SURgical PAtient Safety System (SURPASS) at the Luzerner Kantonsspital (LUKS) – implementation of a process-oriented electronic checklist system

Daniela Heim

Qualitäts- und Riskmanagement, Luzerner Kantonsspital (LUKS)

Starting position

In many national and international clinics, surgical checklists are used in the operating environment to improve overall patient safety. In line with this, in 2013 LUKS implemented a more comprehensive electronic checklist system called SURPASS. The SURPASS system was developed at the AMC Academic Medical Center in Amsterdam [1]. The electronic checklist covers the entire treatment path of the patient and is completed by all of the responsible functions in the treatment process.

During the time period 2007 to 2009, comprehensive studies on the effect of the implementation of SURPASS were performed at the AMC [2]. These showed that the mortality rate was reduced from 1.5% to 0.8% and the complication rate was reduced from 27.3% to 16.7%. LUKS is the first hospital in Switzerland to introduce the electronic SURPASS system.

Objectives

SURPASS should be implemented at LUKS so that the existing processes at LUKS can be integrated as comprehensively as possible. The integration into the Clinic Information System should also further support the processes and avoid the collection of redundant data with a related improvement in employee satisfaction.

This is the pre-requisite for a highly monitored compliance level. By successfully implementing SURPASS at LUKS it would prove the feasibility of being able to transfer and implement a foreign electronic checking system into the environment of a Swiss hospital.

Method

A multi-disciplinary project team developed between 1 May 2013 to 31 September 2013 checklists that were adapted to the discipline-specific processes based on AMC guidelines. The SURPASS checklists cover all the essential ten to twelve connections of the surgical patient-care pathway which enables an inter-professional exchange of information to take place. These interfaces do have a risk of information loss.

Basically four different patient checklists were created (hospitalised, outpatient / hospitalised, emergencies and re-operation). The SURPASS checklists could be opened via a link to two different clinical patient data systems (Polypoint RAP version g2.8.3 covering logistics and MedFolio Nexus AG version 2.2.0.1776 covering individual case details). Each user signs the checklist after completing inputs with a personal Windows login. The test phase with ongoing adjustments lasted six months, from 1 November 2013 to 31 May 2014. The compliance evaluations were published monthly. After three months, an employee survey to review the implementation of SURPASS was carried out.

Results

An anonymous online survey was sent to 480 employees. The response rate was 42%. This covered all of the eleven SURPASS disciplines and all of the nine occupational groups included in the patient treatment process. The results showed that 82% of the checklist users understood the software application and also found it user-friendly. 72% of respondents felt the electronic format is better than the paper checklist. 74% of employees considered signing the checklist as necessary. At the end of the first month of launch, the introduction lag for compliance by the doctors was 33% (Std: 13%, max. 63%, min. 16%). After five months, the compliance increased to 63% (Std: 23, max. 96%, min. 13%). The increase is with a p <0.001 significance (T-Test). The compliance in the various disciplines has a high variability of 13% to 96%.

Discussion

The results of the employee survey confirmed the ease of use of electronic checklists. The implementation of SURPASS also identified a big challenge; that the safety as well as the checklist culture is anchored differently in the various treatment disciplines. Pre-requisite for a high compliance is that the implementation has to follow a slim version of the existing processes without redundant data entry. The motivation can increase by informing and describing via newsletter various SURPASS situations. The monthly publication of the compliance values is indispensable – this guarantees a high recording rate.
Correspondence:
Daniela Heim
Bahnhofstrasse 21
CH-5642 Mühlau
daniela.heim[at]luks.ch

References