Electronic PROMs in Spine Tango:
Introduction and user guidance
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1. Introduction

PROMs stand for patient reported outcome measures, which means patient self-assessment. It is generally accepted that the success of an intervention for spinal pathologies should also be assessed according to how the patient perceives the benefit achieved - usually based on the impact on pain, impairment in daily activities, ability to work, quality of life, etc.¹

Spine Tango registry platform offers an electronic PROMs management function.

2. PROM instruments

As of August 2023, this function includes following PROMs that are sent as one set of questions.

1) **Spine Tango's version of the Core Outcome Measures Index COMI** (7 questions at baseline and 11 questions at each follow-up)

COMI is one of the internationally commonly disease-specific PROMs. COMI is a brief instrument designed to assess key outcomes of importance to patients with back (or neck) problems: Pain, function, symptom-specific well-being, quality of life and disability. This instrument was developed in the early 2000s and does not require a licensing agreement for the hospitals. The instrument is an official PROM instrument of EUROSPINE. In addition to original COMI instrument in the Spine Tango PROM five questions are asked postoperatively about the complications that occurred and reoperation that took place, satisfaction with the treatment in the clinic or hospital and satisfaction with the overall outcome. Satisfaction with the overall result is also important if the preoperative survey did not take place.

2) **EQ-5D-5L** (6 questions at baseline and 6 questions at each follow-up)

The EQ-5D is a widely used generic PROM standard that can be applied to a variety of health conditions. It is used to quantify health-related quality of life (HRQL). This PROM measures a patient’s health status in five different domains: Mobility, Self-care, Habitual activities, Pain/Discomfort, and Anxiety/depression. The EQ-5D is available with five (5L) or three (3L) answers per question, with the EQ-5D-5L being the more modern and therefore the offer version.

3) Education (1 question)

The level of education is one additional question with the following answer options: ≤9 years of education, 10-13 years of education, >13 years of education.

3. Languages

The above-mentioned PROMs instruments are currently available in seven languages:

- English,
- German,
- Italian,
- French,
- Dutch,
- Slovenian,
- Spanish.

Further languages of PROMs will be implemented step by step. Next targeted languages are Czech and Portuguese.

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¹ Deyo et al. (1994) Outcome measures for studying patients with low back pain. Spine 19:2032S-2036S
4. **Steps to activate and send ePROMs.**
   If patient has consented to be registered in the registry and if he or she has consented to his/her contact data being used for sending him/her ePROMs

1) Create a new patient by entering the patient number, date of birth, gender.
2) Activated ePROMs.
3) Select the language of the questionnaire (in the patient view of the questionnaire, the patient can still change the language).
4) Add contact details (either mobile phone number, an e-mail address or both; avoid errors as the ePROMs want each the patient otherwise).
5) Save the entered information.
6) (Not shown in the image) The platform confirms that the patient has been created and asks for confirmation whether to send the ePROMs and also asks whether to send a back or neck related form version. The ePROMs are then sent to the entered contacts after confirmation.

5. **Patient information**
   Adequate verbal and written patient information is key to success. Spine Tango provides a template for written patient information in the languages of the ePROMs on the EUROSPINE website.

   It is important that the patient is informed at least that

   1) His/her contact details will be used to send him/her ePROMs before and twice after surgery;
   2) He/she should answer the ePROMs as soon as possible and that his/her answers will serve as a basis for improving the quality of treatment in the future. If not answered, the system will send reminders.
   3) The survey is voluntary. The data entered in the questionnaire will be evaluated confidentially. If the patient does not wish to answer the questionnaire, he/she will not suffer any disadvantage.
6. **E-mail to the patient**

The patient receives an e-mail with the following text.

```
Hello,

As part of the treatment process, your surgeon would like you to complete a questionnaire to tell him about your pain and its effect on your daily life, before and at certain intervals after surgery. For this purpose, Test clinic ZZZ is making use of the Spine Tango registry to administer the questionnaires, via e-mail and/or SMS.

In case you receive an e-mail asking you to complete the questionnaire, you should click on the provided link or alternatively copy and paste the following link into a browser:

https://spinetango.online/FS15patientportal/gpoe/4f9B7b6B91b55a5

This will take you to the Spine Tango online system where you can complete your questionnaire.

Please do not hesitate to contact your spine surgeon if you have any questions about completing the questionnaire or experience any technical problems, please send an email to health_servicedesk@necsws.com.

Thank you for your cooperation.

Spine Tango Registry on behalf of the Test clinic ZZZ.
```

7. **Text message to mobile phone**

The patient receives a text message with the following text.

```
10:29 SPINE TANGO

Hello,
You have received a questionnaire before surgery from Test clinic ZZZ. To complete the questionnaire, please click https://spinetango.online/FS15patientportal/gpoe/4f9B7b6B91b55a5
To stop receiving questionnaires, please click https://spinetango.online/FS15patientportal/gpoe/7796f91f973f5065

10:29 - 3G_Budget Mobile
```

8. **Patient support**

In the e-mail text the patient is invited to contact his/her spine surgeon, if he/she has any questions about the surgery, or to send the registry support an email to health_servicedesk@necsws.com, if there are any questions about completing this questionnaire or any technical problems.

9. **Automatised reminders**

After the ePROM were activated, the platform is managing ePROMs autonomously. The platform takes care of the 1st message and two reminders, 7 days, and 14 days after the 1st message. The first message and all reminders always contain the same link to ePROMs, whether in the SMS message or
in the e-mail. This link remains valid for 4 weeks. Therefore, no manual resending of ePROMs is required. However, if the patient's contact details are incorrect, e.g., because the contact details were entered wrongly or have changed, they can be changed, and the platform offers to send a link to the new contact details.

10. The button "Send ePROMs"
The button "Send ePROMs" (s. the image below) is used to send a new set of ePROMs questions. Such a new set of ePROMs is needed exclusively in case of another operation.

11. Automated postoperative ePROM
The set of post-operative ePROMs is automatically sent 3 and 12 months after surgery. However, to send postoperative ePROMs, the platform needs to know the date of the surgery. Therefore, in the same clinical case, the surgery form must be created, and the date of surgery must be entered for the platform to send the postoperative ePROMs.

12. Patient view of the ePROMs
Patients answer ePROMs in a patient portal. Patients can change the language and also return to previous pages.
13. Checking the status of ePROMs
With the function "ePROMs Status" the status of ePROMs can be checked 1) if the ePROMs questionnaire has not yet been filled in or 2) if it has only recently been filled in. The patient can be searched in the list.

To prevent the list from becoming too long, patients who have already submitted their questionnaire will be removed from the list after a few weeks. The patient can also be removed from the list manually.

14. Search for patients with ePROMs
The patients with ePROMs can be easily searched. To do this, go to the search function and select the patients with ePROMs as shown in the next image, and then search for them. Add other search criteria like “incomplete” status of the ePROMs form if required.