Introducing ISIN's new intraoperative neurophysiological monitoring (IONM) case report form within EUROSPINE's Spine Tango registry

The International Society of Intraoperative Neurophysiology (ISIN) has developed a case report form to examine the individual protocols of IONM and their value for patient safety. In collaboration with EUROSPINE, this new IONM form has been implemented on the international Spine Tango platform in January 2025 (Link) and can now be completed together with the surgery form. This registry will help to monitor and improve the quality of IONM and its practice for spinal procedures. Neuromonitorists' support will be required to reflect and to improve current practice.

Why was the IONM case report form created (and why fill it out)?

Surgeons, hospitals, payors, and patients require data on IONM effectiveness… they ask for answers to the following questions:

- Which groups of surgery patients (if any) are benefitted by IONM?
- Which explanatory variables best determine the probability of a good outcome using IONM?
- For which spinal pathologies and procedures does IONM improve (or not improve) patient outcomes?

The Spine Tango platform

The platform is multilingual (currently translated into 9 languages) and has several features that can add value to the user. These include data export options, online statistics, and semi-automated electronic distribution of patient reported outcome measure questionnaires (PROMs) before surgery and in post-operative follow-up. Surgeons receive quarterly detailed benchmarking reports. All users can request access to pooled international data, which can be provided on the basis of a study protocol approved by the Spine Tango Committee. Being part of an international network of hospitals can also be a valuable asset for research activities.

If the Surgeon/Hospital is already registered in the international Spine Tango platform…

The new IONM case report form is now live. If surgeon(s) or other hospital users are already able to submit the surgeon form to Spine Tango, the IONM case report form can now be found, completed, and submitted as additional IONM-specific data to supplement the surgeon form. ***The IONM form is intended for in-room neuromonitorist completion***. In general, the neuromonitorist for a case will need to be added to the authorized list of users of Spine Tango for that hospital. This step may require contact with the Spine Tango IT/Support team (see below). Once added with an authorized Spine Tango account, neuromonitorists registered in the Spine Tango platform in the same hospital (or department, if applicable) and caring for the same patient may independently find and complete the IONM form.

If the Surgeon/Hospital is NOT yet registered in the international Spine Tango platform…

There is formal process of registration for new users. As users will submit real data and use the platform, they will be asked to sign a Terms and Conditions document. The formal process of registration of a hospital is described here in the middle of the webpage. Remember to include all neuromonitorists who may be completing the IONM form. There are basically three steps:

- fill in the user registration form (the questions with the red star are mandatory, while the other questions can be skipped (Link)
- read, complete, and sign the Terms and Conditions (Link)
- send them to spinetango@eurospine.org

How will the IONM case report form be used?

First, data will be collected on several crucial IONM variables… for example, motor and sensory evoked potential (EP) methods, surgical context of EP loss (an alarm), intervention(s) to recover EP loss, and rate of successful EP recovery after intervention.

And then…

- Collect "NO IONM cases" and match to "IONM cases" using crucial variables from the surgery form (patient demographics, pathology, procedure, and so on).
- Compare "NO IONM" to "IONM" cohort outcomes within surgery strata (multilevel ACDFs, PCDFs, scoliosis correction with osteotomy, for example).
- Using a causal modeling strategy, identify which IONM methods, actions, or settings mediate or explain outcome differences between "NO IONM" and "IONM."
- Using Bayesian Machine Learning methods, find out how IONM methods, actions, and settings update the prior probability of a poor outcome to an improved, unchanged, or worse outcome.

ISIN and EUROSPINE's Spine Tango express our gratitude for considering this invitation to fill out the IONM form, along with the surgeon form, during any and all neuromonitored spine cases.

Spine Tango and ISIN contact information

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