharmacology laboratories themselves, and has been developed in collaboration with the Directorate of Health. The application is continually quality assured by the Pharmacology portal's web editorial team, which consists of professionals from the eight largest clinical pharmacology departments in Norway (4).

### Other laboratory sciences

Clinical pharmacology laboratories have analysis repertoires that are constantly changing as new therapeutic drugs and drugs of abuse enter the market. We developed this application because we saw a need for a flexible, clear and rapidly updateable overview of codes for clinical pharmacology analyses, and to ensure that the coding system originates from the professional community.

However, the solution is not solely for the use of clinical pharmacologists. We would hereby like to extend an open invitation to our colleagues in the other laboratory

sciences: Try our application and consider whether this could be a route you would also like to take. Perhaps in the future we will have a shared, professionally endorsed Norwegian laboratory analysis and coding system portal? We would applaud this, and gladly support our laboratory colleagues who share this wish.

*We would like to thank Kantega for their excellent technical design of the coding system application.*

**Andreas Austgulen Westin**  
andreas.westin@legemidler.no  
**Tormod Karlsen Bjånes**

Andreas Austgulen Westin (born 1977) is a senior consultant at the Department of Clinical Pharmacology, St. Olav University Hospital in Trondheim. He is a board member of the Norwegian Society of Clinical Pharmacology and of the Directorate of Health's advisory group for clinical pharmacology to the Norwegian Laboratory Coding system, and is a web editor of the Pharmacology portal. The author has completed the ICMJE form and reports no conflicts of interest.

Tormod Karlsen Bjånes (born 1978) is a senior consultant at the Section for Clinical Pharmacology, Laboratory for Clinical Biochemistry, Haukeland University Hospital. He is a board member of the Norwegian Society of Clinical Pharmacology and of the Directorate of Health's advisory group for clinical pharmacology to the Norwegian Laboratory Coding System, and is a web editor of the Pharmacology portal. The author has completed the ICMJE form and reports no conflicts of interest.

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